

SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, UMEÅ, UDDEHOLM

DELARY and MYRVIKEN

| | | | | |
|----------|-------|------------|------------|-----------|
| Uppsala | (UPP) | 59°51.5'N, | 17°37.6'E; | h = 14 m |
| Kiruna | (KIR) | 67°50.4'N, | 20°25.0'E; | h = 390 m |
| Umeå | (UME) | 63°48.9'N, | 20°14.2'E; | h = 16 m |
| Uddeholm | (UDD) | 60°05.4'N, | 13°36.4'E; | h = 240 m |
| Delary | (DEL) | 56°28.2'N, | 13°52.2'E; | h = 150 m |
| Myrviken | (MYV) | 62°56.5'N, | 14°20.8'E; | h = 345 m |

JANUARY 1-31, 1997

| 1997 | | | | | 1997 | | | | |
|------|---|-----|------|-------------------------------------|------|---|-----|----|--------------------------------------|
| Jan. | 1 | UPP | iP | 23 45 55.3 | Jan. | 3 | UPP | iP | 22 01 16.9 |
| | | | | Minahassa Peninsula, Sulawesi | | | | | micr sec |
| | | | | (h = 120 km). | | | P | Z' | 0.2 1.0 |
| " | 2 | UPP | iPKP | 03 16 21.5 | | | KIR | iP | 22 01 18.2 |
| | | | | South of Fiji Islands (h = 500 km). | | | | | micr sec |
| " | 2 | UPP | iP | 06 51 38.7 | | | P | Z' | 0.2 0.9 |
| | | | | | | | | | Eastern Siberia, Russia (h = 10 km). |
| " | 2 | UPP | iP | 11 04 05.5 | | | | | m = 6.1 (UPP,KIR). |
| | | | | Andaman Islands, India (h = N). | " | 3 | UPP | iP | 22 50 29.2 |
| " | 2 | UPP | iP | 12 59 25.7 | | | | | Eastern Siberia, Russia (h = 10 km). |
| " | 2 | UPP | iP | 15 27 18.6 | " | 4 | UPP | iP | 16 35 02.0 |
| | | | | Ionian Sea (h = 10 km). | | | | | Samar, Philippine Islands |
| " | 2 | KIR | iSg1 | 17 50 12.6 | | | | | (h = 45 km). |
| | | | | Off coast of northern Norway, | " | 5 | UPP | eP | 08 56 28 |
| | | | | 70.0°N, 17.5°E. | | | i | | 08 56 31.9 |
| | | | | Origin time = 17 48 55. | | | iS | | 09 03 42 |
| | | | | By combination with Finnish and | | | | | micr sec |
| | | | | Norwegian station readings. | | | Mx | Z | 6.1 17 |
| " | 3 | UPP | iP | 00 06 23.6 | | | KIR | Mx | 09 19 |
| | | | | Cyprus region (h = 10 km). | | | | | micr sec |
| " | 3 | UPP | ePKP | 04 17 20 | | | Mx | Z | 2.8 13 |
| | | | | Tonga Islands (h = 140 km). | | | | | Nepal-India border region (h = N). |
| " | 5 | UPP | eP | 10 46 09 | | | | | M = 5.5 (UPP,KIR). |
| | | | | Taiwan region (h = N). | " | 6 | UPP | iP | 14 13 12.2 |
| " | 6 | UPP | iP | 14 13 12.2 | | | | | Qinghai, China (h = N). |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|----|--|--------------|------|----|---|------------|
| Jan. | 7 | UPP iP | 01 23 36.2 | Jan. | 11 | UPP iP | 02 11 58.6 |
| | | Mariana Islands (h = 220 km). | | | | Crete (h = N). | |
| " | 7 | UPP iP | 02 19 48.0 | " | 11 | UPP iP | 06 01 52.9 |
| | | Crete (h = 40 km). | | | | Kyushu, Japan (h = 50 km). | |
| " | 8 | UPP iP | 06 54 46.1 | " | 11 | UPP iP | 20 41 13.1 |
| | | Haiti region (h = 10 km). | | | | i | 20 41 17.8 |
| " | 9 | UPP iP | 08 03 04.1 D | | | iPP | 20 44 48 |
| | | Unimak Island region (h = N). | | | | iSKS | 20 51 40 |
| " | 9 | UPP iP | 08 58 17.9 | | | | micr sec |
| | | Northern Mid-Atlantic region (h = 10 km). | | | | P | Z' 0.1 0.8 |
| " | 9 | UPP iP | 13 50 58.7 C | | | i | Z' 1.3 1.5 |
| | | ipP | 13 51 04.6 | | | KIR iP | 20 40 59.5 |
| | | iS | 13 57 12 | | | | micr sec |
| | | | micr sec | | | P | Z' 5.7 2.0 |
| | | pP | Z' 0.2 0.9 | " | 12 | UPP iP | 12 15 13.7 |
| | | Mx | Z 36 13 | | | Albania (h = 10 km). | |
| | | KIR iP | 13 51 00.0 C | " | 13 | UPP iP | 10 25 09.4 |
| | | ipP | 13 51 05.1 | | | iS | 10 29 50 |
| | | | micr sec | | | | micr sec |
| | | P | Z' 0.5 1.5 | | | P | Z' 0.1 0.9 |
| | | Mx | Z 12 11 | | | Mx | Z 7.8 15 |
| | | Kyrgyzstan. | | | | KIR iP | 10 26 10.1 |
| | | h = 20 km (UPP,KIR). | | | | i | 10 26 14.0 |
| | | m = 5.9, M = 6.1 (UPP,KIR). | | | | | micr sec |
| " | 10 | UPP iP | 02 31 37.6 | | | i | Z' 0.2 0.8 |
| | | | micr sec | | | Mx | Z 4.7 12 |
| | | P | Z' 0.2 0.9 | | | Cyprus region (h = N). | |
| | | KIR iP | 02 31 46.7 | | | m = 5.8, M = 5.4 (UPP,KIR). | |
| | | | micr sec | " | 13 | UPP iP | 13 32 01.3 |
| | | P | Z' 0.1 0.7 | | | Mariana Islands region (h = N). | |
| | | Hindu Kush region, Afghanistan (h = 200 km). | | " | 13 | UPP iP | 15 22 39.1 |
| | | m = 5.6 (UPP,KIR). | | | | Jan Mayen Island region (h = 10 km). | |
| " | 10 | UPP iP | 19 30 48.9 C | " | 13 | UPP iPKP1 | 23 56 56.1 |
| | | | micr sec | | | i | 23 57 04.4 |
| | | P | Z' 0.1 0.7 | | | Kermadec Islands, New Zealand (h = 250 km). | |
| | | KIR iP | 19 30 06.3 C | " | 14 | KIR iPg1 | 03 54 36.2 |
| | | | micr sec | | | iSg1 | 03 54 52.4 |
| | | P | Z' 0.3 1.0 | | | Northern Norway, 68.9°N, 22.6°E. | |
| | | Hokkaido, Japan region (h = 90 km). | | | | Origin time = 03 54 15. | |
| | | m = 6.0 (UPP,KIR). | | | | (cont.) | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | 1997 | | |
|------|----|---|------|----|---|
| Jan. | 14 | (cont.) By combination with Finnish and Norwegian station readings. | Jan. | 19 | UPP iP 02 34 27.1 Java Sea (h = 650 km). |
| " | 14 | UPP iP 18 17 36.0 Mariana Islands region (h = 300 km). | " | 19 | UPP iP 04 45 26.4 i 04 45 38.6 iS 04 55 24 micr sec |
| " | 16 | UPP iP 01 19 15.3 i 01 19 19.3 micr sec P Z' 0.1 0.7 Taiwan region (h = 30 km). | " | 19 | P Z' 0.2 1.0 i Z' 0.5 1.1 Mx Z 9.8 16 KIR iP 04 45 06.1 i 04 45 18.1 micr sec |
| " | 16 | UPP iP 21 53 57.5 i 21 54 06.0 Michoacan, Mexico (h = 30 km). | " | 19 | P Z' 0.3 1.3 i Z' 0.9 1.3 Mx Z 2.4 13 Philippine Islands region (h = N). m = 6.5, M = 5.9 (UPP,KIR). Double P, small and large, on average 12.1 s apart. The second arrival, when interpreted as pP, gives a focal depth of 40 km. |
| " | 17 | UPP iPdiff 11 34 18.3 iPP 11 38 44.1 Flores region, Indonesia (h = 110 km). | " | 19 | UPP iP 05 43 08.7 micr sec P Z' 0.1 0.9 Andreanof Islands, Aleutian Is. (h = N). |
| " | 17 | UPP iP 15 48 50.3 Ryukyu Islands (h = N). | " | 19 | UPP iP 15 16 23.4 Off e. coast of N. Islands, N.Z. (h = 100 km). |
| " | 17 | UPP iP 16 04 55.4 iS 16 14 30 micr sec P Z' 0.4 1.3 Mx Z 33 14 KIR iP 16 04 25.5 micr sec P Z' 0.5 1.4 Mx Z 15 14 Ryukyu Islands (h = N). m = 6.3, M = 6.5 (UPP,KIR). | " | 19 | UPP iP 19 47 03.6 Albania (h = 10 km). |
| " | 17 | UPP iP 21 25 14.6 i 21 25 18.6 Central Mid-Atlantic ridge (h = 10 km). | " | 19 | KIR iPg1 21 17 21.3 iSg1 21 19 01.4 Norwegian Sea, 71.9°N, 1.2°E. Origin time = 21 15 20. By combination with Finnish and Norwegian station readings. |
| " | 18 | UPP iP 07 46 03.6 Afghanistan-Tajikistan bord. reg. (h = 90 km). | " | 20 | KIR iPn 03 05 03.9 UDD iPn 03 06 30.8 Norwegian Sea, 72.9°N, 7.7°E. Origin time = 03 03 28. By combination with Finnish and Norwegian station readings. |
| " | 18 | UPP iP 17 25 35.1 Taiwan region (h = 55 km). | | | |
| " | 18 | UPP iPKP 18 39 09.7 South of Fiji Islands (h = 500 km). | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|----|----------|---|------|----|------------|---|
| Jan. | 20 | UPP iP | 13 27 06.6 C | Jan. | 22 | UPP iP | 18 30 26.3 |
| | | | Kodiak Island region (h = N). | | | | micr sec |
| " | 20 | UPP iPKP | 17 40 30.6 | | | P Z' | 0.1 1.0 |
| | | | South of Fiji Islands (h = 600 km). | | | | Turkey (h = 10 km). |
| " | 20 | UPP iP | 18 01 16.3 | " | 22 | UPP iP | 18 33 06.5 |
| | | | Tajikistan-Xinjiang border reg. (h = 60 km). | | | | micr sec |
| | | | | | | P Z' | 0.1 1.0 |
| | | | | | | | Turkey (h = 10 km). |
| " | 20 | UPP iP | 19 22 20.6 | " | 23 | UPP iPdiff | 02 29 02.8 |
| | | | Off east coast of Honshu, Japan (h = N). | | | | micr sec |
| | | | | | | Mx Z | 13 20 |
| " | 21 | UPP iP | 01 35 02.3 | | | KIR Mx | 03 12 |
| | | | micr sec | | | | micr sec |
| | | Mx Z | 22 13 | | | Mx Z | 11 18 |
| | | KIR Mx | 02 14 | | | | Southern Bolivia (h = 280 km). |
| | | | micr sec | | | | M = 6.4 (UPP,KIR). |
| | | Mx Z | 15 13 | " | 23 | UPP iP | 10 01 31.0 |
| | | | Southern Xinjiang, China (h = N). | | | | Southeast of Ryukyu Islands (h = N). |
| | | | M = 6.1 (UPP,KIR). | | | | |
| " | 21 | UPP iP | 01 56 17.1 | " | 24 | UPP iP | 10 43 37.1 |
| | | | micr sec | | | | |
| | | P Z' | 0.1 1.0 | " | 24 | UPP iP | 02 49 53.0 |
| | | | Southern Xinjiang, China (h = N). | | | | Mayanmar-China border region (h = N). |
| " | 21 | UPP iP | 20 52 52.0 | " | 25 | UPP iP | 03 17 04.5 |
| | | | Turkey (h = 15 km). | | | | Southern Xinjiang, China (h = N). |
| " | 21 | UPP iP | 21 32 43.6 | " | 25 | UPP iP | 20 13 23.5 |
| | | i | 21 32 52.4 | | | | Off east coast of Kamchatka (h = N). |
| | | | Near coast of Guerrero, Mexico (h = N). | " | 27 | UPP iP | 13 33 25.7 |
| " | 22 | UPP iP | 18 02 55.1 | " | 27 | UPP iP | 13 59 18.3 |
| | | i | 18 02 57.7 | | | | |
| | | iS | 18 07 32 | " | 28 | UPP iP | 11 02 21.4 |
| | | | micr sec | | | i | 11 02 32.7 |
| | | i Z' | 0.1 1.0 | | | | Caspian Sea (h = N). |
| | | Mx Z | 6.7 13 | " | 28 | UPP iPKP | 14 31 07.7 |
| | | KIR iP | 18 03 54.6 | | | | South of Fiji Islands (h = 100 km). |
| | | | micr sec | | | | Late arrival when compared with the NEIC solution. |
| | | P Z' | 0.2 0.9 | " | 28 | UPP iP | 22 46 46.1 |
| | | Mx Z | 5.9 14 | | | | Xizang (h = N). |
| | | | Turkey (h = 10 km). | | | | |
| | | | m = 5.8, M = 5.4 (UPP,KIR). | | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | | | |
|------|----|-----|--------|-------------------------------------|------|----|---------|----|------------------------------------|
| Jan. | 29 | UPP | i(PKP) | 18 37 53.4 | Jan. | 31 | (cont.) | | |
| | | | | South of Fiji Islands (h = 600 km). | | | KIR | iP | 23 29 37.0 |
| | | | | | | | | | micr sec |
| " | 30 | UPP | Mx | 24 33 | | | | P | Z' 0.3 0.6 |
| | | | | micr sec | | | | | Bonin Islands region (h = 520 km). |
| | | | Mx | Z 8.3 21 | | | | | m = 5.8 (UPP,KIR). |
| | | KIR | Mx | 24 38 | | | | | |
| | | | | micr sec | | | | | |
| | | | Mx | Z 3.0 19 | | | | | |
| | | | | Santa Cruz Islands (h = N). | | | | | |
| | | | | M = 6.1 (UPP,KIR). | | | | | |
| " | 30 | UPP | iPKP | 03 44 41.8 | | | | | |
| | | | | South of Fiji Islands (h = 650 km). | | | | | |
| " | 30 | UPP | iP | 05 38 29.7 | | | | | |
| | | | | Gulf of Alaska (h = N). | | | | | |
| " | 30 | UPP | iP | 08 43 14.3 | | | | | |
| | | | | Rat Islands, Aleutian Islands | | | | | |
| | | | | (h = N). | | | | | |
| " | 30 | UPP | iP | 10 09 58.3 | | | | | |
| | | | i | 10 10 04.4 | | | | | |
| | | | | micr sec | | | | | |
| | | | i | Z' 0.1 0.9 | | | | | |
| | | KIR | iP | 10 08 52.3 | | | | | |
| | | | | micr sec | | | | | |
| | | | P | Z' 0.1 1.1 | | | | | |
| | | | | Myanmar-China border region | | | | | |
| | | | | (h = 10 km). | | | | | |
| | | | | m = 6.0 (UPP,KIR). | | | | | |
| " | 31 | UPP | iP | 20 11 48.0 C | | | | | |
| | | | i | 20 11 54.1 | | | | | |
| | | | i | 20 11 56.4 | | | | | |
| | | | | micr sec | | | | | |
| | | | P | Z' 0.1 0.9 | | | | | |
| | | KIR | iP | 20 11 47.1 C | | | | | |
| | | | | micr sec | | | | | |
| | | | P | Z' 0.1 0.9 | | | | | |
| | | | | Nepal (h = 20 km). | | | | | |
| | | | | m = 5.8 (UPP,KIR). | | | | | |
| " | 31 | UPP | iP | 23 30 07.5 | | | | | |
| | | | | micr sec | | | | | |
| | | | P | Z' 0.1 0.6 | | | | | |
| | | | | (cont.) | | | | | |

September 7, 1998

Conny Holmqvist
Ota Kulhánek

UPP = Uppsala, KIR = Kiruna, UME = Umeå, ÜDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|----|-------------------------------------|-----------------|------|----|-----------------------------------|--------------|
| Feb. | 6 | UPP iP | 03 07 41.3 | Feb. | 10 | UPP iP | 23 08 11.8 C |
| | | Tajikistan-Xinjiang border reg. | | | | | micr sec |
| | | (h = 160 km). | | | | P Z' | 0.1 0.7 |
| " | 7 | UPP iP | 00 32 17.1 | | | Hokkaido, Japan region | |
| | | Mariana Islands region (h = 45 km). | | | | (h = 100 km). | |
| " | 7 | UPP i(PKP) | 09 00 28.9 | " | 12 | UPP iP | 05 29 50.0 |
| | | Tonga Islands region (h = 600 km). | | | | Near Islands, Aleutian Islands | |
| | | | | | | (h = N). | |
| " | 8 | UPP iP | 12 52 08.1 | " | 12 | UPP iP | 23 00 21.3 |
| | | Northern Sumatera, Indonesia | | | | Greece (h = N). | |
| | | (h = N). | | | | | |
| " | 8 | UPP iP | 20 24 49.3 | " | 13 | UPP iPKP1 | 01 14 09.8 |
| | | Bonin Islands region (h = N). | | | | i | 01 14 14.8 |
| | | | | | | Kermadec Islands region | |
| | | | | | | (h = 200 km). | |
| " | 9 | UPP iP | 03 59 40.9 | " | 13 | UPP iP | 04 52 55.6 |
| | | Northwest of Kuril Islands | | | | Greece (h = N). | |
| | | (h = 360 km). | | | | | |
| " | 9 | UPP iP | 11 37 41.9 | " | 13 | UPP iP | 10 27 08.6 |
| | | | micr sec | | | North of Svalbard (h = 10 km). | |
| | | | P Z' 0.1 1.0 | " | 13 | UPP iPKP2 | 16 33 21.4 |
| | | Qinghai, China (h = 10 km). | | | | Kermadec Islands region (h = N). | |
| " | 9 | UPP iP | 19 07 53.9 C | " | 13 | UPP iP | 23 42 09.5 |
| | | | micr sec | | | Near east coast of Kamchatka | |
| | | | P Z' 0.6 1.3 | | | (h = 100 km). | |
| | | KIR iP | 19 06 58.6 C... | " | 14 | UPP iPKP1 | 17 56 06.1 |
| | | | micr sec | | | Kermadec Islands region | |
| | | | P Z' 0.5 1.2 | | | (h = 50 km). | |
| | | Near east coast of Kamchatka | | " | 15 | UPP iP | 05 33 57.2 |
| | | (h = N). | | | | Southern Xinjiang, China (h = N). | |
| | | m = 6.5 (UPP,KIR). | | " | 15 | UPP iPn | 19 33 32.0 |
| " | 9 | UPP iP | 21 54 31.6 | | | iPg1 | 19 33 39.2 |
| | | Georgia-Armenia-Turkey bord. reg. | | | | iSg1 | 19 34 25.0 |
| | | (h = N). | | | | i | 19 34 34.2 |
| " | 10 | UPP iP | 19 43 32.5 | | | KIR iPn | 19 33 19.9 |
| | | | 19 43 50.9 | | | iPg1 | 19 33 32.1 |
| | | | | | | i | 19 34 13.2 |
| " | 10 | UPP iP | 20 30 02.5 | | | iSg1 | 19 34 25.4 |
| | | Gulf of California (h = 10 km). | | | | UME iPg1 | 19 32 35.0 C |
| | | | | | | i | 19 32 39.4 |
| | | | | | | iSg1 | 19 32 44.6 |

(cont.)

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | | | |
|------|----|--|-------|------------|----|-----|------|---|--------------|
| Feb. | 15 | (cont.) | | Feb. | 19 | | | | |
| | | UDD | iPn | 19 33 32.6 | | UPP | iP | 20 33 05.4 C | |
| | | | iPg1 | 19 33 41.3 | | | i | 20 33 26.2 | |
| | | | iSn | 19 34 12.2 | | | | micr sec | |
| | | | i | 19 34 36.1 | | | P Z' | 0.2 1.4 | |
| | | | iSg1 | 19 34 40.8 | | | | Near east coast Honshu, Japan | |
| | | MYV | iPn | 19 32 55.7 | | | | (h = 80 km). | |
| | | | iPg1 | 19 32 58.9 | | | | | |
| | | | iSg1 | 19 33 22.1 | " | 20 | UPP | iP | 08 06 00.6 |
| | | Ångermanland, Sweden, 63.9°N, 18.6°E. | | | | | i | 08 06 19.5 | |
| | | Origin time = 19 32 18. | | | | | P Z' | 0.1 0.8 | |
| | | M _L (UPP) = 3.2 (0.09) 3. | | | | KIR | iP | 08 05 18.5 | |
| | | Felt. | | | | | | micr sec | |
| | | By combination with Finnish station readings. | | | | | P Z' | 0.2 0.8 | |
| | | | | | | | | Hokkaido, Japan region (h = N). m = 6.1 (UPP,KIR). | |
| " | 15 | UPP | iP | 19 54 50.7 | " | 21 | UPP | iP | 02 59 14.1 |
| | | Southern Iran (h = N). | | | | | | Greece (h = 60 km). | |
| " | 16 | UPP | iP | 11 08 12.6 | " | 21 | UPP | iP | 08 40 58.4 |
| | | Ionian Sea (h = N). | | | | | | Rat Islands, Aleutian Islands (h = 50 km). | |
| " | 17 | UPP | iP | 04 39 14.1 | " | 21 | UPP | iPKP2 | 09 49 21.4 |
| | | Southern Iran (h = N). | | | | | | Kermadec Islands region (h = 600 km). | |
| " | 17 | UPP | iPKP1 | 23 09 56.2 | " | 21 | UPP | iP | 23 51 28.0 C |
| | | South of Fiji Islands (h = 450 km). | | | | | | micr sec | |
| " | 18 | UPP | iSg1 | 00 37 47.8 | | | | P Z' | 1.1 1.2 |
| | | KIR | iSg1 | 00 37 19.9 | | | | Mx Z | 6.8 20 |
| | | UME | iPg1 | 00 35 38.0 | | | KIR | iP | 23 50 42.5 C |
| | | | iSg1 | 00 35 43.7 | | | | micr sec | |
| | | UDD | iSg1 | 00 38 12.1 | | | | P Z' | 1.3 1.4 |
| | | MYV | iPg1 | 00 36 26.2 | | | | East of Kuril Islands (h = N). m = 6.8 (UPP,KIR). | |
| | | | iSg1 | 00 37 05.2 | " | 22 | UPP | iP | 19 36 06.6 |
| | | Västerbotten, Sweden, 64.3°N, 20.8°E. | | | | | | Greece (h = N). | |
| | | Origin time = 00 35 26. | | | | | | | |
| | | M _L (UPP) = 2.6 (0.05) 2. | | | | | | | |
| | | By combination with Finnish station readings. | | | | | | | |
| " | 18 | UPP | iPKP1 | 23 07 20.0 | " | 23 | UPP | iP | 20 25 57.9 |
| | | South of Fiji Islands (h = 500 km). | | | | | | Mindanao, Philippine Islands (h = 40 km). | |
| " | 19 | UPP | iP | 01 46 25.8 | " | 26 | UPP | Mx | 19 37 |
| | | Myanmar (h = N). | | | | | | micr sec | |
| " | 19 | UPP | ipP | 18 38 15.6 | | | | Mx Z | 6.0 23 |
| | | Colombia (h = 100 km). | | | | | | (cont.) | |

SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, UMEÅ, UDDEHOLM

DELARY and MYRVIKEN

| | | | | |
|----------|-------|------------|------------|-----------|
| Uppsala | (UPP) | 59°51.5'N, | 17°37.6'E; | h = 14 m |
| Kiruna | (KIR) | 67°50.4'N, | 20°25.0'E; | h = 390 m |
| Umeå | (UME) | 63°48.9'N, | 20°14.2'E; | h = 16 m |
| Uddeholm | (UDD) | 60°05.4'N, | 13°36.4'E; | h = 240 m |
| Delary | (DEL) | 56°28.2'N, | 13°52.2'E; | h = 150 m |
| Myrviken | (MYV) | 62°56.5'N, | 14°20.8'E; | h = 345 m |

MARCH 1 - 31, 1997

| | | | | | | | | | | |
|------|---|-----|----|---|-----|------|---|-----|------|--|
| Mar. | 1 | UPP | iP | 06 12 02.6 | | Mar. | 4 | UPP | iP | 04 03 01.6 |
| | | | | micr | sec | | | | | |
| | | | | P | Z' | 0.1 | | | | |
| | | | | Mx | Z | 8.5 | | | | |
| | | | | Southern Xinjiang, China (h = 20 km). | | | | | | |
| " | 1 | UPP | iP | 09 42 55.6 | | " | 4 | UPP | iPKP | 07 59 36.0 |
| | | | | Southern Xinjiang, China (h = N). | | | | | | |
| " | 1 | UPP | iP | 14 14 28.3 | | | | | | |
| | | | | South of Honshu, Japan (h = 100 km). | | | | | | |
| " | 1 | UPP | iP | 19 29 34.8 | C | | | | | |
| | | | | Romania (h = 120 km). | | | | | | |
| " | 2 | UPP | iP | 01 15 17.0 | | " | 4 | UPP | iP | 13 12 05.5 |
| | | | | Kuril Islands (h = N). | | | | | | micr sec |
| | | | | | | | | | | P Z' 0.2 1.0 |
| | | | | | | | | | | Mx Z 17 21 |
| " | 1 | UPP | iP | 14 14 28.3 | | | | KIR | iP | 13 12 20.7 |
| | | | | South of Honshu, Japan (h = 100 km). | | | | | | micr sec |
| | | | | | | | | | | P Z' 0.4 1.5 |
| " | 1 | UPP | iP | 19 29 34.8 | | | | | | Mx Z 11 16 |
| | | | | Romania (h = 120 km). | | | | | | Pakistan (h = N). |
| | | | | | | | | | | m = 6.1, M = 5.9 (UPP,KIR). |
| " | 2 | UPP | iP | 01 15 17.0 | | " | 5 | UPP | iP | 09 42 40.8 |
| | | | | Kuril Islands (h = N). | | | | | | Kyrgystan (h = N). |
| " | 2 | UPP | iP | 14 14 34.1 | | " | 5 | UPP | iP | 12 30 43.7 |
| | | | | Mariana Islands (h = 130 km). | | | | | | Near east coast of Kamchatka (h = N). |
| " | 2 | UPP | iP | 17 50 07.7 | | " | 5 | UPP | iPKP | 14 14 55.5 |
| | | | | Fox Islands, Aleutian Islands (h = 55 km). | | | | | | Vanuatu Islands (h = N). |
| " | 3 | UPP | iP | 01 51 50.1 | | " | 5 | UPP | iP | 15 11 15.3 |
| | | | | Philippine Islands region (h = N). | | | | | | micr sec |
| | | | | | | | | | | P Z' 0.1 1.0 |
| | | | | | | | | | | Ionian Sea (h = 10 km). |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|---|---|------------|------|----|--|------------|
| Mar. | 5 | UPP iP | 15 22 49.2 | Mar. | 9 | UPP iP | 13 43 19.4 |
| | | Xizang (h = N). | | | | Ethiopia (h = 10 km). | |
| " | 5 | UPP iP | 17 04 21.9 | " | 9 | UPP iP | 14 42 35.1 |
| | | Eastern Caucasus (h = N). | | | | Northern Yukon territory, Canada (h = 10 km). | |
| " | 5 | UPP iP | 17 59 32.0 | " | 9 | UPP iP | 14 46 15.3 |
| | | Ionian Sea (h = N). | | | | Southern Iran (h = N). | |
| " | 6 | UPP iP | 06 29 59.5 | " | 9 | UPP iPKP1 | 15 10 10.3 |
| | | Near east coast of Kamchatka (h = N). | | | | Kermadec Islands, New Zealand (h = 200 km). | |
| " | 6 | UPP iP | 07 02 47.7 | " | 9 | UPP ipP | 16 49 17.3 |
| | | Near west coast of Honshu, Japan (h = 45 km). | | | | Greece (h = N). | |
| " | 6 | KIR iSg1 | 09 14 53.3 | " | 9 | UPP iP | 17 49 29.0 |
| | | Norrbottn, Sweden, 67.4°N, 22.3°E. Origin time = 09 14 32. By combination with Finnish station readings. | | | | Ethiopia (h = 10 km). | |
| " | 6 | UPP iPKP | 11 09 57.7 | " | 10 | UPP iP | 02 24 24.6 |
| | | Off e. coast of N. Island, N.Z. (h = N). | | | | Kuril Islands (h = 140 km). | |
| " | 7 | UPP iPKP2 | 18 15 06.6 | " | 10 | UPP iP | 06 16 59.4 |
| | | Kermadec Islands region (h = 100 km). | | | | Pakistan (h = N). | |
| " | 8 | UPP iP | 17 47 20.1 | " | 10 | UPP iPKP1 | 14 27 01.5 |
| | | i 17 47 24.4 North Atlantic Ocean (h = 10 km). Early arrivals when compared with the NEIC solution. | | | | Off e. coast of N. Island, N.Z. (h = N). | |
| " | 8 | UPP iP | 23 38 01.3 | " | 10 | UPP iP | 15 45 22.7 |
| | | Ethiopia (h = 10 km). | | | | Eastern Xizang-India border reg. (h = N). | |
| " | 9 | UPP iP | 05 01 43.5 | " | 10 | UPP iP | 18 00 37.0 |
| | | Andreanof Islands, Aleutian Is. (h = 55 km). | | | | Eastern Xizang-India border reg. (h = N). | |
| " | 9 | UPP iP | 11 41 20.6 | " | 11 | UPP i(PKP) | 03 32 16.7 |
| | | Greece (h = N). | | | | Fiji Islands region (h = 550 km). | |
| " | 9 | UPP iP | 11 41 47.2 | " | 11 | UPP iPKP1 | 05 45 46.7 |
| | | Greece (h = N). | | | | Kermadec Islands region (h = 10 km). | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, ÚDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | | | |
|------|----|--|-------|------------|------|----|--|------|------------|
| Mar. | 11 | UPP | iP | 07 49 50.7 | Mar. | 13 | UPP | iP | 18 17 34.1 |
| | | | | micr sec | | | | | micr sec |
| | | | P | Z' 0.3 1.2 | | | | P | Z' 0.1 1.0 |
| | | KIR | iP | 07 48 58.2 | | | KIR | iP | 18 17 07.6 |
| | | | | micr sec | | | | | micr sec |
| | | | P | Z' 0.2 1.0 | | | | P | Z' 0.2 1.0 |
| | | Off east coast of Kamchatka (h = N). m = 6.2 (UPP,KIR). | | | | | Northeast of Taiwan (h = 200 km). m = 5.7 (UPP,KIR). | | |
| " | 11 | UPP | iP | 14 29 40.5 | " | 13 | UPP | iP | 20 46 24.5 |
| | | Ryukyu Islands (h = 45 km). | | | | | Pakistan (h = N). | | |
| " | 11 | UPP | iP | 19 34 23.0 | " | 15 | UPP | iP | 17 29 56.2 |
| | | | iSKS | 19 45 46 | | | Kuril Islands (h = N). | | |
| | | | iS | 19 46 18 | | | | | |
| | | | | micr sec | " | 16 | UPP | iP | 06 03 06.5 |
| | | | Mx | Z 25 17 | | | | ipP | 06 03 18.5 |
| | | KIR | Mx | 20 25 | | | | | micr sec |
| | | | | micr sec | | | | P | Z' 0.1 0.9 |
| | | | Mx | Z 7.3 16 | | | | pP | Z' 0.2 1.2 |
| | | Mindanao, Philippine Islands (h = 90 km). M = 6.4 (UPP,KIR). M uncorrected for focal depth. | | | | | | Mx | Z 2.8 15 |
| | | | | | | | KIR | iP | 06 02 30.3 |
| | | | | | | | | ipP | 06 02 42.1 |
| | | | | | | | | | micr sec |
| " | 11 | UPP | iP | 19 35 17.5 | | | | pP | Z' 0.2 1.0 |
| | | | | micr sec | | | | Mx | Z 1.4 17 |
| | | | P | Z' 0.5 1.1 | | | Near s. coast of Honshu, Japan. h = 40 km (UPP,KIR). m = 6.1, M = 5.4 (UPP,KIR). | | |
| | | KIR | iP | 19 34 55.4 | " | 17 | UPP | iP | 08 19 05.8 |
| | | | | micr sec | | | | i | 08 19 09.1 |
| | | | P | Z' 1.1 1.0 | | | | iSKS | 08 29 38 |
| | | Philippine Islands region (h = 10 km). m = 6.8 (UPP,KIR). | | | | | | | micr sec |
| " | 12 | UPP | eP | 15 04 22 | | | | i | Z' 0.1 0.8 |
| | | Mindoro, Philippine Islands (h = N). | | | | | | Mx | Z 10 22 |
| " | 12 | UPP | iPKP2 | 15 50 31.5 | | | KIR | iP | 08 19 04.5 |
| | | | i | 15 50 46.8 | | | | i | 08 19 07.7 |
| | | Off e. coast of N. Islands, N.Z. (h = 60 km). | | | | | | | micr sec |
| | | | | | | | | i | Z' 0.6 1.1 |
| | | | | | | | | Mx | Z 5.2 21 |
| | | | | | | | Sunda Strait (h = N). m = 6.7, M = 6.1 (UPP,KIR). | | |
| " | 12 | UPP | iPKP2 | 23 14 04.6 | " | 17 | UPP | iP | 09 34 13.2 |
| | | Kermadec Islands region (h = 150 km). | | | | | | i | 09 34 38.2 |
| " | 13 | UPP | iP | 01 22 58.4 | | | Hokkaido, Japan region (h = 80 km). | | |
| | | Hokkaido, Japan region (h = 130 km). | | | | | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|----|-----|------|------------------------------------|------|----|-------------------------------------|
| Mar. | 18 | UPP | iSn | 05 58 18.4 | Mar. | 20 | (cont.) |
| | | KIR | iPn | 05 56 04.0 | | | Mx Z 5.8 16 |
| | | | iSn | 05 57 34.3 | | | Pakistan (h = N). |
| | | UME | iPn | 05 56 15.0 | | | m = 6.0, M = 5.7 (UPP,KIR). |
| | | | iSn | 05 57 58.0 | " | 20 | UPP iSg1 12 11 47.5 |
| | | UDD | iPn | 05 56 10.1 | | | KIR iSg1 12 13 01.4 |
| | | | iSn | 05 57 48.7 | | | UME iPg1 12 10 43.6 |
| | | MYV | iPn | 05 55 47.2 | | | iSg1 12 11 01.8 |
| | | | iSn | 05 57 11.0 | | | UDD iPg1 12 11 22.2 |
| | | | | Norwegian Sea, 66.3°N, 2.6°W. | | | iSg1 12 12 09.2 |
| | | | | Origin time = 05 53 50. | | | MYV iPg1 12 10 53.0 |
| | | | | By combination with Finnish and | | | iSg1 12 11 17.8 |
| | | | | Norwegian station readings. | | | Ångermanland, Sweden, 62.8°N, |
| " | 18 | UPP | iP | 11 31 50.8 | | | 18.2°E. |
| | | | | micr sec | | | Origin time = 12 10 20. |
| | | | P | Z' 0.1 1.0 | | | M _L (UPP)=2.7 (0.16) 3. |
| | | | | Crete (h = 20 km). | | | By combination with Finnish station |
| | | | | | | | readings. |
| " | 18 | UPP | iP | 13 14 25.5 | " | 20 | UPP iP 18 07 53.5 |
| | | | | Luzon, Philippine Islands (h = N). | | | iS 18 12 34 |
| " | 18 | UPP | iP | 15 59 37.7 | | | micr sec |
| | | | | Fox Islands, Aleutian Islands | | | Mx Z 1.0 19 |
| | | | | (h = N). | | | KIR Mx 18 25 |
| | | | | | | | micr sec |
| " | 19 | UPP | iPKP | 02 10 07.7 | | | Mx Z 0.9 13 |
| | | | | Kermadec Islands region (h = N). | | | Tunisia (h = 10 km). |
| | | | | | | | M = 4.5 (UPP,KIR). |
| " | 19 | UPP | iP | 20 05 03.5 | " | 20 | UPP iPKP 23 33 02.1 |
| | | | | Pakistan (h = 50 km). | | | Kermadec Islands region (h = N). |
| " | 19 | UPP | iP | 23 15 08.1 | " | 21 | UPP iP 06 21 55.5 |
| | | | | Southern Italy (h = 10 km). | | | iS 06 25 54 |
| " | 20 | UPP | iP | 02 27 51.5 | | | micr sec |
| | | | | North of Ascension Island | | | Mx Z 2.2 11 |
| | | | | (h = 10 km). | | | KIR Mx 06 35 |
| | | | | | | | micr sec |
| " | 20 | UPP | iP | 08 58 51.9 | | | Mx Z 2.0 13 |
| | | | iPP | 09 00 35.7 | | | Aegean Sea (h = 5 km). |
| | | | iS | 09 05 26 | | | M = 4.8 (UPP,KIR). |
| | | | | micr sec | " | 21 | UPP iP 09 11 38.0 |
| | | | P | Z' 0.1 0.7 | | | |
| | | | Mx | Z 4.3 17 | " | 21 | UPP iPKP 12 26 07.5 |
| | | KIR | iP | 08 59 08.5 | | | iPKP1 12 26 11.8 |
| | | | iPP | 09 00 56.5 | | | iPKP2 12 26 18.3 |
| | | | | micr sec | | | micr sec |
| | | | P | Z' 0.3 1.0 | | | |
| | | | | (cont.) | | | (cont.) |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, ÚDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | 1997 | |
|------|-------------------------------------|--|----|
| Mar. | 21 | Mar. | 23 |
| | (cont.) | (cont.) | |
| | Mx Z 0.8 19 | (h = 10 km). | |
| | Kermadec Islands region | m = 6.1, M = 5.3 (UPP,KIR). | |
| | (h = 450 km). | | |
| " | 21 UPP iP 15 54 44.7 | " 24 UPP iP 02 31 26.5 | |
| | Pakistan (h = N). | North Ascencian Island (h = 10 km). | |
| " | 21 UPP iP 17 08 26.7 | " 24 UPP iP 06 45 46.1 | |
| | Rat Islands, Aleutian Islands | i 06 45 49.2 | |
| | (h = N). | micr sec | |
| | | P Z' 0.1 1.0 | |
| | | KIR iP 06 45 54.9 | |
| | | micr sec | |
| | | P Z' 0.1 0.8 | |
| | | Fox Islands, Aleutian Islands (h = N). | |
| | | m = 5.9 (UPP,KIR). | |
| " | 21 UPP iP 23 06 42.3 | " 24 UPP iP 07 05 31.9 | |
| | Northwestern Iran (h = 10 km). | micr sec | |
| " | 22 UPP iPKP 03 08 28.3 | P Z' 0.1 0.9 | |
| | South of Fiji Islands (h = 600 km). | KIR iP 07 04 31.1 | |
| " | 22 UPP iP 06 28 02.2 | i 07 04 36.8 | |
| | Pakistan (h = N). | micr sec | |
| | | i Z' 0.2 1.1 | |
| | | Near n. coast of eastern Siberia | |
| | | (h = 10 km). | |
| | | m = 5.8 (UPP,KIR). | |
| " | 23 UPP iP 06 10 18.5 | " 24 UPP eP 14 44 10 | |
| | micr sec | i 14 44 20.9 | |
| | P Z' 0.1 1.0 | Eastern Kashmir (h = N). | |
| | Near s. coast of Honshu , Japan | " 24 UPP iP 21 37 35.6 | |
| | (h = 80 km). | Nepal-India border region (h = N). | |
| " | 23 UPP iPKP 16 08 53.9 | " 24 UPP iP 22 35 32.4 | |
| | Vanuatu Islands (h = N). | Northern Molucca Sea (h = N). | |
| " | 23 UPP iP 20 57 30.5 | " 25 UPP iPKP1 02 37 46.1 | |
| | i 20 57 34.0 | iPKP2 02 38 00.0 | |
| | iS 21 04 30 | Off e. coast of N. Island, N.Z. | |
| | micr sec | (h = 100 km). | |
| | i Z' 0.3 1.5 | " 25 UPP iP 02 42 19.5 | |
| | Mx Z 1.7 21 | Rat Islands, Aleutian Is. (h = N). | |
| | KIR iP 20 57 55.1 | " 25 UPP iP 14 29 37.3 | |
| | micr sec | Northern Mid-Atlantic ridge | |
| | P Z' 0.3 1.5 | (h = 10 km). | |
| | Mx Z 0.7 14 | | |
| | Northern Mid-Atlantic ridge | | |
| | (cont.) | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1997

| | | | | |
|------|----|---|------|------------|
| Mar. | 30 | UPP | iP | 23 16 59.9 |
| | | | i | 23 17 19.2 |
| | | | | micr sec |
| | | P | Z' | 0.1 0.9 |
| | | Andreas Islands, Aleutian Is. | | |
| | | (h = N). | | |
| " | 31 | UPP | iP | 11 49 57.8 |
| | | Near east coast of Kamchatka | | |
| | | (h = 55 km). | | |
| " | 31 | UDD | iSg1 | 12 50 08.1 |
| | | MYV | iSn | 12 49 33.0 |
| | | Norwegian Sea, 64.6°N, 1.3°E. | | |
| | | Origin time = 12 46 57. | | |
| | | By combination with Finnish and Norwegian station readings. | | |
| " | 31 | UPP | iP | 16 02 35.8 |
| | | Shikoku, Japan (h = 45 km). | | |
| " | 31 | UPP | iP | 19 46 35.0 |
| | | | | micr sec |
| | | P | Z' | 0.1 1.2 |
| | | KIR | iP | 19 45 39.4 |
| | | | | micr sec |
| | | P | Z' | 0.2 1.1 |
| | | Off east coast of Kamchatka | | |
| | | (h = N). | | |
| | | m = 5.9 (UPP,KIR). | | |

October 23, 1998
 Conny Holmqvist
 Ota Kulhánek

SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, UMEÅ, UDDEHOLM

DELARY and MYRVIKEN

| | | | | |
|----------|-------|------------|------------|-----------|
| Uppsala | (UPP) | 59°51.5'N, | 17°37.6'E; | h = 14 m |
| Kiruna | (KIR) | 67°50.4'N, | 20°25.0'E; | h = 390 m |
| Umeå | (UME) | 63°48.9'N, | 20°14.2'E; | h = 16 m |
| Uddeholm | (UDD) | 60°05.4'N, | 13°36.4'E; | h = 240 m |
| Delary | (DEL) | 56°28.2'N, | 13°52.2'E; | h = 150 m |
| Myrviken | (MYV) | 62°56.5'N, | 14°20.8'E; | h = 345 m |

APRIL 1 - 30, 1997

| 1997 | | | | | 1997 | | | | |
|------|---|-----|-------|------------------------------------|------|---|-----|------|---------------------------------------|
| Apr. | 1 | UPP | iPKP1 | 14 53 57.3 | Apr. | 3 | UPP | iP | 05 23 02.5 |
| | | | | South of Kermadec Islands (h = N). | | | | | North Atlantic Ocean (h = 10 km). |
| " | 2 | UPP | iP | 00 12 31.2 | " | 3 | UPP | iP | 22 51 02.0 |
| | | | | East of Kuril Islands (h = N). | | | | | Near east coast of Kamchatka (h = N). |
| " | 2 | UPP | iP | 06 26 04.5 | " | 4 | UPP | iPg1 | 02 26 03.4 |
| | | | i | 06 26 26.3 | | | | iSg1 | 02 26 24.2 |
| | | | | micr sec | | | | iSn | 02 26 27.4 |
| | | | i | Z' 0.1 0.9 | | | UDD | iPg1 | 02 26 01.8 |
| | | KIR | iP | 06 26 16.6 | | | | iSn | 02 26 22.8 |
| | | | | micr sec | | | | | Närke, Sweden, 58.8°N, 15.1°E. |
| | | | P | Z' 0.8 1.8 | | | | | Origin time = 02 25 35. |
| | | | | Windward Islands (h = 45 km). | | | | | Rockburst at the Zinkgruvan mine. |
| | | | | m = 6.1 (UPP,KIR). | | | | | |
| " | 2 | UPP | iP | 18 36 47.2 | " | 4 | UPP | iPg1 | 02 26 46.7 |
| | | | | Andreanof Islands, Aleutian Is. | | | | iSg1 | 02 27 07.6 |
| | | | | (h = N). | | | | i | 02 27 10.9 |
| | | | | | | | UDD | iPg1 | 02 26 42.7 |
| | | | | | | | | iSg1 | 02 27 03.7 |
| " | 2 | UPP | eP | 19 44 53 | | | | iSn | 02 27 06.9 |
| | | | | micr sec | | | MYV | iSg1 | 02 28 25.0 |
| | | | Mx | Z 2.5 11 | | | | | Närke, Sweden, 58.8°N, 15.1°E. |
| | | KIR | Mx | 20 19 | | | | | Origin time = 02 26 19. |
| | | | | micr sec | | | | | Rockburst at the Zinkgruvan mine. |
| | | | Mx | Z 1.6 11 | | | | | |
| | | | | Kyushu, Japan (h = 10 km). | " | 4 | UPP | iPg1 | 02 28 22.2 |
| | | | | M = 5.6 (UPP,KIR). | | | | iSg1 | 02 28 43.5 |
| | | | | | | | | i | 02 28 46.5 |
| " | 2 | UPP | iP | 21 58 54.0 | | | UDD | iPg1 | 02 28 19.0 |
| | | | | Shikoku, Japan (h = 45 km). | | | | iSg1 | 02 28 38.4 |

(cont.)

UPP = Uppsala, KIR = Kiruna, UME = Umeå; UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|---|---|--|------|----|--|--|
| Apr. | 6 | (cont.) Närke, Sweden, 58.8°N, 15.1°E. Origin time = 22 49 48. Rockburst at the Zinkgruvan mine. | | Apr. | 8 | (cont.) Luzon, Philippine Islands (h = 70 km). m = 6.5, M = 5.4 (UPP,KIR). M uncorrected for focal depth. | |
| " | 7 | UPP iP 04 36 55.4 Southern Greece (h = 10 km). | | " | 8 | UPP iP 22 14 24.5 Irian Jaya region, Indonesia (h = N). | |
| " | 7 | UPP iP 04 40 01.2 micr sec Mx Z 1.1 20 KIR Mx 05 18 micr sec Mx Z 1.7 19 Near coast of Nicaragua (h = N). M = 5.3 (UPP,KIR). | | " | 9 | UPP iP 01 31 08.1 | |
| " | 8 | UPP iP 04 59 45.4 Mariana Islands (h = 140 km). | | " | 9 | UPP iP 04 02 11.5 South of Honshu, Japan (h = 70 km). | |
| " | 8 | UPP iP 15 25 19.7 Fox Islands, Aleutian Islands (h = 45 km). | | " | 9 | UPP iP 07 14 45.0 C iS 07 24 40 micr sec P Z' 0.1 0.9 Mx Z 3.5 12 KIR iP 07 14 16.4 C micr sec P Z' 0.1 1.2 Mx Z 2.2 14 Ryukyu Islands (h = N). m = 5.8, M = 5.7 (UPP,KIR). | |
| " | 8 | UPP Mx 16 17 micr sec Mx Z 0.9 16 KIR Mx 16 15 micr sec Mx Z 1.4 15 Off coast of Jalisco, Mexico (h = 45 km). M = 5.3 (UPP,KIR). | | " | 9 | UPP iSg1 13 08 38.5 KIR iSg1 13 08 51.4 UME iPg1 13 06 45.6 iSg1 13 06 54.7 UDD iSg1 13 09 08.3 MYV iPg1 13 07 33.0 iSg1 13 08 12.0 Gulf of Bothnia, 63.5°N, 21.5°E. Origin time = 13 06 34. M _L (UPP) = 3.0 (0.23) 2. By combination with Finnish station readings. | |
| " | 8 | UPP iP 17 23 36.7 Windward Islands (h = 5 km). | | " | 10 | UPP iP 03 49 39.7 Western Iran (h = N). | |
| " | 8 | UPP iP 18 19 16.3 D i 18 19 18.9 i 18 19 40.3 iS 18 29 10 micr sec P Z' 0.5 0.8 i Z' 0.4 0.8 Mx Z 2.6 21 KIR iP 18 18 56.3 D micr sec P Z' 0.8 1.1 Mx Z 1.2 16 | | " | 11 | UPP iP 03 35 31.3 Ryukyu Islands (h = N). | |
| | | (cont.) | | " | 11 | UPP iP 03 41 34.2 Southern Xinjiang, China (h = N). | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå; UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | | | |
|------|----|------------------------------|-------|--------------|------|----|--------------------------------------|---------|------------|
| Apr. | 11 | UPP | iP | 05 42 32.5 | Apr. | 13 | UPP | iPKP1 | 19 32 58.7 |
| | | | i | 05 42 39.8 | | | | | micr sec |
| | | | iS | 05 48 50 | | | | PKP1 Z' | 0.1 0.8 |
| | | | | micr sec | | | South of Kermadec Islands | | |
| | | | P | Z' 0.1 0.8 | | | (h = 50 km). | | |
| | | | i | Z' 0.3 1.0 | | | | | |
| | | | Mx | Z 71 12 | " | 14 | UPP | iP | 18 03 59.1 |
| | | KIR | iP | 05 42 30.1 | | | | i | 18 04 24.0 |
| | | | | micr sec | | | Myanmar (h = 100 km). | | |
| | | | P | Z' 0.3 1.0 | " | 14 | UPP | iP | 18 55 31.6 |
| | | | Mx | Z 21 10 | " | 14 | UPP | iP | 19 52 44.3 |
| | | Southern Xinjiang, China | | | | | Cyprus region (h = N). | | |
| | | (h = 15 km). | | | | | | | |
| | | m = 6.0, M = 6.5 (UPP,KIR). | | | | | | | |
| " | 11 | UPP | iP | 12 13 38.9 C | " | 15 | UPP | iP | 00 23 39.5 |
| | | | | micr sec | | | | i | 00 24 08.7 |
| | | | P | Z' 0.1 0.7 | | | Myanmar (h = 120 km). | | |
| | | KIR | iP | 12 13 10.3 C | " | 15 | UPP | iP | 00 44 20.9 |
| | | | | micr sec | | | Sea of Okhotsk (h = 490 km). | | |
| | | | P | Z' 0.2 0.8 | " | 15 | UPP | iP | 08 03 20.3 |
| | | Ryukyu Islands (h = N). | | | | | Caribbean Sea (h = N). | | |
| | | m = 6.1 (UPP,KIR). | | | " | 15 | UPP | iP | 10 05 21.2 |
| " | 12 | UPP | iPKP1 | 09 41 15.4 D | " | 15 | South of Honshu, Japan (h = 430 km). | | |
| | | Kermadec Islands region | | | | | | | |
| | | (h = 180 km). | | | | | | | |
| " | 12 | UPP | iP | 21 16 58.1 | " | 15 | UPP | iP | 18 26 58.4 |
| | | | | micr sec | | | | iS | 18 33 14 |
| | | | Mx | Z 6.2 12 | | | | | micr sec |
| | | KIR | Mx | 21 34 | | | | Mx | Z 25 14 |
| | | | | micr sec | | | KIR | Mx | 18 43 |
| | | | Mx | Z 1.3 10 | | | | | micr sec |
| | | Southern Xinjiang, China | | | | | | Mx | Z 8.8 10 |
| | | (h = 20 km). | | | | | Southern Xinjiang, China | | |
| | | M = 5.4 (UPP,KIR). | | | | | (h = 25 km). | | |
| " | 13 | UPP | iP | 05 07 01.4 | " | 16 | UPP | iP | 00 13 33.2 |
| | | Mindanao, Philippine Islands | | | | | Off east coast of Kamchatka (h = N). | | |
| | | (h = 50 km). | | | | | | | |
| " | 13 | UPP | iP | 17 56 58.0 | " | 16 | UPP | iP | 08 49 23.2 |
| | | Taiwan (h = 70 km). | | | | | East of Severnaya Zemlya, Russia | | |
| | | | | | | | (h = 10 km). | | |
| " | 13 | UPP | iP | 18 12 30.4 | " | 16 | UPP | iP | 19 32 24.2 |
| | | Lake Baykal region, Russia | | | | | Near coast of Guatemala (h = N). | | |
| | | (h = 10 km). | | | | | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå; UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|----|---|--------|--------------|------|--|-----------------------------|
| Apr. | 16 | UPP | iP | 23 06 41.7 | Apr. | 19 | (cont.) |
| | | | i | 23 06 50.9 | | | KIR iP 15 32 21.2 C |
| | | Samar, Philippine Islands (h = N). | | | | | micr sec |
| " | 17 | UPP | eP | 01 36 49 | | | P Z' 0.4 1.0 |
| | | Kazakhstan-Xinjiang border region (h = N). | | | | | Mx Z 7.3 16 |
| | | | | | | East of Severnaya Zemlya, Russia (h = 10 km). m = 5.9, M = 5.3 (UPP,KIR). | |
| " | 17 | UPP | iP | 03 37 25.3 | " | 20 | UPP iP KP 05 27 01.0 |
| | | Rat Islands, Aleutian Islands (h = 70 km). | | | | South of Fiji Islands (h = 500 km). | |
| " | 17 | UPP | iPKP1 | 16 58 11.7 | " | 20 | UPP iP 06 02 27.4 |
| | | Kermadec Islands region (h = 200 km). | | | | South of Honshu, Japan (h = N). | |
| " | 18 | UPP | iPKP2 | 04 29 11.7 | " | 21 | UPP eP 04 56 23 |
| | | South of Kermadec Islands (h = N). | | | | | i 04 56 33.6 |
| | | | | | | Fox Islands, Aleutian Islands (h = N). | |
| " | 18 | UPP | i(PKP) | 15 25 10.5 | " | 21 | UPP iP KP 06 00 34.0 |
| | | Fiji Islands region (h = 360 km). | | | | South of Fiji Islands (h = 500 km). | |
| " | 18 | UPP | iPKP2 | 19 45 38.9 | " | 21 | UPP iP 07 29 29.6 |
| | | Kermadec Islands region (h = N). | | | | Southern Sumatera, Indonesia (h = N). | |
| " | 18 | UPP | iPKP | 21 01 01.0 | " | 21 | UPP iP 09 23 50.8 |
| | | South of Fiji Islands (h = 540 km). | | | | | i 09 23 55.5 |
| " | 18 | UPP | iP | 22 20 29.7 | " | 21 | UPP iP 12 21 27.9 |
| | | Rat Islands, Aleutian Islands (h = N). | | | | | micr sec |
| " | 19 | UPP | iP | 06 01 00.6 | " | 21 | UPP iP KP 12 21 27.9 |
| | | | i | 06 01 08.1 | | | micr sec |
| | | | | micr sec | | | PKP Z' 0.1 1.3 |
| | | | i | Z' 0.1 0.9 | | | Mx Z 306 26 |
| | | | Mx | Z 4.6 19 | | | KIR Mx 13 12 |
| | | KIR | iP | 06 01 32.1 | | | micr sec |
| | | | i | 06 01 40.5 | | | Mx Z 139 21 |
| | | | | micr sec | | | Santa Cruz Islands (h = N). |
| | | | i | Z' 0.3 1.2 | | | M = 7.7 (UPP,KIR). |
| | | | Mx | Z 4.2 13 | " | 21 | UPP iP KP 12 30 30.2 |
| | | Southern Iran (h = 25 km). m = 5.8, M = 5.3 (UPP,KIR). | | | | | i 12 30 32.7 |
| " | 19 | UPP | iP | 15 33 31.1 C | | | micr sec |
| | | | | micr sec | | | i Z' 0.5 1.4 |
| | | | P | Z' 0.1 1.1 | | | Vanuatu Islands (h = N). |
| | | | Mx | Z 4.8 17 | | | |
| | | (cont.) | | | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå; UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | | | |
|------|----|-----|--------|-----------------------------------|------|----|-----|-------|-----------------------------------|
| Apr. | 21 | UPP | iPKP | 12 33 44.2 | Apr. | 23 | UPP | iPKP | 00 24 55.8 |
| | | | | micr sec | | | | | Vanuatu Islands (h = N). |
| | | | PKP | Z' 0.1 1.0 | | | | | |
| | | | | Vanuatu Islands (h = N). | " | 23 | UPP | iPKP | 04 06 23.0 |
| " | 21 | UPP | iPKP | 12 47 30.5 | | | | Mx | Z 5.4 20 |
| | | | | Vanuatu Islands (h = N). | | | | | Vanuatu Islands (h = N). |
| " | 21 | UPP | iPKP | 12 58 13.2 | " | 23 | UPP | iPKP | 08 16 18.3 |
| | | | | Vanuatu Islands (h = N). | | | | | Vanuatu Islands (h = N). |
| " | 21 | UPP | iPKP | 13 43 15.8 | " | 23 | UPP | iP | 19 57 40.7 |
| | | | | Vanuatu Islands (h = N). | | | | i | 19 58 07.4 |
| " | 21 | UPP | iPKP | 13 46 55.4 | | | | iSKS | 20 08 02 |
| | | | | Vanuatu Islands (h = N). | | | | iS | 20 08 38 |
| " | 21 | UPP | iPKP | 15 36 37.4 | | | | | micr sec |
| | | | | Vanuatu Islands (h = N). | | | KIR | Mx | Z 5.4 19 |
| " | 21 | UPP | iP | 15 37 00.4 | | | | | 20 44 |
| | | | | Near Islands, Aleutian Islands | | | | | micr sec |
| | | | | (h = N). | | | | Mx | Z 6.2 17 |
| " | 21 | UPP | iP | 15 56 11.3 | " | 24 | UPP | iP | 16 51 02.5 |
| | | | | Pakistan (h = N). | | | | | Southwestern Ryukyu Islands |
| " | 21 | UPP | i(PKP) | 18 12 13.1 | | | | | (h = 90 km). |
| | | | | Fiji Islands region (h = 620 km). | " | 24 | UPP | iPKP2 | 17 32 19.0 |
| " | 21 | UPP | iP | 20 04 01.6 | | | | | South of Kermadec Islands |
| | | | | | | | | | (h = 150 km). |
| " | 22 | UPP | iP | 06 08 49.6 | " | 25 | UPP | iP | 03 01 56.5 |
| | | | | Southern Sumatera, Indonesia | | | | | micr sec |
| | | | | (h = 110 km). | | | | P | Z' 0.1 1.0 |
| " | 22 | UPP | iP | 09 43 03.6 | | | | | Kuril Islands (h = N). |
| | | | iS | 09 52 40 | " | 25 | KIR | iSn | 03 31 22.9 |
| | | | | micr sec | | | | | Off coast of northwestern Norway, |
| | | | Mx | Z 17 19 | | | | | 67.8°N, 10.2°E. |
| | | KIR | Mx | 10 17 | | | | | Origin time = 03 29 37. |
| | | | | micr sec | | | | | By combination with Finnish and |
| | | | Mx | Z 11 20 | | | | | Norwegian station readings. |
| | | | | Windward Islands (h = 5 km). | " | 25 | UPP | iP | 05 48 37.5 C |
| | | | | M = 6.2 (UPP,KIR). | | | | i | 05 48 39.3 |
| " | 22 | UPP | eP | 10 23 25 | | | | | micr sec |
| | | | | Windward Islands (h = 5 km). | | | | i | Z' 0.2 1.0 |
| " | 22 | UPP | iP | 17 47 06.8 | | | | Mx | Z 6.1 18 |
| | | | | Southern Iran (h = N). | | | | | (cont.) |

UPP = Uppsala, KIR = Kiruna, UME = Umeå; UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|----|---|-------|-------|------|-----|--|
| Apr. | 25 | (cont.) KIR | iP | 05 47 | 49.7 | C | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.7 | 1.9 | |
| | | | Mx | Z | 8.2 | 17 | |
| | | Kuril Islands (h = N). m = 6.3, M = 5.9 (UPP,KIR). | | | | | |
| " | 25 | UPP | iP | 05 52 | 45.1 | | |
| | | | i | 05 52 | 46.2 | | |
| | | Kuril Islands (h = N). | | | | | |
| " | 25 | UPP | iP | 06 02 | 02.4 | | |
| | | Kuril Islands (h = N). | | | | | |
| " | 25 | UPP | iPKP | 07 51 | 44.9 | | |
| | | South of Fiji Islands (h = 190 km). | | | | | |
| " | 25 | UPP | Mx | 10 13 | | | |
| | | | | | micr | sec | |
| | | | Mx | Z | 1.7 | 21 | |
| | | KIR | Mx | 10 24 | | | |
| | | | | | micr | sec | |
| | | | Mx | Z | 1.3 | 19 | |
| | | Southern Mid-Atlantic Ridge (h = 10 km). M = 5.5 (UPP,KIR). | | | | | |
| " | 25 | UPP | iPKP1 | 17 10 | 41.0 | | |
| | | Kermadec Islands region (h = 440 km). | | | | | |
| " | 25 | UPP | iP | 21 53 | 28.0 | | |
| | | South of Honshu, Japan (h = N). | | | | | |
| " | 26 | UPP | iP | 05 58 | 31.9 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.1 | 0.7 | |
| | | KIR | iP | 05 58 | 03.6 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.1 | 1.0 | |
| | | Mariana Islands (h = 190 km). m = 5.7 (UPP,KIR). | | | | | |
| " | 26 | UPP | iPKP1 | 09 21 | 19.8 | | |
| | | Kermadec Islands region (h = N). | | | | | |
| " | 26 | UPP | iPKP2 | 10 31 | 43.2 | | |
| | | West of Macquarie Islands (h = N). | | | | | |
| Apr. | 26 | UPP | iP | 10 49 | 35.6 | | |
| | | Southern California (h = 15 km). | | | | | |
| " | 26 | UPP | iPKP2 | 14 42 | 03.6 | | |
| | | Kermadec Islands region (h = N). | | | | | |
| " | 26 | UPP | iP | 15 55 | 39.5 | | |
| | | Kuril Islands (h = N). | | | | | |
| " | 26 | UPP | iP | 17 54 | 18.8 | | |
| | | Kuril Islands (h = N). | | | | | |
| " | 26 | UPP | iP | 22 23 | 33.6 | | |
| | | | iS | 22 27 | 46 | | |
| | | | | | micr | sec | |
| | | | Mx | Z | 0.9 | 14 | |
| | | Southern Greece (h = N). | | | | | |
| " | 27 | UPP | iPKP | 00 50 | 47.7 | | |
| | | | i | 00 54 | 16 | | |
| | | | | | micr | sec | |
| | | | Mx | Z | 2.2 | 23 | |
| | | Vanuatu Islands (h = 40 km). | | | | | |
| " | 27 | UPP | iPKP1 | 04 26 | 29.6 | | |
| | | Off e. coast of N. Island, N.Z. (h = N). | | | | | |
| " | 27 | UPP | iPKP2 | 06 22 | 19.4 | | |
| | | Kermadec Islands, New Zealand (h = N). | | | | | |
| " | 27 | UPP | iP | 14 20 | 06.6 | | |
| | | Kuril Islands (h = N). | | | | | |
| " | 27 | UPP | iP | 14 25 | 44.6 | | |
| | | Kuril Islands (h = N). | | | | | |
| " | 28 | UPP | iP | 03 21 | 56.1 | | |
| | | | | | micr | sec | |
| | | | Mx | Z | 5.1 | 12 | |
| | | KIR | Mx | 03 37 | | | |
| | | | | | micr | sec | |
| | | | Mx | Z | 1.4 | 9 | |
| | | Ionian Sea (h = N). M = 5.0 (UPP,KIR). | | | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå; UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|----|---|------------|------|----|--|------------|
| Apr. | 28 | UPP iSg1 | 03 27 10.5 | Apr. | 29 | UPP iP | 23 57 15.9 |
| | | UDD iSg1 | 03 27 11.8 | | | Ionian Sea (h = N). | |
| | | MYV iSg1 | 03 26 05.4 | | | | |
| | | Southwestern Norway, 62.0°N, 5.5°E. | | " | 30 | UPP iP | 05 51 19.5 |
| | | Origin time = 03 23 57. | | | | Central Mediterranean Sea | |
| | | $M_L(\text{UPP}) = 2.7 (0.12) 2.$ | | | | (h = 10 km). | |
| | | Felt. | | " | 30 | UPP iP | 18 40 56.8 |
| | | By combination with Finnish and Norwegian station readings. | | | | Greece (h = N). | |
| " | 28 | UPP iP | 04 03 56.9 | " | 30 | UPP iP | 19 58 29.2 |
| | | Crete (h = N). | | | | Andreanof Islands, Aleutian Is. (h = N). | |
| " | 28 | UPP iP | 05 30 54.9 | " | 30 | UPP iP | 21 30 32.3 |
| | | Near Islands, Aleutian Islands (h = N). | | | | Andreanof Islands, Aleutian Is. (h = N). | |
| " | 28 | UPP iP | 10 33 27.3 | | | | |
| | | Ionian Sea (h = 10 km). | | | | | |
| " | 28 | UPP iS | 12 33 36 | | | | |
| | | | micr sec | | | | |
| | | Mx | Z 6.8 17 | | | | |
| | | KIR Mx | 13 22 | | | | |
| | | | micr sec | | | | |
| | | Mx | Z 2.1 17 | | | | |
| | | Prince Edward Islands region (h = 10 km). | | | | | |
| " | 28 | UPP iP | 17 05 35.4 | | | | |
| | | Northern Sumatera, Indonesia (h = N). | | | | | |
| " | 28 | UPP iPKP1 | 22 53 57.1 | | | | |
| | | iPKP2 | 22 54 03.6 | | | | |
| | | Kermadec Islands region (h = 400 km). | | | | | |
| " | 29 | UPP iP | 01 45 08.2 | | | | |
| | | Tajikistan-Xinjiang border reg. (h = 140 km). | | | | | |
| " | 29 | UPP iP | 16 42 52.6 | | | | |
| | | South of Honshu, Japan (h = 310 km). | | | | | |
| " | 29 | UPP iP | 17 35 10.2 | | | | |
| | | Mariana Islands (h = 100 km). | | | | | |
| " | 29 | UPP iP | 21 22 54.5 | | | | |
| | | Sea of Okhotsk (h = 510 km). | | | | | |

January 13, 1999

Conny Holmqvist
Ota Kulhánek

SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, UMEÅ, UDDEHOLM

DELARY and MYRVIKEN

| | | | | |
|----------|-------|------------|------------|-----------|
| Uppsala | (UPP) | 59°51.5'N, | 17°37.6'E; | h = 14 m |
| Kiruna | (KIR) | 67°50.4'N, | 20°25.0'E; | h = 390 m |
| Umeå | (UME) | 63°48.9'N, | 20°14.2'E; | h = 16 m |
| Uddeholm | (UDD) | 60°05.4'N, | 13°36.4'E; | h = 240 m |
| Delary | (DEL) | 56°28.2'N, | 13°52.2'E; | h = 150 m |
| Myrviken | (MYV) | 62°56.5'N, | 14°20.8'E; | h = 345 m |

MAY 1 - 31, 1997

| 1997 | | | | 1997 | | | | | |
|------|---|-----|-------|---------------------------------------|-----|---|-----|-------|--------------------------------------|
| May | 1 | UPP | iP | 09 27 20.9 | May | 3 | UPP | iPKP | 17 05 32.7 |
| | | | | Andreanof Islands, Aleutian Islands | | | | iPKP1 | 17 05 37.8 |
| | | | | (h = N). | | | | | micr sec |
| | | | | | | | | Mx | Z 11 21 |
| " | 1 | UPP | iP | 09 58 48.1 | | | KIR | Mx | 18 04 |
| | | | | Andreanof Islands, Aleutian Islands | | | | | micr sec |
| | | | | (h = N). | | | | Mx | Z 7.0 22 |
| | | | | | | | | | Kermadec Island region (h = 110 km). |
| " | 1 | UPP | iP | 11 50 33.1 | | | | | M = 6.5 (UPP,KIR). |
| | | | iPP | 11 54 07.6 | | | | | M uncorrected for focal depth. |
| | | | iS | 12 01 20 | | | | | |
| | | | | micr sec | " | 3 | UPP | iPKP2 | 20 36 42.7 |
| | | | P | Z' 0.1 1.6 | | | | | Kermadec Islands region (h = N). |
| | | | Mx | Z 58 19 | | | | | |
| | | KIR | iP | 11 50 14.7 | " | 3 | UPP | iP | 21 19 08.5 |
| | | | | micr sec | | | | | Hokkaido, Japan region (h = 100 km). |
| | | | P | Z' 1.0 2.5 | " | 3 | UPP | iP | 23 45 09.4 |
| | | | Mx | Z 59 18 | | | | | Southern Mid-Atlantic ridge |
| | | | | Off coast of Jalisco, Mexico (h = N). | | | | | (h = 10 km). |
| | | | | m = 6.2, M = 7.0 (UPP,KIR). | | | | | |
| " | 1 | UPP | iP | 23 20 18.1 | " | 4 | UPP | iP | 01 56 32.9 |
| | | | | Philippine Islands region (h = N). | | | | | Windward Islands (h = 5 km). |
| " | 3 | UPP | iP | 02 58 07.1 | " | 4 | UPP | iPKP | 09 57 24.7 |
| | | | | Taiwan region (h = N). | | | | iPKP1 | 09 57 28.0 |
| | | | | | | | | | Kermadec Islands region |
| " | 3 | UPP | iPKP1 | 11 01 42.0 | | | | | (h = 150 km). |
| | | | | Kermadec Islands region (h = N). | " | 4 | UPP | iP | 22 59 01.3 |
| " | 3 | UPP | iP | 12 19 20.8 | | | | i | 22 59 03.6 |
| | | | | Ionian Sea (h = N). | | | | | North Atlantic Ocean (h = 10 km). |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|---|-----|-------|--|-----|----|--|
| May | 4 | UPP | iP | 23 02 59.7 | May | 8 | (cont.) |
| | | | i | 23 03 01.9 | | | |
| | | | | North Atlantic Ocean (h = 10 km). | | | |
| " | 5 | UPP | iP | 05 56 41.2 | | | |
| | | | | Luzon, Philippine Islands (h = N). | | | |
| " | 5 | UPP | iP | 13 35 27.9 | | | |
| | | | | South of Honshu, Japan (h = 450 km). | | | |
| " | 7 | UPP | iP | 16 22 37.6 | " | 9 | UPP iP 05 01 24.9 Ryukyu Islands (h = N). |
| " | 8 | UPP | iP | 03 03 23.8 | " | 9 | UPP iSKS 09 30 30 |
| | | | ipP | 03 03 34.7 | | | |
| | | | iS | 03 11 40 | | | |
| | | | | micr sec | | | |
| | | | P | Z' 0.1 0.9 | | | |
| | | | pP | Z' 0.2 0.8 | | | |
| | | | Mx | Z 6.8 20 | | | |
| | | KIR | iP | 03 03 21.7 | | | |
| | | | ipP | 03 03 32.6 | | | |
| | | | | micr sec | | | |
| | | | P | Z' 0.1 1.0 | | | |
| | | | pP | Z' 0.3 1.4 | | | |
| | | | Mx | Z 4.7 19 | | | |
| | | | | India-Bangladesh border region. h = 40 km (UPP,KIR). m = 6.3, M = 5.7 (UPP,KIR). | | | |
| " | 8 | UPP | iP | 06 17 43.2 | " | 9 | UPP iP 17 17 12.3 Kuril Islands (h = N). |
| | | | i | 06 17 53.4 | " | 9 | UPP iP 17 34 32.0 i 17 34 35.4 Near east coast of Honshu, Japan (h = 30 km). |
| | | | iS | 06 26 26 | " | 9 | UPP iP 18 46 28.4 Dodecanese Islands (h = 20 km). |
| | | | | micr sec | " | 10 | UPP iP 02 59 55.6 |
| | | | P | Z' 0.1 0.9 | " | 10 | UPP iP 04 50 33.2 |
| | | | Mx | Z 2.7 17 | | | |
| | | KIR | iP | 06 16 52.7 | | | |
| | | | | micr sec | | | |
| | | | Mx | Z 1.9 15 | | | |
| | | | | Off east coast of Kamchatka (h = N). m = 5.8, M = 5.4 (UPP,KIR). | | | |
| " | 8 | UPP | iPKP2 | 11 30 00.0 | " | 10 | UPP iPg1 05 47 27.0 iSg1 05 47 55.6 Off coast of Medelpad, Sweden, 62.3°N, 17.6°E. Origin time = 05 46 45. |
| | | | | Kermadec Islands, New Zealand (h = N). | | | |
| " | 8 | UPP | iP | 13 40 20.3 | | | |
| | | | iS | 13 49 28 | | | |
| | | | iP'P' | 14 08 46.3 | | | |
| | | | | (cont.) | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå; UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | 1997 | | |
|------|----|--|------|----|---|
| May | 10 | (cont.) By combination with Finnish station readings. | May | 11 | (cont.) $M_L(\text{UPP}) = 2.5 (0.21) 2.$ By combination with Finnish station readings. |
| " | 10 | KIR iSg1 06 35 00.4 Bothnian Bay, 65.6°N, 22.8°E. Origin time = 06 33 45. By combination with Finnish station readings. | " | 11 | UPP iP 21 57 20.7 |
| " | 10 | UPP iP 08 04 47.7 i 08 04 51.9 iPP 08 06 16.1 iS 08 10 36 micr sec P Z' 0.2 1.0 i Z' 0.7 1.0 Mx Z 215 13 KIR iP 08 05 12.8 micr sec P Z' 2.9 1.6 Mx Z 158 10 Northern Iran (h = 10 km). m = 6.8, M = 7.1 (UPP,KIR). | " | 11 | UPP iP 23 11 01.8 C micr sec P Z' 0.3 1.2 KIR iP 23 10 22.7 C micr sec P Z' 0.1 1.0 Eastern Honshu, Japan (h = 50 km). m = 6.0 (UPP,KIR). |
| " | 10 | KIR iPg1 21 47 21.6 iSg1 21 48 07.9 Norwegian Sea, 68.2°N, 10.5°E. Origin time = 21 46 10. $M_L(\text{UPP}) = 3.2 1.$ By combination with Finnish station readings. | " | 11 | UPP Mx 23 34 micr sec Mx Z 2.6 19 KIR Mx 23 33 micr sec Mx Z 1.8 16 West Chile Rise (h = 10 km). M = 5.9 (UPP,KIR). |
| " | 10 | UPP ePKP 18 53 30 South of Fiji Islands (h = 460 km). | " | 12 | UPP iP 03 57 03.6 Northwestern Iran (h = 10 km). |
| " | 10 | UPP iP 19 06 48.3 Southern Sumatera, Indonesia (h = N). | " | 12 | UPP iP 13 54 22.8 micr sec P Z' 0.1 0.9 Central Italy (h = 5 km). |
| " | 11 | UPP iPKP 07 15 32.3 micr sec PKP Z' 0.1 1.0 Kermadec Islands region (h = N). | " | 12 | UPP iP 13 58 14.1 iSKS 14 08 36 iS 14 08 54 micr sec Mx Z 5.4 17 KIR Mx 14 35 micr sec Mx Z 2.0 13 Panay, Philippine Islands (h = N). M = 5.8 (UPP,KIR). |
| " | 11 | KIR iPg1 13 53 57.3 iSg1 13 54 21.2 UME iSg1 13 54 42.1 Norrbotten, Sweden, 66.2°N, 22.1°E. Origin time = 13 53 27. (cont.) | " | 12 | UPP iPg1 14 35 02.2 i 14 35 04.8 Quarry blast, 20 km SE of Uppsala. |
| | | | " | 12 | UPP iPKP1 19 20 04.7 iPKP2 19 20 07.3 South of Australia (h = 10 km). |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | | | | | | | |
|------|----|------------------------------------|-------|------------------------------|---------|-----|----|---|-------------------------|------------|------------|------------|------------|
| May | 12 | UPP | iP | 23 30 | 17.1 | May | 13 | (cont.) | | | | | |
| | | | | Northern Sumatera, Indonesia | | | | MYV | iPn | 22 08 28.2 | | | |
| | | | | (h = N). | | | | | iSg1 | 22 09 53.2 | | | |
| " | 13 | UPP | iPKP1 | 05 49 | 18.3 | | | Off coast of southwestern Norway, 61.0°N, 3.7°E. | | | | | |
| | | | | Kermadec Islands region | | | | Origin time = 22 07 09. | | | | | |
| | | | | (h = 200 km). | | | | $M_L(\text{UPP}) = 3.4 (0.11) 3.$ | | | | | |
| " | 13 | UPP | iP | 05 49 | 56.9 | | | Felt. | | | | | |
| | | | i | 05 50 | 00.0 | | | By combination with Finnish station | | | | | |
| | | | iS | 05 59 | 24 | | | readings. | | | | | |
| | | | | | | " | 13 | UPP | eP | 23 21 04 | | | |
| | | | i | Z' | 0.4 1.5 | | | " | 13 | UPP | iP | 23 43 37.1 | |
| | | Mx | Z | 17 | 13 | | | Kyushu, Japan (h = N). | | | | | |
| | | KIR | iP | 05 49 | 24.8 | | | " | 14 | UPP | iPKP1 | 02 39 17.3 | |
| | | | | | | | | | | | iPKP2 | 02 39 23.0 | |
| | | | | | | | | Kermadec Islands region | | | | | |
| | | | P | Z' | 0.3 1.2 | | | (h = 150 km). | | | | | |
| | | | Mx | Z | 17 18 | | | | | | | | |
| | | Kyushu, Japan (h = N). | | | | | | | | | | | |
| | | m = 6.2, M = 6.4 (UPP,KIR). | | | | | | | | | | | |
| " | 13 | UPP | iP | 07 12 | 29.7 | " | 14 | UPP | iPn | 03 51 34.6 | | | |
| | | Eastern Sea of Japan (h = 300 km). | | | | | | | | iSn | 03 53 02.3 | | |
| " | 13 | UPP | iP | 14 21 | 11.6 C | | | Poland (h = 5 km). | | | | | |
| | | | ipP | 14 21 | 53.2 | " | 14 | UPP | iPKP1 | 04 24 11.0 | | | |
| | | | iS | 14 27 | 02 | | | | iPKP2 | 04 24 15.8 | | | |
| | | | i | 14 29 | 44 | | | Kermadec Islands region | | | | | |
| | | | | | | | | (h = 200 km). | | | | | |
| | | | P | Z' | 4.9 1.3 | " | 14 | UPP | iP | 11 50 35.0 | | | |
| | | Mx | Z | 34 | 13 | | | " | 14 | UPP | iPKP | 17 30 56.5 | |
| | | KIR | iP | 14 21 | 20.3 C' | | | South of Fiji Islands (h = N). | | | | | |
| | | | ipP | 14 22 | 01.5 | | | " | 15 | UPP | iP | 04 07 42.6 | |
| | | | | | | | | Xizang (h = N). | | | | | |
| | | | P | Z' | 6.7 1.8 | | | " | 15 | UPP | iPKP1 | 04 18 02.0 | |
| | | | Mx | Z | 11 13 | | | South of Kermadec Islands | | | | | |
| | | Hindu Kush region, Afghanistan. | | | | | | | (h = 50 km). | | | | |
| | | h = 200 km (UPP,KIR). | | | | | | | " | 15 | UPP | iP | 04 51 32.6 |
| | | m = 6.9, M = 6.1 (UPP,KIR). | | | | | | | Guatemala (h = 270 km). | | | | |
| | | M uncorrected for focal depth. | | | | | | | " | 15 | UPP | iP | 10 10 40.7 |
| " | 13 | UPP | iPn | 22 08 | 47.8 | | | Dodecanese Islands (h = 35 km). | | | | | |
| | | | iSn | 22 10 | 16.2 | " | 15 | UPP | iP | 16 16 45.7 | | | |
| | | | iSg1 | 22 10 | 43.9 | | | | | | | | |
| | | KIR | iSg1 | 22 12 | 16.1 | | | | | | | | |
| | | UME | iSg1 | 22 11 | 21.2 | | | | | | | | |
| | | UDD | iPn | 22 08 | 21.1 | | | | | | | | |
| | | | i | 22 08 | 42.4 | | | | | | | | |
| | | | iSg1 | 22 09 | 43.9 | | | | | | | | |
| | | | i | 22 09 | 52.8 | | | | | | | | |
| | | (cont.) | | | | | | | | | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå; UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | | | |
|------|----|-----|-------|--------------------------------------|-----|----|-----|--------|---------------------------------------|
| May | 15 | UPP | iPKP | 18 20 52.8 | May | 16 | UPP | iP | 18 00 54.1 |
| | | | | Loyalty Islands region (h = N). | | | | | micr sec |
| " | 15 | UPP | iP | 18 37 50.5 D | | | Mx | Z | 1.0 19 |
| | | | i | 18 38 30.4 | | | KIR | Mx | 18 34 |
| | | | | micr sec | | | | | micr sec |
| | | | P | Z' 0.4 0.9 | | | | Mx | Z 1.4 20 |
| | | KIR | iP | 18 37 59.3 D | | | | | North of Ascensian Island |
| | | | | micr sec | | | | | (h = 10 km). |
| | | | P | Z' 0.5 1.0 | | | | | M = 5.1 (UPP,KIR). |
| | | | | Hindu Kush region, Afghanistan | " | 16 | UPP | i(PKP) | 18 57 12.2 |
| | | | | (h = 180 km). | | | | | Fiji Islands region (h = 290 km). |
| | | | | m = 6.1 (UPP,KIR). | " | 16 | UPP | iP | 21 29 38.3 |
| " | 16 | UPP | iPKP2 | 00 20 46.8 | | | | | Windward Islands (h = 5 km). |
| | | | | Kermadec Islands region (h = 45 km). | " | 16 | UPP | iP | 22 51 18.2 |
| " | 16 | UPP | iP | 07 05 11.8 | | | | | micr sec |
| | | | iS | 07 08 44 | | | | P | Z' 0.3 1.8 |
| | | | | micr sec | | | | Mx | Z 2.4 20 |
| | | | P | Z' 0.1 0.8 | | | KIR | Mx | 23 15 |
| | | | Mx | Z 9.8 10 | | | | | micr sec |
| | | KIR | Mx | 07 19 | | | | Mx | Z 1.5 18 |
| | | | | micr sec | | | | | Near east coast of Kamchatka (h = N). |
| | | | Mx | Z 5.3 11 | | | | | M = 5.2 (UPP,KIR). |
| | | | | Albania (h = 10 km). | " | 16 | UPP | iP | 23 53 26.3 |
| | | | | M = 5.3 (UPP,KIR). | | | | | Carlsberg ridge (h = 10 km). |
| " | 16 | UPP | iP | 11 28 06.6 | " | 17 | UPP | iP | 00 36 21.6 |
| | | | i | 11 28 12.5 | | | | | Carlsberg ridge (h = 10 km). |
| | | | | micr sec | " | 17 | UPP | iSn | 01 31 43.6 |
| | | | P | Z' 0.1 1.0 | | | KIR | iPn | 01 30 32.8 |
| | | | i | Z' 0.2 0.9 | | | | iSn | 01 32 08.1 |
| | | | Mx | Z 1.2 15 | | | UME | iSn | 01 31 45.4 |
| | | KIR | iP | 11 27 53.3 | | | UDD | iPn | 01 29 56.2 |
| | | | i | 11 27 52.9 | | | | iSn | 01 31 01.2 |
| | | | | micr sec | | | MYV | iSn | 01 30 42.6 |
| | | | P | Z' 0.1 1.0 | | | | | Norwegian Sea, 63.1°N, 2.6°E. |
| | | | Mx | Z 1.5 14 | | | | | Origin time = 01 28 28. |
| | | | | Xizang (h = N). | | | | | By combination with Finnish station |
| | | | | m = 6.0, M = 5.1 (UPP,KIR). | | | | | readings. |
| " | 16 | UPP | iP | 14 34 42.2 | " | 17 | UPP | iP | 02 29 14.2 |
| | | | | micr sec | " | 17 | UPP | iPKP1 | 03 12 29.5 |
| | | | Mx | Z 1.0 15 | | | | iPKP2 | 03 12 35.3 |
| | | KIR | Mx | 14 36 | | | | | Kermadec Islands region (h = N). |
| | | | | micr sec | | | | | |
| | | | Mx | Z 2.2 15 | | | | | |
| | | | | Jan Mayen Island region (h = 10 km). | | | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|----|-----|-------|-------------------------------------|-----|----|--------------------------------|
| May | 17 | UPP | iP | 03 15 46.8 | May | 21 | (cont.) |
| | | | | Pakistan (h = 15 km). | | | KIR Mx 15 24 |
| | | | | | | | micr sec |
| " | 17 | UPP | iP | 04 06 11.4 | | | Mx Z 7.5 22 |
| | | | | micr sec | | | Vanuatu Islands (h = 55 km). |
| | | Mx | Z | 2.0 15 | | | |
| | | KIR | Mx | 04 23 | " | 21 | UPP Mx 20 58 |
| | | | | micr sec | | | micr sec |
| | | Mx | Z | 07 11 | | | Mx Z 1.6 23 |
| | | | | Southern Xinjiang, China (h = N). | | | KIR Mx 21 07 |
| | | | | M = 4.9 (UPP,KIR). | | | micr sec |
| " | 18 | UPP | iPKP | 05 18 15.4 | | | Mx Z 1.5 18 |
| | | | iPKP1 | 05 18 20.2 | | | North of Ascension Island |
| | | | | Kermadec Islands, New Zealand | | | (h = 10 km). |
| | | | | (h = N). | | | M = 5.2 (UPP,KIR). |
| " | 18 | UPP | iP | 10 12 11.0 | " | 21 | UPP iP 23 01 09.1 C |
| | | | | Fox Islands, Aleutian Islands | | | i 23 01 11.6 |
| | | | | (h = 70 km). | | | i 23 01 24.9 |
| " | 18 | UPP | iP | 15 55 36.6 | | | iS 23 08 56 |
| | | | | Mariana Islands region (h = 50 km). | | | i 23 09 24 |
| | | | | | | | micr sec |
| " | 18 | UPP | iP | 16 22 24.8 | | | P Z' 0.4 0.9 |
| | | | | Flores Sea (h = 200 km). | | | Mx Z 8.2 18 |
| " | 18 | UPP | iPKP2 | 17 47 24.8 | | | KIR iP 23 01 16.8 C |
| | | | | Kermadec Islands, New Zealand | | | i 23 01 28.0 |
| | | | | (h = N). | | | micr sec |
| | | | | | | | P Z' 0.8 0.8 |
| | | | | | | | Mx Z 4.1 15 |
| | | | | | | | Southern India (h = 35 km). |
| | | | | | | | m = 6.6, M = 5.7 (UPP,KIR). |
| " | 18 | UPP | iP | 22 27 04.5 | " | 21 | UPP iP 23 23 03.3 |
| | | | | Southern Sumatera, Indonesia | | | Near s. coast of Honshu, Japan |
| | | | | (h = N). | | | (h = 20 km). |
| " | 19 | UPP | iP | 02 21 07.0 | " | 21 | UPP iP 23 54 47.3 |
| | | | | Off east coast of Honshu, Japan | | | micr sec |
| | | | | (h = N). | | | P Z' 0.1 1.2 |
| " | 19 | UPP | iPKP1 | 19 57 45.2 | | | Spain (h = 20 km). |
| | | | | Kermadec Islands region (h = N). | | | |
| " | 20 | UPP | iP | 04 32 22.1 | " | 21 | UPP iP 23 55 45.4 |
| | | | | South of Honshu, Japan | | | iS 23 59 52 |
| | | | | (h = 100 km). | | | micr sec |
| | | | | | | | P Z' 0.3 1.0 |
| " | 21 | UPP | iPKP | 14 29 41.9 | | | KIR iP 23 56 43.5 |
| | | | iSKP1 | 14 33 05.2 | | | micr sec |
| | | | | micr sec | | | P Z' 0.2 1.5 |
| | | Mx | Z | 16 23 | | | Spain (h = 20 km). |
| | | | | | | | m = 5.7 (UPP,KIR). |
| | | | | (cont.) | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | | | 1997 | | | | | |
|------|----|-----|---------------------------------|--------------|--------------|------|----|-----|-----|------------------------------------|--------------|
| May | 22 | UPP | iP | 00 22 22.4 | | May | 23 | UPP | iP | 10 53 04.1 | |
| | | | | micr | sec | | | | | Philippine Islands region | |
| | | | P | Z' | 0.1 1.0 | | | | | (h = 200 km). | |
| | | | Spain (h = 15 km). | | | | | | | | |
| | " | UPP | iP | 08 03 34.1 | | " | 23 | UPP | iP | 18 02 11.2 | |
| | | | iPP | 08 07 02.4 | | | | | iS | 18 11 38 | |
| | | | iSKS | 08 13 58 | | | | | i | 18 12 20 | |
| | | | | micr | sec | | | | | | |
| | | | P | Z' | 0.3 1.6 | | | | Mx | Z 4.6 18 | |
| | | | Mx | Z | 12 22 | | | KIR | Mx | 18 35 | |
| | | KIR | iP | 08 03 17.3 | | | | | | micr sec | |
| | | | | micr | sec | | | | Mx | Z 4.4 15 | |
| | | | P | Z' | 3.2 2.3 | | | | | Near s. coast of Honshu, Japan | |
| | | | Mx | Z | 6.5 17 | | | | | (h = 10 km). | |
| | | | Guerrero, Mexico (h = 70 km). | | | | " | 23 | UPP | iP | 18 19 44.4 |
| | | | m = 6.6, M = 6.1 (UPP,KIR). | | | | | | | | micr sec |
| | | | M uncorrected for focal depth. | | | | | | | P | Z' 0.1 1.0 |
| | " | 22 | UPP | iP | 13 33 45.4 C | | | | | Spain (h = 10 km). | |
| | | | | i | 13 33 56.2 | | " | 23 | UPP | iP | 18 40 34.0 |
| | | | | iS | 13 43 46 | | | | | Philippine Islands region (h = N). | |
| | | | | | micr sec | | | | | | |
| | | | P | Z' | 0.1 0.8 | | " | 23 | UPP | iP | 20 05 45.5 |
| | | | i | Z' | 0.3 1.0 | | | | | Northern Mid-Atlantic ridge | |
| | | | Mx | Z | 5.9 19 | | | | | (h = 10 km). | |
| | | KIR | iP | 13 33 24.9 C | | | " | 23 | UPP | iP | 20 32 29.6 |
| | | | | i | 13 33 35.8 | | | | | Ryukyu Islands (h = 140 km). | |
| | | | | | micr sec | | | | | | |
| | | | P | Z' | 0.3 0.8 | | " | 23 | UPP | iP | 21 29 07.8 |
| | | | i | Z' | 0.5 1.0 | | | | | Ryukyu Islands (h = N). | |
| | | | Mx | Z | 2.5 15 | | | | | | |
| | | | Luzon, Philippine Islands | | | | " | 24 | UPP | iP | 05 27 25.4 D |
| | | | (h = 35 km). | | | | | | | i | 05 27 37.1 |
| | | | m = 6.4, M = 5.8 (UPP,KIR). | | | | | | | i | 05 27 39.9 |
| | " | 22 | UPP | iP | 14 52 08.6 | | | | | micr sec | |
| | | | Kuril Islands (h = N). | | | | | | | P | Z' 0.2 0.8 |
| | " | 23 | UPP | iPKP2 | 00 44 27.6 | | | KIR | iP | 05 26 48.4 D | |
| | | | Off e. coast of N. Island, N.Z. | | | | | | | micr sec | |
| | | | (h = 200 km). | | | | | | | P | Z' 0.2 1.0 |
| | " | 23 | UPP | iP | 05 27 49.0 | | | | | Off east coast of Honshu, Japan | |
| | | | Kuril Islands (h = N). | | | | | | | (h = N). | |
| | " | 23 | UPP | iP | 07 24 02.7 | | | | | m = 6.1 (UPP,KIR). | |
| | | | Andreasof Islands, Aleutian Is. | | | | " | 24 | UPP | iP | 17 19 14.8 |
| | | | (h = 45 km). | | | | | | | Sichuan, China (h = N). | |
| | " | 25 | UPP | iPKP1 | 02 28 35.3 | | | | | Tonga Islands region (h = N). | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | | | | |
|------|----|-----|-------|--|-----|----|-----|-------|------------|--|
| May | 25 | UPP | iP | 02 59 56.0 | May | 27 | UPP | iPKP2 | 03 33 45.3 | North Island, New Zealand (h = 200 km). |
| " | 25 | UPP | iP | 10 30 23.7 | " | 27 | UPP | Mx | 07 46 | |
| | | | | Central Mid-Atlantic ridge (h = 10 km). | | | | Mx | Z 3.4 | 18 |
| " | 25 | UPP | iP | 15 00 09.3 | | | KIR | Mx | 07 43 | |
| | | | | Rat Islands, Aleutian Islands (h = 80 km). | | | | Mx | Z 1.9 | 15 |
| " | 25 | UPP | iPKP2 | 18 55 56.5 | | | | | | |
| | | | | Kermadec Islands region (h = N). | | | | | | Pacific-Antarctic Ridge (h = 10 km). M = 6.1 (UPP,KIR). |
| " | 25 | UPP | iPKP2 | 19 07 12.4 | " | 27 | UPP | iPKP | 08 19 47.6 | |
| | | | | Kermadec Islands region (h = N). | | | | Mx | Z 4.7 | 23 |
| " | 25 | UPP | iPKP | 23 41 37.0 | | | KIR | Mx | 09 15 | |
| | | | i | 23 41 42.7 | | | | Mx | Z 4.7 | 20 |
| | | | i | 23 43 06 | | | | | | Tonga Islands (h = 15 km). M = 6.2 (UPP,KIR). |
| | | | | micr sec | | | | | | |
| | | | PKP | Z' 0.4 | | | | | | |
| | | | i | Z' 1.7 | | | | | | |
| | | | Mx | Z 6.0 | | | | | | |
| | | KIR | Mx | 24 40 | " | 27 | UPP | iP | 15 21 18.2 | |
| | | | | micr sec | | | | P | Z' 0.1 | 1.1 |
| | | | Mx | Z 2.4 | | | | | | Mariana Islands (h = 540 km). |
| | | | | South of Kermadec Islands (h = 330 km). M = 6.2 (UPP,KIR). M uncorrected for focal depth. | " | 28 | UPP | iP | 05 28 34.8 | Afghanistan (h = N). |
| " | 26 | UPP | iP | 01 24 27.9 | " | 28 | UPP | iP | 09 20 34.1 | Sea of Okhotsk (h = 350 km). |
| | | | | Iran-Iraq border region (h = N). | " | 28 | UPP | iP | 18 21 13.9 | Hindu Kush region, Afghanistan (h = 130 km). |
| " | 26 | UPP | iP | 05 08 45.4 | " | 29 | UPP | iPKP | 00 31 15.7 | South Sandwich Islands region (h = N). |
| | | | | Southern Iran (h = N). | " | 29 | KIR | i | 15 11 53.7 | |
| " | 26 | UPP | iPKP2 | 11 10 34.3 | | | | iSg1 | 15 12 39.1 | Norwegian Sea, 68.1°N, 10.5°E. Origin time = 15 10 42. M _L (UPP) = 1.9 1. By combination with Finnish station readings. |
| | | | | Off w. coast of S. Island, N.Z. (h = N). | | | | | | |
| " | 26 | UPP | iP | 11 25 04.9 | | | | | | |
| | | | | Carlsberg Ridge (h = 10 km). | | | | | | |
| " | 27 | UPP | iP | 01 35 40.9 | | | | | | |
| | | | | Eastern Kashmir (h = N). | | | | | | |
| " | 27 | UPP | iP | 02 04 31.0 | | | | | | |
| | | | | Northern Xinjiang, China (h = 20 km). | | | | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1997

| | | | | |
|-----|----|-------------------------------------|------|------------|
| May | 29 | UPP | iPKP | 17 22 01.0 |
| | | | | micr sec |
| | | | Mx | Z 5.7 22 |
| | | KIR | Mx | 18 19 |
| | | | | micr sec |
| | | | Mx | Z 4.3 19 |
| | | Southern Pacific Ocean (h = 10 km). | | |
| | | M = 6.2 (UPP,KIR). | | |
| " | 29 | UPP | iPg1 | 18 36 11.7 |
| | | | iSg1 | 18 36 32.6 |
| | | | i | 18 36 36.4 |
| | | Närke, Sweden, 58.8°N, 15.1°E. | | |
| | | Origin time = 18 35 44. | | |
| | | Rockburst at the Zinkgruvan mine. | | |
| " | 30 | UPP | iP | 18 02 59.8 |
| | | | | micr sec |
| | | | Mx | Z 2.6 14 |
| | | KIR | Mx | 18 22 |
| | | | | micr sec |
| | | | Mx | Z 0.9 10 |
| | | Southern Xinjiang, China (h = N). | | |
| | | M = 5.1 (UPP,KIR). | | |
| " | 30 | UPP | iP | 20 31 35.5 |
| | | Kuril Islands (h = N). | | |
| " | 31 | UPP | iP | 19 28 20.9 |
| | | Pakistan (h = N). | | |
| " | 31 | UPP | iP | 21 34 38.4 |
| | | Pakistan (h = N). | | |

January 29, 1999

Conny Holmqvist
Ota Kulhánek

DEPARTMENT OF EARTH SCIENCES
 SEISMOLOGY
 VILLAVAEGEN 16
 S-752 36 UPPSALA
 SWEDEN

SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, UMEÅ, UDDEHOLM

DELARY and MYRVIKEN

| | | | | |
|----------|-------|------------|------------|-----------|
| Uppsala | (UPP) | 59°51.5'N, | 17°37.6'E; | h = 14 m |
| Kiruna | (KIR) | 67°50.4'N, | 20°25.0'E; | h = 390 m |
| Umeå | (UME) | 63°48.9'N, | 20°14.2'E; | h = 16 m |
| Uddeholm | (UDD) | 60°05.4'N, | 13°36.4'E; | h = 240 m |
| Delary | (DEL) | 56°28.2'N, | 13°52.2'E; | h = 150 m |
| Myrviken | (MYV) | 62°56.5'N, | 14°20.8'E; | h = 345 m |

JUNE 1 - 30, 1997

| 1997 | | | | | 1997 | | | | |
|------|---|-----|------|------------|------|---|-----|-------|--------------------------------|
| June | 1 | UPP | iP | 10 39 03.6 | June | 2 | UPP | iP | 09 06 43.7 |
| " | 1 | UPP | iPKP | 11 20 02.0 | | | | | Hindu Kush region, Afghanistan |
| " | 1 | UPP | iP | 15 14 29.5 | | 2 | UPP | iP | 19 31 12.7 |
| | | | iS | 15 24 16 | | | | Mx | Z 6.3 14 |
| | | | | micr sec | | | KIR | Mx | 20 10 |
| | | | Mx | Z 7.6 15 | | | | Mx | Z 3.1 13 |
| | | KIR | Mx | 15 51 | | | | | Ryukyu Islands (h = N). |
| | | | | micr sec | | | | | M = 5.9 (UPP,KIR). |
| | | | Mx | Z 3.3 15 | | 2 | UPP | iPKP | 21 43 28.5 C |
| | | | | | | | | | micr sec |
| | | | | | | | | | PKP Z' 0.1 1.0 |
| | | | | | | | | | Mx Z 2.9 21 |
| " | 2 | UPP | iP | 00 33 13.5 | | | KIR | Mx | 22 36 |
| | | | | | | | | | micr sec |
| " | 2 | UPP | iP | 04 01 14.4 | | | | Mx | Z 2.6 21 |
| | | | | | | | | | South Sandwich Islands region |
| " | 2 | UPP | iP | 05 15 47.3 | | | | | (h = N). |
| | | | | | | | | | M = 5.9 (UPP,KIR). |
| " | 2 | UPP | iP | 08 14 32.0 | " | 2 | UPP | iP | 21 53 25.6 |
| | | | | | " | 3 | UPP | ePKP2 | 01 02 56 |
| " | 2 | UPP | iP | 08 27 58.9 | | | | | Kermadec Islands, New Zealand |
| | | | | | | | | | (h = N). |
| | | | | | " | 3 | UPP | iP | 01 18 16.0 |
| | | | | | | | | | Albania (h = 10 km). |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|---|--|------------|------|---|---|------------|
| June | 3 | UPP iPKP2 | 11 04 08.3 | June | 6 | UPP iP | 06 38 54.1 |
| | | Kermadec Islands region (h = N). | | | | South of Mariana Islands (h = 30 km). | |
| " | 3 | UPP iP | 12 21 19.6 | " | 6 | UPP iP | 17 59 04.7 |
| | | Off east coast of Honshu, Japan (h = N). | | | | Philippine Islands region (h = 40 km). | |
| " | 3 | UPP iP | 21 28 38.5 | " | 6 | UPP iP | 22 07 37.5 |
| | | Near east coast of Kamchatka (h = 70 km). | | | | Philippine Islands region (h = N). | |
| " | 3 | UPP iP | 23 01 40.0 | " | 6 | UPP i | 22 18 04.5 |
| | | Volcano Islands region (h = 190 km). | | | | iPg1 | 22 18 06.0 |
| " | 4 | UPP eP | 23 26 46 | | | iSg1 | 22 18 30.0 |
| | | Hokkaido, Japan region (h = 110 km). | | | | UME iSg1 | 22 19 57.3 |
| " | 5 | UPP iP | 09 43 15.3 | | | UDD iPg1 | 22 18 10.8 |
| | | Kuril Islands (h = 200 km). | | | | iSg1 | 22 18 36.9 |
| " | 5 | UPP iPKP2 | 13 04 55.9 | | | MYV iPg1 | 22 18 01.8 |
| | | West of Macquarie Island (h = 10 km). | | | | iSg1 | 22 18 23.0 |
| " | 5 | UPP iPg1 | 18 35 23.9 | | | Hälsingland, Sweden, 61.6°N, 16.4°E. | |
| | | iSg1 | 18 35 45.5 | | | Origin time = 22 17 34. | |
| | | iSn | 18 35 48.5 | | | $M_L(\text{UPP}) = 2.3$ 1. | |
| | | iRg | 18 35 55.9 | | | By combination with Finnish station readings. | |
| | | UDD iPg1 | 18 35 21.8 | " | 7 | UPP iP | 02 12 13.4 |
| | | i | 18 35 24.1 | " | 7 | UPP iP | 11 31 12.0 |
| | | iSg1 | 18 35 41.9 | | | i | 11 31 24.0 |
| | | iSn | 18 35 44.2 | | | | micr sec |
| | | Närke, Sweden, 58.8°N, 15.1°E. | | | | P | Z' 0.1 0.9 |
| | | Origin time = 18 34 55. | | | | Eastern Gulf of Aden (h = 30 km). | |
| | | Rockburst at the Zinkgruvan mine. | | " | 7 | UPP iP | 12 44 20.4 |
| | | Very well developed Rg phase at UPP records with clear dispersive characteristics. | | | | Hokkaido, Japan region (h = 110 km). | |
| " | 6 | UPP iP | 02 03 06.6 | " | 8 | UPP iP | 01 42 56.0 |
| | | i | 02 03 13.7 | | | Central Mediterranean Sea (h = N). | |
| | | Off w coast of northern Sumatera (h = 25 km). | | " | 8 | UPP iP | 20 34 33.1 |
| " | 6 | UPP eP | 03 28 04 | | | Southern Xinjiang, China (h = N). | |
| " | 6 | UPP iP | 03 59 45.3 | " | 8 | UPP iP | 20 58 02.6 |
| | | Off w coast of northern Sumatera (h = 20 km). | | | | i | 20 58 03.8 |
| | | | | | | Ryukyu Islands (h = 45 km). | |
| | | | | " | 9 | UPP Mx | 08 42 |
| | | | | | | | micr sec |
| | | | | | | Mx | Z 3.0 22 |

(cont.)

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|----|--|--------------|------|----|---|------------|
| June | 18 | UPP iP | 12 20 25.9 | June | 20 | UPP iP | 02 44 54.4 |
| | | Kuril Islands (h = N). | | | | | micr sec |
| " | 18 | UPP iPKP2 | 16 46 08.6 | | | p Z' | 0.1 1.1 |
| | | Kermadec Islands region (h = 450 km). | | | | KIR iP | 02 44 01.5 |
| | | | | | | | micr sec |
| " | 18 | UPP iPKP1 | 19 51 44.6 | | | P Z' | 0.1 1.0 |
| | | South of Kermadec Islands (h = N). | | | | Andreanof Islands, Aleutian Is. (h = N). m = 5.8 (UPP,KIR). | |
| " | 19 | UPP iPKP1 | 00 43 23.2 | " | 20 | UPP iS | 13 10 56 |
| | | i | 00 43 24.9 | | | | micr sec |
| | | iPKP2 | 00 43 29.1 | | | Mx Z | 5.4 20 |
| | | Kermadec Islands, New Zealand (h = 200 km). | | | | KIR Mx | 13 25 |
| | | | | | | | micr sec |
| " | 19 | UPP iPKP2 | 03 06 51.3 | | | Mx Z | 6.1 12 |
| | | Kermadec Islands region (h = N). | | | | Northern Iran (h = 10 km). M = 5.5 (UPP,KIR). | |
| " | 19 | UPP iPKP1 | 03 22 30.9 | " | 20 | UPP eP | 19 56 45 |
| | | South of Kermadec Islands (h = N). | | | | Off east coast of Kamchatka (h = 35 km). | |
| " | 19 | UPP iP | 09 01 10.6 | " | 20 | UPP iP | 20 48 37.5 |
| " | 19 | UPP iP | 10 17 09.2 | | | Mariana Islands region (h = N). | |
| | | Southwestern Ryukyu Islands (h = 50 km). | | " | 21 | UPP i(PKP) | 00 47 42.8 |
| " | 19 | UPP iPKP1 | 17 05 26.1 | | | South of Fiji Islands (h = 500 km). | |
| | | iPKP2 | 17 05 33.6 | " | 21 | UPP iP | 04 32 08.2 |
| | | South of Kermadec Islands (h = 450 km). | | | | Mariana Islands region (h = N). | |
| " | 19 | UPP iP | 22 56 10.3 C | " | 21 | UPP ePKP1 | 19 54 36 |
| | | | micr sec | | | South of Kermadec Islands (h = N). | |
| | | P Z' | 0.3 1.6 | " | 22 | UPP iP | 07 35 29.9 |
| | | Mx Z | 1.1 17 | | | Andreanof Islands, Aleutian Is. (h = N). | |
| | | KIR iP | 22 55 18.0 C | " | 22 | UPP iP | 09 48 00.5 |
| | | | micr sec | | | i | 09 48 05.8 |
| | | P Z' | 0.2 1.5 | | | Taiwan region (h = N). | |
| | | Mx Z | 1.4 15 | " | 22 | UPP iP | 13 40 14.7 |
| | | Off east coast of Kamchatka (h = 30 km). m = 6.0, M = 5.1 (UPP,KIR). | | | | South of Honshu, Japan (h = N). | |
| " | 20 | UPP iP | 02 12 29.0 | " | 23 | UPP iP | 01 16 26.2 |
| | | Chagos archipelago region (h = 10 km). | | | | Costa Rica (h = 20 km). | |
| " | | | | " | 23 | UPP eP | 11 58 25 |
| | | | | | | South of Honshu, Japan (h = 55 km). | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|----|---------------------------------|--------------|------|-----|---------------------------------------|------------------------------------|
| June | 23 | UPP ipP | 16 41 49.6 | June | 25 | UPP iP | 10 01 33.6 |
| | | Kuril Islands (h = 40 km). | | | | iS | 10 10 48 |
| " | 23 | UPP eP | 19 24 29 | | | | micr sec |
| | | Washington (h = 5 km). | | | | P | Z' 0.2 1.5 |
| " | 23 | UPP iP | 19 39 01.4 | | | Mx | Z 7.0 15 |
| | | Southern Iran (h = N). | | | KIR | Mx | 10 32 |
| " | 24 | UPP iP | 09 32 35.1 | | | | micr sec |
| | | | micr sec | | | Mx | Z 3.3 12 |
| | | | Mx Z 1.5 11 | | | | Western Honshu, Japan (h = 10 km). |
| | | | KIR Mx 09 50 | | | | M = 5.9 (UPP,KIR). |
| | | | micr sec | " | 25 | UPP iP | 13 12 16.9 |
| | | | Mx Z 0.9 11 | | | Kuril Islands (h = 60 km). | |
| | | Southern Xinjiang, China | | " | 25 | UPP iP | 19 45 56.4 C |
| | | (h = 70 km). | | | | iPP | 19 47 21.7 |
| | | M = 5.0 (UPP,KIR). | | | | iS | 19 51 48 |
| | | M uncorrected for focal depth. | | | | | micr sec |
| " | 24 | UPP eP | 12 19 31 | | | P | Z' 0.1 1.0 |
| | | Southern Mid-Atlantic Rigde | | | | Mx | Z 8.1 11 |
| | | (h = 10 km). | | | KIR | iP | 19 46 22.2 C |
| " | 24 | UPP Mx | 17 35 | | | | micr sec |
| | | | micr sec | | | P | Z' 0.2 1.0 |
| | | | Mx Z 1.8 22 | | | Mx | Z 11 15 |
| | | | KIR Mx 17 31 | | | | Northern Iran (h = 10 km). |
| | | | micr sec | | | | m = 5.7, M = 5.8 (UPP,KIR). |
| | | | Mx Z 1.4 20 | " | 25 | UPP iPKP2 | 21 52 43.7 |
| | | Vanuatu Islands region (h = N). | | | | Kermadec Islands, New Zealand | |
| | | M = 5.7 (UPP,KIR). | | | | (h = 200 km). | |
| " | 24 | UPP iP | 20 19 17.3 | " | 26 | UPP iP | 05 21 04.1 |
| " | 24 | UPP iP | 23 18 42.2 | | | Southern Sumatera, Indonesia (h = N). | |
| | | iSKS | 23 29 20 | " | 26 | UPP iP | 06 25 15.1 |
| | | | micr sec | | | South of Panama (h = 10 km). | |
| | | | Mx Z 8.9 20 | " | 26 | UPP iPKP1 | 19 41 00.5 |
| | | | KIR Mx 24 06 | | | Southern East Pacific Rise | |
| | | | micr sec | | | (h = 10 km). | |
| | | | Mx Z 2.5 15 | " | 26 | UPP Mx | 20 53 |
| | | Halmahera, Indonesia (h = N). | | | | | micr sec |
| | | M = 6.0 (UPP,KIR). | | | | Mx | Z 2.0 17 |
| " | 25 | UPP eP | 01 30 10 | | | KIR | Mx 20 46 |
| | | Afghanistan (h = N). | | | | | micr sec |
| | | | | | | Mx | Z 1.9 18 |
| | | | | | | | Southern east Pacific Rise |
| | | | | | | | (h = 10 km). |
| | | | | | | | M = 5.9 (UPP,KIR). |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| | | | | | | | | | | | |
|------|----|-----|--------|--------------|--|------|----|-----|--------|-------------------------------------|--|
| 1997 | | | | | | 1997 | 29 | UPP | iP | 21 32 55.2 | |
| June | 27 | UPP | iP | 01 35 33.7 | | | | | | Bonin Islands region (h = 450 km). | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| " | 27 | UPP | iP | 04 46 47.1 D | | " | 30 | UPP | iSg1 | 00 40 56.2 | |
| | | | iS | 04 52 01 | | | | UME | iSg1 | 00 40 57.9 | |
| | | | | micr sec | | | | | | Off cost of Hälsingland, Sweden, | |
| | | | P | Z' 0.9 2.5 | | | | | | 62.0°N, 17.7°E. | |
| | | KIR | iP | 04 47 22.3 D | | | | | | Origin time = 00 39 52. | |
| | | | i | 04 47 27.1 | | | | | | $M_L(\text{UPP}) = 1.9$ 1. | |
| | | | | micr sec | | | | | | By combination with Finnish station | |
| | | | P | Z' 1.4 2.8 | | " | 30 | UPP | iP | 07 45 53.0 | |
| | | | i | Z' 0.4 1.2 | | | | | | | |
| | | | | | | " | 30 | UPP | iPKP1 | 12 46 21.6 | |
| | | | | | | | | | | South of Kermadec Islands (h = N). | |
| " | 27 | UPP | Mx | 05 00 | | " | 30 | UPP | iPdiff | 16 01 26.9 | |
| | | | | micr sec | | | | | | Hawaii (h = 8 km). | |
| | | | Mx | Z 4.5 17 | | | | | | | |
| | | KIR | Mx | 05 01 | | " | 30 | UPP | Mx | 19 48 | |
| | | | | micr sec | | | | | | micr sec | |
| | | | Mx | Z 6.1 18 | | | | | Mx | Z 2.5 26 | |
| | | | | | | | | KIR | Mx | 19 49 | |
| | | | | | | | | | | micr sec | |
| " | 27 | KIR | iPn | 05 18 57.7 | | | | | Mx | Z 2.3 25 | |
| | | UME | iPn | 05 19 45.9 | | | | | | | |
| | | | | | | | | | | Peru-Ecuador border region (h = N). | |
| | | | | | | | | | | $M = 5.5$ (UPP,KIR). | |
| " | 27 | UPP | iP | 16 05 28.2 C | | " | 30 | UPP | iP | 21 53 59.3 | |
| | | | | micr sec | | | | | | Turkey (h = 125 km). | |
| | | | P | Z' 0.1 0.8 | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| " | 29 | UPP | iP | 03 39 10.8 | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| " | 29 | UPP | iPKP | 04 09 59.9 | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| " | 29 | UPP | iP | 07 18 58.8 | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| " | 29 | UPP | iP | 17 44 39.7 | | | | | | | |
| | | | | | | | | | | | |
| " | 29 | UPP | iPdiff | 20 16 58.5 | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| " | 29 | UPP | iP | 20 37 52.8 | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

February 18, 1999

Conny Holmqvist
Ota Kulhánek

SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, UMEÅ, UDDEHOLM

DELARY and MYRVIKEN

| | | | | |
|----------|-------|------------|------------|-----------|
| Uppsala | (UPP) | 59°51.5'N, | 17°37.6'E; | h = 14 m |
| Kiruna | (KIR) | 67°50.4'N, | 20°25.0'E; | h = 390 m |
| Umeå | (UME) | 63°48.9'N, | 20°14.2'E; | h = 16 m |
| Uddeholm | (UDD) | 60°05.4'N, | 13°36.4'E; | h = 240 m |
| Delary | (DEL) | 56°28.2'N, | 13°52.2'E; | h = 150 m |
| Myrviken | (MYV) | 62°56.5'N, | 14°20.8'E; | h = 345 m |

JULY 1 - 31, 1997

| 1997 | | | | | 1997 | | | | |
|------|---|-------------------------------------|-------|--------------|------|---|--------------------------------------|------|------------|
| July | 1 | UPP | iP | 03 51 06.4 C | July | 4 | UPP | iPKP | 10 12 52.8 |
| | | | | micr sec | | | | | micr sec |
| | | | P | Z' 0.3 0.8 | | | | Mx | Z 1.0 19 |
| | | KIR | iP | 03 50 21.5 C | | | KIR | Mx | 11 07 |
| | | | | micr sec | | | | | micr sec |
| | | | P | Z' 0.3 1.0 | | | | Mx | Z 1.5 18 |
| | | Hokkaido, Japan region (h = 70 km). | | | | | Southwestern Atlantic Ocean | | |
| | | m = 6.3 (UPP,KIR). | | | | | (h = 10 km). | | |
| | | | | | | | M = 5.6 (UPP,KIR). | | |
| " | 1 | UPP | iP | 09 18 47.1 | " | 4 | UPP | iP | 11 14 59.8 |
| | | Ryukyu Islands (h = 180 km). | | | | | | | micr sec |
| " | 1 | UPP | iP | 14 07 10.5 | | | | P | Z' 0.1 0.8 |
| | | | | | | | Andreanof Islands, Aleutain Is. | | |
| " | 1 | UPP | iP | 18 36 32.0 | | | (h = N). | | |
| | | Philippine Islands region (h = N). | | | " | 4 | UPP | iP | 12 54 10.4 |
| " | 2 | UPP | iPKP1 | 07 19 24.5 | | | Kenai Peninsula, Alaska (h = 40 km). | | |
| | | South of Kermadec Islands (h = N). | | | " | 4 | UPP | iP | 18 49 22.5 |
| " | 2 | UPP | iP | 14 22 35.7 | | | | | micr sec |
| | | | | | | | | P | Z' 0.1 0.9 |
| " | 2 | UPP | iP | 18 39 06.5 | | | Taiwan (h = N). | | |
| | | Near east coast of Honshu (h = N). | | | " | 4 | UPP | iP | 23 43 32.5 |
| " | 3 | UPP | iP | 13 13 17.8 | | | Bonin Islands region (h = 40 km). | | |
| " | 3 | UPP | iP | 16 21 29.1 C | " | 5 | UPP | iP | 00 30 28.3 |
| | | Andreanof Islands, Aleutian Is. | | | | | Kuril Islands (h = 60 km). | | |
| | | (h = N). | | | " | 5 | UPP | iP | 20 23 07.1 |
| | | | | | | | Ionian Sea (h = N). | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|---|---|------------|------|---|--------------------------------------|--------------|
| July | 5 | UPP i(PKP) | 23 39 46.2 | July | 7 | UPP iP | 11 31 34.8 |
| | | South of Fiji Islands (h = 590 km). | | | | Northern Sumatera (h = 25 km). | |
| " | 6 | UPP iP | 02 01 29.0 | " | 7 | UPP iP | 11 37 06.2 |
| | | E. Russia - N.E. China border reg. (h = 540 km). | | | | iS | 11 47 26 |
| | | | | | | | micr sec |
| " | 6 | UPP iPKP2 | 06 57 17.6 | | | Mx Z | 3.7 24 |
| | | North of New Zealand (h = 600 km). | | | | KIR Mx | 12 20 |
| | | | | | | | micr sec |
| " | 6 | UPP ePdiff | 10 08 56 | | | Mx Z | 3.1 17 |
| | | iPP | 10 13 45.1 | | | Northern Sumatera (h = 30 km). | |
| | | iSKS | 10 19 28 | | | M = 5.7 (UPP,KIR). | |
| | | | micr sec | " | 7 | UPP ipP | 12 23 07.6 |
| | | Mx Z | 23 17 | | | Northern Sumatera (h = 25 km). | |
| | | KIR Mx | 11 06 | " | 7 | UPP iP | 13 36 39.7 |
| | | | micr sec | | | Off coast of Oregon (h = 10 km). | |
| | | Mx Z | 8.6 17 | " | 7 | UPP iP | 18 59 08.9 |
| | | Near coast of central Chile (h = 20 km). | | " | 7 | UPP iP | 21 46 47.5 |
| | | M = 6.6 (UPP,KIR). | | | | Greenland Sea (h = 10 km). | |
| " | 6 | UPP iP | 12 30 06.6 | " | 8 | UPP iP | 02 36 41.4 |
| | | Bonin Islands region (h = 40 km). | | | | i | 02 36 42.6 |
| " | 6 | UPP iP | 20 25 10.3 | | | iS | 02 47 04 |
| | | iS | 20 36 27 | | | | micr sec |
| | | Off east coast of Honshu (h = N). | | | | i | Z' 0.2 1.1 |
| " | 6 | UPP iP | 20 26 03.6 | | | Mx Z | 3.8 24 |
| | | i | 20 26 08.5 | | | KIR iP | 02 36 10.4 |
| | | iS | 20 36 27 | | | | micr sec |
| | | | micr sec | | | P | Z' 1.1 1.5 |
| | | i | Z' 0.5 1.5 | | | Mx Z | 3.3 20 |
| | | Mx Z | 2.0 21 | | | Volcano Islands region (h = N). | |
| | | KIR i | 20 25 59.2 | | | m = 6.5, M = 5.6 (UPP,KIR). | |
| | | | micr sec | " | 8 | UPP iP | 02 52 49.4 |
| | | i | Z' 0.7 1.8 | | | Volcano Islands region (h = N). | |
| | | Mx Z | 2.1 16 | " | 8 | UPP iP | 08 18 23.0 |
| | | Caribbean Sea (h = N). | | | | Southern Italy (h = 10 km). | |
| | | m = 6.4, M = 5.5 (UPP,KIR). | | " | 8 | UPP iP | 11 14 49.3 C |
| " | 7 | UPP Mx | 24 28 | | | | micr sec |
| | | | micr sec | | | P | Z' 0.1 0.6 |
| | | Mx Z | 1.0 18 | | | KIR iP | 11 14 16.3 C |
| | | KIR Mx | 24 23 | | | | micr sec |
| | | | micr sec | | | P | Z' 0.2 0.6 |
| | | Mx Z | 1.3 19 | | | South of Honshu, Japan (h = 430 km). | |
| | | Near coast of central Chile (h = N). | | | | m = 5.8 (UPP,KIR). | |
| | | M = 5.5 (UPP,KIR). | | | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå; UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | | | | | |
|------|----|---|----|--------------|------|----|-----|---|--|---|------------|
| July | 8 | UPP | iP | 12 22 12.4 | July | 10 | UPP | iP | 08 31 55.8 | | |
| | | | iS | 12 31 09 | | | | | micr sec | | |
| | | | | micr sec | | | | P | Z' 0.3 1.4 | | |
| | | | P | Z' 0.1 1.0 | | | | Taiwan region (h = N). | | | |
| | | | Mx | Z 2.7 18 | | | | | | | |
| | | KIR | Mx | 12 55 | " | 10 | UPP | iP | 14 09 49.6 | | |
| | | | | micr sec | | | | | Eastern Xizang-India border reg. | | |
| | | | Mx | Z 2.4 17 | | | | | (h = N). | | |
| | | Andreanof Islands, Aleutian Is. (h = N). M = 5.4 (UPP,KIR). | | | | | " | 10 | UPP | iP | 23 35 20.4 |
| " | 8 | UPP | iP | 16 38 17.7 | | | | | | Andreanof Islands, Aleutian Is. (h = N). | |
| | | Taiwan region (h = N). | | | " | 11 | UPP | iP | 10 07 41.7 | Java Sea (h = 570 km). | |
| " | 9 | UPP | iP | 09 47 35.5 C | " | 11 | UPP | iP | 15 05 15.3 | | |
| | | | | micr sec | | | | i | 15 05 49.3 | | |
| | | | P | Z' 0.1 1.0 | | | | | micr sec | | |
| | | Near s. coast of Honshu, Japan (h = 60 km). | | | | | | P | Z' 0.2 0.7 | | |
| " | 9 | UPP | iP | 14 53 07.9 | | | KIR | iP | 15 05 09.8 | | |
| | | | | micr sec | | | | | micr sec | | |
| | | | P | Z' 0.1 1.0 | | | | P | Z' 0.3 1.2 | | |
| | | | Mx | Z 2.1 13 | | | | Myanmar (h = 140 km). m = 6.1 (UPP,KIR). | | | |
| | | KIR | Mx | 15 03 | " | 11 | UPP | iP | 15 43 27.9 | | |
| | | | | micr sec | | | | | Kuril Islands (h = 160 km). | | |
| | | | Mx | Z 1.9 15 | " | 13 | UPP | iP | 01 13 19.0 | | |
| | | Northern Mid-Atlantic Ridge (h = 10 km). M = 4.8 (UPP,KIR). | | | | | | | Kuril Islands (h = N). | | |
| " | 9 | UPP | iP | 19 36 05.1 | " | 13 | UPP | iP | 01 51 15.2 | | |
| | | | i | 19 36 09.3 | | | | | Pakistan (h = N). | | |
| | | | iS | 19 45 46 | " | 13 | UPP | iP | 02 02 55.5 | | |
| | | | | micr sec | | | | | Pakistan (h = N). | | |
| | | | P | Z' 0.1 1.0 | " | 13 | UPP | iP | 19 48 34.2 | | |
| | | | i | Z' 0.2 1.0 | | | | | Qinghai, China (h = N). | | |
| | | | Mx | Z 44 24 | " | 14 | UPP | iP | 09 53 01.0 | | |
| | | KIR | iP | 19 36 11.1 | | | | i | 09 53 04.7 | | |
| | | | i | 19 36 14.4 | | | | | Qinghai, China (h = 15 km). | | |
| | | | | micr sec | " | 14 | UPP | iP | 11 51 32.7 | | |
| | | | i | Z' 0.2 1.1 | | | | | | | |
| | | | Mx | Z 26 21 | | | | | | | |
| | | Near coast of Venezuela (h = 20 km). m = 6.1, M = 6.6 (UPP,KIR). | | | " | 14 | UPP | iP | 12 56 52.5 | | |
| " | 10 | UPP | iP | 03 53 35.0 | " | 14 | UPP | iP | 12 56 52.5 | | |
| | | Mindanao, Philippine Islands (h = 50 km). | | | | | | | Hindu Kush region, Afghanistan (h = 90 km). | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå; UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | | | |
|------|----|-----|--------|-------------------------------------|------|----|-----|--------|-------------------------------------|
| July | 19 | UPP | iPKP | 16 29 39.5 | July | 22 | UPP | i(PKP) | 10 35 32.1 |
| | | | i | 16 29 46.8 | | | | | Solomon Islands (h = 50 km). |
| | | | | Loyalty Islands region (h = N). | | | | | |
| " | 19 | UPP | eP | 17 13 09 | " | 22 | UPP | iP | 15 19 11.4 |
| | | | | Off east coast of Honshu, Japan | | | | | Near Islands, Aleutian Islands |
| | | | | (h = N). | | | | | (h = N). |
| " | 19 | UPP | iPKP2 | 23 15 08.1 | " | 22 | UPP | iP | 16 25 43.2 |
| | | | | Kermadec Islands, New Zealand | | | | | micr sec |
| | | | | (h = N). | | | | Mx | Z 1.2 15 |
| | | | | | | | | | Iceland region (h = 10 km). |
| " | 20 | UPP | iP | 00 41 17.8 C | " | 22 | UPP | iP | 19 21 27.3 |
| | | | | micr sec | | | | | micr sec |
| | | | P | Z' 0.2 1.2 | | | | P | Z' 0.1 1.0 |
| | | | Mx | Z 6.1 18 | | | KIR | iP | 19 22 03.3 |
| | | KIR | iP | 00 40 25.1 C | | | | | micr sec |
| | | | | micr sec | | | | P | Z' 0.2 1.1 |
| | | | P | Z' 0.3 1.1 | | | | | Central Mid- Atlantic Ridge |
| | | | | Fox Islands, Aleutian Islands | | | | | (h = 10 km). |
| | | | | (h = 15 km). | | | | | m = 6.1 (UPP,KIR). |
| | | | | m = 6.3 (UPP,KIR). | " | 22 | UPP | iP | 22 15 37.4 |
| " | 20 | UPP | iP | 01 06 23.0 | | | | | Hokkaido, Japan region (h = 70 km). |
| | | | | Fox Islands, Aleutian Islands | " | 22 | UPP | iP | 23 06 04.5 |
| | | | | (h = 10 km). | | | | | Philippine Islands region (h = N). |
| " | 20 | UPP | iP | 03 43 27.0 | " | 23 | UPP | iP | 03 37 02.0 |
| | | | | Albania (h = N). | | | | | Minahassa Peninsula, Sulawesi |
| " | 20 | UPP | iP | 03 48 10.2 | | | | | (h = 140 km). |
| | | | | Albania (h = N). | " | 23 | UPP | iP | 14 16 58.1 |
| " | 20 | UPP | iP | 09 28 50.7 | | | | | Northern Peru (h = 30 km). |
| | | | | Albania (h = N). | " | 23 | UPP | iP | 19 17 58.4 |
| " | 21 | UPP | iPKP | 01 12 27.6 | | | | | Southwestern Ryukyu Islands |
| | | | | South of Fiji Islands (h = 500 km). | | | | | (h = 50 km). |
| " | 21 | UPP | iP | 10 57 32.6 | " | 24 | UPP | i(PKP) | 03 28 55.4 |
| | | | | Philippine Islands region | | | | i | 03 29 06.6 |
| | | | | (h = 55 km). | | | | | South of Tonga Islands (h = N). |
| " | 22 | UPP | i(PKP) | 08 51 36.2 | " | 24 | UPP | iP | 10 05 53.1 |
| | | | | Fiji Islands region (h = 120 km). | | | | | Bonin Islands region (h = 480 km). |
| " | 22 | UPP | iP | 10 16 12.5 | " | 24 | UPP | iP | 10 11 50.3 |
| | | | | South of Honshu, Japan | | | | | South of Honshu, Japan (h = 30 km). |
| | | | | (h = 400 km). | | | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | | | |
|------|----|-----|--------|--------------------------------------|------|----|-----|-----|--------------------------------------|
| July | 24 | UPP | Mx | 21 05 | July | 26 | UPP | iP | 15 05 36.8 |
| | | | | micr sec | | | | | Southern Greece (h = N). |
| | | | Mx | Z 1.6 17 | | | | | |
| | | KIR | Mx | 21 01 | " | 26 | UPP | iP | 16 44 01.6 C |
| | | | | micr sec | | | | | Hindu Kush region, Afghanistan |
| | | | Mx | Z 1.4 20 | | | | | (h = 230 km). |
| | | | | Off coast of central Chile (h = N). | | | | | |
| | | | | M = 5.6 (UPP,KIR). | " | 26 | UPP | iP | 18 56 20.8 |
| " | 24 | UPP | iP | 21 16 08.4 | | | | | Mariana Islands (h = 90 km). |
| | | | | Xizang (h = N). | " | 27 | UPP | iP | 02 06 51.0 |
| " | 24 | UPP | ipP | 23 30 04.1 | | | | | Southern Iran (h = N). |
| | | | | Myanmar-India border region | " | 27 | UPP | Mx | 06 31 |
| | | | | (h = 90 km). | | | | | micr sec |
| " | 24 | UPP | i(PKP) | 23 49 55.8 | | | KIR | Mx | Z 3.4 18 |
| | | | | South of Fiji Islands (h = 100 km). | | | | | 06 27 |
| " | 25 | UPP | iP | 02 47 06.1 | | | | | micr sec |
| | | | | North Atlantic Ocean (h = 10 km). | | | | | Mx Z 3.0 19 |
| " | 25 | UPP | Mx | 07 53 | | | | | Near coast of central Chile (h = N). |
| | | | | micr sec | | | | | M = 5.9 (UPP,KIR). |
| | | | Mx | Z 2.6 19 | " | 27 | UPP | iP | 07 06 03.0 D |
| | | KIR | Mx | 07 52 | | | | | Bonin Islands region (h = 340 km). |
| | | | | micr sec | " | 27 | UPP | iP | 10 13 12.4 D |
| | | | Mx | Z 2.1 19 | | | | | iS 10 17 31 |
| | | | | Near coast of central Chile (h = N). | | | | | micr sec |
| | | | | M = 5.8 (UPP,KIR). | | | | | P Z' 0.2 1.0 |
| " | 25 | UPP | Mx | 08 57 | | | | | Mx Z 2.2 15 |
| | | | | micr sec | | | KIR | iP | 10 14 20.5 D |
| | | | Mx | Z 5.0 17 | | | | | micr sec |
| | | KIR | Mx | 08 55 | | | | | P Z' 0.3 1.0 |
| | | | | micr sec | | | | | Mx Z 3.0 15 |
| | | | Mx | Z 2.1 17 | | | | | Central Mediterranean Sea (h = N). |
| | | | | Near coast of central Chile (h = N). | " | 27 | UPP | ipP | 18 43 05.7 |
| | | | | M = 6.0 (UPP,KIR). | | | | | Yellow Sea (h = 10 km). |
| " | 25 | UPP | iP | 12 39 08.1 | " | 27 | UPP | iP | 23 41 16.2 |
| | | | | Greece (h = 40 km). | | | | | i 23 44 22.6 |
| " | 25 | UPP | iP | 15 16 06.0 | | | | | Southern Iran (h = N). |
| | | | | Andreanof Islands, Aleutian Islands | " | 28 | UPP | iP | 06 59 37.2 |
| | | | | (h = N). | | | | | micr sec |
| " | 26 | UPP | iPKP | 09 12 20.6 | | | | | P Z' 0.1 1.3 |
| | | | | South of Fiji Islands (h = 550 km). | | | | | Mx Z 3.4 21 |

(cont.)

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| | | | | | | | | | |
|------|----|-------------------------------------|-------|--------------|------|----|-----------------------------------|--------|-----------------|
| 1997 | | | | | 1997 | | | | |
| July | 28 | (cont.) | | | July | 31 | UPP | iPdiff | 22 08 33.6 C |
| | | KIR | iP | 06 59 05.5 | | | | | micr sec |
| | | | | micr sec | | | | Pdiff | Z' 0.1 0.9 |
| | | | P | Z' 0.6 1.6 | | | KIR | iP | 22 08 17.1 C |
| | | | Mx | Z 3.0 19 | | | | | micr sec |
| | | Volcano Islands region (h = N). | | | | | | P | Z' 0.2 0.9 |
| | | m = 6.1, M = 5.6 (UPP,KIR). | | | | | Banda Sea (h = 60 km). | | |
| | | m = 6.9 (UPP,KIR). | | | | | | | |
| " | 28 | UPP | iPKP | 16 04 23.5 | " | 31 | UPP | iP | 22 32 07.1 |
| | | South of Fiji Islands (h = 300 km). | | | | | Bonin Islands region (h = 60 km). | | |
| " | 28 | UPP | iPKP | 20 16 21.6 | | | | | |
| | | South of Fiji Islands (h = 200 km). | | | | | | | |
| " | 29 | UPP | iP | 02 08 22.4 | | | | | March 3, 1999 |
| | | South of Honshu (h = 60 km). | | | | | | | Conny Holmqvist |
| " | 29 | UPP | ipP | 18 09 00.0 | | | | | Ota Kulhánek |
| | | Northern India (h = N). | | | | | | | |
| " | 30 | UPP | ePn | 03 45 07.6 | | | | | |
| | | Poland (h = 5 km). | | | | | | | |
| " | 30 | UPP | iP | 07 29 24.7 | | | | | |
| " | 31 | UPP | iPKP1 | 02 27 58.4 | | | | | |
| | | | iPKP2 | 02 28 03.1 | | | | | |
| | | Kermadec Islands region | | | | | | | |
| | | (h = 550 km). | | | | | | | |
| " | 31 | UPP | iP | 16 09 59.5 C | | | | | |
| | | | | micr sec | | | | | |
| | | | P | Z' 0.2 0.9 | | | | | |
| | | KIR | iP | 16 09 58.9 C | | | | | |
| | | | | micr sec | | | | | |
| | | | P | Z' 0.1 1.0 | | | | | |
| | | Myanmar-India border region | | | | | | | |
| | | (h = N). | | | | | | | |
| | | m = 6.1 (UPP,KIR). | | | | | | | |
| " | 31 | UPP | ipP | 16 20 42.4 | | | | | |
| | | Eastern Arabian peninsula | | | | | | | |
| | | (h = 10 km). | | | | | | | |
| " | 31 | UPP | iP | 20 19 19.8 | | | | | |
| | | Myanmar-India border region | | | | | | | |
| | | (h = N). | | | | | | | |

DEPARTMENT OF EARTH SCIENCES
 SEISMOLOGY
 VILLAVAEGEN 16
 S-752 36 UPPSALA
 SWEDEN

UPPSALA UNIVERSITET
 Inst för geovetenskaper
 Seismologi
 Villavägen 16
 752 36 UPPSALA

SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, UMEÅ, UDDEHOLM

DELARY and MYRVIKEN

| | | | | |
|----------|-------|------------|------------|-----------|
| Uppsala | (UPP) | 59°51.5'N, | 17°37.6'E; | h = 14 m |
| Kiruna | (KIR) | 67°50.4'N, | 20°25.0'E; | h = 390 m |
| Umeå | (UME) | 63°48.9'N, | 20°14.2'E; | h = 16 m |
| Uddeholm | (UDD) | 60°05.4'N, | 13°36.4'E; | h = 240 m |
| Delary | (DEL) | 56°28.2'N, | 13°52.2'E; | h = 150 m |
| Myrviken | (MYV) | 62°56.5'N, | 14°20.8'E; | h = 345 m |

AUGUST 1 - 31, 1997

| 1997 | | | | | 1997 | | | | |
|------|---|---|-------|------------|------|---|--|-------|------------|
| Aug. | 1 | UPP | iPKP1 | 07 39 08.1 | Aug. | 4 | (cont.) | | |
| | | | iPKP2 | 07 39 15.8 | | | KIR | Mx | 20 05 |
| | | Kermadec Islands region (h = 550 km). | | | | | | | micr sec |
| | | | | | | | | Mx | Z 3.7 21 |
| " | 1 | UPP | iP | 15 34 35.1 | | | Tonga Islands (h = N). M = 6.0 (UPP,KIR). | | |
| | | Sunda strait (h = 150 km). | | | " | 4 | UPP | iPKP1 | 23 00 43.7 |
| " | 2 | UPP | iP | 01 56 08.0 | | | | i | 23 00 55.4 |
| | | Greece (h = 25 km). | | | | | Off e. coast of N. Island, N.Z. (h = 100 km). | | |
| " | 3 | UPP | iP | 03 44 23.4 | " | 5 | UPP | iPKP2 | 01 42 23.3 |
| | | | | micr sec | | | South of Kermadec Islands (h = N). | | |
| | | Mx | Z | 0.7 11 | " | 5 | UPP | iP | 02 57 54.1 |
| | | KIR | Mx | 04 00 | | | | i | 02 58 03.1 |
| | | | | micr sec | | | Northern Mid-Atlantic ridge (h = 10 km). | | |
| | | Mx | Z | 0.6 9 | | | | | |
| | | Ionian Sea (h = 40 km). M = 4.4 (UPP,KIR). | | | " | 6 | UPP | iP | 15 07 37.6 |
| " | 4 | UPP | ipP | 13 11 29.7 | | | | ipP | 15 08 22.6 |
| | | Taiwan (h = N). | | | | | | i | 15 09 58.4 |
| " | 4 | UPP | iP | 17 29 32.1 | | | | iS | 15 13 38 |
| | | | | i | | | | | micr sec |
| | | Kuril Islands (h = N). | | | | | | P | Z' 0.1 0.8 |
| " | 4 | UPP | Mx | 20 10 | | | KIR | iP | 15 07 44.8 |
| | | | | micr sec | | | | ipP | 15 08 26.5 |
| | | Mx | Z | 3.5 20 | | | | | micr sec |
| | | (cont.) | | | | | | P | Z' 0.3 1.1 |
| | | | | | | | (cont.) | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|----|--|--|------|----|-----------|--|
| Aug. | 6 | (cont.) Hindu Kush region. h = 210 km (UPP,KIR). m = 5.6 (UPP,KIR). | | Aug. | 10 | UPP iP | 14 41 42.3 East of Kuril Islands (h = N). |
| " | 8 | UPP epP | 02 44 34 Turkey (h = 10 km). | " | 10 | UPP iP | 22 49 04.6 Kuril Islands (h = 80 km). |
| " | 8 | UPP iP | 20 46 15.6 Near s. coast of Honshu, Japan (h = 70 km). | " | 11 | UPP iP | 05 33 30.1 Mariana Islands (h = 160 km). |
| " | 8 | UPP Mx | 23 41 micr sec Mx Z 14 24 KIR Mx | " | 12 | UPP iPKP | 01 39 45.5 South of Fiji Islands (h = 600 km). |
| " | 8 | KIR Mx | 23 39 micr sec Mx Z 5.2 21 Fiji Islands region (h = 10 km). M = 6.3 (UPP,KIR). | " | 12 | UPP iSg1 | 08 16 13.0 |
| " | 9 | UPP iP | 04 58 02.7 Xizang (h = N). | " | 12 | KIR iSg1 | 08 19 36.7 |
| " | 9 | UPP iP | 14 38 04.5 Mindoro, Philippine Islands (h = 110 km). | " | 12 | MYV iPn | 08 15 40.0 |
| " | 10 | UPP iP | 05 29 16.6 Cyprus region (h = 80 km). | " | 12 | iPg1 | 08 15 50.0 |
| " | 10 | UPP iPKP | 09 39 07.6 | " | 12 | iSg1 | 08 16 52.0 Southern Norway, 59.8 °N, 6.6°E. Origin time = 08 14 24. M _L (UPP) = 3.3 (0.17) 2. Felt. By combination with Finnish and Norwegian station readings. |
| " | 10 | iSKS | 09 45 45 micr sec Mx Z 4.4 26 KIR Mx | " | 12 | UPP iPKP2 | 08 39 22.9 Kermadec Islands region (h = 200 km). |
| " | 10 | KIR Mx | 10 32 micr sec Mx Z 3.8 19 Western Australia (h = 10 km). M = 5.9 (UPP,KIR). | " | 12 | UPP iPKP1 | 20 29 12.7 iPKP2 20 29 21.4 South of Kermadec Islands (h = 60 km). |
| " | 10 | UPP iP | 14 26 21.2 Mindanao, Philippine Islands (h = 60 km). | " | 12 | UPP iPKP2 | 20 33 02.6 South of Kermadec Islands (h = 60 km). |
| " | 10 | UPP iP | 14 26 28.8 Kuril Islands (h = N). | " | 12 | UPP iP | 23 09 26.3 |
| " | 10 | UPP iP | 14 28 33.3 i 14 28 36.7 East of Kuril Islands (h = N). | " | 13 | UPP iP | 00 08 40.9 Hindu Kush region (h = 100 km). |
| | | | | " | 13 | UPP iP | 04 56 53.3 C i 04 56 54.1 iS 05 06 32 micr sec P Z' 0.1 0.8 i Z' 1.1 1.0 Mx Z 4.8 15 |

(cont.)

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | | 1997 | | | | |
|------|----|--|-------|--|------|----|--|-------|---|
| Aug. | 13 | (cont.) KIR | iP | 04 56 26.6 C micr sec | Aug. | 15 | UPP | iP | 21 28 12.8 Greece-Albania border region (h = N). |
| | | | P | Z' 0.8 1.2 | " | 16 | UPP | iSg1 | 09 02 13.1 |
| | | | Mx | Z 4.3 16 | | | MYV | iSg1 | 09 03 13.0 |
| | | Southwestern Ryukyu Islands (h = 55 km). m = 6.7, M = 5.8 (UPP,KIR). | | | | | Västmanland, Sweden, 59.4°N, 14.8°E. Origin time = 09 01 24. M _L (UPP) = 2.0 1. By combination with Finnish and Norwegian station readings. | | |
| " | 13 | UPP | iP | 08 24 05.0 Sichuan, China (h = 35 km). | " | 16 | UPP | iP | 13 23 47.9 Hokkaido, Japan region (h = 50 km). |
| " | 13 | UPP | iP | 14 37 54.8 micr sec | " | 17 | UPP | iP | 06 12 26.7 Northern Molucca Sea (h = 80 km). |
| | | | Mx | Z 1.5 14 | " | 17 | UPP | iP | 06 50 21.2 Southern Iran (h = N). |
| | | KIR | Mx | 14 54 micr sec | " | 17 | UPP | iP | 08 18 22.2 Jawa, Indonesia (h = 110 km). |
| | | | Mx | Z 2.5 14 | " | 17 | UPP | iP | 11 08 05.0 Crete (h = N). |
| | | Kyrgyzstan-Xinjiang border reg. (h = N). M = 5.1 (UPP,KIR). | | | " | 17 | UPP | iPKP1 | 12 41 03.6 Kermadec Islands region (h = N). |
| " | 14 | UPP | iPKP2 | 05 54 32.2 Kermadec Islands, New Zealand (h = 350 km). | " | 17 | UPP | Mx | 21 30 micr sec |
| " | 15 | UPP | iP | 05 45 33.9 Northern Iran (h = N). | " | 17 | UPP | Mx | Z 2.6 19 |
| " | 15 | UPP | iP | 06 23 01.4 micr sec | " | 17 | KIR | Mx | 21 29 micr sec |
| | | | P | Z' 0.1 1.0 | | | | Mx | Z 2.1 19 |
| | | KIR | iP | 06 22 17.0 micr sec | | | Vanuatu Islands (h = 25 km). M = 5.8 (UPP,KIR). | | |
| | | | P | Z' 0.1 1.0 | " | 17 | UPP | iP | 23 15 29.5 |
| | | Hokkaido, Japan region (h = N). m = 5.9 (UPP,KIR). | | | | | | i | 23 15 41.7 |
| " | 15 | UPP | iS | 08 04 32 micr sec | " | 18 | UPP | Mx | 13 37 micr sec |
| | | | Mx | Z 3.4 21 | | | | Mx | Z 1.1 17 |
| | | KIR | Mx | 08 39 micr sec | | | KIR | Mx | 13 46 micr sec |
| | | | Mx | Z 3.1 21 | | | | Mx | Z 1.3 19 |
| | | Central east Pacific Rise (h = 10 km). M = 5.8 (UPP,KIR). | | | | | Off coast of central Chile (h = N). M = 5.5 (UPP,KIR). | | |
| " | 15 | UPP | iP | 16 19 40.3 Near east coast of Honshu, Japan (h = 40 km). | | | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|----|--|------------|------|----|--|------------|
| Aug. | 19 | UPP iP | 08 43 45.5 | Aug. | 22 | UPP iP | 03 22 16.7 |
| | | South of Honshu, Japan (h = 310 km). | | | | Greece (h = N). | |
| " | 19 | UPP iP | 11 46 38.3 | " | 22 | UPP iP | 08 22 48.2 |
| | | Mindanao, Philippine Islands (h = 70 km). | | | | Eastern Honshu, Japan (h = 80 km). | |
| " | 19 | UPP iP | 15 09 14.7 | " | 22 | UPP iPKP1 | 10 19 19.4 |
| | | Hindu Kush region, Afganistan (h = 100 km). | | | | Kermadec Islands region (h = 400 km). | |
| " | 20 | UPP iP | 05 22 32.2 | " | 23 | UPP iP | 07 28 23.9 |
| | | Hokkaido, Japan region (h = 140 km). | | | | Near east coast of Kamchatka (h = 80 km). | |
| " | 20 | UPP iP | 07 27 27.9 | " | 23 | UPP iP | 08 03 40.7 |
| | | iS | 07 37 28 | | | Kuril Islands (h = 70 km). | |
| | | | micr sec | " | 24 | UPP iP | 01 12 20.8 |
| | | P | Z' 0.1 1.0 | | | El Salvador (h = 140 km). | |
| | | Mx | Z 11 19 | " | 24 | UPP Mx | 03 17 |
| | | KIR iP | 07 27 26.2 | | | | micr sec |
| | | | micr sec | | | Mx | Z 1.5 13 |
| | | P | Z' 0.2 1.1 | | | KIR Mx | 03 14 |
| | | Mx | Z 4.8 17 | | | | micr sec |
| | | Northern Sumatera, Indonesia (h = N). m = 5.9, M = 6.0 (UPP,KIR). | | | | Mx | Z 1.6 11 |
| " | 20 | UPP Mx | 14 56 | " | 24 | UPP iP | 11 54 19.4 |
| | | | micr sec | | | Northwestern Iran (h = 10 km). | |
| | | Mx | Z 4.0 21 | " | 24 | UPP iP | 12 29 35.6 |
| | | KIR Mx | 15 01 | | | Taiwan region (h = N). | |
| | | | micr sec | " | 24 | UPP iP | 13 23 33.3 |
| | | Mx | Z 5.1 19 | | | | micr sec |
| | | Mid-Indian Ridge (h = 10 km). M = 6.0 (UPP,KIR). | | | | Mx | Z 7.9 12 |
| " | 21 | UPP iP | 19 19 58.7 | | | KIR Mx | 13 47 |
| | | Western Iran (h = N). | | | | | micr sec |
| " | 21 | KIR eSn | 22 38 59 | | | Mx | Z 5.7 20 |
| | | MYV iPn | 22 37 17.0 | | | Pakistan (h = N). M = 5.6 (UPP,KIR). | |
| | | iSn | 22 38 07.0 | " | 24 | UPP iP | 19 10 31.5 |
| | | Norwegian Sea, 64.9°N, 5.3°E. Origin time = 22 36 08. By combination with Finnish and Norwegian station readings. | | | | | micr sec |
| | | | | | | Mx | Z 2.4 13 |
| " | 22 | UPP iP | 02 58 36.2 | " | 24 | UPP iP | 21 18 47.5 |
| | | Talaud Islands, Indonesia (h = 150 km). | | | | Southern Iran (h = N). | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå; UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | | | |
|------|----|-----|--------|-------------------------------------|------|----|-----|----|---------------------------------------|
| Aug. | 25 | UPP | iP | 07 09 39.0 | Aug. | 28 | UPP | iP | 11 15 46.1 |
| | | | | Taiwan region (h = N). | | | | iS | 11 20 18 |
| | | | | | | | | | micr sec |
| " | 25 | UPP | i(PKP) | 12 17 32.4 | | | | P | Z' 0.2 1.4 |
| | | | | Fiji Islands region (h = 390 km). | | | | Mx | Z 2.3 19 |
| | | | | | | | KIR | iP | 11 15 45.4 |
| " | 25 | UPP | iP | 21 36 54.6 | | | | | micr sec |
| | | | | Southern Sumatera, Indonesia | | | | P | Z' 0.1 1.6 |
| | | | | (h = N). | | | | Mx | Z 1.4 12 |
| | | | | | | | | | North Atlantic Ocean (h = 10 km). |
| " | 26 | UPP | iP | 03 04 00.7 | | | | | m = 5.4, M = 4.7 (UPP,KIR). |
| | | | | Off east coast of Kamchatka | " | 29 | UPP | Mx | 08 11 |
| | | | | (h = N). | | | | | micr sec |
| " | 26 | UPP | iP | 08 55 01.9 | | | | Mx | Z 11 20 |
| | | | | South Atlantic ocean (h = 10 km). | | | KIR | Mx | 08 05 |
| | | | | | | | | | micr sec |
| " | 26 | UPP | iPKP1 | 09 18 17.0 | | | | Mx | Z 11 22 |
| | | | | South of Kermadec Islands (h = N). | | | | | Tonga Islands (h = N). |
| | | | | | | | | | M = 6.5 (UPP,KIR). |
| " | 26 | UPP | iPKP1 | 15 40 31.7 D | " | 29 | UPP | Mx | 09 21 |
| | | | | South of Fiji Islands (h = 610 km). | | | | | micr sec |
| " | 27 | UPP | iPKP1 | 11 07 23.6 | | | | Mx | Z 32 19 |
| | | | | Kermadec Islands region | | | KIR | Mx | 09 19 |
| | | | | (h = 260 km). | | | | | micr sec |
| " | 27 | UPP | Mx | 14 51 | | | | Mx | Z 14 17 |
| | | | | micr sec | | | | | Near n. coast of New Guinea, P.N.G. |
| | | | | Mx Z 2.0 19 | | | | | (h = 25 km). |
| | | KIR | Mx | 14 51 | | | | | M = 6.7 (UPP,KIR). |
| | | | | micr sec | " | 29 | UPP | iP | 19 35 15.5 |
| | | | | Mx Z 2.4 20 | | | | | Mindanao, Philippine Islands (h = N). |
| | | | | New Britain region, P.N.G. (h = N). | " | 30 | UPP | iP | 03 41 52.5 |
| | | | | M = 5.7 (UPP,KIR). | | | | | Mariana Islands (h = N). |
| " | 27 | UPP | iP | 18 57 05.6 | " | 30 | UPP | iP | 03 47 25.9 |
| | | | | Azores Islands (h = 10 km). | | | | | Off east coast of Honshu, Japan |
| " | 28 | UPP | iPn | 06 03 17.1 | | | | | (h = 25 km). |
| | | | iSn | 06 03 44.8 | " | 30 | UPP | iP | 05 04 54.4 |
| | | | iSg1 | 06 03 53.5 | | | | | micr sec |
| | | MYV | iPg1 | 06 03 34.2 | | | | P | Z' 0.1 0.8 |
| | | | iSg1 | 06 04 19.2 | | | | | Near southeast coast of Russia |
| | | | | Värmland, Sweden, 59.6°N, 13.2°E. | | | | | (h = 350 km). |
| | | | | Origin time = 06 02 38. | " | 30 | UPP | iP | 05 57 06.9 |
| | | | | $M_L(UPP) = 3.2$ | | | | | Ionian Sea (h = N). |
| | | | | Felt. | | | | | |
| | | | | By combination with Finnish and | | | | | |
| | | | | Norwegian station readings. | | | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1997

Aug. 30 UPP iP 07 23 44.5
Kuril Islands (h = N).

" 31 UPP iPKP1 11 19 37.1
iPKP2 11 19 41.5
Kermadec Islands, New Zealand
(h = 55 km).

March 30, 1999

Conny Holmqvist
Ota Kulhánek

SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, UMEÅ, UDDEHOLM

DELARY and MYRVIKEN

| | | | | |
|----------|-------|------------|------------|-----------|
| Uppsala | (UPP) | 59°51.5'N, | 17°37.6'E; | h = 14 m |
| Kiruna | (KIR) | 67°50.4'N, | 20°25.0'E; | h = 390 m |
| Umeå | (UME) | 63°48.9'N, | 20°14.2'E; | h = 16 m |
| Uddeholm | (UDD) | 60°05.4'N, | 13°36.4'E; | h = 240 m |
| Delary | (DEL) | 56°28.2'N, | 13°52.2'E; | h = 150 m |
| Myrviken | (MYV) | 62°56.5'N, | 14°20.8'E; | h = 345 m |

SEPTEMBER 1 - 30, 1997

| | | | | | | | | | |
|------|---|-----|-----|---|------|---|-----|------|-------------------------------------|
| 1997 | | | | | 1997 | | | | |
| Sep. | 1 | UPP | iP | 03 48 32.9 | Sep. | 2 | UPP | iP | 00 30 51.6 |
| | | | | Kyushu, Japan (h = N). | | | | | micr sec |
| " | 1 | UPP | iP | 07 51 24.7 | | | | P | Z' 0.1 1.0 |
| | | | | Andreanof Islands, Aleutian Is. (h = N). | | | | | Hokkaido, Japan region (h = 55 km). |
| " | 1 | UPP | iP | 12 47 19.6 | " | 2 | UPP | iP | 00 50 57.6 |
| | | | iS | 12 56 09 | | | | | Bonin Islands region (h = 480 km). |
| | | | | micr sec | | | | | |
| | | | Mx | Z 2.6 21 | | | | | |
| | | KIR | Mx | 13 23 | | | | | |
| | | | | micr sec | | | | | |
| | | | Mx | Z 3.0 19 | | | | | |
| | | | | North of Ascension Island (h = 10 km). M = 5.5 (UPP,KIR). | | | | | |
| " | 1 | UPP | iP | 14 17 24.6 | " | 2 | UPP | iP | 12 25 53.5 |
| | | | | Near east coast of Kamchatka (h = N). | | | | i | 12 25 55.0 |
| | | | | | | | | ipP | 12 26 43.5 |
| " | 1 | UPP | ipP | 23 10 14.8 | | | | iSKS | 12 36 20 |
| | | | | micr sec | | | | | micr sec |
| | | | Mx | Z 3.0 30 | | | | i | Z' 1.3 1.0 |
| | | KIR | Mx | 23 43 | | | | Mx | Z 13 21 |
| | | | | micr sec | | | | KIR | iP 12 25 54.4 |
| | | | Mx | Z 1.9 20 | | | | i | 12 25 56.4 |
| | | | | North of Ascension Island (h = 10 km). M = 5.3 (UPP,KIR). | | | | ipP | 12 26 47.2 |
| | | | | | | | | | micr sec |
| | | | | | | | | i | Z' 1.5 1.2 |

(cont.)

UPP = Uppsala, KIR = Kiruna, UME = Umeå; UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|---|--------------------------------------|--------------|------|----|--------------------------------|-----------------------------------|
| Sep. | | (cont.) | | Sep. | | (cont.) | |
| | 2 | | Mx Z 5.2 21 | | 5 | | Mx Z 2.1 19 |
| | | Colombia. | | | | East of Kuril Islands (h = N). | |
| | | h = 210 km (UPP,KIR). | | | | m = 6.0, M = 5.4 (UPP,KIR). | |
| | | m = 6.8, M = 6.1 (UPP,KIR). | | | | | |
| | | M uncorrected for focal depth. | | " | 6 | UPP iP | 09 07 28.6 |
| " | 2 | UPP iP | 13 22 10.6 | | | Bay of Campeche (h = N). | |
| | | Kyushu, Japan (h = 55 km). | | " | 7 | UPP iP | 10 23 36.1 C |
| " | 3 | UPP Mx | 07 57 | | | i | 10 23 41.2 |
| | | | micr sec | | | iPP | 10 25 32.8 |
| | | Mx Z 3.2 17 | | | | P | Z' 0.2 1.4 |
| | | KIR Mx | 07 58 | | | i | Z' 0.5 1.7 |
| | | | micr sec | | | Mx | Z 4.9 19 |
| | | Mx Z 1.7 19 | | | | KIR iP | 10 23 52.9 C |
| | | Pacific-Antarctic Ridge (h = 10 km). | | | | | micr sec |
| | | M = 6.0 (UPP,KIR). | | | | P | Z' 0.4 1.6 |
| " | 3 | UPP iP | 22 11 28.3 | | | Mx | Z 3.1 18 |
| | | Central Italy (h = 10 km). | | | | | Pakistan (h = N). |
| " | 3 | UPP iP | 23 29 29.3 | | | | m = 6.1, M = 5.3 (UPP,KIR). |
| | | Southern Italy (h = 10 km). | | " | 7 | UPP iPKP | 13 15 02.5 |
| " | 4 | UPP iPKP | 04 42 02.2 | | | | Solomon Islands (h = 420 km). |
| | | | micr sec | " | 7 | UPP iP | 14 44 24.9 |
| | | PKP Z' 3.8 0.8 | | | | | Mindoro, Philippine Islands |
| | | South of Fiji Islands (h = 630 km). | | | | | (h = 100 km). |
| " | 4 | UPP iPKP | 04 48 51.2 | " | 7 | UPP iP | 23 52 00.7 C |
| | | | micr sec | | | | micr sec |
| | | PKP Z' 0.4 1.1 | | | | P | Z' 0.1 0.9 |
| | | South of Fiji Islands (h = 600 km). | | | | | Near s. coast of Honshu, Japan |
| " | 4 | UPP iPKP | 05 59 04.9 | | | | (h = 100 km). |
| | | South of Fiji Islands (h = 600 km). | | " | 8 | UPP iPKP1 | 09 00 32.5 |
| " | 4 | UPP iPKP | 06 20 48.3 D | | | iPKP2 | 09 00 37.6 |
| | | | micr sec | | | | Kermadec Islands region |
| | | PKP 0.3 1.0 | | | | | (h = 350 km). |
| | | South of Fiji Islands (h = 630 km). | | " | 8 | UPP iP | 13 33 14.0 |
| " | 5 | UPP iP | 10 42 35.2 C | " | 8 | UPP iP | 14 22 06.6 |
| | | | micr sec | " | 9 | UPP iP | 08 24 13.2 |
| | | P Z' 0.1 0.7 | | | | | Southern Xinjiang, China (h = N). |
| | | Mx Z 2.6 19 | | " | 12 | UPP iP | 10 20 16.0 |
| | | KIR iP | 10 41 49.0 C | | | | Sakhalin Island (h = N). |
| | | | micr sec | | | | |
| | | P Z' 0.1 0.9 | | | | | |

(cont.)

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|----|---|------------|------|----|--|---------------------|
| Sep. | 14 | UPP iP | 10 01 15.8 | Sep. | 18 | UPP iP | 10 43 33.9 |
| | | Andranof Islands, Aleutian Is. (h = 55 km). | | | | Volcano Island Region (h = 200 km). | |
| " | 15 | UPP iPKP | 00 26 49.0 | " | 18 | UPP ipP | 14 39 09.4 |
| | | | | | | Kazakhstan-Xinjiang border reg. (h = N). | |
| " | 15 | UPP iPKP2 | 01 59 27.5 | " | 18 | UPP iPKP | 18 38 36.6 |
| | | Kermadec Islands region (h = 160 km). | | | | South Sandwich Islands (h = N). | |
| " | 15 | UPP iP | 13 18 49.0 | " | 18 | UPP ePKP | 23 22 09 |
| | | Mindanao, Philippine Islands (h = 50 km). | | | | Vanuatu Islands (h = 200 km). | |
| " | 16 | UPP iP | 13 31 21.6 | " | 19 | UPP iP | 02 13 02.6 |
| | | | | | | Sea of Okhotsk (h = 450 km). | |
| " | 16 | MYV iSg1 | 17 51 56.0 | " | 19 | UPP iP | 12 04 59.8 |
| | | Ångermanland, Sweden, 63.6°N, 17.8°E. Origin time = 17 51 07. By combination with Finnish station readings. | | | | micr sec Mx Z 0.1 0.9 | Greece (h = 10 km). |
| " | 17 | UPP iP | 15 04 05.7 | " | 20 | UPP iP | 07 20 52.2 |
| | | | micr sec | | | Vancouver Island region (h = 10 km). | |
| | | Mx | Z 7.3 26 | " | 20 | UPP ipP | 15 55 56.9 |
| | | KIR Mx | 15 47 | | | Iceland region (h = 10 km). | |
| | | | micr sec | " | 20 | UPP iPKP1 | 16 31 11.4 |
| | | Mx | Z 1.9 23 | | | iPKP2 | 16 31 13.6 |
| | | Northern Molucca Sea (h = N). M = 5.7 (UPP,KIR). | | | | micr sec | |
| " | 17 | UPP iP | 15 39 00.8 | | | Mx Z 34 23 | |
| | | i | 15 39 05.7 | | | KIR Mx | 17 30 |
| | | Philippine Islands region (h = N). | | | | micr sec | |
| | | | | | | Mx Z 31 23 | |
| " | 18 | UPP iPKP2 | 00 30 33.9 | | | Kermadec Islands region (h = 30 km). M = 7.0 (UPP,KIR). | |
| | | Kermadec Islands, New Zealand (h = 90 km). | | " | 20 | UPP iPKP | 16 54 17.7 |
| | | | | | | iPKP2 | 16 54 21.9 |
| | | | | | | Kermadec Islands region (h = 70 km). | |
| " | 18 | UPP iP | 03 57 07.8 | " | 20 | UPP iPKP1 | 18 30 35.6 C |
| | | Hokkaido, Japan region (h = 45 km). | | | | Kermadec Islands region (h = 70 km). | |
| " | 18 | UPP iP | 03 56 40.5 | " | 20 | UPP iP | 20 37 59.5 |
| | | Northern Iran (h = N). | | | | Near east coast of Honshu, Japan (h = 40 km). | |
| " | 18 | UPP iP | 09 29 31.4 | " | 21 | UPP iP | 03 18 26.4 |
| | | | micr sec | | | | |
| | | P | Z' 0.2 0.8 | | | | |
| | | Andranof Islands, Aleutian Is. (h = N). | | | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå; UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | | | |
|------|----|-----|------|--|------|----|-----|------|--------------------------------------|
| Sep. | 21 | UPP | iP | 03 37 09.6 | Sep. | 23 | UPP | iPKP | 20 18 46.8 |
| | | | | | | | | | South of Fiji Islands (h = 500 km). |
| | | | | | | | | | |
| " | 21 | UPP | ipP | 16 30 46.7 | " | 23 | UPP | iP | 20 50 06.2 |
| | | | | | | | | | Northern Sumatera (h = 230 km). |
| | | | | | | | | | |
| " | 21 | UPP | iP | 18 24 21.5 | " | 24 | UPP | iPKP | 11 12 35.2 |
| | | | i | 18 24 35.0 | | | | | Solomon Islands (h = 80 km). |
| | | | iS | 18 33 18 | | | | | |
| | | | | micr sec | " | 25 | UPP | iP | 01 36 33.5 |
| | | | i | Z' 0.3 1.5 | | | | | Andreanof Islands, Aleutian Is. |
| | | | Mx | Z 4.8 18 | | | | | (h = N). |
| | | KIR | Mx | 19 03 | " | 25 | UPP | iP | 05 03 09.6 |
| | | | | micr sec | | | | | Off east coast of Honshu, Japan |
| | | | Mx | Z 1.7 19 | | | | | (h = N). |
| | | | | Lake Tanganyika region (h = 10 km). | | | | | |
| | | | | M = 5.5 (UPP,KIR). | " | 25 | UPP | iP | 14 33 15.4 |
| " | 21 | UPP | iP | 22 14 02.8 | | | | i | 14 33 23.5 |
| | | | | micr sec | | | | iS | 14 43 34 |
| | | | P | Z' 0.1 1.0 | | | | | Mid-Indian ridge (h = 10 km). |
| | | | | Fox Islands, Aleutian Islands (h = N). | " | 25 | UPP | iPKP | 23 46 26.1 |
| " | 21 | UPP | iPKP | 22 27 56.1 | | | | | Kermadec Islands region (h = 40 km). |
| | | | | Kermadec Islands region | " | 26 | UPP | iP | 00 37 11.8 |
| | | | | (h = 150 km). | | | | i | 00 37 14.4 |
| | | | | | | | | iS | 00 40 20 |
| " | 22 | UPP | iP | 12 19 14.3 | | | | | micr sec |
| | | | iS | 12 29 50 | | | | i | Z' 0.3 1.0 |
| | | | | micr sec | | | | Mx | Z 24 15 |
| | | | Mx | Z 1.9 20 | | | | KIR | Mx |
| | | KIR | Mx | 12 56 | | | | | 00 49 |
| | | | | micr sec | | | | | micr sec |
| | | | Mx | Z 1.7 19 | | | | | Mx |
| | | | | Near coast of Chiapas, Mexico | | | | | Z 12 13 |
| | | | | (h = N). | | | | | Central Italy (h = 10 km). |
| | | | | M = 5.4 (UPP,KIR). | | | | | M = 5.5 (UPP,KIR). |
| " | 22 | UPP | iPKP | 15 30 12.3 | " | 26 | UPP | iP | 09 44 26.2 |
| | | | | South of Fiji Islands (h = 350 km). | | | | iS | 09 47 32 |
| | | | | | | | | | micr sec |
| | | | | | | | | P | Z' 0.5 0.8 |
| " | 23 | UPP | iP | 03 13 03.4 | | | | Mx | Z 54 11 |
| | | | | Northern Iran (h = N). | | | | KIR | Mx |
| | | | | | | | | | 09 56 |
| | | | | | | | | | micr sec |
| " | 23 | UPP | iP | 07 41 22.9 | | | | Mx | Z 32 10 |
| | | | | Andreanof Islands, Aleutian Is. | | | | | Central Italy (h = 10 km). |
| | | | | (h = 55 km). | | | | | M = 6.0 (UPP,KIR). |
| " | 23 | UPP | iPKP | 08 14 01.3 | " | 26 | UPP | iP | 16 02 13.4 |
| | | | | South of Fiji Islands (h = 140 km). | | | | | Banda Sea (h = 250 km). |

UPP = Uppsala, KIR = Kiruna, UME = Umeå; UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1997

| | | | | | |
|------|----|-----|-------|------------|---|
| Sep. | 26 | UPP | iP | 20 57 25.4 | Philippine Islands region (h = N). |
| " | 27 | UPP | iPKP1 | 07 42 34.6 | Kermadec Islands region (h = N). |
| " | 28 | UPP | iP | 01 52 07.9 | Sulawesi, Indonesia (h = N). M = 5.5 (UPP,KIR). |
| | | | | micr sec | |
| | | Mx | Z | 1.4 21 | |
| | | KIR | Mx | 02 39 | |
| | | | | micr sec | |
| | | Mx | Z | 2.8 20 | |
| " | 28 | UPP | iP | 14 42 48.7 | Myanmar-India border region (h = 130 km). |
| " | 28 | UPP | iP | 22 22 34.7 | Mindoro, Philippine Islands (h = N). |
| " | 29 | UPP | iPKP1 | 07 05 57.8 | Kermadec Islands region (h = N). |
| " | 29 | UPP | iP | 17 48 42.1 | Mariana Islands (h = 70 km). |
| | | | i | 17 48 49.3 | |
| " | 30 | UPP | iPKP1 | 04 46 12.8 | Kermadec Islands, New Zealand (h = N). |
| | | | iPKP2 | 04 46 16.8 | |
| " | 30 | UPP | iP | 06 39 22.8 | South of Honshu, Japan (h = 10 km). M = 6.3 (UPP,KIR). |
| | | | iS | 06 49 06 | |
| | | | | micr sec | |
| | | P | Z' | 0.1 1.3 | |
| | | Mx | Z | 20 20 | |
| | | KIR | Mx | 07 17 | |
| | | | | micr sec | |
| | | Mx | Z | 17 19 | |
| " | 30 | UPP | iP | 09 41 39.0 | Mariana Islands (h = 90 km). |
| " | 30 | UPP | eP | 20 34 20.0 | South of Honshu, Japan (h = 10 km). |

April 27, 1999

Conny Holmqvist
Ota Kulhánek

SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, UMEÅ, UDDEHOLM

DELARY and MYRVIKEN

| | | | | |
|----------|-------|------------|------------|-----------|
| Uppsala | (UPP) | 59°51.5'N, | 17°37.6'E; | h = 14 m |
| Kiruna | (KIR) | 67°50.4'N, | 20°25.0'E; | h = 390 m |
| Umeå | (UME) | 63°48.9'N, | 20°14.2'E; | h = 16 m |
| Uddeholm | (UDD) | 60°05.4'N, | 13°36.4'E; | h = 240 m |
| Delary | (DEL) | 56°28.2'N, | 13°52.2'E; | h = 150 m |
| Myrviken | (MYV) | 62°56.5'N, | 14°20.8'E; | h = 345 m |

OCTOBER 1 - 31, 1997

| 1997 | | | | | 1997 | | | | |
|------|---|-----|-------|-------------------------------------|------|---|-----|-------|------------------------------------|
| Oct. | 1 | UPP | iP | 06 15 32.7 | Oct. | 3 | UPP | iP | 08 59 21.5 |
| | | | i | 06 16 06.4 | | | | iS | 09 02 34 |
| | | | | micr sec | | | | | micr sec |
| | | | P | Z' 0.1 0.9 | | | | P | Z' 0.1 0.9 |
| | | | | Near southeast coast of Russia | | | | Mx | Z 6.0 13 |
| | | | | (h = 420 km). | | | KIR | Mx | 09 11 |
| | | | | | | | | | micr sec |
| " | 2 | UPP | iPKP2 | 02 12 53.7 | | | | Mx | Z 3.0 10 |
| | | | | Kermadec Islands region (h = N). | | | | | Central Italy (h = 10 km). |
| | | | | | | | | | M = 5.0 (UPP,KIR). |
| " | 2 | UPP | iPKP | 13 34 39.1 | " | 3 | UPP | iP | 11 36 19.7 |
| | | | | South of Fiji Islands (h = 600 km). | | | | | micr sec |
| " | 2 | UPP | iP | 19 41 58.7 | | | | Mx | Z 1.0 13 |
| | | | | Central Italy (h = 10 km). | | | KIR | Mx | 12 00 |
| | | | | | | | | | micr sec |
| " | 2 | UPP | ipP | 21 42 41.3 | | | | Mx | Z 1.6 15 |
| | | | | Central Italy (h = 10 km). | | | | | Southern Iran (h = N). |
| | | | | | | | | | M = 4.9 (UPP,KIR). |
| " | 3 | UPP | ePKP | 03 02 23 | " | 3 | UPP | iP | 13 22 13.5 |
| | | | i | 03 02 30.6 | | | | | Pakistan (h = 15 km). |
| | | | | West of Macquarie Island | | | | | |
| | | | | (h = 10 km). | | | | | |
| " | 3 | UPP | iP | 04 57 35.1 | " | 3 | UPP | iP | 17 08 41.6 |
| | | | | micr sec | | | | | Southern Iran (h = N). |
| | | | P | Z' 0.1 0.9 | " | 3 | UPP | iPKP1 | 18 34 50.1 |
| | | | | Hokkaido, Japan region (h = N). | | | | | South of Kermadec Islands (h = N). |
| | | | | | " | 3 | UPP | iP | 18 30 26.1 |
| | | | | | | | | | South of Aleutian Islands (h = N). |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|---|---|------------|------|---|---|------------|
| Oct. | 3 | UPP iP | 22 16 35.4 | Oct. | 6 | UPP iP | 00 00 39.8 |
| | | Andreanof Islands, Aleutian Is. (h = 60 km). | | | | Kuril Islands (h = 45 km). | |
| " | 4 | UPP iP | 01 48 52.1 | " | 6 | UPP eP | 00 22 05 |
| | | Near Islands, Aleutian Islands (h = N). | | | | Mariana Islands (h = 200 km). | |
| " | 4 | UPP iP | 11 09 15.8 | " | 6 | UPP iP | 03 21 08.6 |
| | | | micr sec | | | Philippine Islands region (h = 70 km). | |
| | | Mx | Z 2.3 17 | " | 6 | UPP iP | 12 42 55.8 |
| | | KIR Mx | 11 38 | | | iSKS | 12 53 14 |
| | | | micr sec | | | iS | 12 53 36 |
| | | Mx | Z 1.5 18 | | | | micr sec |
| | | Off coast of northern California (h = 5 km). M = 5.4 (UPP,KIR). | | | | P | Z' 0.1 0.9 |
| " | 4 | UPP iP | 15 44 58.1 | | | Mx | Z 2.9 21 |
| | | | micr sec | | | KIR Mx | 13 25 |
| | | Mx | Z 2.0 17 | | | | micr sec |
| | | KIR Mx | 16 03 | | | Mx | Z 2.0 13 |
| | | | micr sec | | | Mindanao, Philippine Islands (h = 100 km). M = 5.6 (UPP,KIR). | |
| | | Mx | Z 1.7 19 | " | 6 | UPP iP | 17 22 30.3 |
| | | Northern Mid-Atlantic ridge (h = 10 km). M = 5.3 (UPP,KIR). | | | | Andreanof Islands, Aleutian Is. (h = N). | |
| " | 4 | UPP ipP | 16 08 25.2 | " | 6 | UPP iPKP | 18 52 55.2 |
| | | Crete (h = 10 km). | | | | Tonga Islands region (h = N). | |
| " | 4 | UPP iP | 16 17 34.4 | " | 6 | UPP iPKP | 21 11 36.1 |
| | | Central Italy (h = 10 km). | | | | i | 21 11 44.1 |
| " | 4 | UPP iP | 20 37 03.3 | | | | micr sec |
| | | Ryukyu Islands (h = N). | | | | Mx | Z 3.4 21 |
| " | 5 | UPP iP | 03 39 54.7 | | | Solomon Islands (h = N). | |
| | | i | 03 40 22.4 | " | 6 | UPP eP | 21 16 29 |
| | | | micr sec | | | | micr sec |
| | | P | Z' 0.1 0.7 | | | Mx | Z 3.0 17 |
| | | Kuril Islands (h = 70 km). | | | | KIR iP | 21 14 53.4 |
| " | 5 | UPP iPKP | 18 22 56.4 | | | | micr sec |
| | | South Sandwich Islands region (h = 270 km). | | | | Mx | Z 2.2 13 |
| " | 5 | UPP iP | 19 12 54.9 | | | UME iP | 21 15 44.1 |
| | | Mindanao, Philippine Islands (h = 220 km). | | | | MYV iP | 21 15 45.0 |
| | | | | | | Greenland Sea (h = 10 km). M = 4.1 (UPP,KIR). | |
| " | 5 | UPP iP | 19 12 54.9 | " | 6 | UPP ePn | 21 32 44 |
| | | Mindanao, Philippine Islands (h = 220 km). | | | | Greenland Sea (h = 10 km). | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|----|--|--------------------------|------|----|---|--------------|
| Oct. | | (cont.) | | Oct. | | (cont.) | |
| | 10 | KIR Mx | 19 55 micr sec | | | | micr sec |
| | | Mx Z | 2.3 22 | | | | i Z' 0.4 1.4 |
| | | Solomon Islands (h = N). M = 5.8 (UPP,KIR). | | | | KIR Mx | 11 24 |
| | | | | | | | micr sec |
| " | 11 | UPP iP | 05 56 10.3 micr sec | | | Mx Z | 2.6 13 |
| | | P Z' | 0.1 1.1 | | | Central Italy (h = 10 km). M = 4.9 (UPP,KIR). | |
| | | Near s. coast of Honshu, Japan (h = 30 km). | | " | 13 | UPP ipP | 11 05 52.2 |
| | | | | | | Central Italy (h = 10 km). | |
| " | 11 | UPP iP | 09 56 47.7 micr sec | " | 13 | UPP iP | 13 13 25.4 |
| | | P Z' | 0.1 1.0 | | | Central Italy (h = 10 km). | |
| | | Near east coast of Honshu, Japan (h = 50 km). | | " | 13 | UPP iP | 13 44 47.2 |
| " | 11 | UPP iP | 16 05 29.3 micr sec | | | iS | 13 48 58 |
| | | P Z' | 0.3 1.5 | | | | micr sec |
| | | Off coast of Oregon (h = 10 km). | | | | P Z' | 1.5 0.9 |
| " | 11 | UPP iP | 18 35 54.4 micr sec | | | Mx Z | 230 19 |
| | | P Z' | 0.3 0.9 | | | KIR Mx | 14 00 |
| | | Taiwan region (h = 140 km). | | | | | micr sec |
| " | 11 | UPP iP | 19 03 26.9 micr sec | | | Mx Z | 64 16 |
| | | i | 19 03 37.7 | | | Southern Greece (h = 25 km). M = 6.5 (UPP,KIR). | |
| | | i | 19 06 05.1 | " | 13 | UPP iP | 16 20 44.6 |
| | | P Z' | 0.1 0.9 | | | Southern Greece (h = N). | |
| | | Romania (h = 120 km). | | " | 13 | UPP iP | 17 18 35.2 |
| " | 11 | UPP iP | 19 50 51.3 C micr sec | | | | micr sec |
| | | P Z' | 0.2 0.9 | " | 14 | UPP i(PKP) | 10 12 21.5 |
| | | Mx Z | 2.3 17 | | | (PKP) Z' | 1.5 0.9 |
| | | KIR Mx | 20 24 | | | Mx Z | 67 24 |
| | | | micr sec | | | KIR Mx | 11 08 |
| | | Mx Z | 1.1 15 | | | | micr sec |
| | | Hokkaido, Japan region (h = N). | | | | Mx Z | 31 20 |
| " | 12 | UPP iP | 11 12 37.9 micr sec | | | South of Fiji Islands (h = 170 km). M = 7.1 (UPP,KIR). | |
| | | i | 11 12 42.6 | | | M uncorrected for focal depth. | |
| | | i | 11 12 48.9 | " | 14 | UPP iP | 10 48 43.1 |
| | | iS | 11 15 50 | " | 14 | UPP iP | 10 50 13.3 |
| | | (cont.) | | | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|----|-----|--------|------------------------------------|------|----|--------------------------------------|
| Oct. | 14 | UPP | iP | 15 27 09.0 | Oct. | 15 | (cont.) |
| | | | i | 15 27 12.4 | | | KIR Mx 20 58 |
| | | | iS | 15 30 20 | | | micr sec |
| | | | | micr sec | | | Mx Z 1.1 10 |
| | | | i | Z' 0.3 1.0 | | | Kashmir-Xizang border region |
| | | | Mx | Z 23 12 | | | (h = N). |
| | | KIR | Mx | 15 39 | | | M = 5.0 (UPP,KIR). |
| | | | | micr sec | | | |
| | | | Mx | Z 10 13 | " | 16 | UPP iP 12 04 34.3 |
| | | | | Central Italy (h = 10 km). | | | |
| | | | | M = 5.5 (UPP,KIR). | " | 16 | UPP iP 12 51 53.0 |
| | | | | | | | South of Honshu, Japan (h = 410 km). |
| " | 14 | UPP | iP | 17 24 09.7 | | | |
| | | | | Luzon, Philippine Islands (h = N). | " | 16 | UPP iP 21 56 22.0 |
| " | 14 | UPP | i(PKP) | 18 05 53.3 | | | Andreanof Islands, Aleutian Is. |
| | | | | Fiji Islands region (h = 180 km). | | | (h = N). |
| " | 14 | UPP | iP | 18 25 27.8 | " | 17 | UPP iPKP 10 15 07.6 |
| | | | | Nicobar Islands, India (h = N). | | | i 10 15 22.4 |
| " | 14 | UPP | i(PKP) | 21 36 44.7 | | | i 10 15 38.6 |
| | | | | Fiji Islands region (h = 170 km). | | | micr sec |
| " | 15 | UPP | iPKP | 01 22 08 | | | Mx Z 4.7 26 |
| | | | iS | 01 30 56 | | | KIR Mx 11 30 |
| | | | | micr sec | | | micr sec |
| | | | Mx | Z 90 27 | | | Mx Z 2.6 23 |
| | | KIR | Mx | 02 11 | | | West of Macquarie Island |
| | | | | micr sec | | | (h = 10 km). |
| | | | Mx | Z 28 22 | | | M = 6.0 (UPP,KIR). |
| | | | | Near coast of central Chile | " | 17 | UPP i(PKP) 15 20 13.3 |
| | | | | (h = 60 km). | | | iSKP 15 23 03.6 |
| | | | | M = 7.0 (UPP,KIR). | | | Fiji Islands region (h = 580 km). |
| | | | | M uncorrected for focal depth. | " | 17 | UPP ipP 17 43 15.9 |
| " | 15 | UPP | iP | 02 24 23.9 | | | micr sec |
| | | | | Eastern Mediterranean Sea | | | Mx Z 2.5 11 |
| | | | | (h = 10 km). | | | KIR Mx 17 59 |
| " | 15 | UPP | iP | 03 22 09.4 | | | micr sec |
| | | | | Andreanof Islands, Aleutian Is. | | | Mx Z 1.6 11 |
| | | | | (h = 20 km). | | | Southern Xinjiang, China |
| | | | | | | | (h = 50 km). |
| | | | | | | | M = 5.2 (UPP,KIR). |
| " | 15 | UPP | iP | 05 19 46.9 | " | 18 | UPP iP 10 18 26.6 |
| | | | | Central Mediterranean Sea (h = N). | | | Sea of Okhotsk (h = 390 km). |
| " | 15 | UPP | iP | 20 39 22.0 | " | 19 | UPP iPKP1 11 15 31.2 |
| | | | | micr sec | | | Kermadec Islands region |
| | | | Mx | Z 0.9 10 | | | (h = 300 km). |
| | | | | (cont.) | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | | | |
|------|----|-----|------|---|------|----|-----|-------|--|
| Oct. | 19 | UPP | iP | 14 38 29.2 C | Oct. | 22 | UPP | iP | 10 06 26.4 |
| | | | | micr sec | | | | i | 10 06 52.7 |
| | | | P | Z' 0.1 0.8 | | | | | micr sec |
| | | | | Hindu Kush region (h = 210 km). | | | | P | Z' 0.1 0.9 |
| " | 19 | UPP | iPKP | 16 13 03.5 | " | 22 | UPP | iP | 11 28 20.5 |
| | | | | Tonga Islands (h = N). | | | | | Taiwan region (h = N). |
| " | 19 | UPP | iPn | 19 52 27.4 | " | 22 | UPP | iPKP1 | 19 46 42.6 |
| | | | iSg1 | 19 54 00.0 | | | | | South of Fiji Islands (h = 350 km). |
| | | UME | iPg1 | 19 51 29.0 | " | 23 | UPP | iP | 12 39 01.1 |
| | | | iSg1 | 19 51 52.5 | | | | | micr sec |
| | | MYV | iPn | 19 52 06.8 | | | | P | Z' 0.3 1.4 |
| | | | iPg1 | 19 52 13.4 | | | | | Yunnan, China (h = N). |
| | | | iSg1 | 19 53 09.4 | " | 23 | UPP | iP | 14 30 16.7 C |
| | | | | Off coast of Norrbotten, Sweden, 65.4°N, 22.4°E. | " | 24 | UPP | iP | 08 46 34.0 |
| | | | | Origin time = 19 50 58. | | | | i | 08 46 36.8 |
| | | | | $M_L(\text{UPP}) = 3.5 (0.22) 2.$ | | | | | Alabama (h = 10 km). |
| | | | | Felt. | " | 24 | UPP | iP | 11 58 54.5 |
| | | | | By combination with Finnish station readings. | | | | | Southeastern Siberia, Russia (h = 10 km). |
| " | 19 | UPP | iP | 23 10 46.3 | " | 24 | UPP | iP | 12 16 06.9 |
| | | | | Kuril Islands (h = 100 km). | | | | | Nepal (h = N). |
| " | 20 | UPP | iPKP | 05 34 09.8 | " | 24 | UPP | iP | 12 27 44.1 |
| | | | | micr sec | | | | | Southeastern Siberia, Russia (h = 10 km). |
| | | | PKP | Z' 0.2 0.9 | " | 24 | UPP | iP | 13 01 29.9 |
| | | | | South of Fiji Islands (h = N). | | | | | East of Lake Baykal, Russia (h = N). |
| " | 20 | UPP | iP | 06 16 46.4 C | " | 26 | UPP | iP | 08 56 43.5 |
| | | | i | 06 16 55.9 | | | | i | 08 56 49.1 |
| | | | | micr sec | | | | | Philippine Islands region (h = N). |
| | | | P | Z' 0.1 1.0 | " | 26 | UPP | iP | 19 17 44.7 |
| | | | | Southern Iran (h = N). | | | | | Eastern Honshu, Japan (h = 130 km). |
| " | 20 | UPP | iP | 10 14 28.7 | " | 27 | UPP | iP | 03 59 12.2 |
| | | | | Southern Iran (h = N). | " | 27 | UPP | iPKP1 | 09 52 42.5 C |
| " | 21 | UPP | iP | 18 02 27.3 | | | | | micr sec |
| | | | | Greece (h = 15 km). | | | | PKP1 | Z' 0.1 1.1 |
| " | 22 | UPP | iP | 03 54 47.8 | | | | | Kermadec Islands, New Zealand (h = N). |
| | | | | Mindanao, Philippine Islands (h = 140 km). | | | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1997

| | | | | |
|------|----|--------------------------------------|-------|--------------|
| Oct. | 28 | UPP | iP | 06 28 31.8 D |
| | | | iSKS | 06 38 42 |
| | | | | micr sec |
| | | | P | Z' 1.2 1.3 |
| | | | Mx | Z 44 25 |
| | | KIR | Mx | 07 04 |
| | | | | micr sec |
| | | | Mx | Z 7.1 23 |
| | | Northern Peru (h = 110 km). | | |
| | | M = 6.4 (UPP,KIR). | | |
| | | M uncorrected for focal depth. | | |
| " | 28 | UPP | iP | 11 53 06.6 |
| | | Gaspé Peninsula, Canada | | |
| | | (h = 10 km). | | |
| " | 29 | UPP | iP | 02 52 13.4 |
| | | Caribbean Sea (h = 10 km). | | |
| " | 29 | UPP | iP | 05 09 11.2 |
| | | Sunda Strait (h = 45 km). | | |
| " | 29 | UPP | iP | 16 17 16.2 |
| | | Kuril Islands (h = 200 km). | | |
| " | 30 | UPP | iP | 02 12 28.5 C |
| | | | | micr sec |
| | | | P | Z' 0.1 0.7 |
| | | Xizang (h = N). | | |
| " | 30 | UPP | iP | 06 41 50.3 C |
| | | Andaman Islands, India (h = 55 km). | | |
| " | 30 | UPP | iP | 13 41 59.6 |
| | | Off east coast of Kamchatka (h = N). | | |
| " | 31 | UPP | iPKP | 12 48 33.8 |
| | | Vanuatu Islands (h = 180 km). | | |
| " | 31 | UPP | iP | 13 11 56.9 |
| | | Southwestern Ryukyu Islands | | |
| | | (h = 50 km). | | |
| " | 31 | UPP | iP | 17 23 16.6 |
| | | | | micr sec |
| | | | P | Z' 0.2 1.2 |
| | | Hindu Kush region (h = 100 km). | | |
| " | 31 | UPP | iPKP2 | 23 13 10.8 |
| | | North Island, New Zealand | | |
| | | (h = 130 km). | | |

November 5, 1999

Conny Holmqvist
Ota Kulhánek

SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, UMEÅ, UDDEHOLM

DELARY and MYRVIKEN

| | | | | |
|----------|-------|------------|------------|-----------|
| Uppsala | (UPP) | 59°51.5'N, | 17°37.6'E; | h = 14 m |
| Kiruna | (KIR) | 67°50.4'N, | 20°25.0'E; | h = 390 m |
| Umeå | (UME) | 63°48.9'N, | 20°14.2'E; | h = 16 m |
| Uddeholm | (UDD) | 60°05.4'N, | 13°36.4'E; | h = 240 m |
| Delary | (DEL) | 56°28.2'N, | 13°52.2'E; | h = 150 m |
| Myrviken | (MYV) | 62°56.5'N, | 14°20.8'E; | h = 345 m |

NOVEMBER 1 - 30, 1997

| 1997 | | | | | 1997 | | | | |
|------|---|-----|-------|---|------|---|-----|--------|--|
| Nov. | 1 | UPP | iP | 03 53 56.1 C micr sec P Z' 0.1 0.8 | Nov. | 3 | UPP | iP | 05 58 47.2 micr sec P Z' 0.1 1.0 |
| | | | | Hindu Kush region, Afghanistan (h = 210 km). | " | 3 | UPP | iP | 08 13 33.3 Turkey (h = N). |
| " | 1 | UPP | iPKP | 19 29 50.8 | " | 3 | UPP | iP | 09 35 55.2 |
| | | | iPKP1 | 19 29 54.6 | | | | | Southwestern Ryukyu Islands (h = 120 km). |
| | | | | Kermadec Islands region (h = 350 km). | " | 3 | UPP | iPKP1 | 10 10 13.8 |
| " | 2 | UPP | iP | 06 37 37.2 | | | | | Kermadec Islands, New Zealand (h = N). |
| | | | | Southern Greece (h = 35 km). | " | 3 | UPP | i(PKP) | 19 36 06.1 |
| " | 2 | UPP | iPKP | 12 58 19.1 | | | | | micr sec |
| | | | PKP | Z' 0.1 0.9 | | | Mx | Z | 4.0 15 |
| | | | | Kermadec Islands region (h = 400 km). | | | KIR | Mx | 20 26 |
| " | 3 | UPP | iP | 02 39 16.5 | | | | | micr sec |
| | | | | micr sec | | | Mx | Z | 2.6 19 |
| | | | P | Z' 0.2 1.3 | | | | | Near coast of central Chile (h = 45 km). |
| | | | Mx | Z 3.0 12 | | | | | M = 6.0 (UPP,KIR). |
| | | KIR | Mx | 03 04 | " | 3 | UPP | iP | 23 51 49.0 |
| | | | | micr sec | | | | | Sunda Strait (h = 50 km). |
| | | | Mx | Z 2.6 13 | " | 5 | UPP | iP | 10 10 47.5 |
| | | | | Xizang (h = N). | | | | | Maldiv Islands region (h = 10 km). |
| | | | | M = 5.5 (UPP,KIR). | | | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|---|--|---|------|---|--|--|
| Nov. | 5 | UPP i | iP 10 20 42.2 10 20 48.3 | Nov. | 6 | UPP iP | 17 41 37.5 Nicaragua (h = 120 km). |
| | | | Maldive Islands region (h = 10 km). | | | | |
| " | 5 | UPP iP | 10 32 47.3 Greece (h = 10 km). | " | 6 | UPP iP | 11 59 12.2 Southeastern Siberia (h = N). |
| " | 5 | UPP iS P Mx KIR iP P Mx | 12 28 17.0 12 32 46 micr sec Z' 0.2 1.3 Z 4.2 15 12 29 28.8 micr sec Z' 0.4 1.8 Z 3.3 13 Crete (h = N). m = 5.8, M = 5.1 (UPP,KIR). | " | 6 | UPP iP | 22 56 46.2 Kuril Islands (h = 110 km). |
| " | 5 | UPP iP | 20 15 22.7 C micr sec P Z' 0.1 0.8 Hokkaido, Japan region (h = 120 km). | " | 7 | UPP iP i | 04 35 21.7 04 35 31.9 South of Alaska (h = 40 km). |
| " | 5 | UPP iS P Mx KIR iP P Mx | 21 15 15.7 C 21 19 11 micr sec Z' 0.3 1.0 Z 29 11 21 16 31.8 C micr sec Z' 0.3 1.5 Z 6.6 13 Greece (h = 25 km). m = 5.7, M = 5.6 (UPP,KIR). | " | 7 | UPP iPKP iPKP1 | 17 16 46.8 17 16 56.0 Off e. coast of N. Island, N.Z. (h = 200 km). |
| " | 5 | UPP iP | 23 57 47.2 24 07 58 micr sec P Z' 0.1 1.0 Mx Z 7.2 16 24 35 micr sec Mx Z 5.9 19 Bonin Islands region (h = 10 km). M = 6.0 (UPP,KIR). | " | 7 | UPP iPKP2 | 22 50 21.3 North Island, New Zealand (h = N). |
| " | 5 | UPP iS P Mx KIR iP P Mx | 21 15 15.7 C 21 19 11 micr sec Z' 0.3 1.0 Z 29 11 21 16 31.8 C micr sec Z' 0.3 1.5 Z 6.6 13 Greece (h = 25 km). m = 5.7, M = 5.6 (UPP,KIR). | " | 8 | UPP iP i iPP iS | 09 14 48.8 Eastern Xizang-India border reg. (h = 60 km). |
| " | 5 | UPP iP iS P Mx KIR Mx | 23 57 47.2 24 07 58 micr sec Z' 0.1 1.0 Z 7.2 16 24 35 micr sec Mx Z 5.9 19 Bonin Islands region (h = 10 km). M = 6.0 (UPP,KIR). | " | 8 | UPP iP i iS P Z' i Z' KIR iP i i Z' Mx Z | 10 11 47.5 10 11 50.7 10 13 50 10 19 00 micr sec Z' 0.1 1.0 Z' 0.6 0.8 10 11 39.8 10 11 41.4 micr sec Z' 0.5 1.1 Z 11 29 Xizang (h = N). m = 6.5 (UPP,KIR). |
| " | 5 | UPP iP iS P Mx KIR Mx | 23 57 47.2 24 07 58 micr sec Z' 0.1 1.0 Z 7.2 16 24 35 micr sec Mx Z 5.9 19 Bonin Islands region (h = 10 km). M = 6.0 (UPP,KIR). | " | 8 | UPP iP | 10 20 33.4 Xizang (h = N). |
| " | 6 | UPP iP | 02 43 28.5 Southern Quebec, Canada (h = 20 km). | " | 8 | UPP iP | 12 01 22.5 Xizang (h = N). |
| " | 6 | UPP iP | 02 43 28.5 Southern Quebec, Canada (h = 20 km). | " | 8 | UPP iP | 12 24 05.9 |
| " | 6 | UPP iP | 02 43 28.5 Southern Quebec, Canada (h = 20 km). | " | 8 | UPP iP | 12 25 25.8 Kuril Islands (h = N). |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|----|---|------------|------|----|---------|--|
| Nov. | 8 | UPP iP | 18 40 29.4 | Nov. | 10 | (cont.) | |
| | | Xizang (h = N). | | | | KIR iP | 23 17 58.5 |
| | | | | | | | micr sec |
| " | 9 | UPP iP | 00 34 02.9 | | | P | Z' 1.3 1.6 |
| | | | micr sec | | | Mx | Z 2.7 17 |
| | | P | Z' 0.1 0.9 | | | | South of Honshu, Japan (h = 90 km). |
| | | Xizang (h = N). | | | | | m = 6.4, M = 5.6 (UPP,KIR). |
| | | | | | | | M uncorrected for focal depth. |
| " | 9 | UPP iP | 04 27 51.3 | " | 11 | UPP iP | 03 54 57.8 |
| | | Xizang (h = N). | | | | | South of Honshu, Japan (h = 80 km). |
| " | 9 | UPP iP | 04 43 08.8 | " | 11 | UPP iP | 10 21 12.0 |
| | | Arabian Sea (h = 20 km). | | | | | Bonin Islands region (h = N). |
| " | 9 | UPP iP | 05 32 45.0 | " | 11 | UPP iP | 17 44 06.1 |
| | | Caspian Sea (h = 70 km). | | | | | South of Honshu, Japan (h = 80 km). |
| " | 9 | UPP iP | 19 11 19.0 | " | 11 | UPP iP | 17 55 55.4 |
| | | Andreanof Islands, Aleutian Is. (h = N). | | | | | Sunda Strait (h = N). |
| " | 9 | UPP iP | 22 32 35.0 | " | 11 | UPP iP | 20 10 45.5 D |
| | | North Atlantic Ocean (h = 10 km). | | | | | micr sec |
| " | 9 | UPP iP | 23 09 05.4 | | | P | Z' 0.1 0.8 |
| | | iSKS | 23 19 12 | | | | Kuril Islands (h = 80 km). |
| | | iS | 23 19 22 | " | 11 | UPP iP | 22 31 39.1 |
| | | | micr sec | | | | Xizang (h = N). |
| | | Mx | Z 2.6 19 | " | 12 | UPP iP | 00 21 27.4 |
| | | KIR Mx | 23 42 | | | | micr sec |
| | | | micr sec | | | P | Z' 0.1 1.0 |
| | | Mx | Z 1.7 17 | | | | Taiwan region (h = 90 km). |
| | | El Salvador (h = 180 km). | | " | 12 | UPP iP | 16 31 36.8 C |
| | | M = 5.5 (UPP,KIR). | | | | i | 16 31 40.2 |
| | | M uncorrected for focal depth. | | | | iS | 16 35 26 |
| " | 10 | UPP iP | 01 18 43 | | | | micr sec |
| | | Xizang (h = N). | | | | P | Z' 0.2 0.8 |
| " | 10 | UPP iP | 12 58 16.2 | | | Mx | Z 1.5 11 |
| | | North of Ascension Island (h = 10 km). | | | | KIR Mx | 16 46 |
| | | | | | | | micr sec |
| " | 10 | UPP iP | 23 18 33.3 | | | Mx | Z 1.6 11 |
| | | iPP | 23 21 29.4 | | | | Greece-Albania border region (h = 30 km). |
| | | iS | 23 28 16 | | | | M = 4.7 (UPP,KIR). |
| | | | micr sec | | | | |
| | | P | Z' 0.5 1.0 | | | | |
| | | Mx | Z 3.9 22 | | | | |

(cont.)

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|----|-----|----|--|------|----|---|
| Nov. | 12 | UPP | iP | 22 13 24.6 | Nov. | 14 | (cont.) Aegean Sea (h = 20 km). m = 6.4, M = 5.9 (UPP,KIR). |
| | | | | micr sec | | | |
| | | | P | Z' 0.1 1.0 | | | |
| | | | | Eastern Sea of Japan (h = 280 km). | | | |
| " | 13 | UPP | iP | 00 52 41.5 | " | 14 | UPP iP 22 32 56.9 Xizang (h = N). |
| | | | | Northwestern Balkan region (h = 10 km). | | | |
| " | 13 | UPP | iP | 10 07 27.6 | " | 14 | UPP iP 23 02 24.1 Hokkaido, Japan region (h = 130 km). |
| | | | | Xizang (h = N). | | | |
| " | 13 | UPP | iP | 10 08 40.8 | " | 15 | UPP iP 04 53 58.6 Near east coast of Honshu (h = 80 km). |
| | | | | Bonin Islands region (h = N). | | | |
| " | 13 | UPP | iP | 18 07 51.8 | " | 15 | UPP iP 06 12 11.2 California-Nevada border region (h = 5 km). |
| | | | | South of Honshu, Japan (h = 120 km). | | | |
| " | 13 | UPP | Mx | 23 06 | " | 15 | UPP iP 07 15 59.2 C iS 07 24 42 |
| | | | | micr sec | | | micr sec |
| | | | Mx | Z 1.7 13 | | | P Z' 0.5 0.7 |
| | | KIR | Mx | 23 05 | | | KIR iP 07 14 14.1 C |
| | | | | micr sec | | | micr sec |
| | | | Mx | Z 1.4 15 | | | P Z' 1.7 0.5 |
| | | | | Xizang (h = N). M = 5.1 (UPP,KIR). | | | Hokkaido, Japan region (h = 160 km). m = 6.8 (UPP,KIR). |
| " | 14 | UPP | iP | 10 29 20.6 | " | 15 | UPP iP 13 20 30.3 South of Honshu, Japan (h = 410 km). |
| | | | | micr sec | | | |
| | | | Mx | Z 1.8 17 | | | |
| | | | | Central Mid-Atlantic ridge (h = 10 km). | " | 15 | UPP iPKP 19 18 19.3 i 19 18 56.4 iSKP1 19 21 33.7 i 19 21 43.5 |
| " | 14 | UPP | iP | 10 39 55.9 | | | micr sec |
| | | | | Bonin Islands region (h = N). | | | PKP Z' 0.3 13 |
| " | 14 | UPP | iP | 15 48 10.2 | | | Mx Z 40 24 |
| | | | | Kuril Islands (h = 120 km). | | | KIR Mx 20 10 |
| " | 14 | UPP | iP | 21 43 41.4 C | | | micr sec |
| | | | i | 21 43 55.2 | | | Mx Z 9.9 20 |
| | | | iS | 21 47 38 | | | Vanuatu Islands (h = 120 km). M = 6.7 (UPP,KIR). M uncorrected for focal depth. |
| | | | | micr sec | | | |
| | | | P | Z' 1.8 1.4 | | | |
| | | | Mx | Z 39 15 | " | 15 | UPP iP 23 11 16.4 Bonin Islands region (h = 460 km). |
| | | KIR | iP | 21 44 53.4 C | | | |
| | | | | micr sec | | | |
| | | | P | Z' 1.0 1.0 | | | |
| | | | Mx | Z 26 12 | | | |

(cont.)

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|----|--|--------------|------|----|--|------------|
| Nov. | 15 | UPP iP | 23 29 20.1 | Nov. | 18 | UPP iP | 14 01 20.9 |
| | | Ryukyu Islands (h = N). | | | | Southern Greece (h = N). | |
| " | 16 | UPP iP | 03 04 52.1 | " | 18 | UPP iP | 14 08 30.7 |
| | | Lake Baykal region, Russia (h = 10 km). | | | | Ionian Sea (h = N). | |
| " | 16 | UPP iP | 05 00 41.0 | " | 18 | UPP iP | 14 30 26.3 |
| | | Andreanof Islands, Aleutian Is. (h = N). | | | | Southern Greece (h = N). | |
| " | 16 | UPP iP | 12 12 00.5 | " | 18 | UPP iP | 15 15 20.0 |
| | | Bonin Islands region (h = N). | | | | Southern Greece (h = N). | |
| " | 17 | UPP iP | 00 26 54.7 | " | 18 | UPP iP | 15 28 31.3 |
| | | Luzon, Philippine Islands (h = N). | | | | i | 15 28 35.8 |
| " | 17 | UPP eP | 05 15 32 | | | iS | 15 32 37.5 |
| | | Andreanof Islands, Aleutian Is. (h = 50 km). | | | | P | Z' 0.3 0.9 |
| " | 17 | UPP iPKP | 05 50 04.8 | | | KIR iP | 15 29 43.0 |
| | | Solomon Islands (h = 100 km). | | | | P | Z' 0.2 1.0 |
| " | 17 | UPP iP | 07 25 51.1 | | | Southern Greece (h = N). m = 5.8 (UPP,KIR). | |
| | | Xizang (h = N). | | " | 18 | UPP iPKP | 16 01 04.8 |
| " | 17 | UPP iP | 17 07 44.6 | | | iPKP2 | 16 01 08.6 |
| | | Nicobar Islands, India (h = 70 km). | | | | Kermadec Islands, New Zealand (h = 50 km). | |
| " | 18 | UPP iP | 11 26 44.3 | " | 18 | UPP iP | 16 07 45.9 |
| | | i | 11 26 54.6 | | | Southern Greece (h = N). | |
| | | Romania (h = 120 km). | | " | 18 | UPP iP | 16 25 02.0 |
| " | 18 | UPP iP | 13 12 37.6 C | | | Ionian Sea (h = N). | |
| | | iS | 13 16 40 | " | 18 | UPP iP | 17 29 51.6 |
| | | | micr sec | | | Ionian Sea (h = N). | |
| | | P | Z' 1.1 0.9 | " | 18 | UPP iP | 17 48 39.6 |
| | | Mx | Z 165 10 | | | Ionian Sea (h = N). | |
| | | KIR iP | 13 13 50.6 | " | 18 | UPP iP | 19 26 45.9 |
| | | | micr sec | | | Ionian Sea (h = N). | |
| | | P | Z' 1.0 1.3 | " | 18 | UPP iP | 20 11 18.2 |
| | | Mx | Z 84 11 | | | Southern Greece (h = N). | |
| | | Ionian Sea (h = N). m = 6.4, M = 6.6 (UPP,KIR). | | " | 18 | UPP iP | 20 18 36.4 |
| " | 18 | UPP iP | 13 27 47.2 | | | Ionian Sea (h = N). | |
| | | Southern Greece (h = 10 km). | | " | 18 | UPP iP | 20 56 26.7 |
| " | 18 | UPP iP | 13 49 01.3 | | | Ionian Sea (h = N). | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|----|-------------------------------------|------------|------|----|-------------------------------------|------------|
| Nov. | 18 | UPP iP | 21 07 44.4 | Nov. | 20 | UPP iP | 06 27 02.5 |
| | | Ionian Sea (h = N). | | | | | |
| " | 18 | UPP iP | 23 04 39.5 | " | 20 | UPP iP | 16 26 16.0 |
| | | Southern Greece (h = N). | | | | i | 16 26 18.7 |
| | | | | | | Xizang (h = N). | |
| " | 19 | UPP iP | 00 38 03.4 | " | 20 | UPP iP | 23 48 16.3 |
| | | Ionian Sea (h = N). | | | | Ionian Sea (h = N). | |
| " | 19 | UPP iP | 02 53 33.3 | " | 21 | UPP iP | 11 33 31.8 |
| | | Ionian Sea (h = N). | | | | iS | 11 41 58 |
| | | | | | | | micr sec |
| " | 19 | UPP iP | 11 13 54.6 | | | P | Z' 0.4 0.9 |
| | | | | | | Mx | Z 11 26 |
| " | 19 | UPP iP | 12 00 14.8 | | | KIR iP | 11 33 28.6 |
| | | Ionian Sea (h = N). | | | | | micr sec |
| | | | | | | P | Z' 1.3 1.5 |
| " | 19 | UPP iP | 15 50 16.8 | | | Mx | Z 5.1 17 |
| | | i | 15 50 23.9 | | | India-Bangladesh border region | |
| | | Ionian Sea (h = N). | | | | (h = 55 km). | |
| | | | | | | m = 6.5, M = 5.8 (UPP,KIR). | |
| " | 19 | UPP iP | 16 09 29.9 | " | 21 | UPP iP | 17 27 38.6 |
| | | Ionian Sea (h = N). | | | | Southern Greece (h = N). | |
| " | 19 | UPP iP | 17 18 49.8 | " | 21 | UPP iP | 17 52 33.3 |
| | | Near east coast of Honshu, Japan | | | | Southern Greece (h = N). | |
| | | (h = 70 km). | | | | | |
| " | 19 | UPP iP | 17 36 14.5 | " | 21 | KIR iSg1 | 18 01 47.9 |
| | | Off east coast of Honshu, Japan | | | | MYV iPn | 18 01 03.0 |
| | | (h = 50 km). | | | | eSg1 | 18 01 55 |
| | | | | | | Coast of northwestern Norway, | |
| " | 19 | UPP iP | 22 07 23.1 | | | 66.5°N, 13.1°E. | |
| | | Xizang (h = N). | | | | Origin time = 18 00 10. | |
| | | | | | | M _L (UPP) = 2.5 1. | |
| " | 19 | UPP iP | 23 58 28.2 | | | By combination with Finnish station | |
| | | Ionian Sea (h = N). | | | | readings. | |
| " | 20 | UPP iP | 00 37 13.5 | " | 22 | UPP iP | 02 45 09.1 |
| | | | | | | India-Bangladesh border region | |
| " | 20 | UPP iP | 01 15 06.5 | | | (h = 55 km). | |
| | | Ionian Sea (h = N). | | | | | |
| " | 20 | UPP iP | 01 56 17.9 | " | 22 | UPP iP | 08 49 55.4 |
| | | Southern Greece (h = N). | | | | Ionian Sea (h = N). | |
| " | 20 | UPP iP | 02 07 23.9 | " | 22 | UPP iP | 14 17 28.3 |
| | | Hokkaido, Japan region (h = 55 km). | | | | Bonin Islands region (h = 350 km). | |
| " | 20 | UPP iP | 05 11 01.7 | | | | |
| | | Southern Greece (h = N). | | | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|----|-----|-----|-----------------------------------|------|----|-------------------------------------|
| Nov. | 23 | UPP | iP | 04 02 07.6 C | Nov. | 24 | (cont.) |
| | | | iS | 04 11 12 | | | KIR Mx 05 50 |
| | | | | micr sec | | | micr sec |
| | | | P | Z' 0.1 0.8 | | | Mx Z 0.8 12 |
| | | | Mx | Z 2.6 13 | | | Southern Greece (h = N). |
| | | KIR | iP | 04 01 26.2 | | | M = 4.6 (UPP,KIR). |
| | | | i | 04 01 27.7 | | | |
| | | | | micr sec | " | 24 | UPP iP 23 21 11.6 |
| | | | i | Z' 0.7 1.6 | | | Mangolia (h = 10 km). |
| | | | Mx | Z 4.2 13 | | | |
| | | | | Eastern Sea of Japan (h = 25 km). | | | |
| | | | | m = 6.3, M = 5.7 (UPP,KIR). | " | 25 | UPP iP 12 28 01.0 |
| | | | | | | | iSKS 12 38 31 |
| | | | | | | | micr sec |
| " | 23 | UPP | iP | 07 09 06.6 | | | Mx Z 32 25 |
| | | | | Fox Islands, Aleutian Islands | | | KIR Mx 13 13 |
| | | | | (h = N). | | | micr sec |
| | | | | | | | Mx Z 19 20 |
| " | 23 | UPP | iP | 13 08 12.2 | | | Minahassa peninsula, Sulawesi |
| | | | | Myanmar (h = 55 km). | | | (h = 25 km). |
| | | | | | | | M = 6.6 (UPP,KIR). |
| " | 23 | UPP | iP | 15 48 56.4 C | " | 25 | UPP iP 14 21 56.2 |
| | | | | Ionian Sea (h = N). | | | North Atlantic Ocean (h = 10 km). |
| " | 23 | UPP | iP | 17 35 34.8 | " | 25 | UPP iP 17 12 31.3 |
| | | | | Taiwan region (h = N). | | | ipP 17 12 39.5 |
| " | 24 | UPP | iP | 00 50 04.9 | | | micr sec |
| | | | | South of Honshu, Japan | | | P Z' 0.1 0.8 |
| | | | | (h = 420 km). | | | pP Z' 0.1 0.8 |
| " | 24 | UPP | iP | 01 20 27.3 | | | KIR iP 17 11 44.0 |
| | | | ipP | 01 20 39.5 | | | ipP 17 11 52.2 |
| | | | | micr sec | | | micr sec |
| | | | P | Z' 0.1 1.0 | | | P Z' 0.2 1.1 |
| | | KIR | iP | 01 19 35.5 | | | Kuril Islands. |
| | | | ipP | 01 19 47.2 | | | h = 30 km (UPP,KIR). |
| | | | | micr sec | | | m = 6.0 (UPP,KIR). |
| | | | P | Z' 0.2 1.0 | " | 25 | KIR iSg1 22 26 01.5 |
| | | | | Fox Islands, Aleutian Islands. | | | UME iSg1 22 26 28.3 |
| | | | | h = 40 km (UPP,KIR). | | | MYV iPg1 22 25 19.0 |
| | | | | m = 6.0 (UPP,KIR). | | | iSg1 22 26 06.0 |
| " | 24 | UPP | eP | 02 44 47 | | | Norwegian Sea, 66.5°N, 12.3°E. |
| | | | | Ionian Sea (h = N). | | | Origin time = 22 24 15. |
| | | | | | | | M _L (UPP) = 2.7 1. |
| " | 24 | UPP | iP | 05 35 31.9 | | | By combination with Finnish station |
| | | | | micr sec | | | readings. |
| | | | Mx | Z 2.1 12 | " | 26 | UPP iP 14 56 38.3 |
| | | | | (cont.) | | | Sea of Okhotsk (h = 400 km). |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1997

| | | | | | |
|------|----|-----|------|------------|-------------------------------------|
| Nov. | 29 | UPP | iP | 06 25 03.5 | |
| | | | | | Yunnan, China (h = N). |
| " | 29 | UPP | iPKP | 09 29 06.9 | |
| | | | | | South of Fiji Islands (h = 550 km). |
| " | 29 | UPP | Mx | 15 11 | |
| | | | | micr sec | |
| | | | Mx | Z 3.1 | 19 |
| | | KIR | Mx | 15 10 | |
| | | | | micr sec | |
| | | | Mx | Z 3.4 | 18 |
| | | | | | Near coast of Nicaragua (h = N). |
| | | | | | M = 5.7 (UPP,KIR). |
| | 30 | UPP | iP | 01 14 23.5 | |
| | | | | | Xizang (h = N). |
| " | 30 | UPP | iP | 18 30 32.0 | |
| | | | | | Andreanof Islands, Aleutian Is. |
| | | | | | (h = N). |

December 8, 1999

Conny Holmqvist
Ota Kulhánek

DEPARTMENT OF EARTH SCIENCES
SEISMOLOGY
VILLAVAEGEN 16
S-752 36 UPPSALA
SWEDEN

UPPSALA UNIVERSITET
Inst för geovetenskaper
Seismologi
Villavägen 16
752 36 UPPSALA

SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, UMEÅ, UDDEHOLM

DELARY and MYRVIKEN

| | | | | |
|----------|-------|------------|------------|-----------|
| Uppsala | (UPP) | 59°51.5'N, | 17°37.6'E; | h = 14 m |
| Kiruna | (KIR) | 67°50.4'N, | 20°25.0'E; | h = 390 m |
| Umeå | (UME) | 63°48.9'N, | 20°14.2'E; | h = 16 m |
| Uddeholm | (UDD) | 60°05.4'N, | 13°36.4'E; | h = 240 m |
| Delary | (DEL) | 56°28.2'N, | 13°52.2'E; | h = 150 m |
| Myrviken | (MYV) | 62°56.5'N, | 14°20.8'E; | h = 345 m |

DECEMBER 1 - 31, 1997

| 1997 | | | | | 1997 | | | | |
|------|---|-----|-------|--------------------------------------|------|-----|------|-------|---|
| Dec. | 1 | UPP | iP | 18 28 54.1 | Dec. | 3 | UPP | iP | 12 34 44.6 |
| | | | | | | | | | micr sec |
| | | | | Eastern Sea of Japan (h = N). | | | | | Z 0.8 12 |
| " | 1 | UPP | iP | 21 01 46.5 | | KIR | Mx | | 12 56 |
| | | | | Kyrgystan (h = N). | | | | | micr sec |
| | | | | | | | | | Z 1.5 13 |
| " | 2 | UPP | iP | 00 05 27.9 | | | | | Xizang (h = N). |
| | | | | micr sec | | | | | M = 5.0 (UPP,KIR). |
| | | | Mx | Z 2.9 13 | | | | | |
| | | KIR | iPn | 00 04 11.9 | " | 4 | UPP | iPKP2 | 02 33 59.6 |
| | | | i | 00 04 13.8 | | | | i | 02 34 13.4 |
| | | | | micr sec | | | | | Kermadec Islands region (h = N). |
| | | | i | Z' 0.5 1.5 | | | | | |
| | | | Mx | Z 5.3 13 | " | 4 | UPP | iPg1 | 03 12 18.2 |
| | | | | Jan Mayen Island region (h = 10 km). | | | | iSg1 | 03 13 24.9 |
| " | 2 | UPP | iP | 03 47 22.6 | | KIR | iPn | | 03 11 36.0 |
| | | | | Ionian Sea (h = N). | | | | iPg1 | 03 11 43.1 |
| | | | | | | | | iSg1 | 03 11 24.3 |
| " | 2 | UPP | iP | 11 59 53.2 | | UME | iPg1 | | 03 11 04.8C |
| | | | | Mindanao, Philippine Islands | | | | iSg1 | 03 11 17.4 |
| | | | | (h = 600 km). | | | | i | 03 11 19.8 |
| | | | | | | UDD | iSg1 | | 03 13 35.4 |
| " | 2 | UPP | iPKP1 | 14 35 14.6 | | MYV | iPn | | 03 11 33.2 |
| | | | | Kermadec Islands region (h = N). | | | | iPg1 | 03 11 39.0 |
| | | | | | | | | iSn | 03 12 07.0 |
| | | | | | | | | iSg1 | 03 12 16.0 |
| " | 2 | UPP | iP | 19 27 56.3 | | | | | Västerbotten, Sweden, 64.8°N, 19.7°E. |
| | | | iS | 19 32 14 | | | | | Origin time = 03 10 46. |
| | | | | micr sec | | | | | M _L (UPP) = 3.2 (0.10) 4. |
| | | | P | Z' 0.1 0.9 | | | | | Felt. |
| | | | | Central Mediterranean Sea (h = N). | | | | | By combination with Finnish and Norwegian station readings. |

UPP = Uppsåla, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | | | |
|------|---|-----|-------|--------------------------------------|------|---|-----|----|---------------------------------------|
| Dec. | 4 | UPP | iP | 06 11 47.3 | Dec. | 5 | UPP | iP | 11 47 31.0 |
| | | | i | 06 12 04.6 | | | | | micr sec |
| | | | | Eastern Caucasus (h = 70 km). | | | P | Z' | 0.4 1.3 |
| " | 4 | UPP | iP | 10 25 03.5 | | | KIR | iP | 11 46 35.2 |
| | | | | Southwestern Pakistan (h = N). | | | | | micr sec |
| | | | | | | | P | Z' | 0.4 1.3 |
| " | 4 | UPP | iP | 15 09 20.9 | | | | | Near east coast of Kamchatka (h = N). |
| | | | | micr sec | | | | | m = 6.3 (UPP,KIR). |
| | | | Mx | Z 2.2 18 | " | 5 | UPP | iP | 11 51 37.9 |
| | | | | Near coast of Guatemala (h = 80 km). | | | | | Near east coast of Kamchatka (h = N). |
| " | 4 | UPP | iP | 22 52 07.4 | " | 5 | UPP | iP | 11 53 16.5 |
| | | | | micr sec | | | | | micr sec |
| | | | Mx | Z 3.8 20 | | | P | Z' | 0.4 1.6 |
| | | KIR | Mx | 23 17 | " | 5 | UPP | iP | 11 55 48.3 |
| | | | | micr sec | | | | | micr sec |
| | | | Mx | Z 1.8 16 | | | P | Z' | 0.1 1.1 |
| | | | | Near east coast of Kamchatka | | | | | Near east coast of Kamchatka (h = N). |
| | | | | (h = N). | | | | | |
| | | | | M = 5.3 (UPP,KIR). | " | 5 | UPP | iP | 11 59 01.9 |
| " | 5 | UPP | iPKP2 | 01 11 24.6 | | | | | micr sec |
| | | | | South of Kermadec Islands (h = N). | | | P | Z' | 0.6 1.4 |
| " | 5 | UPP | iP | 08 19 02.6 | | | KIR | iP | 11 58 07.6 |
| | | | | Near east coast of Kamchatka | | | | | micr sec |
| | | | | (h = N). | | | P | Z' | 0.2 1.0 |
| | | | | | | | | | Near east coast of Kamchatka (h = N). |
| | | | | | | | | | m = 6.3 (UPP,KIR). |
| | 5 | UPP | iP | 11 37 13.8 C | " | 5 | UPP | iP | 12 01 33.1 |
| | | | i | 11 37 16.2 | | | | | Near east coast of Kamchatka (h = N). |
| | | | i | 11 37 20.4 | " | 5 | UPP | iP | 12 06 11.2 |
| | | | iS | 11 45 44.1 | | | | | micr sec |
| | | | | micr sec | | | P | Z' | 0.2 1.1 |
| | | | P | Z' 7.4 1.5 | | | | | Off east coast of Kamchatka (h = N). |
| | | KIR | iP | 11 36 17.6 C | " | 5 | UPP | iP | 12 20 51.9 |
| | | | | micr sec | | | | | micr sec |
| | | | P | Z' 3.0 0.7 | | | P | Z' | 0.2 1.4 |
| | | | Mx | Z 294 14 | | | | | Near east coast of Kamchatka (h = N). |
| | | | | Near east coast of Kamchatka | | | | | |
| | | | | (h = N). | | | | | |
| | | | | m = 7.5 (UPP,KIR). | " | 5 | UPP | iP | 12 32 59.5 |
| " | 5 | UPP | iP | 11 45 43.1 | | | | | Off east coast of Kamchatka (h = N). |
| | | | | micr sec | " | 5 | UPP | iP | 12 58 45.3 |
| | | | P | Z' 1.2 1.6 | | | | | Ionian Sea (h = N). |
| | | KIR | iP | 11 44 47.6 | | | | | |
| | | | | micr sec | | | | | |
| | | | P | Z' 0.6 1.5 | | | | | |
| | | | | Off east coast of Kamchatka (h = N). | | | | | |
| | | | | m = 6.6 (UPP,KIR). | | | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | | | |
|------|---|-----|----|--------------------------------------|------|---|-----|----|--------------------------------------|
| Dec. | 5 | UPP | iP | 13 05 08.7 | Dec. | 5 | UPP | iP | 19 12 26.0 |
| | | | | Off east coast of Kamchatka (h = N). | | | | | Off east coast of Kamchatka (h = N). |
| " | 5 | UPP | iP | 14 33 29.1 | " | 5 | UPP | iP | 19 12 46.5 |
| | | | | micr sec | | | | | Off east coast of Kamchatka (h = N). |
| | | | P | Z' 0.2 1.2 | | | | | |
| | | KIR | iP | 14 32 34.5 | " | 5 | UPP | iP | 19 14 31.6 |
| | | | | micr sec | | | | | micr sec |
| | | | P | Z' 0.1 1.0 | | | | P | Z' 0.5 1.4 |
| | | | | Off east coast of Kamchatka (h = N). | | | | | Off east coast of Kamchatka (h = N). |
| | | | | m = 6.0 (UPP,KIR). | | | | | |
| " | 5 | UPP | iP | 14 57 17.9 | " | 5 | UPP | iP | 20 17 14.7 |
| | | | | micr sec | | | | | Off east coast of Kamchatka (h = N). |
| | | | P | Z' 0.1 1.0 | " | 5 | UPP | iP | 20 41 22.6 |
| " | 5 | UPP | iP | 16 20 33.3 | | | | P | Z' 0.1 1.0 |
| | | | | Near east coast of Kamchatka | | | | | Off east coast of Kamchatka (h = N). |
| | | | | (h = N). | " | 5 | UPP | iP | 20 43 28.5 |
| " | 5 | UPP | iP | 16 36 17.8 | | | | | Off east coast of Kamchatka (h = N). |
| | | | | Off east coast of Kamchatka (h = N). | " | 5 | UPP | iP | 21 30 08.1 |
| " | 5 | UPP | iP | 16 37 30.0 | | | | | micr sec |
| | | | | Near east coast of Kamchatka | | | | P | Z' 0.2 1.3 |
| | | | | (h = N). | | | KIR | iP | 21 29 13.8 |
| " | 5 | UPP | iP | 17 06 28.8 | | | | | micr sec |
| | | | | Near east coast of Kamchatka | | | | P | Z' 0.1 1.0 |
| | | | | (h = N). | | | | | Off east coast of Kamchatka (h = N). |
| | | | | | | | | | m = 5.9 (UPP,KIR). |
| " | 5 | UPP | iP | 17 08 08.8 | " | 5 | UPP | iP | 21 34 46.7 |
| | | | | Near east coast of Kamchatka | | | | i | 21 35 01.0 |
| | | | | (h = N). | | | | | micr sec |
| " | 5 | UPP | iP | 17 34 11.7 | | | | P | Z' 0.2 1.2 |
| | | | | Off east coast of Kamchatka (h = N). | | | KIR | iP | 21 33 51.7 |
| " | 5 | UPP | iP | 17 48 02.8 | | | | | micr sec |
| | | | | Off east coast of Kamchatka (h = N). | | | | P | Z' 0.2 1.1 |
| | | | | | | | | | Off east coast of Kamchatka |
| | | | | | | | | | (h = N). |
| | | | | | | | | | m = 6.1 (UPP,KIR). |
| " | 5 | UPP | iP | 18 58 46.6 | " | 5 | UPP | iP | 22 47 50.6 |
| | | | iS | 19 07 16 | | | | | micr sec |
| | | | | micr sec | | | | P | Z' 0.2 1.0 |
| | | | Mx | Z 34 16 | | | | | Off east coast of Kamchatka (h = N). |
| | | KIR | iP | 18 57 53.9 | " | 5 | UPP | iP | 23 00 46.5 |
| | | | | micr sec | | | | | Volcano Islands region (h = N). |
| | | | P | Z' 1.1 1.4 | | | | | |
| | | | Mx | Z 14 14 | | | | | |
| | | | | Off east coast of Kamchatka (h = N). | | | | | |
| | | | | m = 6.9, M = 6.4 (UPP,KIR). | | | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|---|-----|----|--|------|---|--------------------------------------|
| Dec. | 5 | UPP | iP | 23 47 00.5 | Dec. | 6 | (cont.) |
| | | | | Rat Islands, Aleutian Islands (h = N). | | | KIR iP 06 47 24.9 C |
| | | | | | | | micr sec |
| " | 6 | UPP | iP | 00 35 31.9 | | | P Z' 0.1 0.7 |
| | | | | micr sec | | | Near east coast of Kamchatka |
| | | | | P Z' 0.3 1.4 | | | (h = N). |
| | | | | Mx Z 5.3 16 | | | m = 6.1 (UPP,KIR). |
| | | KIR | iP | 00 34 37.2 | " | 6 | UPP iP 06 58 48.5 |
| | | | | micr sec | | | Near east coast of Kamchatka |
| | | | | P Z' 0.1 1.0 | | | (h = N). |
| | | | | Mx Z 1.9 15 | | | |
| | | | | Off east coast of Kamchatka (h = N). | | | |
| | | | | m = 6.0, M = 5.5 (UPP,KIR). | " | 6 | UPP iP 08 14 53.3 |
| " | 6 | UPP | iP | 00 51 23.4 | | | i 08 15 00.9 |
| | | | | Near east coast of Kamchatka | | | micr sec |
| | | | | (h = N). | | | i Z' 0.1 1.0 |
| | | | | | | | Northwest territories (h = 10 km). |
| " | 6 | UPP | iP | 02 17 22.6 | " | 6 | UPP iP 10 15 28.4 |
| | | | | micr sec | | | i 10 15 29.9 |
| | | | | Near east coast of Kamchatka | | | micr sec |
| | | | | (h = N). | | | i Z' 0.4 1.5 |
| | | | | | | | KIR iP 10 14 33.8 |
| " | 6 | UPP | iP | 03 13 43.1 | | | micr sec |
| | | | | micr sec | | | P Z' 0.2 0.8 |
| | | | | P Z' 0.1 1.0 | | | Off east coast of Kamchatka (h = N). |
| | | | | Near east coast of Kamchatka | | | m = 6.3 (UPP,KIR). |
| | | | | (h = N). | " | 6 | UPP iP 11 09 33.6 C |
| " | 6 | UPP | iP | 04 20 30.5 | | | micr sec |
| | | | | Near east coast of Kamchatka | | | P Z' 0.6 1.1 |
| | | | | (h = N). | | | Mx Z 25 17 |
| | | | | | | | KIR iP 11 08 39.3 C |
| " | 6 | UPP | iP | 05 20 07.0 | | | micr sec |
| | | | | Near east coast of Kamchatka | | | P Z' 0.5 0.9 |
| | | | | (h = N). | | | Mx Z 15 14 |
| | | | | | | | Off east coast of Kamchatka (h = N). |
| | | | | | | | m = 6.6, M = 6.3 (UPP,KIR). |
| " | 6 | UPP | iP | 06 25 46.0 | " | 6 | UPP iP 12 20 56.3 |
| | | | | Near east coast of Kamchatka | | | Romania (h = N). |
| | | | | (h = N). | | | |
| " | 6 | UPP | iP | 06 47 25.4 | " | 6 | UPP iP 12 47 39.3 |
| | | | | Near east coast of Kamchatka | | | micr sec |
| | | | | (h = N). | | | P Z' 0.3 1.4 |
| " | 6 | UPP | iP | 06 48 19.9 C | | | KIR iP 12 46 44.7 |
| | | | | micr sec | | | micr sec |
| | | | | P Z' 0.2 1.0 | | | P Z' 0.4 1.7 |
| | | | | (cont.) | | | Near east coast of Kamchatka |
| | | | | | | | (h = N). |
| | | | | | | | m = 6.2 (UPP,KIR). |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|---|-----------|---|------|---|---------|---|
| Dec. | 6 | UPP iP | 12 53 55.9 | Dec. | 7 | (cont.) | |
| | | | Off east coast of Kamchatka (h = N). | | | | Kermadec Islands, New Zealand (h = 200 km). |
| " | 6 | UPP iP | 17 47 48.7 | " | 7 | UPP iP | 13 25 10.1 |
| | | | micr sec | | | | Off east coast of Kamchatka (h = N). |
| | | P | Z' 0.2 1.2 | | | | |
| | | KIR iP | 17 46 53.8 | " | 7 | UPP iP | 13 28 16.9 |
| | | | micr sec | | | | Mariana Islands (h = 140 km). |
| | | P | Z' 0.1 0.9 | " | 7 | UPP iP | 14 06 55.3 |
| | | | Off east coast of Kamchatka (h = N). | | | | Off east coast of Kamchatka (h = N). |
| | | | m = 6.0 (UPP,KIR). | | | | |
| " | 6 | UPP iP | 19 58 00.0 | " | 7 | UPP iP | 14 55 48.8 |
| | | | micr sec | | | | micr sec |
| | | P | Z' 0.1 1.0 | | | P | Z' 0.1 1.3 |
| | | | Near east coast of Kamchatka (h = N). | | | | Off east coast of Kamchatka (h = N). |
| " | 6 | UPP iP | 23 38 31.8 | " | 7 | UPP iP | 16 37 33.5 |
| | | | Ionian Sea (h = N). | | | i | 16 37 39.1 |
| " | 7 | UPP iP | 04 01 58.1 | | | | micr sec |
| | | i | 04 01 59.1 | | | P | Z' 0.1 1.3 |
| | | | micr sec | | | | Near east coast of Kamchatka (h = N). |
| | | i | Z' 0.1 1.0 | " | 7 | UPP iP | 18 06 38.5 |
| | | | Near east coast of Honshu, Japan (h = 90 km). | | | i | 18 06 40.4 |
| " | 7 | UPP iP | 05 13 31.8 | | | iS | 18 15 06 |
| | | | micr sec | | | | micr sec |
| | | P | Z' 0.1 1.2 | | | i | Z' 0.3 1.2 |
| | | | Off east coast of Kamchakta (h = N). | | | Mx | Z 21 17 |
| " | 7 | UPP iP | 08 21 19.7 | | | KIR iP | 18 05 44.6 |
| | | ipP | 08 21 29.0 | | | | micr sec |
| | | | micr sec | | | P | Z' 1.0 2.1 |
| | | pP | Z' 0.2 1.1 | | | Mx | Z 16 16 |
| | | KIR iP | 08 20 26.4 | | | | Near east coast of Kamchatka (h = N). |
| | | ipP | 08 20 33.6 | | | | m = 6.4, M = 6.2 (UPP,KIR). |
| | | | micr sec | " | 7 | UPP iP | 20 05 23.9 |
| | | pP | Z' 0.2 1.0 | | | | Ionian Sea (h = N). |
| | | | Near east coast of Kamchakta. h = 30 km (UPP,KIR). m = 6.1 (UPP,KIR). | " | 7 | UPP iP | 23 16 17.1 |
| " | 7 | UPP iP | 10 28 46.8 | | | | micr sec |
| | | | Kuril Islands (h = 70 km). | | | P | Z' 0.2 1.2 |
| " | 7 | UPP iPKP1 | 11 33 27.9 | | | KIR iP | 23 15 21.6 |
| | | iPKP2 | 11 33 31.8 | | | | micr sec |
| | | | (cont.) | | | P | Z' 0.2 1.0 |
| | | | | | | | Off east cost of Kamchatka (h = N). m = 6.1 (UPP,KIR). |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|---|---|--|------|----|---|---|
| Dec. | 7 | UPP iP Xizang (h = N). | 23 35 46.8 | Dec. | 9 | UPP iP P KIR iP P | 13 13 10.8 micr sec Z' 0.8 1.3 10 12 17.9 micr sec Z' 0.1 1.0 |
| " | 8 | UPP iP i Nepal (h = N). | 02 13 35.7 02 13 38.8 | | | | Off east coast of Kamchatka (h = N). m = 6.2 (UPP,KIR). |
| " | 8 | UPP iP Off east coast of Kamchatka (h = N). | 14 48 23.0 | " | 10 | UPP iP i | 08 18 37.5 08 18 47.5 |
| " | 8 | UPP i(PKP) Fiji Islands region (h = 160 km). | 16 06 23.4 | | | | Near east coast of Kamchatka (h = N). |
| " | 8 | UPP iP P Z' 0.1 1.2 Off east coast of Kamchatka (h = N). | 18 28 02.7 micr sec Z' 0.1 1.2 | " | 10 | UPP iP | 11 23 44.0 |
| " | 8 | UPP iP i P Z' 0.7 1.5 KIR iP P Z' 0.6 1.5 Off east coast of Kamchatka (h = N). m = 6.5 (UPP,KIR). | 21 16 38.1 21 16 50.8 micr sec Z' 0.7 1.5 21 15 43.9 micr sec Z' 0.6 1.5 | " | 10 | UPP iP | 21 23 32.0 |
| " | 8 | UPP iP i P Z' 0.6 1.3 KIR iP P Z' 0.4 1.1 Off east coast of Kamchatka (h = N). m = 6.5 (UPP,KIR). | 22 30 20.0 22 30 32.2 micr sec Z' 0.6 1.3 22 29 26.1 micr sec Z' 0.4 1.1 | " | 11 | UPP iP ipP iS P Z' 0.6 1.2 Mx Z 2.5 17 KIR iP ipP | 04 10 50.3 Near east coast of Kamchatka (h = N). 05 13 18.3 Bonin Islands region (h = 350 km). 05 38 31.6 Afghanistan (h = N). 08 09 01.0 C 08 09 48.8 08 19 26 micr sec Z' 0.6 1.2 Z 2.5 17 08 09 02.8 C 08 09 50.7 micr sec Z' 0.8 1.8 Z 2.5 14 |
| " | 9 | UPP iP i Off east coast of Kamchatka (h = N). | 02 30 13.3 02 30 27.9 | | | | Colombia. h = 200 km (UPP,KIR). m = 6.4, M = 5.7 (UPP,KIR). M uncorrected for focal depth. |
| " | 9 | UPP eP Iraq (h = N). | 03 22 05 | " | 12 | UPP iP | 06 22 14.6 |
| " | 9 | UPP iPKP Kermadec Islands region (h = 200 km). | 04 14 45.4 | " | 12 | UPP iP | 22 07 27.1 |
| | | | | | | | Minahassa Peninsula (h = 150 km). |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|----|--|--|------|----|--|--|
| Dec. | 13 | UPP iP i Pakistan (h = N). | 03 49 50.3 03 49 56.3 | Dec. | 14 | UPP iPKP1 Kermadec Islands, New Zealand (h = 200 km). | 12 41 01.5 |
| " | 13 | UPP iP i Ionian Sea (h = N). | 04 21 26.1 04 21 57.1 | " | 14 | UME iP i Greenland Sea (h = 10 km). | 19 28 36.3 19 28 42.2 |
| " | 13 | UPP iP Sicily (h = 410 km). | 04 34 20.0 | " | 14 | UPP iP | 23 40 49.7 |
| " | 13 | UPP iP Near east coast of Honshu, Japan (h = N). | 06 56 37.8 | " | 15 | UPP iP Hindu Kush region, Afghanistan (h = 220 km). | 18 59 32.6 |
| " | 13 | UPP iP i micr sec i Z' 0.1 1.1 Mx Z 8.7 18 KIR Mx 07 07 micr sec Mx Z 5.8 16 UME iP 07 05 09.3 i 07 05 12.4 iS 07 07 27.3 UDD iP 07 05 24.0 MYV iP 07 04 54.4 i 07 05 00.0 iS 07 07 00.0 Jan Mayen Island region (h = 10 km). | 07 05 41.2 07 05 43.8 07 07 00.4 | " | 15 | UPP iP Off east coast of Kamchatka (h = N). | 23 09 00.4 |
| " | 13 | UPP iP Ionian Sea (h = 45 km). | 20 46 53.7 | " | 16 | UPP Mx micr sec Mx Z 3.1 19 KIR Mx 12 36 micr sec Mx Z 2.3 18 Near coast of Guerrero, Mexico (h = 10 km). M = 5.6 (UPP,KIR). | 12 43 12 36 18 |
| " | 14 | UPP iPKP South Sandwich Islands region (h = N). | 02 58 09.7 | " | 16 | UPP iP Nicobar Islands, India (h = N). | 20 32 44.8 |
| " | 14 | UPP iP i micr sec P Z' 0.1 1.1 Off east coast of Kamchatka (h = N). | 04 21 21.5 04 21 33.6 04 49 50.5 04 58 48 04 48 58.1 04 48 58.1 | " | 17 | UPP iP iS micr sec P Z' 0.2 1.0 Mx Z 36 19 KIR iP micr sec P Z' 0.2 1.3 Mx Z 52 20 Rat Islands, Aleutian Islands (h = 20 km). m = 6.1, M = 6.6 (UPP,KIR). | 04 49 50.5 04 58 48 04 48 58.1 04 48 58.1 |
| " | 14 | UPP iP Off east coast of Kamchatka (h = N). | 04 22 47.0 | " | 17 | UPP iP Near s. coast of Honshu, Japan (h = 300 km). | 05 17 34.5 |
| " | 14 | UPP iP Greece (h = N). | 09 31 43.7 | " | 17 | UPP iP micr sec P Z' 0.8 1.2 | 05 58 52.1 05 58 52.1 |

(cont.)

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|----|---|---|------|----|--|--|
| Dec. | 17 | (cont.) Hindu Kush region, Afghanistan (h = 210 km). | | Dec. | 19 | UPP iP i i Z' | 07 28 30.4 07 28 35.6 micr sec 0.1 0.9 |
| " | 17 | UPP iP Crete (h = N). | 09 45 30.3 | " | 19 | UPP iP | 09 48 06.6 Off east coast of Kamchatka (h = N). |
| " | 17 | UPP iP Rat Islands, Aleutian Islands (h = N). | 11 56 06.6 | " | 19 | UPP iP | 12 25 26.8 Rat Islands, Aleutian Islands (h = N). |
| " | 18 | UPP ipP Southern Sumatera, Indonesia (h = N). | 05 59 55.8 | " | 19 | UPP iP | 15 00 20.9 Andreanof Islands, Aleutian Is. (h = N). |
| " | 18 | UPP iP | 14 24 54.0 | " | 20 | UPP eP | 00 50 11 Komandorski Islands region (h = N). |
| " | 18 | UPP iP ipP P KIR iP ipP P | 15 14 20.3C 15 15 07.1 micr sec Z' 0.1 1.0 15 14 13.5 C 15 14 59.0 micr sec Z' 0.4 1.6 | " | 20 | UPP iP | 01 16 14.6 Mangolia (h = 100 km). |
| | | El Salvador. h = 190 km (UPP,KIR). m = 5.7 (UPP,KIR). | | " | 20 | UPP iP i P | 11 16 24.6 11 16 31.1 Northern Xinjiang, China (h = N). |
| " | 18 | UPP iP i | 18 45 26.3 18 45 37.5 | " | 20 | UPP iP iS P | 13 35 49.2 13 43 22 micr sec Z' 0.1 0.9 |
| | | Kuril Islands (h = N). | | " | 20 | UPP iP i i | 19 36 09.7 19 36 13.7 Mariana Islands (h = N). |
| " | 18 | UPP iP i i | 20 36 18.9 20 36 23.2 20 36 27.6 | " | 20 | UPP iPn iSn iSg1 | 21 42 51.6 21 44 24.0 21 45 22.4 |
| | | Mariana Islands (h = N). | | " | 20 | KIR iPn iPg1 iSn iSg1 | 21 41 48.8 21 41 57.9 21 42 30.4 21 42 45.5 |
| " | 18 | UPP iP Romania (h = 140 km). | 23 24 49.8 | " | 20 | UME iPn UDD iPn MYV iPn iPg1 i iSg1 | 21 42 13.8 21 42 43.5 21 42 06.0 21 42 14.0 21 42 24.0 21 43 19.0 |
| " | 19 | UPP iP i | 04 56 34.9 04 56 39.5 | | | | |
| | | Nicobar Islands, India (h = 20 km). | | | | | |
| " | 19 | UPP iP Nicobar Islands, India (h = 20 km). | 06 02 23.4 | | | | |

(cont.)

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | | | |
|------|----|---|--------|------------|----|-----|-----|------------|--------------------------------------|
| Dec. | 20 | (cont.) Norwegian Sea, 67.9°N, 10.3°E. Origin time = 21 40 49. $M_L(\text{UPP}) = 4.0 (0.28) 2$. By combination with Finnish and Norwegian station readings. | | Dec. | 22 | UPP | iP | 10 37 59.0 | Philippine Islands region (h = N). |
| " | 21 | KIR | iPg1 | 18 31 23.8 | " | 22 | UPP | iP | 16 43 09.5 |
| | | | iSg1 | 18 32 12.6 | | | | | micr sec |
| | | MYV | iSg1 | 18 32 42.8 | | | P | Z' 0.1 | 1.1 |
| | | Norwegian Sea, 68.0°N, 10.1°E. Origin time = 18 30 10. By combination with Finnish and Norwegian station readings. | | | | KIR | iP | 16 42 29.3 | |
| " | 21 | UPP | iP | 21 14 36.1 | | | | | micr sec |
| | | | | micr sec | | | | | |
| | | | P | Z' 0.1 | | | | | 0.8 |
| | | Kuril Islands (h = N). | | | " | 22 | UPP | iP | 17 02 16.1 |
| " | 22 | UPP | iPdiff | 02 20 17.6 | | | | | micr sec |
| | | | i | 02 20 19.4 | | | Mx | Z 1.9 | 14 |
| | | | iPKP | 02 24 09.3 | | | KIR | Mx | 17 40 |
| | | | iPP | 02 24 54.2 | | | | | micr sec |
| | | | iPKKP | 02 34 50.6 | | | | | 18 |
| | | | | micr sec | | | Mx | Z 2.7 | |
| | | | Mx | Z 29 | | | | | Luzon, Philippine Islands (h = N). |
| | | KIR | Mx | 03 10 | | | | | M = 5.6 (UPP,KIR). |
| | | | | micr sec | " | 22 | UPP | iP | 19 15 44.7 |
| | | | Mx | Z 16 | | | | | micr sec |
| | | Eastern New Guinea reg., P.N.G. (h = 180 km). M = 6.6 (UPP,KIR). M uncorrected for focal depth. | | | | | P | Z' 0.1 | 0.8 |
| " | 22 | UPP | iPKP | 06 34 28.8 | | | KIR | iP | 19 15 51.8 |
| | | South Sandwich Islands (h = 100 km). | | | | | | | micr sec |
| " | 22 | UPP | iP | 10 16 23.6 | | | | | 1.0 |
| | | | iSKS | 10 26 48 | | | | | Alaska Peninsula (h = N). |
| | | | iS | 10 26 58 | | | | | m = 5.8 (UPP,KIR). |
| | | | | micr sec | " | 22 | UPP | iP | 19 18 50.5 C |
| | | | Mx | Z 3.8 | | | | | micr sec |
| | | KIR | Mx | 10 53 | | | P | Z' 0.3 | 1.0 |
| | | | | micr sec | | | KIR | iP | 19 18 07.6 C |
| | | | Mx | Z 4.3 | | | | | micr sec |
| | | Near coast of Guatemala (h = 60 km). M = 5.8 (UPP,KIR). | | | | | | | 1.0 |
| " | 22 | UPP | iP | 10 16 23.6 | | | | | Hokkaido, Japan region (h = 120 km). |
| | | | iSKS | 10 26 48 | | | | | m = 6.2 (UPP,KIR). |
| | | | iS | 10 26 58 | " | 23 | UPP | iP | 02 47 33.1 |
| | | | | micr sec | | | | | Taiwan region (h = 100 km). |
| | | | Mx | Z 3.8 | " | 23 | UPP | iP | 04 23 20.1 |
| | | KIR | Mx | 10 53 | | | | | Eastern Kashmir (h = N). |
| | | | | micr sec | " | 23 | UPP | iP | 09 10 18.8 |
| | | | Mx | Z 4.3 | | | | | Aegean Sea (h = 10 km). |
| | | Near coast of Guatemala (h = 60 km). M = 5.8 (UPP,KIR). | | | " | 23 | UPP | iP | 10 04 44.5 |
| " | 22 | UPP | iP | 10 16 23.6 | | | | | Philippine Islands region (h = N). |
| | | | iSKS | 10 26 48 | " | 23 | UPP | iP | 10 04 44.5 |
| | | | iS | 10 26 58 | | | | | Philippine Islands region (h = N). |
| | | | | micr sec | | | | | |
| | | | Mx | Z 3.8 | | | | | |
| | | KIR | Mx | 10 53 | | | | | |
| | | | | micr sec | | | | | |
| | | | Mx | Z 4.3 | | | | | |
| | | Near coast of Guatemala (h = 60 km). M = 5.8 (UPP,KIR). | | | | | | | |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

| 1997 | | | | 1997 | | | |
|------|----|------------|---|------|----|--------------|--|
| Dec. | 23 | UPP iP | 10 15 43.1 | Dec. | 26 | UPP iPKP1 | 06 03 20.8 |
| | | | Philippine Islands region (h = N). | | | | South of Fiji Islands (h = 550 km). |
| " | 23 | UPP iP | 11 32 22.3 | " | 26 | UPP iP | 06 34 28.2 |
| " | 24 | UPP iP | 00 05 03.9 | | | | micr sec |
| | | | Philippine Islands region (h = N). | | | P Z' 0.1 1.1 | Off east coast of Kamchatka (h = N). |
| " | 24 | UPP iP | 09 45 05.6 | " | 26 | UPP iP | 21 29 14.5 |
| | | | Sicily (h = 10 km). | | | | Rat Islands, Aleutian Islands (h = N). |
| " | 24 | UPP iP | 11 41 32.0 | " | 27 | UPP iP | 04 28 36.6 |
| | | | Northwest of Ryukyu Islands (h = 50 km). | | | | Lake Issyk-Kul region (h = N). |
| " | 24 | UPP iP | 17 57 01.9 | " | 27 | UPP iP | 19 23 18.3 |
| | | | Northern Italy (h = 10 km). | | | | Dodecanese Islands (h = N). |
| " | 24 | UPP iPKP | 19 13 20.8 | " | 27 | UPP iPKP | 23 14 04.6 |
| | | | South of Fiji Islands (h = 450 km). | | | | Southern Mid-Atlantic ridge (h = 10 km). |
| " | 25 | UPP iP | 00 49 39.2 | " | 28 | UPP iP | 03 36 15.4 |
| | | | Ionian Sea (h = 10 km). | | | | Talau Islands, Indonesia (h = 100 km). |
| " | 25 | UPP iPKP1 | 13 39 08.9 | " | 28 | UPP iP | 09 17 46.8 |
| | | | South of Kermadec Islands (h = 200 km). | | | | Andreanof Islands, Aleutian Is. (h = N). |
| " | 25 | UPP iP | 16 39 41.2 | " | 28 | KIR iSg1 | 12 04 35.3 |
| | | | Southern Greece (h = 10 km). | | | UME iPg1 | 12 03 51.8 |
| " | 25 | UPP Mx | 23 05 | | | iSg1 | 12 04 15.7 |
| | | | micr sec | | | UDD iSg1 | 12 06 44.3 |
| | | Mx Z | 4.1 20 | | | MYV iSg1 | 12 05 31.2 |
| | | KIR Mx | 23 08 | | | | Gulf of Bothnia, 65.4°N, 22.6°E. |
| | | | micr sec | | | | Origin time = 12 03 19. |
| | | Mx Z | 2.4 17 | | | | $M_L(\text{UPP}) = 2.7 (0.13) 3.$ |
| | | | Near coast of Chiapas, Mexico (h = 10 km). | | | | By combination with Finnish and Norwegian station readings. |
| | | | M = 5.7 (UPP,KIR). | " | 28 | UPP iP | 20 51 31.5 |
| " | 26 | UPP iP | 05 01 07.9 | | | | Turkey (h = 10 km). |
| | | | Off east coast of Kamchatka (h = N). | " | 30 | UPP iP | 04 42 55.1 |
| " | 26 | UPP iP | 05 12 57.5 | | | i | 04 43 09.1 |
| | | | Off east coast of Kamchatka (h = N). | | | | micr sec |
| " | 26 | UPP i(PKP) | 05 52 40.6 | | | i Z' 0.1 0.9 | Romania (h = 140 km). |
| | | iSKP | 05 55 29.6 | " | 30 | UPP iP | 12 04 30.5 |
| | | | South of Fiji Islands (h = 590 km). | | | | Myanmar (h = N). |

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1997

| | | | | |
|------|----|-----|----|------------|
| Dec. | 30 | UPP | iP | 13 53 41.4 |
| | | | i | 13 53 46.9 |
| | | | iS | 14 02 12 |
| | | | | micr sec |
| | | | i | Z' 0.2 0.8 |

Myanmar (h = N).

| | | | | |
|---|----|-----|----|------------|
| " | 30 | UPP | iP | 22 44 08.2 |
|---|----|-----|----|------------|

Fox Islands, Aleutian Islands (h = N).

| | | | | |
|---|----|-----|----|------------|
| " | 31 | UPP | iP | 16 06 14.6 |
|---|----|-----|----|------------|

Central Italy (h = 10 km).

| | | | | |
|---|----|-----|----|------------|
| " | 31 | UPP | iP | 21 40 25.2 |
|---|----|-----|----|------------|

Xizang (h = N).

December 9, 1999

Conny Holmqvist
Ota Kulhánek