Janet please file

SEISMOLOGICAL INSTITUTE
BOX 517
S-751 20 UPPSALA 1
SWEDEN

# S E I S M O L O G I C A L  B U L L E T I N

## U P P S A L A, K I R U N A, S K A L S T U G A N, U M E Å, U D D E H O L M and D E L A R Y

| | | | | |
|---|---|---|---|---|
| Uppsala | (Up): | 59°51.5'N, | 17°37.6'E; | h = 14 m |
| Kiruna | (Ki): | 67°50.4'N, | 20°25.0'E; | h = 390 m |
| Skalstugan | (Sk): | 63°34.8'N, | 12°16.8'E; | h = 580 m |
| Umeå | (Um): | 63°48.9'N, | 20°14.2'E; | h = 16 m |
| Uddeholm | (Ud): | 60°05.4'N, | 13°36.4'E; | h = 240 m |
| Delary | (De): | 56°28.2'N, | 13°52.2'E; | h = 150 m |

## J U L Y 1 - 31, 1970

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 July | 1 | Up | iP | | 00 23 21.1 | |
| | | Ud | iP | | 00 23 28.5 | |
| | | Greece. | | | | |
| " | 1 | Up | iP | | 01 44 54.0 | |
| | | Sk | iP | | 01 45 35.9 | |
| | | Um | iP | | 01 45 32.7 | |
| | | Ud | iP | | 01 45 03.2 | |
| | | Greece. | | | | |
| " | 1 | Up | iP | | 01 52 50.8 | |
| | | Ki | | | micr sec | |
| | | | Mx | E | 0.6 13 | |
| | | | Mx | N | 0.4 13 | |
| | | | Mx | Z | 0.6 13 | |
| | | Sk | iP | | 01 53 34.4 | |
| | | Um | iP | | 01 53 32.6 | |
| | | Ud | iP | | 01 52 59.4 | |
| | | | iPP | | 01 53 25.3 | |
| | | De | iP | | 01 52 33.1 | |
| | | Greece. | | | | |
| " | 1 | Up | eP | | 02 04 38 | |
| | | Ud | iP | | 02 04 34.7 | |
| | | De | iP | | 02 04 20.0 | |
| " | 1 | Um | iP | | 02 05 29.5 | |
| | | Mariana Islands (h = 45 km). | | | | |
| " | 1 | Um | iP | | 03 02 33.6 | |
| " | 1 | Up | iP | | 03 28 41.0 | |
| | | | | | micr sec | |
| | | | P | Z' | 0.1 0.8 | |
| | | Ki | iP | | 03 28 10.5 | |
| | | | | | micr sec | |
| | | | P | Z' | 0.1 1.0 | |
| | | (cont.) | | | | |
| 1970 July | 1 | (cont.) | | | | |
| | | Sk | iP | | 03 28 38.8 | |
| | | | iPP | | 03 31 48.8 | |
| | | Um | iP | | 03 28 23.6 | D |
| | | | ipP | | 03 30 19.3 | |
| | | | isP | | 03 31 14.1 | |
| | | Ud | iP | | 03 28 48.7 | D |
| | | De | iP | | 03 29 00.8 | |
| | | Bonin Islands. | | | | |
| | | h = 540 km (Um). | | | | |
| | | m = 5.3 (Up,Ki). | | | | |
| " | 1 | Um | iP | | 04 18 16.5 | |
| | | | i | | 04 18 30.1 | |
| | | Ud | i(P) | | 04 18 27.6 | |
| " | 1 | Ki | iPKP | | 06 17 09.2 | C |
| | | | i | | 06 17 18.5 | |
| | | South Sandwich Islands (h = N). | | | | |
| " | 1 | Ki | eP | | 06 40 26 | |
| | | Sk | eP | | 06 40 47 | |
| | | Um | iP | | 06 40 31.0 | |
| | | Ud | iP | | 06 40 51.6 | |
| | | Molucca Passage (h = 70 km). | | | | |
| " | 1 | Ki | i(P) | | 08 41 36.8 | |
| | | Sk | e(P) | | 08 41 43 | |
| " | 1 | Sk | eP | | 10 26 10 | |
| | | Um | iP | | 10 26 07.8 | |
| | | Ud | iP | | 10 26 19.7 | |
| " | 1 | Sk | iP | | 10 35 24.7 | |
| " | 1 | Ki | iPn | | 11 37 01.4 | |
| | | (cont.) | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970 July 1 (cont.)

| | | | |
|---|---|---|---|
| Ki | iSn | 11 37 55.6 | |
| | iSg | 11 38 19.0 | |
| Sk | eLgl | 11 40 45 | |
| Um | iSg | 11 39 12.0 | |

Northwest Russia.
Origin time = 11 35 48.
Explosion?

" 1

| | | |
|---|---|---|
| Up | iSg | 12 12 36.8 |
| Sk | iSg | 12 14 26.9 |
| Um | iSg | 12 13 06.0 |
| Ud | iLgl | 12 13 38.4 |
| De | iLgl | 12 14 03.4 |

Esthonia,
59.7°N, 25.6°E.
Origin time = 12 10 25.
Explosion?

" 1

| | | |
|---|---|---|
| Um | iP | 12 20 14.0 |
| Ud | iP | 12 20 26.2 |

" 1

| | | |
|---|---|---|
| De | iP | 13 27 43.0 |

" 1

| | | |
|---|---|---|
| Ud | iP | 15 01 22.5 |

Greece.

" 1

| | | |
|---|---|---|
| Up | iP | 15 56 12.6 |
| Ki | iP | 15 57 13.1 |
| Sk | eP | 15 56 47 |
| Um | iP | 15 56 39.1 |
| Ud | iP | 15 56 21.7 |
| De | iP | 15 55 52.2 |
| | i | 15 56 01.5 |

Cyprus (h = 35 km).

" 1

| | | | micr | sec |
|---|---|---|---|---|
| Up | | | | |
| | Mx | E | 0.9 | 24 |
| | Mx | N | 1.0 | 19 |
| | Mx | Z | 1.8 | 22 |
| Ki | iP | | 16 28 41.7 | |
| | | | micr | sec |
| | Mx | E | 0.6 | 18 |
| | Mx | N | 0.7 | 21 |
| Sk | iP | | 16 28 10.4 | |
| Um | iP | | 16 28 35.4 | |
| Ud | iP | | 16 28 08.1 | C |
| | i | | 16 28 23.2 | |
| De | eP | | 16 28 03 | |
| | i | | 16 28 10.8 | |

North Atlantic Ocean (h = N).
M = 5.0 (Up,Ki).

" 1

| | | |
|---|---|---|
| Up | i | 18 09 12.1 |
| | iSg | 18 09 29.5 |

(cont.)

1970 July 1 (cont.)

| | | |
|---|---|---|
| Sk | eSg | 18 11 26 |
| Ud | iSg | 18 09 35.3 |
| De | iPg | 18 07 29.6 |
| | iSg | 18 07 46.9 |

South Baltic Sea,
55.6°N, 15.6°E.
Origin time = 18 07 05.
Probably underwater explosion.

" 1

| | | |
|---|---|---|
| De | iPg | 18 07 35.7 |
| | iSg | 18 07 52.6 |

South Baltic Sea,
55.6°N, 15.6°E.
Origin time = 18 07 11.
Probably underwater explosion.

" 1

| | | |
|---|---|---|
| De | iPg | 18 07 39.6 |
| | iSg | 18 07 56.0 |

South Baltic Sea,
55.6°N, 15.6°E.
Origin time = 18 07 15.
Probably underwater explosion.

" 1

| | | |
|---|---|---|
| Up | iSg | 18 12 11.1 |
| Ud | iSg | 18 12 15.2 |
| De | iPg | 18 10 11.2 D |
| | iSg | 18 10 28.0 |

South Baltic Sea,
55.6°N, 15.6°E.
Origin time = 18 09 46.
Probably underwater explosion.

" 1

| | | |
|---|---|---|
| Um | i(Sg) | 18 16 34.7 |
| De | e | 18 18 54 |

" 1

| | | |
|---|---|---|
| Sk | iP | 19 25 02.4 |

Mexico (h = 35 km).

" 1

| | | |
|---|---|---|
| Up | iP | 21 30 00.5 |
| Ki | eP | 21 29 40 |
| Ud | i(P) | 21 29 45.5 |

" 1

| | | |
|---|---|---|
| Up | ipP | 21 39 59.9 |
| Ki | iP | 21 39 03.5 |
| Um | iP | 21 39 24.6 |
| | ipP | 21 39 36.5 |
| Ud | iP | 21 39 55.7 |
| | ipP | 21 40 06.0 |

Japan.
h = 40 km (Um,Ud).

" 2

| | | |
|---|---|---|
| Up | iP | 00 58 50.0 |
| | ipP | 00 59 02.8 |
| | iSKS | 01 09 20 |

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970 July 2 (cont.)

| | | | | micr | sec |
|---|---|---|---|---|---|
| Up | | | | | |
| | Mx | E | | 1.5 | 20 |
| | Mx | N | | 1.4 | 22 |
| | Mx | Z | | 2.0 | 21 |
| Ki | iP | | | 00 58 54.0 | |
| | ipP | | | 00 59 06.9 | |
| | | | | micr | sec |
| | Mx | E | | 1.6 | 21 |
| | Mx | N | | 0.8 | 19 |
| | Mx | Z | | 1.6 | 20 |
| Sk | eP | | | 00 58 39 | |
| | ipP | | | 00 58 51.1 | |
| | iPP | | | 01 02 41.0 | |
| Um | iP | | | 00 58 54.7 | |
| | ipP | | | 00 59 07.3 | |
| | iPP | | | 01 03 03.5 | |
| | iSKS | | | 01 09 28 | |
| Ud | eP | | | 00 58 41 | |
| | ipP | | | 00 58 54.2 | |
| | iPP | | | 01 02 42.2 | |
| De | iP | | | 00 58 43.3 | |
| | ipP | | | 00 58 56.8 | |

Peru.
h = 50 km (Up,Ki,Sk,Um,Ud, De).
M = 5.6 (Up,Ki).

| | | | | | | |
|---|---|---|---|---|---|---|
| " | 2 | Up | iPKP | | 01 15 53.3 | |
| | | | | | micr | sec |
| | | | PKP | Z' | 0.3 | 1.3 |
| | | | Mx | E | 2.9 | 19 |
| | | | Mx | N | 1.9 | 23 |
| | | | Mx | Z | 1.8 | 19 |
| | | Ki | iPKP | | 01 15 53.0 | |
| | | | | | micr | sec |
| | | | PKP | Z' | 0.4 | 1.0 |
| | | | Mx | E | 1.9 | 20 |
| | | | Mx | N | 1.7 | 20 |
| | | | Mx | Z | 3.2 | 20 |
| | | Sk | iPKP | | 01 16 02.6 | D |
| | | | ePKS | | 01 19 41 | |
| | | Um | iPKP | | 01 15 52.7 | |
| | | | iPKS | | 01 19 32.9 | |
| | | | i | | 01 19 47.0 | |
| | | Ud | iPKP | | 01 16 03.9 | |
| | | | iPKS | | 01 19 44.6 | |
| | | De | iPKP | | 01 15 56.3 | |

South of Australia (h = N).
M = 6.2 (Up,Ki).

| | | | | |
|---|---|---|---|---|
| " | 2 | Up | iP | 01 58 39.4 |
| " | 2 | De | iP | 02 16 48.5 |
| " | 2 | Up | iP | 02 29 51.5 |

(cont.)

1970 July 2 (cont.)

| | | | | micr | sec |
|---|---|---|---|---|---|
| Up | | | | | |
| | Mx | E | | 1.9 | 20 |
| | Mx | N | | 2.8 | 20 |
| | Mx | Z | | 1.8 | 19 |
| Ki | iP | | | 02 30 47.3 | |
| | | | | micr | sec |
| | Mx | E | | 1.6 | 15 |
| | Mx | N | | 1.9 | 12 |
| | Mx | Z | | 2.1 | 11 |
| Sk | eP | | | 02 30 33 | |
| | iPP | | | 02 31 27.0 | |
| Um | iP | | | 02 30 16.1 | |
| | iSn | | | 02 35 44.7 | |
| Ud | iP | | | 02 30 05.5 | |
| | i | | | 02 30 10.6 | |
| De | iP | | | 02 29 42.9 | |

Turkey (h = 25 km).
M = 4.9 (Up,Ki).

| | | | | |
|---|---|---|---|---|
| " | 2 | Up | iP | 06 20 59.9 |
| | | Ud | iP | 06 21 00.2 |
| | | De | iP | 06 21 21.9 |

Aleutian Islands (h = 45 km).

| | | | | |
|---|---|---|---|---|
| " | 2 | Ki | ePKP | 07 36 24 |
| | | Um | iPKP | 07 36 30.7 |
| | | Ud | iPKP | 07 36 38.8 |
| | | De | iPKP | 07 36 50.3 |
| | | | iSKP | 07 39 41.2 |

Fiji Islands (h = 600 km).

| | | | | | | |
|---|---|---|---|---|---|---|
| " | 2 | Up | iP | | 07 54 58.0 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 0.8 |
| | | | Mx | E | 1.4 | 11 |
| | | | Mx | N | 1.4 | 12 |
| | | | Mx | Z | 1.5 | 16 |
| | | Ki | iP | | 07 56 13.6 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 1.5 |
| | | | Mx | E | 3.4 | 15 |
| | | | Mx | N | 0.7 | 11 |
| | | | Mx | Z | 1.1 | 13 |
| | | Sk | iP | | 07 55 38.2 | |
| | | Um | iP | | 07 55 37.1 | C |
| | | | iS | | 08 00 08 | |
| | | Ud | iP | | 07 55 04.3 | |
| | | De | iP | | 07 54 27.1 | |

Greece (h = 35 km).
m = 5.4, M = 5.0 (Up,Ki).

| | | | | |
|---|---|---|---|---|
| " | 2 | Um | i(P) | 11 20 06.3 |
| " | 2 | Ud | i(Sg) | 13 33 11.5 |
| | | De | i | 13 33 31.2 |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 July | 2 | Up | iP | | | 14 17 46.3 | |
| | | Ki | | | | micr | sec |
| | | | Mx | E | | 0.5 | 11 |
| | | | Mx | N | | 0.4 | 15 |
| | | Sk | iP | | | 14 18 24.8 | |
| | | Ud | iP | | | 14 17 52.2 | |
| | | Greece. | | | | | |
| " | 2 | Sk | eP | | | 14 25 43 | |
| | | Ud | iP | | | 14 25 15.1 | |
| | | Greece. | | | | | |
| " | 2 | Ki | ePn | | | 14 53 35 | |
| | | | iSn | | | 14 54 19.9 | |
| | | | iSg | | | 14 54 34.3 | |
| | | Sk | e(Lg1) | | | 14 57 28 | |
| | | Northwest Russia. | | | | | |
| | | Origin time = 14 52 35. | | | | | |
| | | Explosion? | | | | | |
| " | 2 | Ki | iSn | | | 16 53 16.6 | |
| | | | i(Lg1) | | | 16 53 34.3 | |
| " | 2 | Up | iP | | | 19 26 12.6 | |
| | | | | | | micr | sec |
| | | | P | | Z' | 0.1 | 0.8 |
| | | | Mx | | E | 1.4 | 19 |
| | | | Mx | | N | 1.4 | 18 |
| | | | Mx | | Z | 1.9 | 20 |
| | | Ki | iP | | | 19 26 13.3 | |
| | | | | | | micr | sec |
| | | | P | | Z' | 0.1 | 1.0 |
| | | | Mx | | E | 1.2 | 18 |
| | | | Mx | | N | 1.8 | 17 |
| | | | Mx | | Z | 1.7 | 19 |
| | | Sk | iP | | | 19 26 28.9 | |
| | | | ipP | | | 19 26 40.3 | |
| | | Um | iP | | | 19 26 09.6 | |
| | | | i | | | 19 26 18.0 | |
| | | Ud | iP | | | 19 26 24.6 | |
| | | | ipP | | | 19 26 36.1 | |
| | | | i | | | 19 29 17.1 | |
| | | De | iP | | | 19 26 23.0 | |
| | | | ipP | | | 19 26 35.8 | |
| | | Sumatra. | | | | | |
| | | h = 45 km (Sk,Ud,De). | | | | | |
| | | m = 5.9, M = 5.7 (Up,Ki). | | | | | |
| " | 2 | Ki | iP | | | 21 29 37.1 | |
| | | Ud | iP | | | 21 29 08.9 | |
| " | 2 | Up | iP | | | 22 42 16.4 | |
| " | 3 | Up | iP | | | 00 45 43.4 | |
| | | | i | | | 00 45 45.1 | |
| | | (cont.) | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 July | 3 | (cont.) | | | | | |
| | | Up | | | | micr | sec |
| | | | P | | Z' | 0.1 | 0.5 |
| | | | Mx | | E | 0.8 | 11 |
| | | | Mx | | N | 0.8 | 13 |
| | | | Mx | | Z | 1.0 | 11 |
| | | Ki | iP | | | 00 46 59.5 | |
| | | | | | | micr | sec |
| | | | Mx | | E | 1.8 | 15 |
| | | | Mx | | N | 0.5 | 13 |
| | | | Mx | | Z | 0.9 | 13 |
| | | Sk | iP | | | 00 46 24.8 | |
| | | Um | iP | | | 00 46 22.8 | |
| | | | i | | | 00 46 46.6 | |
| | | Ud | iP | | | 00 45 50.8 | |
| | | | i | | | 00 45 52.3 | |
| | | De | iP | | | 00 45 19.3 | |
| | | Greece (h = N). | | | | | |
| | | M = 4.7 (Up,Ki). | | | | | |
| " | 3 | Sk | iP | | | 00 59 04.3 | |
| " | 3 | Up | iP | | | 03 45 45.0 | |
| | | Sk | iP | | | 03 46 25.3 | C |
| | | Um | iP | | | 03 46 25.8 | |
| | | Ud | iP | | | 03 45 52.7 | C |
| | | De | iP | | | 03 45 16.4 | |
| | | Greece. | | | | | |
| " | 3 | Sk | e | | | 07 14 50 | |
| | | Um | i(P) | | | 07 14 29.9 | |
| " | 3 | Up | iP | | | 10 00 31.6 | D |
| | | | iPcP | | | 10 01 02.9 | |
| | | | iS | | | 10 08 35 | |
| | | | | | | micr | sec |
| | | | P | | Z' | 0.2 | 0.8 |
| | | Ki | iP | | | 09 59 43.6 | |
| | | | | | | micr | sec |
| | | | P | | Z' | 0.1 | 1.0 |
| | | Sk | iP | | | 10 00 19.3 | |
| | | Um | iP | | | 10 00 05.0 | |
| | | | iS | | | 10 07 48 | |
| | | Ud | iP | | | 10 00 36.7 | D |
| | | De | iP | | | 10 00 55.8 | |
| | | Okhotsk Sea (h = 360 km). | | | | | |
| | | m = 5.5 (Up,Ki). | | | | | |
| " | 3 | De | iP | | | 10 09 22.2 | |
| " | 3 | Up | iPKP | | | 10 41 28.3 | |
| | | | ipPKP | | | 10 41 44.6 | |
| | | | | | | micr | sec |
| | | | PKP | | Z' | 0.1 | 0.5 |
| | | Ki | ePKP | | | 10 41 11 | |
| | | (cont.) | | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | |
|---|---|---|---|---|---|
| 1970 July | 3 | (cont.) | | | |
| | | Sk | iPKP | 10 41 24.3 | D |
| | | Um | iPKP | 10 41 19.2 | |
| | | | ipPKP | 10 41 36.9 | |
| | | Ud | iPKP | 10 41 31.2 | |
| | | De | iPKP | 10 41 39.3 | |
| | | | ipPKP | 10 41 55.4 | |
| | | South of Kermadec Islands. h = 60 km (Up,Um,De). | | | |
| " | 3 | Up | iSg | 12 33 37.8 | |
| | | Ud | iPg | 12 32 48.8 | |
| | | | iSg | 12 33 11.2 | |
| | | De | iPg | 12 33 01.0 | |
| | | | iSg | 12 33 27.3 | |
| | | Västergötland, Sweden. Origin time = 12 32 18. | | | |
| " | 3 | Ki | iP | 13 44 13.7 | |
| | | De | iP | 13 44 10.1 | |
| " | 3 | Sk | i(P) | 15 10 50.1 | |
| | | Um | iP | 15 10 45.0 | |
| | | Ud | iP | 15 10 57.0 | |
| " | 3 | De | iP | 16 00 40.1 | |
| " | 3 | Up | iP | 16 42 15.3 | |
| | | Um | iP | 16 42 09.7 | |
| | | Ud | iP | 16 42 27.0 | |
| | | De | iP | 16 42 24.9 | |
| " | 3 | Sk | eSg | 18 25 03 | |
| | | Um | iPg | 18 23 18.1 | |
| | | | i | 18 23 34.8 | |
| | | | iSg | 18 23 38.0 | |
| " | 3 | Surface waves are recorded by long-period Press-Ewing seismographs at Uppsala and Umeå (M = 4.4), due to the atmospheric nuclear explosion at Tuamotu, 21.8°S, 139.2°W, at 18 30 00. | | | |
| " | 3 | Ki | iP | 19 03 53.8 | |
| " | 3 | Ki | iP | 21 42 54.1 | |
| | | Ud | iP | 21 43 16.0 | |
| | | Celebes (h = 270 km). | | | |
| " | 3 | Sk | eP | 23 01 18 | |
| | | Um | iP | 23 00 53.8 | |
| | | | i | 23 01 07.5 | |
| | | Ud | iP | 23 01 06.4 | |
| | | | i | 23 01 19.8 | |

| | | | | | |
|---|---|---|---|---|---|
| 1970 July | 4 | Um | iP | 01 10 22.0 | |
| | | North of Ascension Island (h = N). | | | |
| " | 4 | Sk | eP | 01 26 44 | |
| | | Um | iP | 01 26 53.3 | |
| | | Ud | iP | 01 26 22.8 | |
| | | | i | 01 26 28.6 | |
| | | North of Ascension Island (h = N). | | | |
| " | 4 | Up | iP | 03 12 12.4 | |
| | | Sk | eP | 03 12 28 | |
| | | Luzon. | | | |
| " | 4 | Ki | iSg | 10 44 04.6 | |
| | | Sk | eSg | 10 44 09 | |
| | | | i | 10 44 13.2 | |
| | | Um | iSg | 10 44 32.9 | |
| | | Nordland, Norway, 66.4°N, 14.8°E. Origin time = 10 42 36. | | | |
| " | 4 | Ki | ePn | 13 25 18 | |
| | | | iSn | 13 26 02.1 | |
| | | | iSg | 13 26 19.1 | |
| | | Sk | eSg | 13 28 43 | |
| | | Um | iSn | 13 26 44.9 | |
| | | | iSg | 13 27 09.3 | |
| | | Northwest Russia, 67.4°N, 29.7°E. Origin time = 13 24 20. Explosion? | | | |
| " | 4 | Ud | iP | 15 01 36.7 | |
| | | Kurile Islands (h = 55 km). | | | |
| " | 4 | Ki | iP | 19 15 27.8 | |
| | | Sk | eP | 19 15 48 | |
| | | Um | iP | 19 15 31.3 | |
| | | | ipP | 19 15 40.8 | |
| | | Ud | iP | 19 15 49.5 | |
| | | | ipP | 19 15 59.3 | |
| | | Banda Sea. h = 35 km (Um,Ud). | | | |
| " | 4 | Sk | e(P) | 20 22 24 | |
| | | Um | iP | 20 22 25.0 | |
| " | 4 | Up | iP | 23 45 59.4 | |
| | | Ki | iP | 23 46 33.9 | |
| | | Sk | iP | 23 46 34.4 | |
| | | Ud | iP | 23 46 14.4 | |
| | | Caucasus. Origin time = 23 40 38. | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 July | 5 | Ki | iP | | 07 09 16.2 | |
| | | | ipP | | 07 09 53.8 | |
| | | Ud | iP | | 07 09 00.8 | C |
| | | Peru-Brazil. | | | | |
| | | h = 150 km (Ki). | | | | |
| " | 5 | Um | i(P) | | 07 28 52.5 | |
| | | | i | | 07 31 40.8 | |
| " | 5 | Up | eP | | 14 25 23 | |
| | | | | | micr | sec |
| | | | Mx | E | 1.8 | 19 |
| | | | Mx | N | 1.4 | 18 |
| | | | Mx | Z | 3.0 | 19 |
| | | Ki | iP | | 14 25 06.4 | C |
| | | | ipP | | 14 25 13.2 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 1.3 |
| | | | Mx | E | 1.5 | 18 |
| | | | Mx | N | 1.7 | 20 |
| | | | Mx | Z | 2.0 | 18 |
| | | Sk | iP | | 14 25 28.0 | C |
| | | | ipP | | 14 25 36.2 | |
| | | Um | iP | | 14 25 12.1 | |
| | | | ipP | | 14 25 20.1 | |
| | | Ud | iP | | 14 25 32.3 | C |
| | | | ipP | | 14 25 39.5 | |
| | | De | iP | | 14 25 38.1 | |
| | | Mindanao. | | | | |
| | | h = 30 km (Ki,Sk,Um,Ud). | | | | |
| | | M = 5.7 (Up,Ki). | | | | |
| " | 5 | Ud | iP | | 18 28 42.3 | C |
| " | 5 | Um | iP | | 23 18 30.9 | |
| " | 6 | Up | iP | | 03 43 50.6 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 0.8 |
| | | Ki | iP | | 03 43 05.5 | C |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 1.0 |
| | | Sk | iP | | 03 43 39.4 | |
| | | Um | iP | | 03 43 26.3 | |
| | | Ud | iP | | 03 43 56.5 | C |
| | | De | iP | | 03 44 14.3 | |
| | | Kurile Islands (h = 60 km). | | | | |
| " | 6 | Ud | i(Sg) | | 07 03 44.4 | |
| " | 6 | Ki | iP | | 11 01 11.0 | C |
| | | Um | iP | | 11 01 38.3 | |
| | | | iPcP | | 11 02 18.3 | |
| | | Ud | iP | | 11 02 03.4 | |
| | | De | iP | | 11 02 26.5 | |
| | | Unimak Island (h = 90 km). | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 July | 6 | Up | iSn | | 12 53 04.9 | |
| | | | iSg | | 12 53 20.4 | |
| | | Ki | iSg | | 12 55 54.1 | |
| | | | i | | 12 56 04.5 | |
| | | Sk | iSg | | 12 55 11.2 | |
| | | Um | iSg | | 12 53 51.5 | |
| | | Ud | i | | 12 54 14.0 | |
| | | | iLgl | | 12 54 22.9 | |
| | | De | iLgl | | 12 54 47.5 | |
| | | Esthonia, | | | | |
| | | 59.7°N, 25.6°E. | | | | |
| | | Origin time = 12 51 10. | | | | |
| | | Explosion? | | | | |
| " | 6 | Ki | iP | | 15 14 42.9 | |
| | | Sk | iP | | 15 15 16.2 | |
| | | Um | iP | | 15 14 57.7 | |
| | | Ud | iP | | 15 15 27.3 | C |
| | | Sea of Japan (h = 370 km). | | | | |
| " | 6 | Ki | eP | | 16 27 23 | |
| | | Um | iP | | 16 27 31.2 | |
| | | Ud | iP | | 16 28 05.6 | |
| | | De | iP | | 16 28 19.3 | |
| | | USSR-Mongolia. | | | | |
| " | 6 | Up | iP | | 20 07 30.1 | |
| " | 6 | Up | iP | | 22 06 25.6 | |
| | | Ud | iP | | 22 06 31.5 | |
| | | Japan (h = 50 km). | | | | |
| " | 6 | Up | iP | | 23 52 33.7 | |
| | | Ki | iP | | 23 51 40.5 | |
| | | Ud | iP | | 23 52 34.3 | |
| | | Aleutian Islands (h = 230 km). | | | | |
| " | 7 | Ki | iPKP | | 02 11 37.8 | |
| | | New Hebrides Islands | | | | |
| | | (h = 20 km). | | | | |
| " | 7 | Ki | eP | | 04 23 47 | |
| | | Ud | iP | | 04 24 08.5 | |
| | | Burma-India (h = 130 km). | | | | |
| " | 7 | Ki | eP | | 06 09 52 | |
| | | Sk | iP | | 06 09 03.1 | |
| | | Um | iP | | 06 09 11.5 | |
| | | Ud | iP | | 06 08 26.8 | |
| | | Italy (h = 15 km). | | | | |
| " | 7 | Up | i(P) | | 06 16 57.5 | |
| " | 7 | Up | iP | | 06 31 12.3 | |
| | | | i | | 06 31 17.3 | |

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 July | 7 | (cont.) | | | | |
| | | Up | | | micr | sec |
| | | | P | Z' | 0.1 | 0.5 |
| | | Ki | iP | | 06 30 | 25.3 |
| | | Um | iP | | 06 30 | 46.9 |
| | | Ud | iP | | 06 31 | 17.7 |
| | | De | iP | | 06 31 | 37.5 |
| | | Kurile Islands (h = 80 km). | | | | |
| " | 7 | Um | i(P) | | 06 55 | 07.8 |
| " | 7 | Ki | iP | | 08 07 | 05.1 |
| | | | i | | 08 07 | 13.2 |
| | | Sk | eP | | 08 06 | 28 |
| | | Um | iP | | 08 06 | 54.5 |
| | | North Atlantic Ocean (h = N). | | | | |
| " | 7 | Um | iSg | | 10 14 | 34.2 |
| | | Ud | iLgl | | 10 15 | 07.0 |
| | | Probably Esthonia. | | | | |
| | | Explosion? | | | | |
| " | 7 | Um | iSg | | 12 58 | 08.3 |
| | | Ud | eLgl | | 12 58 | 38 |
| | | De | iLgl | | 12 59 | 04.4 |
| | | Esthonia, | | | | |
| | | 59.7°N, 25.6°E. | | | | |
| | | Origin time = 12 55 26. | | | | |
| | | Explosion? | | | | |
| " | 7 | Ud | iP | | 14 49 | 06.0 |
| | | De | iP | | 14 49 | 17.4 |
| " | 7 | Sk | iP | | 16 09 | 37.6 |
| | | De | iP | | 16 09 | 05.9 |
| | | | i | | 16 09 | 25.1 |
| " | 7 | Ki | iPn | | 20 45 | 47.0 |
| | | | iPx | | 20 45 | 55.6 |
| | | | iSn | | 20 46 | 33.2 |
| | | | iSg | | 20 46 | 50.5 |
| | | Sk | iSg | | 20 49 | 38.5 |
| | | Um | eSg | | 20 48 | 19 |
| | | Northwest Russia, | | | | |
| | | 69.0°N, 30.3°E. | | | | |
| | | Origin time = 20 44 46. | | | | |
| | | Explosion? | | | | |
| " | 7 | Um | iP | | 22 22 | 39.3 |
| | | Ud | iP | | 22 23 | 09.9 |
| | | De | iP | | 22 23 | 27.7 |
| " | 8 | Sk | iP | | 02 19 | 29.1 |
| | | Um | iP | | 02 19 | 46.0 |
| | | Panama (h = 30 km). | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 July | 8 | Up | iP | | 05 00 | 11.5 D |
| | | | iS | | 05 09 | 14 |
| | | | | | micr | sec |
| | | | P | Z' | 0.4 | 0.7 |
| | | | Mx | E | 1.0 | 18 |
| | | | Mx | N | 2.0 | 24 |
| | | | Mx | Z | 1.8 | 19 |
| | | Ki | iP | | 05 00 | 17.5 D |
| | | | i | | 05 01 | 05 |
| | | | iS | | 05 09 | 25 |
| | | | i | | 05 10 | 09 |
| | | | | | micr | sec |
| | | | P | Z' | 0.7 | 0.6 |
| | | | Mx | E | 1.5 | 20 |
| | | | Mx | N | 1.7 | 20 |
| | | Sk | iP | | 04 59 | 57.0 D |
| | | Um | iP | | 05 00 | 18.0 D |
| | | | iS | | 05 09 | 26 |
| | | Ud | iP | | 04 59 | 59.7 D |
| | | De | iP | | 05 00 | 00.5 D |
| | | Virgin Islands (h = 150 km). | | | | |
| | | m = 6.4, M = 5.5 (Up,Ki). | | | | |
| " | 8 | Ki | iPKP | | 06 40 | 59.7 |
| | | South Sandwich Islands | | | | |
| | | (h = N). | | | | |
| " | 8 | Up | i(Lgl) | | 11 09 | 51.6 |
| | | Ki | iPn | | 11 05 | 37.8 |
| | | | iSn | | 11 06 | 37.0 |
| | | | iLgl | | 11 06 | 56.3 |
| | | Sk | iLgl | | 11 09 | 25.4 |
| | | Um | iSg | | 11 07 | 51.5 |
| | | Ud | iLgl | | 11 10 | 20.3 |
| | | De | iLgl | | 11 11 | 48.1 |
| | | Northwest Russia, | | | | |
| | | 67.4°N, 33.3°E. | | | | |
| | | Origin time = 11 04 22. | | | | |
| | | Explosion? | | | | |
| " | 8 | Up | iSg | | 13 55 | 26.1 |
| | | Ki | iPn | | 13 50 | 36.7 |
| | | | iSn | | 13 51 | 24.6 |
| | | | iLgl | | 13 51 | 37.9 |
| | | Sk | eLgl | | 13 54 | 26 |
| | | Um | iSg | | 13 53 | 08.6 |
| | | Ud | iLgl | | 13 55 | 40.8 |
| | | De | e(Lgl) | | 13 57 | 23 |
| | | Northwest Russia, | | | | |
| | | 68.9°N, 31.1°E. | | | | |
| | | Origin time = 13 49 33. | | | | |
| | | Explosion? | | | | |
| " | 8 | Um | iP | | 14 19 | 25.8 |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 July | 8 | Ud | iP | | 15 07 11.6 | |
| | | De | iP | | 15 06 32.5 | |
| " | 8 | Up | iP | | 15 09 53.0 | |
| | | Ki | iP | | 15 09 10.1 | |
| | | Sk | iP | | 15 09 45.1 | |
| | | Um | iP | | 15 09 29.1 | C |
| | | Ud | iP | | 15 09 59.8 | C |
| | | De | iP | | 15 10 16.8 | |
| | | Japan (h = 70 km). | | | | |
| " | 8 | Up | iP | | 19 01 24.4 | |
| | | Ki | iP | | 19 01 10.6 | |
| | | Sk | iP | | 19 01 35.6 | |
| | | Um | iP | | 19 01 13.4 | |
| | | Ud | iP | | 19 01 36.4 | C |
| | | De | iP | | 19 01 40.2 | |
| " | 8 | Ki | eP | | 19 45 40 | |
| | | Um | iP | | 19 45 19.6 | |
| | | Ud | iP | | 19 45 31.6 | |
| " | 8 | Up | iP | | 19 58 30.4 | |
| | | | ipP | | 19 59 17.9 | |
| | | Ki | iP | | 19 57 37.8 | |
| | | | ipP | | 19 58 22.9 | |
| | | Um | ipP | | 19 58 38.9 | |
| | | Ud | iP | | 19 58 31.3 | |
| | | | ipP | | 19 59 16.7 | |
| | | De | iP | | 19 58 53.0 | |
| | | | ipP | | 19 59 37.5 | |
| | | Aleutian Islands. | | | | |
| | | h = 190 km (Up,Ki,Ud,De). | | | | |
| " | 8 | Up | iP | | 23 20 46.0 | |
| | | | iPP | | 23 22 11.7 | |
| | | Ki | iP | | 23 21 00.8 | |
| | | | ePP | | 23 22 29 | |
| | | | i | | 23 22 52.9 | |
| | | | | micr | sec | |
| | | | Mx | E 0.4 | 10 | |
| | | | Mx | N 0.3 | 10 | |
| | | | Mx | Z 0.3 | 10 | |
| | | Sk | iP | | 23 21 14.8 | |
| | | | i | | 23 21 25.3 | |
| | | | iPP | | 23 23 00.1 | |
| | | Um | iP | | 23 20 47.4 | |
| | | | i | | 23 21 09.5 | |
| | | | iPP | | 23 22 21.8 | |
| | | Ud | iP | | 23 21 03.0 | C |
| | | | iPP | | 23 22 48.4 | |
| | | Afghanistan-USSR (h = N). | | | | |
| " | 9 | Ki | eP | | 04 33 09 | |
| | | Ud | iP | | 04 33 34.7 | |
| | | | i | | 04 33 54.3 | |
| 1970 July | 9 | Sk | iP | | 07 02 36.0 | |
| " | 9 | Up | iP | | 07 54 07.3 | |
| | | Ud | iP | | 07 54 09.4 | |
| | | De | iP | | 07 54 19.6 | |
| " | 9 | Up | iP | | 08 22 10.9 | |
| | | | | micr | sec | |
| | | | P | Z' 0.2 | 1.2 | |
| | | | Mx | E 0.6 | 17 | |
| | | | Mx | N 1.0 | 17 | |
| | | | Mx | Z 0.9 | 15 | |
| | | Ki | iP | | 08 21 25.1 | C |
| | | | | micr | sec | |
| | | | P | Z' 0.1 | 1.0 | |
| | | | Mx | E 1.4 | 19 | |
| | | | Mx | N 1.3 | 20 | |
| | | | Mx | Z 1.4 | 17 | |
| | | Sk | iP | | 08 22 00.7 | |
| | | Um | iP | | 08 21 45.2 | |
| | | Ud | iP | | 08 22 16.8 | |
| | | | i | | 08 25 18.4 | |
| | | De | iP | | 08 22 34.8 | C |
| | | Kurile Islands (h = 50 km). | | | | |
| | | m = 6.1, M = 5.2 (Up,Ki). | | | | |
| " | 9 | Up | iSg | | 08 29 02.3 | |
| | | Sk | iSg | | 08 30 26.2 | |
| | | Um | iSg | | 08 31 10.2 | |
| | | Ud | i | | 08 28 32.6 | |
| | | | iSg | | 08 28 38.9 | |
| | | De | iSg | | 08 26 47.3 | |
| | | | iRg | | 08 27 05.5 | |
| | | Denmark, | | | | |
| | | 55.6°N, 11.7°E. | | | | |
| | | Origin time = 08 26 06. | | | | |
| " | 9 | Up | iP | | 11 35 41.0 | |
| | | | | micr | sec | |
| | | | P | Z' 0.1 | 1.0 | |
| | | | Mx | E 0.8 | 18 | |
| | | | Mx | N 2.0 | 17 | |
| | | | Mx | Z 1.7 | 18 | |
| | | Ki | iP | | 11 34 56.0 | C |
| | | | | micr | sec | |
| | | | P | Z' 0.1 | 1.0 | |
| | | | Mx | E 2.1 | 18 | |
| | | | Mx | N 1.8 | 19 | |
| | | | Mx | Z 2.4 | 16 | |
| | | Sk | iP | | 11 35 30.3 | |
| | | Um | iP | | 11 35 16.7 | C |
| | | Ud | iP | | 11 35 47.3 | |
| | | De | iP | | 11 36 04.7 | |
| | | Kurile Islands (h = 40 km). | | | | |
| | | m = 6.0, M = 5.4 (Up,Ki). | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970 July 9 Up iP 12 22 59.5 C
iPcP 12 23 23.6
micr sec
P Z' 0.2 0.7
Mx E 2.1 14
Mx N 5.1 17
Mx Z 4.6 18
Ki iP 12 22 13.8
ipP 12 22 24.4
micr sec
P Z' 0.1 0.9
Mx E 5.8 18
Mx N 5.0 20
Mx Z 6.1 16
Sk eP 12 22 49
Um iP 12 22 34.0
ipP 12 22 48.0
Ud iP 12 23 05.8 C
De iP 12 23 23.7 C
Kurile Islands.
h = 45 km (Ki,Um).
m = 6.2, M = 5.9 (Up,Ki).

" 9 Ki iP 17 02 11.9
Ud iP 17 02 37.1
Talaud Islands (h = 60 km).

" 9 Ki iSg 17 48 47.4
Sk ePg 17 48 15
iSg 17 48 51.8
Um iSg 17 49 13.9
Ud iSg 17 50 43.1
Nordland, Norway,
66.3°N, 14.5°E.
Origin time = 17 47 19.
Explosion?

" 9 Up iP 20 31 43.5
Ki eP 20 30 58
micr sec
Mx E 0.7 19
Mx N 0.5 20
Mx Z 0.7 17
Sk iP 20 31 33.3
Um iP 20 31 15.2
Ud iP 20 31 48.9
Kurile Islands (h = N).

" 9 Up iP 20 33 49.3
Ki iP 20 33 03.5
Um iP 20 33 23.9
Ud iP 20 33 55.1
Kurile Islands.
Origin time = 20 22 46.

" 9 Up iP 21 11 42.5
(cont.)

1970 July 9 (cont.)
Up i 21 11 57.8
iS 21 14 25.3
micr sec
P Z' 0.1 1.0
Ki iP 21 13 04.8 C
i 21 13 11.6
iS 21 17 14.2
micr sec
P Z' 0.1 1.0
Sk iP 21 12 35.6
i 21 12 39.2
eS 21 16 15
Um iP 21 12 23.0 C
iPn 21 12 39.6
iS 21 15 44.4
iSn 21 16 18.7
Ud iP 21 11 57.3
iPn 21 12 14.6
i 21 12 34.7
Rumania (h = 140 km).
m = 5.2 (Up,Ki).

" 9 Ud iP 22 38 03.2

" 10 Um iP 00 32 53.4
i 00 33 05.0
Ud iP 00 33 15.5
South of Japan (h = 40 km).

" 10 Up iP 01 22 24.1
Ud iP 01 22 30.1
Kurile Islands (h = N).

" 10 Um eP 02 52 41

" 10 Ki iSg 03 08 07.2
Sk iSg 03 08 13.1
Um iSg 03 08 36.7
Nordland, Norway.

" 10 Up iP 03 32 01.2
Ki iP 03 32 09.6
Sk eP 03 32 29
Um iP 03 31 59.0
Ud iP 03 32 17.9
i 03 32 50.9
Hindu Kush.

" 10 Sk iP 05 42 01.4
Um iP 05 41 46.5
i 05 41 55.7
Ud eP 05 41 42

" 10 Ud iPKP 07 19 00.9
Scotia Sea (h = N).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 July | 10 | Ki | eP | 09 41 24 | | |
| | | Sk | iP | 09 42 05.0 | | |
| | | Ud | iP | 09 42 53.3 | | |
| " | 10 | Up | iPKP | 09 44 12.9 | | |
| | | Ki | iPKP | 09 43 58.3 | | |
| | | | ipPKP | 09 44 32.8 | | |
| | | | iSKP | 09 47 08.0 | | |
| | | Sk | iPKP | 09 44 09.4 | | |
| | | | ipPKP | 09 44 43.8 | | |
| | | Um | iPKP | 09 44 04.4 | | |
| | | | ipPKP | 09 44 38.7 | | |
| | | Ud | iPKP | 09 44 14.7 | | |
| | | | ipPKP | 09 44 48.5 | | |
| | | Santa Cruz Islands. | | | | |
| | | h = 130 km (Ki,Sk,Um,Ud). | | | | |
| " | 10 | Up | iP | 10 45 50.9 | | |
| | | Ki | iP | 10 45 20.9 | | |
| | | Sk | iP | 10 45 49.6 | | |
| | | Um | iP | 10 45 34.5 D | | |
| | | Ud | iP | 10 45 58.5 | | |
| | | Bonin Islands (h = 500 km). | | | | |
| " | 10 | Ki | iPn | 10 49 10.2 | | |
| | | | iSn | 10 50 08.7 | | |
| | | | iLgl | 10 50 28.2 | | |
| | | Sk | i | 10 52 18.3 | | |
| | | | iSg | 10 52 59.3 | | |
| | | Um | iSg | 10 51 22.1 | | |
| | | Northwest Russia, | | | | |
| | | 67.4°N, 33.2°E. | | | | |
| | | Origin time = 10 47 53. | | | | |
| | | Explosion? | | | | |
| " | 10 | Ki | iP | 12 06 16.1 | | |
| | | | i | 12 06 28.7 | | |
| | | Mariana Islands (h = 110 km). | | | | |
| " | 10 | Um | eP | 13 06 53 | | |
| | | Ud | i(P) | 13 07 28.6 | | |
| " | 10 | Up | | micr | sec | |
| | | | Mx | E | 0.8 | 20 |
| | | | Mx | N | 0.9 | 18 |
| | | | Mx | Z | 1.8 | 22 |
| | | Ki | iP | 13 27 24.3 | | |
| | | | i | 13 27 51.0 | | |
| | | | | micr | sec | |
| | | | Mx | E | 0.8 | 19 |
| | | | Mx | N | 0.8 | 19 |
| | | | Mx | Z | 1.0 | 16 |
| | | Sk | iP | 13 27 20.7 | | |
| | | | i | 13 27 39.5 | | |
| | | Um | iP | 13 27 33.9 | | |
| | | (cont.) | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1970 July | 10 | (cont.) | | | |
| | | Um | i | 13 27 50.5 | |
| | | | i | 13 29 12.4 | |
| | | Mexico (h = 45 km). | | | |
| | | M = 5.3 (Up,Ki). | | | |
| " | 10 | Up | iP | 13 34 54.7 | |
| | | | i | 13 35 13.3 | |
| | | Ki | iP | 13 35 50.4 | C |
| | | | iPn | 13 36 17.1 | |
| | | | iSn | 13 41 25.7 | |
| | | Sk | eP | 13 35 38 | |
| | | | iPP | 13 36 18.2 | |
| | | Um | iP | 13 35 18.3 | |
| | | Ud | iP | 13 35 09.4 | |
| | | | iS | 13 39 32.4 | |
| | | Turkey (h = 15 km). | | | |
| " | 10 | Up | iP | 14 21 58.8 | D |
| | | | iS | 14 24 20.2 | |
| | | | | micr | sec |
| | | | P | Z' 0.2 | 0.5 |
| | | | Mx | E 0.8 | 6 |
| | | | Mx | N 1.0 | 7 |
| | | | Mx | Z 0.5 | 7 |
| | | Ki | iP | 14 23 31.6 | |
| | | | iS | 14 27 08.8 | |
| | | | iLgl | 14 29 33.4 | |
| | | | | micr | sec |
| | | | Mx | E 1.3 | 8 |
| | | | Mx | N 0.4 | 8 |
| | | | Mx | Z 0.5 | 7 |
| | | Sk | eP | 14 22 56 | |
| | | | iPP | 14 23 11.6 | |
| | | | iS | 14 26 18.1 | |
| | | | iLgl | 14 28 15.9 | |
| | | Um | iP | 14 22 41.4 | |
| | | | i | 14 22 48.8 | |
| | | | iSn | 14 25 38.3 | |
| | | | i | 14 26 42.4 | |
| | | | iLgl | 14 27 28.7 | |
| | | Ud | iP | 14 22 15.4 | |
| | | | iSn | 14 24 49.3 | |
| | | | iLgl | 14 26 34.1 | |
| | | De | iP | 14 21 36.0 | |
| | | | iLgl | 14 25 07.0 | |
| | | Rumania (h = N). | | | |
| | | M = 4.8 (Up,Ki). | | | |
| " | 10 | Up | iP | 16 28 35.3 | |
| | | Ki | eP | 16 28 06 | |
| | | Sk | iP | 16 28 34.9 | |
| | | | ipP | 16 28 49.2 | |
| | | Um | iP | 16 28 16.1 | |
| | | | ipP | 16 28 32.4 | |
| | | (cont.) | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1970 | | | | | | | | |
| July | 10 | (cont.) | | | | | | |
| | | Ud | iP | | | 16 | 28 | 44.1 |
| | | | i | | | 16 | 28 | 51.8 |
| | | De | iP | | | 16 | 28 | 57.3 |
| | | Ryukyu Islands. | | | | | | |
| | | h = 60 km (Sk,Um). | | | | | | |
| " | 10 | Up | iP | | | 19 | 56 | 34.9 |
| " | 10 | Ki | iP | | | 21 | 17 | 04.5 |
| " | 10 | Up | iP | | | 21 | 19 | 00.7 |
| | | | i | | | 21 | 19 | 02.5 |
| | | | iS | | | 21 | 29 | 17 |
| | | | | | micr | | sec | |
| | | | P | Z' | 0.7 | | 0.7 | |
| | | | Mx | E | 1.0 | | 20 | |
| | | | Mx | N | 0.9 | | 21 | |
| | | | Mx | Z | 1.2 | | 19 | |
| | | Ki | iP | | | 21 | 18 | 45.2 C |
| | | | iS | | | 21 | 28 | 47 |
| | | | | | micr | | sec | |
| | | | P | Z' | 0.5 | | 0.8 | |
| | | | Mx | E | 1.9 | | 20 | |
| | | | Mx | N | 1.1 | | 21 | |
| | | | Mx | Z | 2.3 | | 19 | |
| | | Sk | iP | | | 21 | 19 | 07.8 C |
| | | Um | iP | | | 21 | 18 | 50.6 C |
| | | | iS | | | 21 | 28 | 56 |
| | | Ud | iP | | | 21 | 19 | 11.6 C |
| | | De | iP | | | 21 | 19 | 17.2 |
| | | Mindoro (h = 80 km). | | | | | | |
| | | m = 6.6, M = 5.5 (Up,Ki). | | | | | | |
| " | 10 | Up | iP | | | 22 | 01 | 48.9 |
| | | | | | micr | | sec | |
| | | | P | Z' | 0.1 | | 0.7 | |
| | | Um | iP | | | 22 | 01 | 14.1 |
| | | Ud | iP | | | 22 | 01 | 51.7 |
| " | 11 | Ud | iP | | | 03 | 32 | 09.6 |
| | | Aleutian Islands (h = 45 km). | | | | | | |
| " | 11 | Up | iP | | | 05 | 37 | 54.2 |
| | | Ud | iP | | | 05 | 37 | 53.5 |
| | | Aleutian Islands (h = 35 km). | | | | | | |
| " | 11 | Ki | iPn | | | 12 | 28 | 34.8 |
| | | | iSn | | | 12 | 29 | 20.1 |
| | | | iLg1 | | | 12 | 29 | 32.4 |
| | | Probably northwest Russia. | | | | | | |
| | | Origin time = 12 27 35. | | | | | | |
| | | Explosion? | | | | | | |
| " | 11 | Ki | e(Sg) | | | 13 | 28 | 09 |
| | | Sk | e(Sg) | | | 13 | 30 | 43 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1970 | | | | | | | | |
| July | 11 | Ki | iP | | | 13 | 40 | 36.1 |
| | | Sk | eP | | | 13 | 39 | 58 |
| | | Ud | iP | | | 13 | 39 | 28.3 |
| | | De | eP | | | 13 | 38 | 59 |
| | | Crete (h = 20 km). | | | | | | |
| " | 11 | Up | iP | | | 14 | 39 | 38.6 |
| | | | | | micr | | sec | |
| | | | P | Z' | 0.1 | | 0.5 | |
| | | Ki | iP | | | 14 | 39 | 00.6 |
| | | Sk | iP | | | 14 | 39 | 34.0 C |
| | | Um | iP | | | 14 | 39 | 17.8 |
| | | Ud | iP | | | 14 | 39 | 46.8 C |
| | | De | iP | | | 14 | 40 | 01.7 C |
| | | Japan (h = 70 km). | | | | | | |
| " | 11 | Up | iP | | | 21 | 28 | 16.7 |
| | | Ki | | | micr | | sec | |
| | | | Mx | E | 0.5 | | 13 | |
| | | | Mx | N | 0.5 | | 16 | |
| | | | Mx | Z | 0.6 | | 14 | |
| | | Sk | iP | | | 21 | 28 | 17.2 |
| | | Um | iP | | | 21 | 27 | 59.0 |
| | | Ud | iP | | | 21 | 28 | 27.3 |
| | | | i | | | 21 | 28 | 29.6 |
| | | | i | | | 21 | 28 | 37.4 |
| | | Ryukyu Islands (h = 35 km). | | | | | | |
| " | 11 | Up | iP | | | 22 | 47 | 18.6 |
| | | | ipP | | | 22 | 47 | 28.7 |
| | | | | | micr | | sec | |
| | | | Mx | E | 0.8 | | 15 | |
| | | | Mx | N | 1.6 | | 20 | |
| | | | Mx | Z | 1.1 | | 14 | |
| | | Ki | iP | | | 22 | 47 | 56.9 |
| | | | | | micr | | sec | |
| | | | P | Z' | 0.2 | | 1.4 | |
| | | | Mx | E | 1.2 | | 18 | |
| | | | Mx | N | 1.5 | | 19 | |
| | | | Mx | Z | 3.4 | | 19 | |
| | | Sk | iP | | | 22 | 47 | 56.5 |
| | | Um | iP | | | 22 | 47 | 31.5 |
| | | | ipP | | | 22 | 47 | 41.2 |
| | | | iS | | | 22 | 52 | 33 |
| | | Ud | iP | | | 22 | 47 | 34.4 C |
| | | | ipP | | | 22 | 47 | 45.2 |
| | | De | iP | | | 22 | 47 | 19.4 |
| | | | i | | | 22 | 47 | 26.5 |
| | | Caspian Sea. | | | | | | |
| | | h = 50 km (Up,Um,Ud). | | | | | | |
| | | M = 4.8 (Up,Ki). | | | | | | |
| " | 11 | Up | iP | | | 23 | 34 | 00.6 |
| | | | | | micr | | sec | |
| | | | Mx | E | 0.6 | | 11 | |
| | | | Mx | N | 0.7 | | 15 | |
| | | | Mx | Z | 0.9 | | 15 | |

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 July | 11 | (cont.) | | | | | |
| | | Ki | eP | | | 23 35 19 | |
| | | | | | | micr | sec |
| | | | Mx | E | | 1.6 | 15 |
| | | | Mx | N | | 0.4 | 12 |
| | | | Mx | Z | | 0.6 | 11 |
| | | Sk | iP | | | 23 34 42.0 | |
| | | Um | iP | | | 23 34 39.8 | |
| | | Ud | iP | | | 23 34 07.7 | |
| | | De | iP | | | 23 33 34.1 | |
| | | Greece-Albania (h = 40 km). | | | | | |
| | | M = 4.7 (Up,Ki). | | | | | |
| " | 12 | Sk | eP | | | 01 24 00 | |
| | | Ud | iP | | | 01 23 38.2 | |
| | | Iran (h = 6 km). | | | | | |
| " | 12 | Up | iP | | | 04 30 10.3 | |
| | | Ki | iP | | | 04 29 24.1 | |
| | | Sk | iP | | | 04 29 59.8 | |
| | | Um | iP | | | 04 29 45.0 C | |
| | | Ud | iP | | | 04 30 16.5 | |
| | | Okhotsk Sea (h = 370 km). | | | | | |
| " | 12 | Up | iP | | | 09 30 52.6 | |
| | | | iS | | | 09 41 34 | |
| | | | | | | micr | sec |
| | | | P | Z' | | 0.2 | 0.7 |
| | | | Mx | E | | 1.6 | 21 |
| | | | Mx | N | | 1.6 | 20 |
| | | | Mx | Z | | 2.7 | 21 |
| | | Ki | iP | | | 09 30 34.3 | |
| | | | | | | micr | sec |
| | | | P | Z' | | 0.1 | 1.0 |
| | | | Mx | E | | 1.8 | 18 |
| | | | Mx | N | | 1.4 | 18 |
| | | | Mx | Z | | 4.4 | 20 |
| | | Sk | iP | | | 09 30 55.9 | |
| | | | ipP | | | 09 31 17.1 | |
| | | Um | iP | | | 09 30 39.6 | |
| | | | i | | | 09 30 43.0 | |
| | | | ipP | | | 09 31 03.0 | |
| | | | iS | | | 09 41 09 | |
| | | Ud | iP | | | 09 31 00.2 | |
| | | | ipP | | | 09 31 22.9 | |
| | | | iPP | | | 09 34 33.3 | |
| | | De | iP | | | 09 31 06.7 | |
| | | Leyte. | | | | | |
| | | h = 80 km (Sk,Um,Ud). | | | | | |
| | | m = 6.0, M = 5.6 (Up,Ki). | | | | | |
| " | 12 | Up | iP | | | 10 11 59.6 | |
| | | Sk | iP | | | 10 12 25.3 | |
| | | Um | iP | | | 10 11 58.0 C | |
| | | Ud | iP | | | 10 12 15.9 C | |
| | | Hindu Kush (h = 200 km). | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 July | 12 | Ud | i(P) | | | 18 05 48.0 | |
| " | 12 | Ud | iP | | | 18 27 07.3 | |
| | | Peru-Bolivia (h = 250 km). | | | | | |
| " | 12 | Ud | i(P) | | | 19 18 45.8 | |
| " | 12 | Ki | iP | | | 20 33 31.8 | |
| | | Java (h = 55 km). | | | | | |
| " | 12 | Up | i | | | 23 23 26.2 | |
| | | Ki | i | | | 23 24 43.4 | |
| | | Sk | e | | | 23 26 29 | |
| " | 13 | Up | iP | | | 00 51 28.4 C | |
| | | | | | | micr | sec |
| | | | Mx | E | | 0.6 | 17 |
| | | | Mx | N | | 0.5 | 10 |
| | | | Mx | Z | | 0.6 | 10 |
| | | Ki | iP | | | 00 52 43.5 | |
| | | | | | | micr | sec |
| | | | Mx | E | | 1.2 | 14 |
| | | | Mx | N | | 0.6 | 14 |
| | | | Mx | Z | | 0.9 | 17 |
| | | Sk | iP | | | 00 52 09.7 | |
| | | | i | | | 00 53 05.4 | |
| | | Um | iP | | | 00 52 08.3 | |
| | | Ud | iP | | | 00 51 35.7 | |
| | | | i | | | 00 51 40.4 | |
| | | Greece (h = N). | | | | | |
| | | M = 4.6 (Up,Ki). | | | | | |
| " | 13 | Ki | i(Sg) | | | 12 38 44.7 | |
| " | 13 | Ki | iP | | | 16 09 40.3 | |
| | | | isP | | | 16 10 11.0 | |
| | | Sk | iP | | | 16 10 07.9 | |
| | | | epP | | | 16 10 31 | |
| | | Um | iP | | | 16 10 09.3 | |
| | | | isP | | | 16 10 40.1 | |
| | | Ud | iP | | | 16 10 32.8 | |
| | | | ipP | | | 16 10 56.1 | |
| | | De | iP | | | 16 10 57.8 C | |
| | | | isP | | | 16 11 29.0 | |
| | | Alaska. | | | | | |
| | | h = 90 km (Ki,Sk,Um,Ud,De). | | | | | |
| " | 13 | Um | iP | | | 21 45 14.4 | |
| | | Ud | iP | | | 21 44 40.2 | |
| " | 13 | Up | iP | | | 21 51 18.0 | |
| | | Ki | eP | | | 21 51 36 | |
| " | 14 | Up | iPKP | | | 04 06 18.7 | |
| | | (cont.) | | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 July | 14 | (cont.) | | | | |
| | | Ki | iPKP | | 04 06 04.8 | |
| | | Sk | iPKP | | 04 06 11.8 | |
| | | Um | iPKP | | 04 06 07.4 | |
| | | | i | | 04 06 10.0 | |
| | | Ud | iPKP | | 04 06 21.0 | |
| | | | i | | 04 06 25.4 | |
| | | De | iPKP | | 04 06 33.9 | |
| | | Kermadec Islands (h = 60 km). | | | | |
| " | 14 | Up | iP | | 04 52 52.3 | |
| | | | i | | 04 53 00.6 | |
| | | | i | | 04 53 09.5 | |
| | | Ki | eP | | 04 52 21 | |
| | | | ipP | | 04 52 33.9 | |
| | | Um | iP | | 04 52 36.1 | |
| | | | ipP | | 04 52 49.6 | |
| | | Ud | iP | | 04 53 06.1 | |
| | | South of Japan. | | | | |
| | | h = 50 km (Ki,Um). | | | | |
| " | 14 | Ki | iP | | 05 44 19.7 C | |
| " | 14 | Ud | iPg | | 12 41 32.1 | |
| | | | iSg | | 12 41 52.4 | |
| | | De | iSg | | 12 42 12.5 | |
| | | Västergötland, Sweden, | | | | |
| | | 58.6°N, 13.7°E. | | | | |
| | | Origin time = 12 41 05. | | | | |
| " | 14 | Up | iP | | 18 09 52.0 | |
| | | | | | micr | sec |
| | | | Mx | E | 0.8 | 17 |
| | | | Mx | N | 2.4 | 17 |
| | | | Mx | Z | 2.7 | 17 |
| | | Ki | iP | | 18 08 26.8 | |
| | | | iS | | 18 09 50.7 | |
| | | | eT | | 18 13 50 | |
| | | | i | | 18 14 46.1 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.2 | 1.5 |
| | | | Mx | E | 3.5 | 16 |
| | | | Mx | N | 1.1 | 16 |
| | | | Mx | Z | 4.9 | 16 |
| | | Sk | iP | | 18 08 54.2 | |
| | | | iS | | 18 10 37.0 | |
| | | Um | iP | | 18 09 11.0 C | |
| | | | iS | | 18 11 02.1 | |
| | | Ud | iP | | 18 09 41.0 | |
| | | | iS | | 18 12 00.6 | |
| | | De | iP | | 18 10 29.5 C | |
| | | Norwegian Sea (h = N). | | | | |
| " | 15 | Up | iP | | 01 04 54.9 | |
| | | Ud | iP | | 01 05 04.4 | |
| 1970 July | 15 | Up | iP | | 05 50 02.4 | |
| | | Ud | iP | | 05 50 13.1 | |
| | | Indian Ocean (h = N). | | | | |
| " | 15 | Um | iSg | | 12 21 43.6 | |
| | | Ud | eLgl | | 12 22 11 | |
| | | Probably Esthonia. | | | | |
| | | Explosion? | | | | |
| " | 15 | Ki | ePKP | | 22 19 40 | |
| | | Sk | iPKP | | 22 19 52.0 | |
| | | Ud | iPKP | | 22 20 01.0 | |
| | | Kermadec Islands (h = N). | | | | |
| " | 16 | Up | iP | | 01 52 15.9 | |
| | | Ki | iP | | 01 51 30.2 | |
| | | | | | micr | sec |
| | | | Mx | E | 0.7 | 19 |
| | | Ud | iP | | 01 52 21.7 | |
| | | Kurile Islands (h = 40 km). | | | | |
| " | 16 | Up | iPKP | | 07 57 06.2 | |
| | | | | | micr | sec |
| | | | PKP | Z' | 0.4 | 0.6 |
| | | Ki | iPKP | | 07 56 48.0 | |
| | | | i | | 07 56 55.3 | |
| | | Sk | ePKP | | 07 56 59 | |
| | | Um | iPKP | | 07 56 54.5 | |
| | | Ud | iPKP | | 07 57 07.9 D | |
| | | De | iPKP | | 07 57 18.4 D | |
| | | Tonga-Kermadec Islands | | | | |
| | | (h = 230 km). | | | | |
| " | 16 | Sk | iSg | | 13 03 45.9 | |
| | | Um | iSg | | 13 02 36.6 | |
| | | Ud | eSg | | 13 02 53 | |
| | | De | iSg | | 13 03 18.0 | |
| | | Esthonia. | | | | |
| | | Explosion? | | | | |
| " | 16 | Up | iPKP | | 16 02 44.2 | |
| | | | | | micr | sec |
| | | | PKP | Z' | 0.6 | 0.8 |
| | | Ki | ePKP | | 16 02 28 | |
| | | Sk | ePKP | | 16 02 37 | |
| | | Um | iPKP | | 16 02 32.6 | |
| | | Ud | iPKP | | 16 02 45.8 C | |
| | | De | iPKP | | 16 02 56.3 | |
| | | Tonga-Kermadec Islands | | | | |
| | | (h = 90 km). | | | | |
| " | 16 | Up | iPKP | | 16 04 54.6 | |
| | | Ud | iPKP | | 16 04 56.4 C | |
| | | De | iPKP | | 16 05 06.7 | |
| | | (cont.) | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 July | 16 | (cont.) Tonga-Kermadec Islands. Origin time = 15 45 31. Probably aftershock of the preceding earthquake. | | | | |
| " | 16 | Up | i(PKP) | | 21 37 01.1 | |
| | | | iPKP | | 21 37 10.4 | |
| | | | | | micr | sec |
| | | | Mx | E | 0.9 | 19 |
| | | | Mx | N | 2.1 | 21 |
| | | | Mx | Z | 2.0 | 21 |
| | | Ki | ePKP | | 21 36 54 | |
| | | | | | micr | sec |
| | | | Mx | E | 1.5 | 20 |
| | | | Mx | N | 0.7 | 18 |
| | | | Mx | Z | 4.0 | 19 |
| | | Sk | ePKP | | 21 37 05 | |
| | | Um | iPKP | | 21 37 00.0 | |
| | | | iPKS | | 21 40 30 | |
| | | Ud | iPKP | | 21 37 03.1 | |
| | | De | i(PKP) | | 21 37 11.5 | |
| | | | iPKP | | 21 37 21.0 | |
| | | Tonga Islands (h = N). M = 5.9 (Up,Ki). | | | | |
| " | 17 | Up | iP | | 05 06 11.1 | |
| | | Ki | eP | | 05 06 40 | |
| | | Ud | iP | | 05 06 20.4 | |
| | | Indian Ocean (h = N). | | | | |
| " | 17 | Up | iP | | 07 43 14.5 | |
| | | | ipP | | 07 43 28.0 | |
| | | Ki | iP | | 07 42 22.5 | |
| | | Sk | eP | | 07 42 57 | |
| | | Um | iP | | 07 42 50.7 | |
| | | Ud | iP | | 07 43 13.8 | C |
| | | De | iP | | 07 43 36.8 | |
| | | | ipP | | 07 43 49.4 | |
| | | Aleutian Islands. h = 50 km (Up,De). | | | | |
| " | 17 | Um | iP | | 07 59 49.6 | |
| | | Ud | iP | | 08 00 20.2 | |
| " | 17 | Sk | iP | | 09 31 59.1 | |
| | | Um | iP | | 09 31 42.9 | |
| | | Ud | iP | | 09 32 13.8 | C |
| | | Japan (h = 100 km). | | | | |
| " | 17 | Ki | iPn | | 11 11 42.1 | |
| | | | iSn | | 11 12 41.2 | |
| | | | iSg | | 11 13 04.4 | |
| | | Sk | eLgl | | 11 15 26 | |
| | | (cont.) | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 July | 17 | (cont.) | | | | |
| | | Um | iSn | | 11 13 19.7 | |
| | | | iSg | | 11 13 54.7 | |
| | | Ud | iLgl | | 11 16 21.9 | |
| | | De | iLgl | | 11 17 56.3 | |
| | | Northwest Russia, 67.5°N, 33.3°E. Origin time = 11 10 25. Explosion? | | | | |
| " | 17 | Up | iSg | | 12 13 17.6 | |
| | | Ki | iSg | | 12 15 51.3 | |
| | | Sk | iSg | | 12 15 11.2 | |
| | | Um | iSg | | 12 13 51.2 | |
| | | Ud | iLgl | | 12 14 19.4 | |
| | | De | eLgl | | 12 14 43 | |
| | | Esthonia, 59.7°N, 25.6°E. Origin time = 12 11 09. Explosion? | | | | |
| " | 17 | Up | iPn | | 13 35 49.4 | |
| | | | iSg | | 13 36 48.5 | |
| | | | i | | 13 36 53.4 | |
| | | Ki | eSn | | 13 39 04 | |
| | | | iSg | | 13 40 53.0 | |
| | | Sk | eSg | | 13 39 10 | |
| | | Um | iSg | | 13 38 41.6 | |
| | | Ud | iPn | | 13 36 09.5 | C |
| | | | iSg | | 13 37 32.0 | |
| | | | i | | 13 37 43.7 | |
| | | De | iPn | | 13 35 48.2 | |
| | | | iPg | | 13 35 56.9 | |
| | | | iSg | | 13 36 49.3 | |
| | | Baltic Sea, off coast of Latvia, 56.5°N, 20.6°E. Origin time = 13 34 43. Explosion? | | | | |
| " | 17 | Up | iPn | | 13 43 40.9 | |
| | | | i(Sg) | | 13 44 45.2 | |
| | | Sk | eSg | | 13 47 05 | |
| | | Um | iSg | | 13 46 31.9 | |
| | | Ud | iPn | | 13 44 00.3 | |
| | | | iSg | | 13 45 21.9 | |
| | | | i | | 13 45 35.0 | |
| | | De | iPn | | 13 43 38.5 | |
| | | | iPg | | 13 43 47.5 | |
| | | | iSg | | 13 44 41.0 | |
| | | Baltic Sea, off coast of Latvia, 56.5°N, 20.6°E. Origin time = 13 42 34. Explosion? | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 July | 17 | Up | eSg | | 17 56 04 | |
| | | Ki | eSg | | 17 53 59 | |
| | | Sk | iSg | | 17 54 03.4 | |
| | | Um | iSn | | 17 54 12.0 | |
| | | | iSg | | 17 54 25.9 | |
| | | Ud | e | | 17 55 29 | |
| | | | iSg | | 17 55 52.7 | |
| | | Nordland, Norway, 66.3°N, 14.6°E. Origin time = 17 52 30. Explosion? | | | | |
| " | 17 | Up | eP | | 18 02 56 | |
| | | Ki | eP | | 18 03 00 | |
| | | Sk | eP | | 18 02 44 | |
| | | Um | iP | | 18 03 01.7 | |
| | | Ud | iP | | 18 02 48.9 | |
| | | De | iP | | 18 02 49.5 | |
| | | Ecuador (h = 180 km). | | | | |
| " | 17 | Up | iPKP | | 20 24 11.2 | |
| | | | ePP | | 20 27 05 | |
| | | | | | micr sec | |
| | | | Mx | E | 1.7 18 | |
| | | | Mx | N | 3.1 19 | |
| | | | Mx | Z | 2.9 18 | |
| | | Ki | iPKP | | 20 24 02.4 | |
| | | | ePKS | | 20 27 21 | |
| | | | | | micr sec | |
| | | | Mx | E | 2.6 20 | |
| | | | Mx | N | 1.0 17 | |
| | | | Mx | Z | 3.6 18 | |
| | | Um | iPKP | | 20 24 03.1 | |
| | | | i | | 20 24 08.5 | |
| | | | iPP | | 20 26 43.8 | |
| | | | i | | 20 27 03.6 | |
| | | Ud | iPKP | | 20 24 08.9 | |
| | | | iPP | | 20 27 15.8 | |
| | | De | iPKP | | 20 24 20.2 | |
| | | Tonga Islands (h = N). M = 6.1 (Up,Ki). | | | | |
| " | 18 | Up | iP | | 01 59 35.9 C | |
| | | | | | micr sec | |
| | | | P | Z' | 0.3 0.8 | |
| | | | Mx | E | 5.0 19 | |
| | | | Mx | N | 6.9 20 | |
| | | | Mx | Z | 8.9 21 | |
| | | Ki | iP | | 01 58 43.2 C | |
| | | | | | micr sec | |
| | | | P | Z' | 0.1 1.0 | |
| | | | Mx | E | 7.8 21 | |
| | | | Mx | N | 2.3 20 | |
| | | | Mx | Z | 7.6 18 | |
| | | Sk | iP | | 01 59 16.9 | |
| | | | iPcP | | 01 59 48.2 | |
| | | (cont.) | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1970 July | 18 | (cont.) | | | |
| | | Um | iP | | 01 59 09.1 C |
| | | | iPcP | | 01 59 43.6 |
| | | | iS | | 02 07 44 |
| | | Ud | iP | | 01 59 36.8 C |
| | | De | iP | | 01 59 58.9 C |
| | | Aleutian Islands (h = 45 km). m = 6.2, M = 6.0 (Up,Ki). | | | |
| " | 18 | Up | iP | | 02 03 52.0 |
| | | Ki | iP | | 02 02 59.7 |
| | | Um | iP | | 02 03 26.0 |
| | | Ud | iP | | 02 03 52.3 |
| | | De | iP | | 02 04 15.0 |
| | | Aleutian Islands. Origin time = 01 52 55. | | | |
| " | 18 | Up | iP | | 02 27 50.0 |
| | | Ki | eP | | 02 28 29 |
| | | Um | eP | | 02 28 06 |
| " | 18 | Ki | iPKP | | 03 17 18.9 |
| | | | i | | 03 20 34.7 |
| | | Sk | iPKP | | 03 17 28.7 |
| | | | i | | 03 20 41.4 |
| | | Um | iPKP | | 03 17 18.8 |
| | | | i | | 03 20 31.2 |
| | | Ud | e | | 03 20 45 |
| " | 18 | Up | iP | | 04 04 45.1 |
| | | Ud | iP | | 04 05 00.0 C |
| " | 18 | Ki | i(PKP) | | 09 19 07.4 |
| | | South Sandwich Islands (h = 50 km). | | | |
| " | 18 | Ki | iPn | | 13 36 22.1 |
| | | | iSn | | 13 37 15.1 |
| | | Sk | eLgl | | 13 39 37 |
| | | Um | iPg | | 13 36 55.6 |
| | | | iSn | | 13 37 39.9 |
| | | | iSg | | 13 38 08.8 |
| | | Northwest Russia, 66.4°N, 31.5°E. Origin time = 13 35 10. Explosion? | | | |
| " | 18 | Up | iP | | 19 16 41.9 |
| | | Um | iP | | 19 16 31.7 |
| | | Ud | iP | | 19 16 54.9 |
| " | 18 | Ud | i(P) | | 23 30 46.0 |
| " | 19 | Up | i | | 04 13 01.5 |
| | | Um | i(Sg) | | 04 14 22.4 |
| | | Ud | e | | 04 12 47 |
| | | (cont.) | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 July | 19 | (cont.) | | | | |
| | | Ud | i(Sg) | | | 04 13 54.9 |
| | | De | e | | | 04 13 05 |
| | | Probably underwater explosion in the Baltic Sea. | | | | |
| " | 19 | Up | | | micr | sec |
| | | | Mx | E | 1.7 | 22 |
| | | | Mx | N | 2.1 | 21 |
| | | | Mx | Z | 4.1 | 21 |
| | | Ki | iPKKP | | | 09 52 23.2 |
| | | | | | micr | sec |
| | | | Mx | E | 3.0 | 20 |
| | | | Mx | N | 1.1 | 18 |
| | | | Mx | Z | 2.0 | 18 |
| | | Um | iPKP | | | 09 41 22.4 |
| | | | iPKKP | | | 09 52 14.6 |
| | | Ud | iPP | | | 09 42 16.1 |
| | | New Ireland (h = 20 km). | | | | |
| | | M = 5.9 (Up,Ki). | | | | |
| " | 19 | Ki | iP | | | 15 43 21.6 |
| | | Ud | iP | | | 15 43 30.7 |
| | | Sunda Strait (h = 40 km). | | | | |
| " | 19 | Ki | iP | | | 15 58 15.5 |
| | | Sk | iP | | | 15 58 37.8 |
| | | Ud | iP | | | 15 58 39.0 |
| | | Mindanao (h = 70 km). | | | | |
| " | 19 | Ki | iP | | | 18 32 55.5 |
| | | Um | iP | | | 18 33 10.9 |
| | | Ud | iP | | | 18 33 26.0 |
| | | Kazakh SSR. | | | | |
| " | 19 | Up | iP | | | 19 37 58.6 |
| " | 19 | Up | iP | | | 20 41 25.2 |
| | | Ud | iP | | | 20 41 16.9 |
| " | 19 | Up | iP | | | 23 42 46.3 |
| | | | iPcP | | | 23 43 10.9 |
| | | Ud | iP | | | 23 42 52.2 |
| | | Kurile Islands (h = N). | | | | |
| " | 20 | Up | iP | | | 01 46 35.3 C |
| | | Um | iP | | | 01 46 09.2 |
| | | Ud | iP | | | 01 46 40.5 |
| " | 20 | Up | iP | | | 03 14 24.3 |
| | | Ki | iP | | | 03 13 49.5 |
| | | Sk | iP | | | 03 14 19.9 |
| | | Um | iP | | | 03 14 04.3 |
| | | | ipP | | | 03 14 16.4 |
| | | (cont.) | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 July | 20 | (cont.) | | | | |
| | | Ud | iP | | | 03 14 30.9 |
| | | | ipP | | | 03 14 43.5 |
| | | South of Japan. | | | | |
| | | h = 45 km (Um,Ud). | | | | |
| " | 20 | Up | iP | | | 04 47 50.0 |
| | | Ki | iP | | | 04 47 11.1 |
| | | Um | iP | | | 04 47 28.4 |
| | | Ud | iP | | | 04 47 57.0 |
| | | Japan (h = 80 km). | | | | |
| " | 20 | Up | iP | | | 09 34 46.3 |
| " | 20 | Up | iSn | | | 12 11 40.9 |
| | | | iSg | | | 12 11 54.2 |
| | | Ki | eSg | | | 12 14 24 |
| | | Sk | eSg | | | 12 13 43 |
| | | Um | iSg | | | 12 12 27.0 |
| | | Ud | iSn | | | 12 12 23.4 |
| | | | iLgl | | | 12 12 56.9 |
| | | De | eLgl | | | 12 13 18 |
| | | Esthonia, | | | | |
| | | 59.7°N, 25.6°E. | | | | |
| | | Origin time = 12 09 44. | | | | |
| | | Explosion? | | | | |
| " | 20 | Up | iP | | | 17 57 13.4 |
| | | | ipP | | | 17 57 57.3 |
| | | Ki | iP | | | 17 57 16.9 |
| | | Sk | iP | | | 17 57 00.9 C |
| | | Um | iP | | | 17 57 18.2 |
| | | Ud | iP | | | 17 57 03.3 |
| | | | i | | | 17 57 14.5 |
| | | De | iP | | | 17 57 04.7 |
| | | Colombia. | | | | |
| | | h = 180 km (Up). | | | | |
| " | 20 | Up | iPKP | | | 20 48 39.9 |
| | | | | | micr | sec |
| | | | PKP | Z' | 0.1 | 0.6 |
| | | Ud | iPKP | | | 20 48 41.7 |
| | | | i | | | 20 48 46.3 |
| | | De | iPKP | | | 20 48 51.9 |
| | | Tonga-Kermadec Islands (h = 340 km). | | | | |
| " | 20 | Ud | iP | | | 21 29 27.0 |
| | | Afghanistan-USSR. | | | | |
| " | 20 | Up | iP | | | 23 23 09.7 |
| " | 21 | Um | iP | | | 01 15 58.3 |
| " | 21 | Up | iP | | | 01 25 26.7 C |
| | | | iPP | | | 01 27 02.3 |
| | | (cont.) | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970 July 21 (cont.)

| | | | | |
|---|---|---|---|---|
| | Up | | micr | sec |
| | | P | Z' 0.2 | 0.6 |
| | Ki | iP | 01 25 36.5 | C |
| | | isP | 01 26 44.2 | |
| | | | micr | sec |
| | | P | Z' 0.5 | 1.0 |
| | Sk | iP | 01 25 52.7 | C |
| | | ipP | 01 26 36.9 | |
| | | iPP | 01 27 37.0 | |
| | Um | iP | 01 25 25.6 | C |
| | | isP | 01 26 33.1 | |
| | Ud | iP | 01 25 43.4 | C |
| | | ipP | 01 26 27.5 | |
| | | iPP | 01 27 23.1 | |
| | De | iP | 01 25 38.6 | |
| | | ipP | 01 26 23.8 | |
| | | iPP | 01 27 17.2 | |

Hindu Kush.
h = 210 km (Ki,Sk,Um,Ud,De).
m = 5.8 (Up,Ki).

| | | | | |
|---|---|---|---|---|
| " 21 | Up | iP | 03 09 49.5 | C |
| | | iPn | 03 10 53.5 | |
| | | | micr | sec |
| | | P | Z' 0.1 | 0.5 |
| | Ki | iP | 03 09 34.1 | C |
| | | | micr | sec |
| | | P | Z' 0.2 | 0.6 |
| | Sk | iP | 03 10 05.2 | C |
| | Um | iP | 03 09 34.8 | C |
| | Ud | iP | 03 10 06.3 | C |
| | | iPn | 03 11 16.2 | |
| | De | iP | 03 10 13.1 | C |

Kazakh SSR.
m = 6.1 (Up,Ki).
Underground explosion.

| | | | | |
|---|---|---|---|---|
| " 21 | Up | iPP | 09 08 44.9 | |
| | Ki | iP | 09 07 25.1 | |
| | | ipP | 09 07 49.6 | |
| | | | micr | sec |
| | | P | Z' 0.1 | 1.0 |
| | Sk | iP | 09 07 45.0 | |
| | | epP | 09 08 11 | |
| | | ePP | 09 09 23 | |
| | Um | iP | 09 07 16.4 | |
| | Ud | iP | 09 07 38.0 | C |
| | De | iP | 09 07 36.4 | |

Tadzhik-Sinkiang.
h = 120 km (Ki,Sk).

| | | | | |
|---|---|---|---|---|
| " 21 | Ki | iP | 10 47 12.9 | |
| | Sk | iP | 10 47 10.7 | |
| | Um | iP | 10 46 49.4 | |
| | Ud | iP | 10 46 49.9 | |
| | De | eP | 10 46 34 | |

Iran (h = 20 km).

1970 July 21

| | | | |
|---|---|---|---|
| Up | iPcP | 10 59 48.8 | |
| Ki | iP | 10 58 29.9 | |
| Ud | iP | 10 59 11.9 | |

Aleutian Islands (h = 55 km).

| | | | |
|---|---|---|---|
| " 21 | Sk | eSg | 11 57 38 |
| | Um | iSg | 11 56 21.6 |
| | Ud | eLgl | 11 56 54 |

Esthonia.
Origin time = 11 53 40.
Explosion?

| | | | | |
|---|---|---|---|---|
| " 21 | Up | iP | 15 47 12.7 | |
| | | ipP | 15 47 28.0 | |
| | | | micr | sec |
| | | P | Z' 0.1 | 0.5 |
| | Ki | ipP | 15 47 29.0 | |
| | Sk | ipP | 15 47 48.8 | |
| | Um | iP | 15 47 08.1 | |
| | | ipP | 15 47 23.7 | |
| | Ud | iP | 15 47 27.4 | |
| | | ipP | 15 47 42.7 | |
| | | i | 15 47 58.5 | |

Nepal-India.
h = 60 km (Up,Um,Ud).

| | | | | |
|---|---|---|---|---|
| " 21 | Um | iP | 16 50 03.1 | |
| " 21 | Um | iP | 18 47 28.4 | |

Mexico (h = N).

| | | | | |
|---|---|---|---|---|
| " 21 | Up | iP | 19 52 52.8 | |
| | Um | iP | 19 52 34.5 | D |
| | | i | 19 52 45.1 | |
| | Ud | iP | 19 52 59.5 | D |
| " 21 | Ud | iP | 22 13 38.7 | |
| " 21 | Ki | eP | 23 15 01 | |
| | Um | iP | 23 15 29.3 | |
| | Ud | iP | 23 15 51.6 | |

Unimak Island (h = N).

| | | | |
|---|---|---|---|
| " 22 | Ud | iP | 01 27 53.1 |
| | | i | 01 28 02.1 |
| " 22 | Ud | iP | 09 44 34.4 |
| " 22 | Ki | iPn | 12 53 52.3 |
| | | iSn | 12 54 38.8 |
| | | iLgl | 12 54 51.8 |
| | Sk | iLgl | 12 57 37.9 |
| | | iSg | 12 57 48.9 |
| | Um | iSg | 12 56 26.1 |
| | | i | 12 56 37.2 |

Northwest Russia,
68.9°N, 30.8°E.
Origin time = 12 52 50.
Explosion?

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | |
|---|---|---|---|---|---|
| 1970 July | 23 | Ud | iP | 09 42 18.9 | |
| | | Philippine Islands (h = 60 km). | | | |
| " | 23 | Ki | iPKP | 16 04 07.1 | |
| | | Um | iPKP | 16 04 15.9 | |
| | | Ud | iPKP | 16 04 24.3 | |
| | | Tonga Islands (h = 100 km). | | | |
| " | 23 | Ki | ePKP | 17 20 07 | |
| | | South Pacific Ocean (h = N). | | | |
| " | 23 | Um | iP | 19 17 54.5 | |
| | | Mariana Islands (h = 140 km). | | | |
| " | 24 | Up | iP | 04 03 52.8 | C |
| | | | iPn | 04 04 56.4 | |
| | | Ki | iP | 04 03 37.3 | C |
| | | | | micr | sec |
| | | | P Z' | 0.1 | 0.6 |
| | | Sk | iP | 04 04 08.3 | C |
| | | Um | iP | 04 03 37.8 | |
| | | | iPP | 04 04 45.6 | |
| | | Ud | iP | 04 04 09.3 | C |
| | | | iPn | 04 05 21.7 | |
| | | De | iP | 04 04 16.2 | |
| | | | iPn | 04 05 35.1 | |
| | | Kazakh SSR. Underground explosion. | | | |
| " | 24 | Ki | iP | 08 12 16.6 | |
| | | | i | 08 12 29.5 | |
| | | Sk | eP | 08 12 53 | |
| | | | iPcP | 08 13 21.3 | |
| | | Ud | iP | 08 13 11.9 | |
| | | Aleutian Islands (h = N). | | | |
| " | 24 | Up | iP | 16 17 48.5 | |
| " | 25 | Up | iP | 01 45 21.2 | C |
| | | | | micr | sec |
| | | | P Z' | 0.2 | 0.5 |
| | | Ki | iP | 01 45 18.5 | C |
| | | Sk | iP | 01 45 39.0 | C |
| | | Um | iP | 01 45 14.7 | |
| | | | ipP | 01 45 25.0 | |
| | | Ud | iP | 01 45 35.1 | C |
| | | De | iP | 01 45 35.3 | |
| | | | ipP | 01 45 45.0 | |
| | | India-East Pakistan. h = 40 km (Um,De). | | | |
| " | 25 | Up | iP | 11 16 00.9 | |
| | | | | micr | sec |
| | | | P Z' | 0.1 | 1.0 |
| | | (cont.) | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1970 July | 25 | (cont.) | | | |
| | | Ki | iP | 11 15 28.9 | |
| | | Sk | iP | 11 15 57.8 | |
| | | | iPP | 11 19 02.9 | |
| | | Um | iP | 11 15 42.4 | |
| | | Ud | iP | 11 16 08.2 | D |
| | | De | iP | 11 16 20.0 | |
| | | Bonin Islands (h = 460 km). | | | |
| " | 25 | Up | iP | 11 16 44.7 | |
| | | | | micr | sec |
| | | | P Z' | 0.1 | 0.5 |
| | | Ki | iP | 11 16 12.4 | |
| | | Sk | iP | 11 16 41.4 | |
| | | | iPP | 11 19 47.5 | |
| | | Um | iP | 11 16 26.0 | |
| | | Ud | iP | 11 16 51.3 | |
| | | De | iP | 11 17 03.6 | |
| | | Bonin Islands. Origin time = 11 05 27. Probably same hypocenter as for the preceding shock. | | | |
| " | 25 | Ki | iPn | 13 17 08.2 | |
| | | | iSn | 13 17 45.2 | |
| | | | iSg | 13 17 59.4 | |
| | | Origin time = 13 16 19. | | | |
| " | 25 | Ki | i(P) | 13 37 49.8 | |
| | | Um | iP | 13 37 28.0 | |
| | | Ud | iP | 13 38 17.9 | |
| | | | i | 13 38 25.0 | |
| " | 25 | Up | iPKP | 16 19 04.8 | |
| | | | i | 16 19 06.9 | |
| | | Ki | iPKP | 16 18 36.0 | C |
| | | Sk | iPKP | 16 18 50.2 | |
| | | Um | iPKP | 16 18 45.7 | |
| | | Ud | iPKP | 16 19 08.4 | |
| " | 25 | Ud | iP | 17 47 24.1 | |
| | | Hindu Kush. | | | |
| " | 25 | Ud | iP | 19 34 39.3 | |
| | | Hindu Kush. | | | |
| " | 25 | Up | iP | 22 52 39.9 | C |
| | | | i | 22 52 46.0 | |
| | | | iPP | 22 55 19.5 | |
| | | | iS | 23 02 08 | |
| | | | | micr | sec |
| | | | P Z' | 0.8 | 1.5 |
| | | | PP Z' | 0.3 | 1.5 |
| | | | Mx E | 85 | 16 |
| | | | Mx N | 170 | 17 |
| | | | Mx Z | 150 | 17 |
| | | (cont.) | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 July | 25 | (cont.) | | | | |
| | | Ki | iP | | 22 52 06.6 | C |
| | | | i | | 22 52 11.7 | |
| | | | iS | | 23 01 10 | |
| | | | eP'P' | | 23 20 23 | |
| | | | | | micr | sec |
| | | | P | Z' | 1.3 | 2.0 |
| | | | Mx | E | 170 | 17 |
| | | | Mx | N | 120 | 16 |
| | | | Mx | Z | 380 | 19 |
| | | Sk | iP | | 22 52 38.6 | C |
| | | Um | iP | | 22 52 20.3 | C |
| | | | i | | 22 52 25.3 | |
| | | | iS | | 23 01 40 | |
| | | | iP'P' | | 23 20 13.8 | |
| | | Ud | iP | | 22 52 48.5 | C |
| | | | i | | 22 52 54.5 | |
| | | De | iP | | 22 53 01.1 | C |
| | | | i | | 22 53 06.7 | |
| | | Japan (h = 35 km). | | | | |
| | | m = 6.6, M = 7.4 (Up,Ki). | | | | |
| | | Probably double P, 5.6 sec apart in average. | | | | |
| " | 25 | Up | iP | | 23 35 25.2 | |
| " | 25 | Ki | iP | | 23 39 19.6 | |
| | | Um | iP | | 23 39 33.1 | |
| | | Ud | iP | | 23 40 01.3 | |
| | | Japan (h = N). | | | | |
| " | 25 | Up | eP | | 23 42 34 | |
| " | 26 | Up | iP | | 00 02 24.0 | |
| | | | i | | 00 02 37.6 | |
| " | 26 | Ki | eP | | 02 48 56 | |
| | | Ud | eP | | 02 49 44 | |
| | | Japan (h = 25 km). | | | | |
| " | 26 | Up | iSn | | 05 10 26.3 | |
| | | | iLgl | | 05 11 13.1 | |
| | | | iSg | | 05 11 27.7 | |
| | | Ki | iPn | | 05 07 13.4 | |
| | | | iSn | | 05 08 10.5 | |
| | | | iSg | | 05 08 32.9 | |
| | | Sk | iSn | | 05 10 02.8 | |
| | | | iSg | | 05 10 59.4 | |
| | | Um | iSn | | 05 08 51.5 | |
| | | | i | | 05 09 23.1 | |
| | | | iSg | | 05 09 25.3 | |
| | | Ud | iSn | | 05 10 46.9 | |
| | | | iLgl | | 05 11 49.6 | |
| | | De | e | | 05 13 02 | |
| | | | i(Lgl) | | 05 13 25.0 | |
| | | (cont.) | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 July | 26 | (cont.) | | | | |
| | | Northwest Russia, | | | | |
| | | 67.5°N, 32.6°E. | | | | |
| | | Origin time = 05 06 00. | | | | |
| | | Explosion? | | | | |
| " | 26 | Up | iLgl | | 05 41 57.1 | |
| | | Ki | iPn | | 05 37 51.2 | |
| | | | iSn | | 05 38 49.2 | |
| | | | iSg | | 05 39 11.0 | |
| | | Sk | eSn | | 05 40 39 | |
| | | | iSg | | 05 41 36.7 | |
| | | Um | iSn | | 05 39 29.3 | |
| | | | iSg | | 05 40 04.6 | |
| | | Ud | iLgl | | 05 42 17.9 | |
| | | De | e(Lgl) | | 05 44 05 | |
| | | Northwest Russia, | | | | |
| | | 67.5°N, 32.6°E. | | | | |
| | | Origin time = 05 36 38. | | | | |
| | | Explosion? | | | | |
| " | 26 | Up | iP | | 07 22 05.2 | C |
| | | | | | micr | sec |
| | | | P | Z' | 1.3 | 2.0 |
| | | | Mx | E | 11 | 18 |
| | | | Mx | N | 17 | 16 |
| | | | Mx | Z | 18 | 14 |
| | | Ki | iP | | 07 21 32.1 | C |
| | | | ipP | | 07 21 42.9 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.6 | 2.0 |
| | | | Mx | E | 18 | 15 |
| | | | Mx | N | 8.7 | 14 |
| | | | Mx | Z | 35 | 17 |
| | | Sk | iP | | 07 22 03.3 | C |
| | | | iPP | | 07 24 47.6 | |
| | | Um | iP | | 07 21 45.3 | C |
| | | Ud | iP | | 07 22 13.8 | C |
| | | | iPP | | 07 25 03.0 | |
| | | De | iP | | 07 22 26.3 | C |
| | | Japan. | | | | |
| | | h = 40 km (Ki). | | | | |
| | | m = 6.6, M = 6.5 (Up,Ki). | | | | |
| " | 26 | Up | iP | | 12 02 04.3 | |
| | | Ud | eP | | 12 02 12 | |
| " | 26 | Ki | iPn | | 13 15 16.5 | |
| | | | iSn | | 13 15 53.8 | |
| | | | iSg | | 13 16 09.5 | |
| | | Um | i | | 13 17 03.4 | |
| | | Ud | i | | 13 19 37.0 | |
| " | 26 | Um | i | | 13 58 11.8 | |
| | | | i | | 13 58 15.6 | |
| | | Ud | i | | 13 59 45.3 | |
| | | | i | | 13 59 54.0 | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 July | 26 | Up | iP | | 20 38 35.8 | |
| | | Ki | iP | | 20 38 44.0 | |
| | | Um | iP | | 20 38 33.5 | |
| | | Ud | iP | | 20 38 51.8 | |
| | | | i | | 20 38 59.5 | |
| | | West Pakistan (h = N). | | | | |
| " | 27 | Um | iP | | 00 52 59.3 | |
| | | Ud | iP | | 00 53 15.2 | |
| " | 27 | Um | iP | | 11 15 51.4 | |
| | | De | iP | | 11 16 35.2 | |
| | | Japan (h = 55 km). | | | | |
| " | 27 | Ki | eP | | 12 38 29 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 1.7 |
| | | Um | iP | | 12 38 47.9 | |
| | | Ud | iP | | 12 39 12.0 | |
| | | South of Japan. | | | | |
| " | 27 | Up | i(PKP) | | 12 51 21.6 | |
| | | | | | micr | sec |
| | | | (PKP) | Z' | 0.2 | 0.5 |
| | | Ki | iPKP | | 12 50 49.9 | |
| | | | | | micr | sec |
| | | | PKP | Z' | 0.1 | 1.2 |
| | | Sk | iPKP | | 12 51 03.7 | |
| | | Um | iPKP | | 12 50 58.7 | C |
| | | Ud | iPKP | | 12 51 08.3 | |
| | | | i(PKP) | | 12 51 26.0 | |
| | | De | i(PKP) | | 12 51 25.9 | |
| | | | iPKP2 | | 12 51 39.1 | |
| | | New Zealand (h = 90 km). | | | | |
| " | 27 | Ud | iP | | 19 14 28.5 | |
| " | 27 | Um | iP | | 20 52 07.7 | |
| | | Japan (h = 70 km). | | | | |
| " | 28 | Up | iPKP | | 00 52 58.1 | |
| | | Ki | iPKP | | 00 53 13.3 | C |
| | | | ipPKP | | 00 53 46.0 | |
| | | | | | micr | sec |
| | | | PKP | Z' | 0.1 | 1.0 |
| | | Um | iPKP | | 00 53 06.1 | |
| | | | ipPKP | | 00 53 38.4 | |
| | | Ud | iPKP | | 00 52 55.6 | |
| | | | i | | 00 56 16.8 | |
| | | South Sandwich Islands. | | | | |
| | | h = 120 km (Ki,Um). | | | | |
| " | 28 | Ud | ePKP | | 05 07 07 | |
| | | De | iPKP | | 05 07 21.1 | |
| | | | i | | 05 07 31.3 | |
| | | Tonga Islands (h = N). | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 July | 28 | Up | iP | | 06 41 05.3 | |
| | | | iPP | | 06 42 37.0 | |
| | | Ki | iP | | 06 41 17.8 | |
| | | | iPP | | 06 42 48.0 | |
| | | | | | micr | sec |
| | | | Mx | E | 0.4 | 9 |
| | | | Mx | N | 0.5 | 7 |
| | | | Mx | Z | 0.5 | 9 |
| | | Sk | iP | | 06 41 32.4 | |
| | | Um | iP | | 06 41 05.2 | |
| | | | iPP | | 06 42 30.9 | |
| | | Ud | iP | | 06 41 21.9 | |
| | | | iPP | | 06 42 55.0 | |
| | | De | iP | | 06 41 17.3 | |
| | | Hindu Kush (h = 60 km). | | | | |
| " | 28 | Ud | i(Sg) | | 10 10 10.3 | |
| | | De | i(Sg) | | 10 10 30.1 | |
| " | 28 | Up | iSg | | 12 14 37.3 | |
| | | Ud | iSg | | 12 13 49.9 | |
| | | De | iPg | | 12 12 51.4 | |
| | | | iSg | | 12 13 17.7 | |
| | | Near Frederikshavn, Denmark, 57.4°N, 10.6°E. | | | | |
| | | Origin time = 12 12 11. | | | | |
| " | 28 | Um | iP | | 13 15 43.6 | |
| " | 28 | Up | iP | | 16 35 36.5 | |
| | | Ki | iP | | 16 34 38.7 | |
| | | Sk | iP | | 16 35 16.7 | |
| | | Um | iP | | 16 35 12.7 | |
| | | Ud | iP | | 16 35 38.6 | |
| " | 28 | Up | iP | | 19 38 53.5 | |
| | | Ki | iP | | 19 37 59.8 | |
| | | | ipP | | 19 38 19.4 | |
| | | Sk | iP | | 19 38 30.8 | |
| | | | iPcP | | 19 39 07.3 | |
| | | Um | iP | | 19 38 27.0 | |
| | | | ipP | | 19 38 46.5 | |
| | | Ud | iP | | 19 38 52.4 | |
| | | | ipP | | 19 39 12.0 | |
| | | De | iP | | 19 39 15.2 | |
| | | | ipP | | 19 39 34.4 | |
| | | Aleutian Islands. | | | | |
| | | h = 70 km (Ki,Um,Ud,De). | | | | |
| " | 28 | Up | iPg | | 20 22 18.1 | |
| | | | iSg | | 20 22 38.4 | |
| | | Sk | eLgl | | 20 24 50 | |
| | | Um | iLgl | | 20 24 31.9 | |
| | | Ud | iPg | | 20 22 44.4 | |
| | | | iSg | | 20 23 23.6 | |
| | | De | eSg | | 20 23 27 | |
| | | | e | | 20 23 39 | |

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970
July 28 (cont.)
Baltic Sea,
58.4°N, 18.1°E.
Origin time = 20 21 48.
Probably underwater
explosion.

" 28 Up iPg 20 22 48.8
iSg 20 23 08.8
Um iLgl 20 25 01.2
Ud iSg 20 23 51.4
Baltic Sea,
58.4°N, 18.1°E.
Origin time = 20 22 19.
Probably underwater
explosion.

" 28 Up iP 21 33 58.4

" 28 Up

| | | micr | sec |
|---|---|---|---|
| Mx | E | 1.4 | 18 |
| Mx | N | 1.3 | 21 |
| Mx | Z | 2.4 | 19 |

Ki

| | | micr | sec |
|---|---|---|---|
| Mx | E | 1.2 | 18 |
| Mx | N | 0.7 | 20 |

Um iPKP 23 25 40.0
Chile (h = N).
M = 5.8 (Up,Ki).

" 29 Up iP 05 58 48.4

| | | micr | sec |
|---|---|---|---|
| P | Z' | 0.1 | 1.0 |
| Mx | E | 9.6 | 17 |
| Mx | N | 5.4 | 15 |
| Mx | Z | 15 | 17 |

Ki iP 05 58 44.6 C
i 05 59 33.6

| | | micr | sec |
|---|---|---|---|
| P | Z' | 0.3 | 1.0 |
| Mx | E | 24 | 15 |
| Mx | N | 4.1 | 11 |

Sk iP 05 59 07.9 C
i 05 59 14.2
Um iP 05 58 39.0
i 05 58 45.9
iS 06 04 34
Ud iP 05 59 03.5 C
iPP 06 00 50.8
De iP 05 59 04.3 C
iPP 06 00 51.6
Sinkiang (h = 15 km).
m = 5.8, M = 6.1 (Up,Ki).
Double P, about 6.6 sec apart.

" 29 Up iP 10 26 33.2 D
(cont.)

1970
July 29 (cont.)

| | | | micr | sec |
|---|---|---|---|---|
| Up | i | | 10 26 55 | |
| | iS | | 10 34 50.4 | |
| | i | | 10 35 21 | |
| | iP'P' | | 10 55 43.1 | |
| | | | micr | sec |
| | P | Z' | 1.0 | 0.5 |
| | Mx | E | 21 | 17 |
| | Mx | N | 63 | 20 |
| | Mx | Z | 29 | 15 |
| Ki | iP | | 10 26 24.7 | D |
| | iS | | 10 34 35.0 | |
| | i | | 10 38 11.9 | |
| | iP'P' | | 10 55 50.7 | |
| | | | micr | sec |
| | P | Z' | 2.8 | 1.0 |
| | Mx | E | 42 | 15 |
| | Mx | N | 18 | 11 |
| | Mx | Z | 52 | 14 |
| Sk | iP | | 10 26 48.0 | D |
| | iS | | 10 35 19.5 | |
| | i | | 10 38 21.5 | |
| | iP'P' | | 10 55 43.1 | |
| Um | iP | | 10 26 24.4 | D |
| | iS | | 10 34 34.0 | |
| | i | | 10 38 11.6 | |
| | iP'P' | | 10 55 41.0 | |
| Ud | iP | | 10 26 46.6 | D |
| | i | | 10 32 56.8 | |
| | iS | | 10 35 15.5 | |
| De | iP | | 10 26 48.4 | D |
| | iS | | 10 35 14.8 | |
| | i | | 10 38 24.1 | |
| | iP'P' | | 10 55 47.7 | |

Burma-India (h = 60 km).
m = 7.3, M = 6.9 (Up,Ki).
The phase appearing at
10 38 (Ki,Sk,Um,De)
probably belongs to a
different earthquake.

" 29 Up iP 10 41 03.9
Ki eP 10 40 56
Sk eP 10 41 19
Um eP 10 40 55
Ud iP 10 41 17.0
Burma-India (h = N).

" 29 Up iP 10 41 23.5

| | | micr | sec |
|---|---|---|---|
| P | Z' | 0.2 | 1.0 |

Ki iP 10 41 14.9

| | | micr | sec |
|---|---|---|---|
| P | Z' | 0.1 | 1.2 |

Sk iP 10 41 38.4
Um iP 10 41 15.2
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 July | 29 | (cont.) | | | | | |
| | | Ud | iP | | 10 41 37.1 | | |
| | | De | i(P) | | 10 41 31.8 | | |
| | | | iP | | 10 41 37.7 | | |
| | | Burma-India (h = 50 km). | | | | | |
| | | m = 6.1 (Up,Ki). | | | | | |
| " | 29 | Ud | iP | | 18 35 53.8 | | |
| | | | i | | 18 36 10.2 | | |
| | | South Atlantic Ocean (h = N). | | | | | |
| " | 30 | Up | iP | | 00 58 51.1 | | |
| | | | i | | 00 58 55.1 | | |
| | | | iS | | 01 04 08 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.3 | 0.6 | |
| | | | Mx | E | 38 | 11 | |
| | | | Mx | N | 78 | 11 | |
| | | | Mx | Z | 59 | 11 | |
| | | Ki | iP | | 00 59 19.0 | | |
| | | | i(S) | | 01 05 14 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 3.9 | 2.5 | |
| | | | Mx | E | 110 | 12 | |
| | | | Mx | N | 220 | 13 | |
| | | | Mx | Z | 150 | 13 | |
| | | Sk | iP | | 00 59 25.5 | | |
| | | | i | | 00 59 32.0 | | |
| | | Um | iP | | 00 58 58.7 | | |
| | | | iS | | 01 04 18 | | |
| | | Ud | iP | | 00 59 08.6 | | |
| | | De | iP | | 00 58 58.2 D | | |
| | | | i | | 00 59 02.2 | | |
| | | Iran-USSR (h = 20 km). | | | | | |
| | | m = 6.6, M = 7.0 (Up,Ki). | | | | | |
| " | 30 | Up | iP | | 02 08 35.8 | | |
| | | | i | | 02 09 01.3 | | |
| | | | iPP | | 02 09 22.7 | | |
| | | Ki | eP | | 02 09 03 | | |
| | | Sk | eP | | 02 09 09 | | |
| | | Um | iP | | 02 08 43.5 | | |
| | | Ud | iP | | 02 08 49.8 | | |
| | | Iran-USSR (h = N). | | | | | |
| " | 30 | Up | iP | | 02 09 40.5 | | |
| | | Ki | iP | | 02 10 08.4 | | |
| | | Sk | iP | | 02 10 12.9 | | |
| | | Um | iP | | 02 09 44.0 | | |
| | | Iran-USSR. | | | | | |
| | | Origin time = 02 03 06. | | | | | |
| " | 30 | Up | iP | | 02 26 09.9 C | | |
| | | Ki | iP | | 02 25 14.1 | | |
| | | Sk | iP | | 02 25 41.2 | | |
| | | Um | iP | | 02 25 43.2 C | | |
| | | (cont.) | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 July | 30 | (cont.) | | | | | |
| | | Ud | iP | | 02 26 06.3 | | |
| | | De | iP | | 02 26 31.1 | | |
| | | Alaska (h = 25 km). | | | | | |
| " | 30 | Up | iP | | 02 41 43.2 C | | |
| | | | i | | 02 42 39.0 | | |
| | | Ki | iP | | 02 42 10.9 | | |
| | | | iPP | | 02 43 34.1 | | |
| | | Sk | iP | | 02 42 16.9 | | |
| | | | iPP | | 02 43 31.0 | | |
| | | Um | iP | | 02 41 54.8 C | | |
| | | | iPP | | 02 43 02.1 | | |
| | | Ud | iP | | 02 42 00.2 | | |
| | | | iPP | | 02 43 08.1 | | |
| | | Iran-USSR (h = N). | | | | | |
| " | 30 | Up | iP | | 03 22 59.4 | | |
| | | Sk | iP | | 03 23 33.0 | | |
| | | Um | iP | | 03 23 09.1 | | |
| | | Ud | iP | | 03 23 13.0 C | | |
| | | Iran-USSR. | | | | | |
| | | Origin time = 03 16 26. | | | | | |
| " | 30 | Up | iP | | 03 29 12.8 C | | |
| " | 30 | Ud | iP | | 04 21 40.9 | | |
| | | Iran-USSR. | | | | | |
| " | 30 | Up | iP | | 05 07 51.0 | | |
| | | | ipP | | 05 08 01.3 | | |
| | | | iS | | 05 15 17 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.2 | 0.5 | |
| | | | pP | Z' | 0.4 | 0.6 | |
| | | | Mx | E | 21 | 14 | |
| | | | Mx | N | 59 | 23 | |
| | | | Mx | Z | 38 | 16 | |
| | | Ki | iP | | 05 08 29.6 C | | |
| | | | ipP | | 05 08 40.1 | | |
| | | | iPa | | 05 11 44 | | |
| | | | iS | | 05 16 09 | | |
| | | | | | micr | sec | |
| | | | pP | Z' | 0.5 | 1.0 | |
| | | | Mx | E | 60 | 15 | |
| | | | Mx | N | 66 | 14 | |
| | | | Mx | Z | 110 | 17 | |
| | | Sk | iP | | 05 08 23.0 | | |
| | | | ipP | | 05 08 33.3 | | |
| | | Um | iP | | 05 08 06.3 | | |
| | | | ipP | | 05 08 18.1 | | |
| | | | iPP | | 05 10 16.5 | | |
| | | | iS | | 05 15 25 | | |
| | | Ud | iP | | 05 08 02.0 C | | |
| | | | ipP | | 05 08 12.4 | | |
| | | De | iP | | 05 07 44.5 C | | |
| | | (cont.) | | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 July | 30 | (cont.) | | | | |
| | | De | ipP | | 05 07 53.8 | |
| | | Gulf of Aden. | | | | |
| | | h = 40 km (Up,Ki,Sk, Um,Ud, De). | | | | |
| | | m = 6.4, M = 6.8 (Up,Ki). | | | | |
| " | 30 | Up | iP | | 05 12 02.4 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.2 | 0.7 |
| | | Ki | eP | | 05 12 43 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.6 | 1.2 |
| | | Sk | iP | | 05 12 34.2 | |
| | | | ipP | | 05 12 45.1 | |
| | | Um | iP | | 05 12 17.9 | |
| | | Ud | iP | | 05 12 16.6 | |
| | | De | iP | | 05 11 58.5 | |
| | | | i | | 05 12 05.4 | |
| | | Gulf of Aden. | | | | |
| | | Origin time = 05 02 57. | | | | |
| | | h = 40 km (Sk). | | | | |
| | | m = 6.4 (Up,Ki). | | | | |
| " | 30 | Ki | e(P) | | 05 33 25 | |
| | | | i | | 05 33 45.9 | |
| | | Sk | eP | | 05 33 30 | |
| | | Ud | eP | | 05 33 24 | |
| " | 30 | Ud | iP | | 05 36 41.3 | |
| " | 30 | Up | i(P) | | 05 41 59.0 | |
| | | Ud | i(P) | | 05 41 03.3 | |
| " | 30 | Up | iPKP | | 06 01 47.4 | |
| | | | ipPKP | | 06 01 56.9 | |
| | | Ki | e(PKP) | | 06 01 24 | |
| | | Sk | iPKP | | 06 01 38.6 | |
| | | | ipPKP | | 06 01 49.5 | |
| | | Um | iPKP | | 06 01 37.4 | |
| | | | ipPKP | | 06 01 48.6 | |
| | | Ud | iPKP | | 06 01 48.8 | |
| | | | ipPKP | | 06 01 58.3 | |
| | | De | iPKP | | 06 01 58.4 | C |
| | | | ipPKP | | 06 02 08.0 | |
| | | Tonga-Kermadec Islands. | | | | |
| | | h = 35 km (Up,Sk,Um,Ud,De). | | | | |
| " | 30 | Ki | iP | | 07 26 51.7 | C |
| | | Sk | iP | | 07 26 18.7 | |
| | | Um | iP | | 07 26 31.5 | C |
| | | Ud | iP | | 07 26 00.1 | C |
| | | North of Ascension Island (h = N). | | | | |
| " | 30 | Up | i | | 10 23 47.3 | |
| | | (cont.) | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 July | 30 | (cont.) | | | | |
| | | Sk | eLgl | | 10 25 06 | |
| | | Um | iLgl | | 10 25 41.0 | |
| | | Ud | iPg | | 10 22 58.2 | |
| | | | iSg | | 10 23 17.2 | |
| | | De | iSg | | 10 23 36.9 | |
| | | Västergötland, Sweden, 58.6°N, 13.3°E. | | | | |
| | | Origin time = 10 22 29. | | | | |
| " | 30 | Up | iSg | | 13 02 31.2 | |
| | | Ki | iSg | | 13 05 20.6 | |
| | | Sk | iSg | | 13 04 28.2 | |
| | | Um | iSg | | 13 03 20.3 | |
| | | Ud | i | | 13 03 12.7 | |
| | | | iSg | | 13 03 36.5 | |
| | | De | iSg | | 13 03 58.7 | |
| | | Esthonia, 59.3°N, 24.1°E. | | | | |
| | | Origin time = 13 00 36. | | | | |
| | | Explosion? | | | | |
| " | 30 | Ud | iP | | 13 32 58.5 | |
| | | Iran-USSR (h = N). | | | | |
| " | 30 | Up | iPn | | 18 02 00.8 | |
| | | | iSn | | 18 02 40.7 | |
| | | | iSg | | 18 02 51.9 | |
| | | Ki | eSn | | 18 04 42 | |
| | | Um | iPg | | 18 02 28.5 | |
| | | | iSg | | 18 03 32.8 | |
| | | Ud | iPn | | 18 02 28.8 | |
| | | | iSn | | 18 03 30.8 | |
| | | | i(Sg) | | 18 04 05.5 | |
| | | De | iPn | | 18 02 41.9 | |
| | | | e | | 18 04 17 | |
| | | Gulf of Finland, 59.8°N, 24.0°E. | | | | |
| | | Origin time = 18 01 08. | | | | |
| | | Explosion? | | | | |
| " | 30 | Um | iPKP | | 19 03 15.3 | C |
| | | Tonga Islands (h = 120 km). | | | | |
| " | 30 | Up | iPKP | | 20 28 45.9 | |
| | | | i | | 20 28 50.0 | |
| | | Ki | ePKP | | 20 28 29 | |
| | | Um | iPKP | | 20 28 33.7 | |
| | | Ud | iPKP | | 20 28 47.0 | |
| | | | i | | 20 28 52.8 | |
| | | De | iPKP | | 20 28 56.0 | |
| | | | i | | 20 29 06.5 | |
| " | 31 | Up | iP | | 01 47 36.6 | |
| | | Um | iP | | 01 47 11.3 | |
| | | Ud | iP | | 01 47 42.8 | |
| | | De | iP | | 01 48 01.0 | |
| | | Kurile Islands (h = 80 km). | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1970 | | | | | | | | |
| July | 31 | Up | iP | | | 02 04 19.0 | C | |
| | | | ipP | | | 02 04 29.7 | | |
| | | | | | | micr | sec | |
| | | | P | | Z' | 0.1 | 0.9 | |
| | | Ki | iP | | | 02 03 33.1 | | |
| | | | | | | micr | sec | |
| | | | P | | Z' | 0.1 | 1.0 | |
| | | Um | iP | | | 02 03 54.2 | | |
| | | Ud | iP | | | 02 04 24.6 | C | |
| | | | ipP | | | 02 04 35.6 | | |
| | | De | iP | | | 02 04 42.5 | | |
| | | | ipP | | | 02 04 53.8 | | |
| | | Kurile Islands. | | | | | | |
| | | h = 40 km (Up,Ud,De). | | | | | | |
| | | m = 6.0 (Up,Ki). | | | | | | |
| " | 31 | De | iP | | | 03 20 32.0 | | |
| " | 31 | De | ePKP | | | 04 00 32 | | |
| | | Tonga Islands (h = N). | | | | | | |
| " | 31 | Up | iP | | | 06 57 29.4 | | |
| | | | | | | micr | sec | |
| | | | P | | Z' | 0.1 | 0.5 | |
| | | Ki | iP | | | 06 57 21.3 | | |
| | | Ud | iP | | | 06 57 42.6 | | |
| | | De | iP | | | 06 57 45.1 | | |
| " | 31 | Up | iP | | | 13 21 18.2 | | |
| | | | | | | micr | sec | |
| | | | P | | Z' | 0.1 | 0.6 | |
| | | | Mx | | N | 1.1 | 18 | |
| | | Ki | iP | | | 13 21 01.6 | C | |
| | | | | | | micr | sec | |
| | | | P | | Z' | 0.1 | 1.0 | |
| | | | Mx | | E | 1.0 | 13 | |
| | | | Mx | | N | 2.6 | 21 | |
| | | | Mx | | Z | 1.1 | 13 | |
| | | Um | iP | | | 13 21 05.3 | C | |
| | | Ud | iP | | | 13 21 30.5 | C | |
| | | | i | | | 13 22 16.1 | | |
| | | De | iP | | | 13 21 36.3 | | |
| | | Szechwan, China (h = 25 km). | | | | | | |
| | | m = 6.1, M = 5.3 (Up,Ki). | | | | | | |
| " | 31 | Up | Mx | | | 16 33 | | |
| | | | | | | micr | sec | |
| | | | Mx | | E | 0.6 | 20 | |
| | | | Mx | | N | 1.2 | 20 | |
| | | | Mx | | Z | 1.1 | 18 | |
| | | Ki | Mx | | | 16 30 | | |
| | | | | | | micr | sec | |
| | | | Mx | | E | 1.2 | 18 | |
| | | | Mx | | N | 0.8 | 17 | |
| | | | Mx | | Z | 2.0 | 18 | |
| | | Easter Island (h = N). | | | | | | |
| | | M = 5.6 (Up,Ki). | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1970 | | | | | | | | |
| July | 31 | Up | iP | | | 17 20 04.6 | D | |
| | | | iSKS | | | 17 29 30 | | |
| | | | iS | | | 17 30 08 | | |
| | | | i | | | 17 33 48 | | |
| | | | iP'P' | | | 17 45 18.1 | | |
| | | | | | | micr | sec | |
| | | | P | | Z' | 3.6 | 1.0 | |
| | | | Mx | | E | 19 | 17 | |
| | | | Mx | | N | 33 | 19 | |
| | | | Mx | | Z | 25 | 16 | |
| | | Ki | iP | | | 17 20 09.6 | D | |
| | | | iSKS | | | 17 29 42 | | |
| | | | iP'P' | | | 17 45 20.6 | | |
| | | | | | | micr | sec | |
| | | | P | | Z' | 5.2 | 1.0 | |
| | | | P'P' | | Z' | 0.5 | 1.5 | |
| | | | Mx | | E | 47 | 17 | |
| | | | Mx | | N | 30 | 15 | |
| | | | Mx | | Z | 32 | 15 | |
| | | Sk | iP | | | 17 19 50 | D | |
| | | | iP'P' | | | 17 45 21 | | |
| | | Um | iP | | | 17 20 09.6 | D | |
| | | | iS | | | 17 30 16 | | |
| | | | iP'P' | | | 17 45 17.0 | | |
| | | Ud | iP | | | 17 19 55.5 | D | |
| | | | iP'P' | | | 17 45 18.6 | | |
| | | De | iP | | | 17 19 55.5 | D | |
| | | | iP'P' | | | 17 45 21.6 | | |
| | | Colombia (h = 650 km). | | | | | | |
| | | m = 7.5, M = 7.0 (Up,Ki). | | | | | | |
| | | M uncorrected for focal depth. | | | | | | |
| " | 31 | Up | iP | | | 18 01 58.4 | | |
| | | Ki | iP | | | 18 02 05.8 | | |
| | | Um | iP | | | 18 02 05.9 | | |
| | | De | iP | | | 18 01 51.4 | | |
| | | Colombia. | | | | | | |
| | | Origin time = 17 50 00. | | | | | | |
| " | 31 | Up | iP | | | 18 02 29.1 | | |
| | | Ki | iP | | | 18 02 33.4 | | |
| | | Sk | iP | | | 18 02 14 | | |
| | | | i | | | 18 02 25 | | |
| | | Um | iP | | | 18 02 35.4 | | |
| | | Ud | iP | | | 18 02 20.7 | | |
| | | Colombia. | | | | | | |
| | | Origin time = 17 50 29. | | | | | | |
| " | 31 | Up | iP | | | 18 20 31.8 | | |
| | | Ki | iP | | | 18 19 59.4 | | |
| | | Ud | iP | | | 18 20 13.0 | | |
| | | | i | | | 18 20 40.2 | | |
| | | De | iP | | | 18 20 13.4 | | |
| | | | i | | | 18 20 41.3 | | |

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970
July 31 (cont.)
These phases are not
mutually consistent
and may belong to more
than one shock.

| | | | | | | |
|---|---|---|---|---|---|---|
| " | 31 | Ki | | | micr | sec |
| | | | Mx | E | 1.1 | 20 |
| | | | Mx | N | 1.5 | 21 |
| | | | Mx | Z | 1.9 | 20 |
| | | Ud | iPKP | | 21 05 | 23.6 |

Fiji Islands (h = N).

| | | | | | |
|---|---|---|---|---|---|
| " | 31 | Ki | iP | 23 16 | 28.7 |
| | | Um | iP | 23 16 | 16.0 |
| | | Ud | iP | 23 16 | 47.7 |

Sinkiang.

Markus Båth
August 5, 1971

SEISMOLOGICAL INSTITUTE
BOX 517
S-751 20 UPPSALA 1
SWEDEN

# S E I S M O L O G I C A L  B U L L E T I N

## U P P S A L A,  K I R U N A,  S K A L S T U G A N,  U M E Å,

## U D D E H O L M  and  D E L A R Y

| | | | | |
|---|---|---|---|---|
| Uppsala | (Up): | 59°51.5'N, | 17°37.6'E; | h = 14 m |
| Kiruna | (Ki): | 67°50.4'N, | 20°25.0'E; | h = 390 m |
| Skalstugan | (Sk): | 63°34.8'N, | 12°16.8'E; | h = 580 m |
| Umeå | (Um): | 63°48.9'N, | 20°14.2'E; | h = 16 m |
| Uddeholm | (Ud): | 60°05.4'N, | 13°36.4'E; | h = 240 m |
| Delary | (De): | 56°28.2'N, | 13°52.2'E; | h = 150 m |

## A U G U S T  1 - 31, 1970

1970 Aug. 1 Up iP 01 30 41.9
iPP 01 34 17.3
micr sec
P Z' 0.1 1.0
Ki iP 01 30 40.7
iPP 01 34 17.5
micr sec
P Z' 0.2 1.0
Sk iP 01 30 52
Um iP 01 30 38.7
iPP 01 34 12.8
Ud iP 01 30 51.3
ipP 01 31 20.6
iPP 01 34 25.9
De iP 01 30 50.1
iPP 01 34 30.7
Sumatra.
h = 120 km (Ud).
m = 6.1 (Up,Ki).

" 1 Up iPKP 06 43 38.2
Ki iPKP 06 43 24.1 C
Sk iPKP 06 43 32
Um iPKP 06 43 30.6
Ud iPKP 06 43 40.4
De iPKP 06 43 45.8
New Hebrides Islands
(h = 180 km).

" 1 Up iSn 10 49 15.5
iSg 10 49 32.0
Ki iSg 10 52 03.8
Sk iLgl 10 51 16
Um iSg 10 50 03.5
Ud eSn 10 50 03
iLgl 10 50 31.6
(cont.)

1970 Aug. 1 (cont.)
De iLgl 10 51 00.3
Esthonia,
59.7°N, 25.6°E.
Origin time = 10 47 23.
Explosion?

" 1 Up iPKS 10 58 39.0
Ki iPKP 10 54 57.0
Sk iPKP 10 55 05
Um iPKP 10 55 03.7
Ud iPKP 10 55 14.9
iPKS 10 58 44.9
De iPKP 10 55 19.6
ePKS 10 58 58
New Hebrides Islands
(h = 30 km).

" 1 Sk iPP 11 49 08
Ud iP 11 47 28.2
Iran-USSR (h = 30 km).

" 1 Ki iP 12 02 56.7
Ud eP 12 03 22
Mindanao (h = 80 km).

" 1 Ki iPn 12 15 25.0
iSn 12 16 12.5
iLgl 12 16 26.6
Sk iSg 12 19 15
Ud e(Lgl) 12 20 19
De iSg 12 22 04.3
Northwest Russia.
Origin time = 12 14 21.
Explosion?

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| 1970 | | | | | |
|---|---|---|---|---|---|
| Aug. | 1 | Up | iP | 14 47 15.7 | |
| | | | i | 14 47 24.4 | |
| | | Ki | iP | 14 45 40.5 | |
| | | | i | 14 45 49.1 | |
| | | | iS | 14 46 59.4 | |
| | | | iT | 14 50 31.1 | |
| | | | i | 14 51 07.2 | |
| | | | i | 14 51 19.4 | |
| | | Sk | iP | 14 46 20 | C |
| | | | iS | 14 48 05 | |
| | | Um | iP | 14 46 29.9 | C |
| | | | eT | 14 52 17 | |
| | | | i | 14 53 08.4 | |
| | | | i | 14 53 31.4 | |
| | | Ud | iP | 14 47 11.9 | |
| | | | i | 14 47 22.0 | |
| | | | eT | 14 55 06 | |
| | | De | iP | 14 48 00.8 | |
| | | | i | 14 48 11.9 | |

Norwegian Sea (h = N).
Double P.

| | | | | | |
|---|---|---|---|---|---|
| " | 1 | Up | iPKP | 17 31 58.4 | |
| | | Um | iPKP | 17 31 46.4 | |
| | | Ud | iPKP | 17 32 00.4 | |
| | | De | iPKP | 17 32 11.2 | |
| " | 1 | Ud | iP | 19 17 46.7 | |

Japan (h = 40 km).

| | | | | | |
|---|---|---|---|---|---|
| " | 1 | Up | iP | 19 55 41.6 | |

Greece.

| | | | | | |
|---|---|---|---|---|---|
| " | 1 | Up | iP | 20 41 42.3 | |
| | | Ud | iP | 20 41 56.4 | |

China.

| | | | | | |
|---|---|---|---|---|---|
| " | 2 | Up | iP | 00 34 18.7 | |
| " | 2 | Um | i(P) | 01 30 19.9 | |
| | | De | i(P) | 01 28 49.3 | |
| | | | i | 01 30 05.6 | |
| | | | i | 01 30 48.9 | |
| " | 2 | Up | iP | 01 47 01.7 | C |
| | | | iPcP | 01 47 28.0 | |

| | | micr | sec |
|---|---|---|---|
| P | Z' | 0.1 | 0.5 |
| Mx | E | 0.8 | 21 |
| Mx | N | 0.9 | 21 |
| Mx | Z | 1.4 | 22 |

| | | | |
|---|---|---|---|
| Ki | iP | 01 46 13.5 | C |
| Sk | iP | 01 46 50.1 | |
| Um | iP | 01 46 35.7 | |
| | iPcP | 01 47 11.5 | |
| Ud | iP | 01 47 06.8 | C |
| De | iP | 01 47 25.5 | C |

Kurile Islands (h = 60 km).

| 1970 | | | | | |
|---|---|---|---|---|---|
| Aug. | 2 | Um | iP | 06 55 24.7 | |

Japan (h = 80 km).

| | | | | | |
|---|---|---|---|---|---|
| " | 2 | Ki | iP | 08 59 13.3 | |
| " | 2 | Ud | iP | 11 22 17.7 | |

Tadzhik SSR.

| | | | | | |
|---|---|---|---|---|---|
| " | 2 | Ki | eP | 14 55 07 | |
| | | Um | iP | 14 55 13.9 | |
| | | Ud | iP | 14 55 48.1 | |
| | | De | iP | 14 55 58.7 | |
| " | 2 | Um | iP | 18 06 38.2 | |

Mexico (h = N).

| | | | | | |
|---|---|---|---|---|---|
| " | 2 | Up | i(P) | 20 00 35.8 | |
| " | 2 | Ki | Mx | 20 37 | |

| | | micr | sec |
|---|---|---|---|
| Mx | E | 0.8 | 20 |
| Mx | Z | 1.1 | 20 |

Samoa Islands (h = N).

| | | | | | |
|---|---|---|---|---|---|
| " | 3 | Up | i(PKP) | 00 52 47.8 | |
| | | Ki | ePKP | 00 52 44 | |
| | | Sk | iPKP | 00 52 54.8 | |
| | | Um | iPKP | 00 52 52.0 | |
| | | | iPKS | 00 56 11.3 | |
| | | Ud | i(PKP) | 00 52 50.0 | |
| | | | iPKP | 00 53 02.1 | |
| | | De | i(PKP) | 00 52 58.3 | |
| | | | iPKP | 00 53 09.4 | |

Tonga Islands (h = 120 km).
(PKP) and PKP represent two different branches.

| | | | | | |
|---|---|---|---|---|---|
| " | 3 | Um | iPKP | 03 52 49.2 | |

Tonga Islands (h = N).

| | | | | | |
|---|---|---|---|---|---|
| " | 3 | Ki | iPKP | 06 14 19.0 | |
| | | Sk | ePKP | 06 14 09 | |
| | | Um | iPKP | 06 14 12.1 | |

South Sandwich Islands (h = N).

| | | | | | |
|---|---|---|---|---|---|
| " | 3 | Up | iPKP | 07 19 55.7 | |

| | | micr | sec |
|---|---|---|---|
| Mx | E | 1.1 | 22 |
| Mx | N | 1.7 | 21 |
| Mx | Z | 2.2 | 22 |

| | | | |
|---|---|---|---|
| Ki | iPKP | 07 19 43.2 | |
| | ipPKP | 07 19 58.4 | |

| | | micr | sec |
|---|---|---|---|
| Mx | E | 1.3 | 21 |
| Mx | N | 1.4 | 20 |
| Mx | Z | 2.0 | 22 |

| | | | |
|---|---|---|---|
| Sk | iPKP | 07 19 53.6 | |
| | ipPKP | 07 20 08.6 | |

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970
Aug. 3 (cont.)

| | | | |
|---|---|---|---|
| | Um | iPKP | 07 19 47.8 |
| | | ipPKP | 07 20 03.6 |
| | Ud | iPKP | 07 19 58.1 |
| | | ipPKP | 07 20 13.2 |
| | De | iPKP | 07 20 03.8 |
| | | ipPKP | 07 20 19.3 |

Solomon Islands.
h = 55 km (Ki,Sk,Um,Ud,De).
M = 5.8 (Up,Ki).

" 3

| | | |
|---|---|---|
| Sk | iP | 12 54 38.0 |
| Um | iP | 12 54 23.6 |

" 3

| | | |
|---|---|---|
| De | iPKP | 13 34 44.2 |

Loyalty Islands (h = 20 km).

" 3

| | | |
|---|---|---|
| Ki | iPn | 19 58 06.6 |
| | iSn | 19 58 53.1 |
| | iLgl | 19 59 06.2 |
| Sk | i(Lgl) | 20 01 58.2 |
| Um | iSg | 20 00 45.3 |

Northwest Russia.
Origin time = 19 57 04.
Explosion?

" 3

| | | | | |
|---|---|---|---|---|
| Up | iP | | 22 42 24.5 | D |
| | ipP | | 22 42 40.0 | |
| | iS | | 22 52 34 | |
| | | | micr | sec |
| | P | Z' | 0.3 | 0.7 |
| | pP | Z' | 0.3 | 0.7 |
| | Mx | N | 1.1 | 26 |
| Ki | iP | | 22 42 24.7 | D |
| | ipP | | 22 42 41.4 | |
| | iS | | 22 52 37.4 | |
| | | | micr | sec |
| | P | Z' | 0.6 | 1.0 |
| | Mx | E | 0.8 | 20 |
| | Mx | Z | 1.0 | 22 |
| Sk | iP | | 22 42 38.9 | D |
| | ipP | | 22 42 55.4 | |
| Um | iP | | 22 42 21.2 | D |
| | ipP | | 22 42 37.3 | |
| Ud | iP | | 22 42 34.9 | D |
| | ipP | | 22 42 52.0 | |
| | iS | | 22 52 56.0 | |
| De | iP | | 22 42 32.6 | |
| | ipP | | 22 42 49.8 | |

Sumatra.
h = 60 km (Up,Ki,Sk,Um,Ud, De).
m = 6.8, M = 5.2 (Up,Ki).

" 4

| | | |
|---|---|---|
| Ud | iP | 02 38 45.2 |

Tadzhik SSR.

1970
Aug. 4

| | | |
|---|---|---|
| Ki | iP | 06 29 46.9 |
| Sk | iP | 06 30 00.9 |
| Um | iP | 06 29 45.0 |
| Ud | iP | 06 29 57.2 |

Sumatra (h = 50 km).

" 4

| | | |
|---|---|---|
| Ki | iP | 11 39 54.9 |
| Sk | iP | 11 40 26.5 |
| | iPcP | 11 41 02.1 |
| Um | iP | 11 40 22.3 |
| | iPcP | 11 41 00.1 |
| Ud | iP | 11 40 47.5 |
| | iPcP | 11 41 16.3 |
| De | iP | 11 41 10.3 |

Aleutian Islands (h = 45 km).

" 4

| | | | |
|---|---|---|---|
| Up | | | micr sec |
| | Mx | E | 0.8 21 |
| | Mx | N | 0.8 20 |
| Ki | iP | | 12 52 56.4 |
| | | | micr sec |
| | Mx | E | 1.0 18 |
| | Mx | N | 1.5 14 |
| | Mx | Z | 0.8 15 |
| Sk | eP | | 12 53 29 |
| Um | iP | | 12 53 11.6 |
| Ud | iP | | 12 53 39.6 |

South of Japan (h = 30 km).
M = 5.3 (Up,Ki).

" 4

| | | |
|---|---|---|
| Sk | eSg | 13 36 35 |
| Um | iSg | 13 35 14.8 |
| De | eLgl | 13 36 11 |

Esthonia,
59.7°N, 25.6°E.
Origin time = 13 32 33.
Explosion?

" 4

| | | |
|---|---|---|
| Sk | eP | 16 04 33 |
| Ud | iP | 16 04 46.4 |
| | i | 16 04 55.1 |

" 4

| | | |
|---|---|---|
| Up | iP | 16 08 32.6 |

" 4

| | | |
|---|---|---|
| Up | iP | 17 37 23.0 |
| Sk | iP | 17 38 09.8 |
| Um | eP | 17 38 06 |
| Ud | iP | 17 37 33.6 |
| De | iP | 17 36 55.6 |

Greece (h = 65 km).

" 4

| | | |
|---|---|---|
| Up | iPKP | 20 57 01.3 |
| Sk | iPKP | 20 57 03.7 |
| Um | ePKP | 20 56 59 |
| Ud | e(PKP) | 20 56 57 |
| | iPKP | 20 57 13.3 |
| De | iPKP | 20 57 11.8 |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | |
|---|---|---|---|---|---|
| 1970 Aug. | 4 | Up | iP | 21 10 53.9 | |
| | | | iS | 21 13 29.6 | |
| | | | iLgl | 21 14 49.2 | |
| | | Ki | iP | 21 12 25.6 | |
| | | Sk | iLgl | 21 17 03.3 | |
| | | Um | iP | 21 11 37.4 | |
| | | | iS | 21 14 46.0 | |
| | | | iLgl | 21 16 23.0 | |
| | | Ud | eP | 21 11 09 | |
| | | | iS | 21 13 55.6 | |
| | | | iLgl | 21 15 25.4 | |
| | | De | iP | 21 10 29.5 | |
| | | | i(Lgl) | 21 14 10.0 | |
| | | Carpathian Mountains. | | | |
| | | Lgl well developed. | | | |
| " | 4 | Up | iPKP | 23 04 00.1 | |
| | | Ud | iPKP | 23 04 02.1 D | |
| | | De | iPKP | 23 04 12.9 | |
| " | 5 | Ki | iPKP | 00 37 38.2 | |
| | | Sk | iPKP | 00 37 49.6 | |
| | | Um | iPKP | 00 37 43.7 | |
| | | De | iPKP | 00 38 00.6 | |
| | | New Hebrides Islands | | | |
| | | (h = 150 km). | | | |
| " | 5 | Ki | iP | 01 14 19.1 | |
| | | Um | iP | 01 14 21.4 | |
| | | | i | 01 14 35.2 | |
| " | 5 | Up | iP | 04 31 10.0 | |
| | | | | micr sec | |
| | | | P Z' | 0.1 0.6 | |
| | | Ki | iP | 04 32 36.3 | |
| | | Sk | iP | 04 31 51.0 | |
| | | Um | iP | 04 31 54.3 | |
| | | Yugoslavia (h = N). | | | |
| " | 5 | Up | iP | 05 39 41.7 | |
| | | Ki | iP | 05 39 44.6 | |
| | | Sk | iP | 05 39 29.8 | |
| | | De | iP | 05 39 33.4 C | |
| | | Peru (h = 70 km). | | | |
| " | 5 | Up | iP | 09 19 41.2 | |
| | | Ki | iP | 09 20 05.1 | |
| | | | | micr sec | |
| | | | P Z' | 0.1 1.0 | |
| | | Sk | iP | 09 19 35.8 | |
| | | Um | iP | 09 19 56.3 | |
| | | De | iP | 09 19 21.4 | |
| | | North Atlantic Ocean | | | |
| | | (h = N). | | | |
| " | 5 | Ki | iPn | 13 16 13.9 | |
| | | | iSn | 13 17 01.7 | |
| | | (cont.) | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1970 Aug. | 5 | (cont.) | | | |
| | | Ki | iLgl | 13 17 15.3 | |
| | | Sk | eSg | 13 20 03 | |
| | | Um | iSg | 13 18 25.4 | |
| | | Northwest Russia. | | | |
| | | Origin time = 13 15 10. | | | |
| | | Explosion? | | | |
| " | 5 | Up | iP | 13 34 48.7 | |
| | | Ki | iP | 13 34 43.2 | |
| | | Sk | iP | 13 34 32.1 | |
| | | Um | iP | 13 34 48.6 | |
| | | Ud | iP | 13 34 39.1 | |
| | | De | iP | 13 34 43.5 C | |
| | | Costa Rica (h = 55 km). | | | |
| " | 5 | De | iPKP | 13 47 46.4 | |
| | | Fiji Islands (h = 220 km). | | | |
| " | 5 | Ki | i(P) | 14 37 42.9 | |
| " | 5 | Up | iSg | 15 03 21.3 | |
| | | | | micr sec | |
| | | | Sg Z' | 0.1 0.5 | |
| | | Sk | eSn | 15 02 51 | |
| | | | iSg | 15 03 21.8 | |
| | | Ud | iPg | 15 01 25.6 | |
| | | | iSg | 15 02 18.2 | |
| | | | i | 15 02 23.7 | |
| | | De | $iP^x$ | 15 01 22.8 | |
| | | | iPg | 15 01 38.5 | |
| | | | iSn | 15 02 13.8 | |
| | | South Norway, | | | |
| | | 58.3°N, 6.9°E. | | | |
| | | Origin time = 15 00 11. | | | |
| | | Solution by combination with Kongsberg readings. | | | |
| " | 5 | Ud | iPg | 15 24 19.9 | |
| | | | iSg | 15 24 40.7 | |
| | | | iRg | 15 24 49.3 | |
| | | De | i(Sg) | 15 25 33.6 | |
| | | Origin time = 15 23 48. | | | |
| " | 5 | Ki | iP | 20 21 09.8 | |
| | | Um | iP | 20 21 24.0 | |
| | | Japan (h = 15 km). | | | |
| " | 5 | Up | iP | 20 45 54.4 | |
| | | Sk | iP | 20 46 36.2 | |
| | | Um | iP | 20 46 35.0 | |
| | | Ud | iP | 20 46 01.9 | |
| | | | i | 20 46 06.3 | |
| | | De | iP | 20 45 26.1 | |
| | | Greece. | | | |
| " | 5 | Up | iP | 23 05 10.0 | |
| | | Aleutian Islands (h = 30 km). | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delar

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Aug. | 6 | Ki | eP | | 02 43 26 | |
| | | Sk | iP | | 02 44 07.2 | |
| | | Um | iP | | 02 43 39.8 | |
| | | | i | | 02 43 46.5 | |
| | | Ud | iP | | 02 44 14.2 | |
| | | South of Japan. | | | | |
| | | Probably foreshock to the following. | | | | |
| " | 6 | Up | iP2 | | 02 49 47.3 | |
| | | Ki | iP1 | | 02 49 04.4 | |
| | | | | | micr | sec |
| | | | Mx | E | 0.6 | 15 |
| | | | Mx | N | 1.0 | 15 |
| | | | Mx | Z | 0.6 | 15 |
| | | Sk | iP2 | | 02 49 44.3 | |
| | | Um | iP1 | | 02 49 21.2 | |
| | | | iP2 | | 02 49 27.3 | |
| | | Ud | iP1 | | 02 49 49.2 | |
| | | | iP2 | | 02 49 54.9 | |
| | | De | iP2 | | 02 50 07.9 | |
| | | South of Japan (h = 30 km). | | | | |
| | | Double P, small P1 and bigger P2, about 6 sec apart. | | | | |
| " | 6 | Ki | iP | | 05 51 58.3 | |
| | | Sk | iP | | 05 52 22.6 | |
| | | | i | | 05 52 32.9 | |
| | | Um | iP | | 05 51 54.2 | |
| | | Ud | iP | | 05 52 18.7 | |
| | | De | iP | | 05 52 20.3 | |
| | | Sinkiang (h = N). | | | | |
| " | 6 | Um | i(Sg) | | 10 14 56.2 | |
| | | Ud | i(Sg) | | 10 15 21.8 | |
| | | Probably Esthonia. | | | | |
| | | Explosion? | | | | |
| " | 6 | Ud | e(Sg) | | 10 35 32 | |
| | | De | i(Pg) | | 10 34 15.1 | |
| | | | i(Sg) | | 10 35 09.7 | |
| " | 6 | Up | iPKP | | 18 02 26.1 | C |
| | | Ud | iPKP | | 18 02 28.5 | C |
| | | Tonga-Kermadec Islands (h = 500 km). | | | | |
| " | 6 | Ki | iPn | | 18 22 43.8 | |
| | | | $iP^x$ | | 18 22 51.9 | |
| | | | iSn | | 18 23 30.2 | |
| | | | iLg1 | | 18 23 43.1 | |
| | | Sk | eSn | | 18 25 35 | |
| | | | iSg | | 18 26 35.5 | |
| | | Um | iSg | | 18 25 23.6 | |
| | | Ud | i | | 18 27 38.6 | |
| | | | iLg1 | | 18 27 47.7 | |
| | | (cont.) | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Aug. | 6 | (cont.) | | | | |
| | | Northwest Russia, 69.4°N, 29.7°E. | | | | |
| | | Origin time = 18 21 43. | | | | |
| | | Explosion? | | | | |
| " | 6 | Um | eP | | 18 53 36 | |
| | | Ud | iP | | 18 53 40.6 | |
| | | Caspian Sea. | | | | |
| " | 6 | Ki | iPn | | 19 06 32.8 | C |
| | | | iSg | | 19 07 16.5 | |
| | | Sk | ePg | | 19 06 44 | |
| | | | iSg | | 19 07 23.1 | |
| | | Um | ePn | | 19 06 49 | |
| | | | iSn | | 19 07 30.2 | |
| | | | iSg | | 19 07 44.8 | |
| | | Ud | iSg | | 19 09 11.2 | |
| | | Nordland, Norway, 66.4°N, 14.4°E. | | | | |
| | | Origin time = 19 05 47. | | | | |
| " | 6 | Ud | iP | | 19 24 27.3 | |
| | | De | e(P) | | 19 24 05 | |
| " | 6 | Ki | eP | | 20 36 16 | |
| | | Ud | iP | | 20 36 28.0 | |
| | | De | iP | | 20 36 34.5 | |
| | | Kirghiz SSR. | | | | |
| " | 6 | Up | e(P) | | 21 21 49 | |
| | | Ud | i(P) | | 21 22 13.1 | |
| " | 6 | Ki | | | micr | sec |
| | | | Mx | E | 0.6 | 15 |
| | | | Mx | N | 0.8 | 13 |
| | | | Mx | Z | 0.7 | 14 |
| | | De | iPKP | | 21 41 19.1 | C |
| | | | i | | 21 41 30.7 | |
| | | Tonga Islands (h = 50 km). | | | | |
| " | 6 | Up | eP | | 22 15 40 | |
| | | Ki | iP | | 22 14 31.6 | |
| | | Sk | iP | | 22 14 42.6 | C |
| | | | iS | | 22 16 26.6 | |
| | | Um | iP | | 22 15 04.5 | |
| | | Ud | iP | | 22 15 28.5 | |
| | | Northeast of Jan Mayen, near 71°1/2 N, 3°W. | | | | |
| | | Origin time = 22 12 22. | | | | |
| " | 7 | Up | iP | | 01 54 22.8 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 1.0 |
| | | Ki | iP | | 01 53 37.0 | |
| | | | | | micr | sec |
| | | | Mx | E | 0.7 | 18 |
| | | (cont.) | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970
Aug. 7 (cont.)

| | | | | |
|---|---|---|---|---|
| Ki | Mx | N | 1.1 | 18 |
| | Mx | Z | 0.6 | 15 |
| Um | iP | | 01 53 57.8 | |
| Ud | iP | | 01 54 28.9 | |
| De | iP | | 01 54 46.6 | |

Kurile Islands (h = N).

" 7

| | | | |
|---|---|---|---|
| Um | iP | | 04 58 48.9 |
| | i | | 04 58 55.0 |
| Ud | iP | | 04 58 29.1 |
| De | iP | | 04 57 57.1 |

Turkey (h = 30 km).

" 7

| | | | | |
|---|---|---|---|---|
| Up | iPKP | | 08 09 21.1 | |
| | iSKP | | 08 12 13.3 | |
| | | | micr | sec |
| | SKP | Z' | 0.1 | 1.0 |
| Ki | iPKP | | 08 09 05.3 | |
| | i | | 08 09 15.6 | |
| | i | | 08 11 36.7 | |
| | iSKP | | 08 11 46.3 | |
| | | | micr | sec |
| | PKP | Z' | 0.1 | 1.0 |
| Sk | iPKP | | 08 09 15.4 | |
| | iSKP | | 08 12 04.4 | |
| Um | iPKP | | 08 09 10.0 | |
| | i | | 08 09 22.7 | |
| | iSKP | | 08 11 55.8 | |
| Ud | iPKP | | 08 09 22.6 | |
| | iSKP | | 08 12 13.7 | |
| De | iPKP | | 08 09 31.3 | |
| | iSKP | | 08 12 25.4 | |

Fiji Islands (h = 550 km).

" 7

| | | | |
|---|---|---|---|
| Ki | iPn | | 10 57 47.4 |
| | iSn | | 10 58 46.7 |
| | iLgl | | 10 59 08.4 |
| Sk | iSg | | 11 01 41.4 |
| Um | iSg | | 10 59 55.7 |

Northwest Russia,
67.2°N, 33.1°E.
Origin time = 10 56 31.
Explosion?

" 7

| | | | |
|---|---|---|---|
| Up | iP | | 13 51 27.6 |
| Ud | iP | | 13 51 33.7 |

Kurile Islands (h = N).

" 7

| | | | |
|---|---|---|---|
| Ki | iP | | 14 39 56.5 |
| Ud | iP | | 14 40 38.5 |

China (h = N).

" 7

| | | | |
|---|---|---|---|
| Up | iP | | 14 44 57.6 |
| Ki | eP | | 14 44 06 |
| Um | iP | | 14 44 31.2 |
| Ud | iP | | 14 45 02.6 |
| De | iP | | 14 45 21.7 |

Kurile Islands (h = 110 km).

1970
Aug. 7

| | | | |
|---|---|---|---|
| Ki | e | | 15 47 36 |
| | iSg | | 15 47 38.8 |
| Sk | iPg | | 15 47 05.6 |
| | e | | 15 47 43 |
| | iSg | | 15 47 45.4 |
| Um | iSn | | 15 47 52.1 |
| | iSg | | 15 48 06.6 |

Nordland, Norway,
66.4°N, 14.4°E.
Origin time = 15 46 09.

" 7

| | | | | |
|---|---|---|---|---|
| Up | iP | | 16 45 44.3 | |
| | i | | 16 45 46.6 | |
| | ipP | | 16 45 53.8 | |
| | iS | | 16 55 52 | |
| | | | micr | sec |
| | P | Z' | 0.2 | 0.5 |
| | Mx | E | 0.8 | 18 |
| | Mx | N | 1.5 | 19 |
| | Mx | Z | 1.3 | 17 |
| Ki | iP | | 16 45 12.5 | |
| | ipP | | 16 45 20.9 | |
| | iS | | 16 54 52 | |
| | | | micr | sec |
| | pP | Z' | 0.3 | 1.0 |
| | Mx | E | 4.8 | 22 |
| | Mx | N | 1.7 | 18 |
| | Mx | Z | 2.2 | 18 |
| Sk | iP | | 16 45 41.8 | |
| | ipP | | 16 45 50.1 | |
| | iPP | | 16 48 46.6 | |
| Um | iP | | 16 45 26.1 | |
| | i | | 16 45 28.3 | |
| | ipP | | 16 45 35.7 | |
| | iS | | 16 55 17 | |
| Ud | iP | | 16 45 51.6 | |
| | i | | 16 45 53.4 | |
| De | iP | | 16 46 04.1 | |
| | i | | 16 46 06.4 | |
| | ipP | | 16 46 14.2 | |

Bonin Islands.
h = 35 km (Up,Ki,Sk,Um,De).
m = 6.4, M = 5.6 (Up,Ki).
Double P.

" 7

| | | | |
|---|---|---|---|
| Ud | iP | | 17 39 44.0 |
| De | iP | | 17 39 17.1 |

" 7

| | | | |
|---|---|---|---|
| De | iPKP | | 19 25 20.3 |

Tonga-Kermadec Islands
(h = 580 km).

" 7

| | | | |
|---|---|---|---|
| Ki | eP | | 21 23 24 |
| Ud | iP | | 21 23 40.4 C |

" 8

| | | | |
|---|---|---|---|
| Ki | iP | | 01 34 52.7 |
| Ud | iP | | 01 35 18.7 |

Mindanao (h = N).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970 Aug. 8 Up iP 04 31 09.6
Ki eP 04 32 26
i 04 32 44.5
Sk iP 04 31 48.9
Ud iP 04 31 09.6 D
Italy (h = 25 km).

" 8 Um iP 09 00 26.4

" 8 Up iP 09 12 32.1 C
i 09 12 45.6
micr sec
P Z' 0.1 1.0
Ki iP 09 12 00.5 C
Sk iP 09 12 31.4 C
Um iP 09 12 13.1 C
Ud iP 09 12 40.9
De iP 09 12 52.4 C
Japan (h = 120 km).

" 8 Ud iP 10 26 25.1
Turkmen SSR.

" 8 Up iP 11 54 06.9
ipP 11 54 15.6
micr sec
Mx N 2.5 18
Ki eP 11 53 56
ipP 11 54 04.5
micr sec
pP Z' 0.1 1.0
Sk iP 11 54 26.6
ipP 11 54 34.4
Ud iP 11 54 23.4
ipP 11 54 32.4
iLgl 12 08 32.2
De eP 11 54 31
Sinkiang.
h = 40 km (Up,Ki,Sk,Ud).
Alternatively, this is a double shock, the second one larger than the first one.

" 8 Up iP 12 18 09.9
Ki iP 12 19 23.0
Sk iP 12 18 50.0
i 12 19 04.2
Um iP 12 18 49.6
Ud iP 12 18 16.3
De iP 12 17 41.0
Greece (h = 90 km).

" 8 Um i(PKS) 12 57 04.9
Fiji Islands (h = 550 km).

1970 Aug. 8 Ki iPn 13 04 13.9
iSn 13 05 02.9
iLgl 13 05 18.5
Origin time = 13 03 09.

" 8 Up iP 14 38 50.6
Ud iP 14 38 56.6
Kurile Islands (h = N).

" 8 Up iP 20 45 58.0 C
Ki eP 20 45 24
Um iP 20 45 37.4
Ud iP 20 46 04.0 C
De iP 20 46 17.7
South of Japan (h = 90 km).

" 8 Up iP 21 17 42.1
i(PP) 21 21 00.8
iSKS 21 28 18
micr sec
Mx E 1.9 20
Mx N 2.2 18
Mx Z 3.4 21
Ki iP 21 17 26.2 C
iSKS 21 28 00
micr sec
P Z' 0.4 1.3
Mx E 2.5 19
Mx N 2.2 18
Mx Z 3.5 17
Sk iP 21 17 47.2
i(PP) 21 20 29.1
Um iP 21 17 31.4
i(PP) 21 20 37.9
iS 21 28 42
Ud iP 21 17 49.8
De iP 21 17 56.2
i 21 20 59.0
i(PP) 21 21 33.8
Molucca Passage (h = 25 km).
M = 5.8 (Up,Ki).
(PP) belong to the group of early arrivals of PP.

" 9 Up iP 01 11 40.2
Ki iP 01 11 41.0
Um iP 01 11 37.6
De eP 01 11 46
Sumatra (h = 40 km).

" 9 Ki iP 02 28 25.4
Um iP 02 29 16.7
Ud iP 02 29 37.3

" 9 Up Mx 11 53
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970
Aug. 9 (cont.)

| | | | | |
|---|---|---|---|---|
| Up | | | micr | sec |
| | Mx | N | 0.7 | 18 |
| | Mx | Z | 1.0 | 20 |
| Ki | Mx | | 12 02 | |
| | | | micr | sec |
| | Mx | E | 0.4 | 17 |

South Pacific Ocean (h = N).
M = 5.6 (Up,Ki).

| | | | | |
|---|---|---|---|---|
| " 9 | Up | i(P) | 12 37 49.0 | |
| | Um | i(P) | 12 38 05.9 | |
| " 9 | Up | iPKP | 13 50 57.3 | |
| | | i | 13 51 03.5 | |
| | Ki | ePKP | 13 50 40 | |
| | Sk | iPKP | 13 50 51.8 | |
| | Um | iPKP | 13 50 46.2 | |
| | Ud | iPKP | 13 50 59.3 | C |
| | De | iPKP | 13 51 07.5 | |

Kermadec Islands (h = N).

| | | | | |
|---|---|---|---|---|
| " 9 | Um | iP | 15 29 31.2 | |
| | Ud | iP | 15 30 11.6 | |

Japan (h = N).

| | | | | |
|---|---|---|---|---|
| " 9 | Up | iP | 16 19 59.8 | |
| | Ki | iP | 16 20 02.8 | |
| | Sk | iP | 16 20 26.4 | |
| | Um | iP | 16 19 57.5 | |
| | Ud | iP | 16 20 22.1 | |
| | De | iP | 16 20 22.7 | |

Kirghiz-Sinkiang (h = N).

| | | | | |
|---|---|---|---|---|
| " 9 | Up | iS | 20 13 58.1 | |
| | Ud | iP | 20 11 21.6 | |
| | | iS | 20 13 14.5 | |
| | De | iP | 20 11 17.0 | |
| | | i | 20 11 33.9 | |
| | | iS | 20 12 51.2 | |

England (h = N).

| | | | | |
|---|---|---|---|---|
| " 9 | Up | i(P) | 21 27 13.1 | |
| | Ki | i(P) | 21 26 59.5 | |
| | Um | iP | 21 27 05.6 | C |
| | Ud | iP | 21 27 21.9 | |
| | De | i(P) | 21 27 38.7 | |
| " 9 | Ud | iP | 21 47 20.1 | |
| | De | iP | 21 46 47.7 | |
| " 10 | Ud | i(Sg) | 13 10 47.8 | |
| | De | i(Sg) | 13 11 08.3 | |
| " 10 | Ud | i | 13 55 17.4 | |
| | | i(Sg) | 13 55 29.6 | |

1970
Aug. 10

| | | | | |
|---|---|---|---|---|
| Up | iPKP | | 15 34 24.2 | |
| | iPKS | | 15 37 47.7 | |
| | | | micr | sec |
| | PKP | Z' | 0.1 | 0.5 |
| | PKS | Z' | 0.2 | 1.0 |
| | Mx | E | 5.3 | 21 |
| | Mx | N | 14 | 21 |
| | Mx | Z | 18 | 22 |
| Ki | iPKP | | 15 34 08.4 | C |
| | i | | 15 34 12.5 | |
| | iPKS | | 15 37 30.4 | |
| | i | | 15 37 48.3 | |
| | | | micr | sec |
| | PKP | Z' | 0.2 | 1.0 |
| | Mx | E | 10 | 24 |
| | Mx | N | 5.9 | 22 |
| | Mx | Z | 11 | 23 |
| Sk | iPKP | | 15 34 19.2 | C |
| | i | | 15 34 24.6 | |
| | iPKS | | 15 37 46.5 | |
| Um | iPKP | | 15 34 12.3 | |
| | i | | 15 34 19.1 | |
| | iPKS | | 15 37 34.9 | |
| | i | | 15 37 55.6 | |
| Ud | iPKP | | 15 34 24.6 | |
| | i | | 15 34 28.2 | |
| | iPKS | | 15 37 46.5 | |
| | i | | 15 37 52.1 | |
| De | iPKP | | 15 34 31.3 | |
| | i | | 15 34 35.4 | |
| | iPKS | | 15 37 57.8 | |
| | i | | 15 38 02.4 | |

New Hebrides Islands
(h = 45 km).
M = 6.6 (Up,Ki).
At the two nearest stations, Ki (about 122°) and Um (about 125°), two branches of PKS are observed, the later one with larger amplitudes.

| | | | | |
|---|---|---|---|---|
| " 10 | Up | iP | 16 42 28.6 | |
| | Ki | iP | 16 43 56.9 | |
| | | iPP | 16 44 35.2 | |
| | Sk | iP | 16 43 11.3 | |
| | Um | iP | 16 43 12.3 | |
| | Ud | i(P) | 16 42 28.6 | |

Yugoslavia (h = 25 km).

| | | | | |
|---|---|---|---|---|
| " 10 | Ki | iSn | 16 57 54.7 | |
| | | eSg | 16 58 47 | |
| | Sk | iSn | 16 57 19.3 | |
| | | iSg | 16 57 56.1 | |
| | Um | iSg | 16 56 44.6 | |
| | Ud | iSg | 16 56 59.1 | |

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970
Aug. 10 (cont.)

| | | | |
|---|---|---|---|
| De | i | 16 57 04.9 | |
| | iSg | 16 57 35.5 | |

Esthonia,
59.3°N, 24.1°E.
Origin time = 16 54 05.
Explosion?

" 11

| | | | |
|---|---|---|---|
| Up | iP | 01 14 50.4 | |
| Ki | iP | 01 14 48.7 | |
| Sk | iP | 01 15 11.9 | |
| Um | iP | 01 14 45.1 | |
| Ud | iP | 01 15 06.3 | |
| De | iP | 01 15 03.2 | |

Kashmir-Tibet (h = N).

" 11

| | | | | |
|---|---|---|---|---|
| Up | iP | | 03 59 34.0 | |
| | ipP | | 03 59 41.9 | |
| | iS | | 04 08 19 | |
| | | | micr | sec |
| | pP | Z' | 0.3 | 1.2 |
| | Mx | E | 3.4 | 18 |
| | Mx | N | 5.8 | 17 |
| | Mx | Z | 9.1 | 23 |
| Ki | iP | | 04 00 19.4 | |
| | ipP | | 04 00 27.1 | |
| | | | micr | sec |
| | pP | Z' | 0.4 | 1.7 |
| | Mx | E | 10 | 16 |
| | Mx | N | 8.3 | 18 |
| | Mx | Z | 7.9 | 18 |
| Sk | iP | | 03 59 45.8 | |
| | ipP | | 03 59 53.8 | |
| Um | iP | | 03 59 59.5 | D |
| | ipP | | 04 00 07.5 | |
| | iS | | 04 09 08 | |
| Ud | iP | | 03 59 28.5 | D |
| | ipP | | 03 59 36.0 | |
| De | iP | | 03 59 07.5 | |
| | ipP | | 03 59 16.1 | |

North of Ascension Island.
h = 30 km (Up,Ki,Sk,Um, Ud,De).
M = 6.1 (Up,Ki).
The phase, here interpreted as pP, is consistently bigger than P within our network.

" 11

| | | | |
|---|---|---|---|
| Ki | iP | 04 52 53.8 | |
| | i | 04 53 10.9 | |

Mariana Islands (h = 240 km).

" 11

| | | |
|---|---|---|
| Ki | iPKP | 06 23 25.2 |
| Sk | iPKP | 06 23 35.9 |
| Um | iPKP | 06 23 31.1 |

Santa Cruz Islands
(h = 130 km).

1970
Aug. 11

| | | | |
|---|---|---|---|
| Ki | iPKP | 10 28 19.0 | |
| Sk | ePKP | 10 28 29 | |
| Um | iPKP | 10 28 24.6 | |
| Ud | iPKP | 10 28 33.7 | |

New Hebrides Islands (h = N).

" 11

| | | | | |
|---|---|---|---|---|
| Up | eP | | 10 38 15 | |
| | iPKP | | 10 41 28.9 | |
| | iPP | | 10 43 32.2 | |
| | iPKS | | 10 44 49.7 | |
| | | | micr | sec |
| | PKP | Z' | 0.3 | 0.6 |
| | PKS | Z' | 0.2 | 1.0 |
| | Mx | E | 21 | 22 |
| | Mx | N | 56 | 22 |
| | Mx | Z | 68 | 22 |
| Ki | i(PKP) | | 10 41 10.9 | |
| | iPKP | | 10 41 16.3 | |
| | iPKS | | 10 44 55.3 | |
| | iPKKP | | 10 51 14.4 | |
| | ePKKS | | 10 54 52 | |
| | | | micr | sec |
| | PKP | Z' | 0.4 | 0.8 |
| | PKS | Z' | 0.1 | 1.0 |
| | Mx | E | 34 | 24 |
| | Mx | N | 21 | 20 |
| | Mx | Z | 44 | 21 |
| Sk | i(PKP) | | 10 41 18.0 | |
| | i | | 10 41 22.7 | |
| | iPKP | | 10 41 26.1 | |
| | iPKS | | 10 44 49.3 | |
| Um | eP | | 10 38 00 | |
| | i(PKP) | | 10 41 17.3 | |
| | iPKP | | 10 41 21.0 | |
| | iPKKS | | 10 54 18.7 | |
| Ud | i(PKP) | | 10 41 18.7 | |
| | iPKP | | 10 41 29.9 | |
| | iPKS | | 10 44 53.2 | |
| | iPKKP | | 10 51 37.2 | |
| | iPKKS | | 10 54 12.3 | |
| De | i(PKP) | | 10 41 25.5 | |
| | iPKP | | 10 41 37.7 | |
| | iPKS | | 10 45 02.5 | |
| | i | | 10 45 11.5 | |
| | iPKKS | | 10 54 11.1 | |

New Hebrides Islands (h = N).
M = 7.2 (Up,Ki).

" 11

| | | |
|---|---|---|
| Up | iSg | 12 10 44.6 |
| Ki | eSg | 12 13 13 |
| Um | iSg | 12 11 16.8 |
| Ud | eLgl | 12 11 48 |
| De | iLgl | 12 12 12.4 |

Esthonia,
59.7°N, 25.6°E.
Origin time = 12 08 35.
Explosion?

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | |
|---|---|---|---|---|---|
| 1970 Aug. | 11 | Up | iP | 12 46 46.9 | |
| | | Ki | iP | 12 45 54.2 | |
| | | | i | 12 46 05.3 | |
| | | Um | iP | 12 46 19.1 | |
| | | | i | 12 46 33.2 | |
| | | Ud | iP | 12 46 49.3 | |
| | | Aleutian Islands. | | | |
| " | 11 | Ki | iPKP | 13 28 30.7 | |
| | | Sk | iPKP | 13 28 41.8 | |
| | | Um | iPKP | 13 28 36.1 | |
| | | Ud | iPKP | 13 28 48.2 | |
| | | | iPKS | 13 32 08.7 | |
| | | De | iPKP | 13 28 52.8 | |
| | | | iPKS | 13 32 25.6 | |
| | | New Hebrides Islands (h = 30 km). | | | |
| " | 11 | Um | iP | 13 37 39.1 | |
| " | 11 | Ki | iPKP | 14 09 37.5 | |
| | | Sk | ePKP | 14 09 45 | |
| | | Um | iPKP | 14 09 43.6 | |
| | | New Hebrides Islands (h = 40 km). | | | |
| " | 11 | Ki | ePKP | 14 11 38 | |
| | | Um | iPKP | 14 11 44.2 | |
| | | New Hebrides Islands. Origin time = 13 52 49. | | | |
| " | 11 | Ki | i | 14 28 50.4 | |
| | | Ud | i | 14 27 23.2 | |
| | | | i(Sg) | 14 27 39.5 | |
| | | | i | 14 29 33.4 | |
| " | 11 | Up | iP | 15 43 29.1 | |
| | | Ki | i(P) | 15 44 04.9 | |
| " | 11 | Ud | iPg | 15 55 40.2 | |
| | | | iSg | 15 56 03.7 | |
| " | 11 | Up | iPKP | 16 35 28.3 | |
| | | Ki | iPKP | 16 35 10.1 | |
| | | Sk | iPKP | 16 35 21.5 | |
| | | Um | iPKP | 16 35 16.4 | |
| | | Ud | iPKP | 16 35 26.2 | |
| | | New Hebrides Islands (h = 35 km). | | | |
| " | 11 | Ki | eP | 16 54 19 | |
| | | | i | 16 54 28.1 | |
| | | Sk | eP | 16 54 43 | |
| | | Um | iP | 16 55 02.7 | |
| " | 11 | Ki | iPKP | 17 46 08.7 | |
| | | Sk | ePKP | 17 46 21 | |
| | | (cont.) | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1970 Aug. | 11 | (cont.) | | | |
| | | Um | iPKP | 17 46 17.5 | |
| | | Ud | iPKP | 17 46 29.1 | |
| | | De | iPKP | 17 46 34.0 | |
| | | New Hebrides Islands (h = 30 km). | | | |
| " | 11 | Um | iPKP | 18 10 36.6 | |
| | | New Hebrides Islands (h = 60 km). | | | |
| " | 11 | Up | iP | 18 36 01.1 | |
| | | | ipP | 18 36 17.1 | |
| | | Ki | iP | 18 35 34.5 | |
| | | Sk | iP | 18 36 02.0 | |
| | | Um | iP | 18 35 44.1 | |
| | | Ud | iP | 18 36 10.8 | |
| | | De | iP | 18 36 20.3 | |
| | | Ryukyu Islands. h = 60 km (Up). | | | |
| " | 11 | Up | iP | 20 11 25.5 | |
| | | Sk | iP | 20 11 11.0 | |
| | | Um | iP | 20 11 27.6 | |
| | | Ud | iP | 20 11 16.9 | |
| | | De | iP | 20 11 21.7 | |
| | | Costa Rica (h = N). | | | |
| " | 11 | Up | iPKP | 20 29 47.8 | |
| | | | ipPKP | 20 30 05.0 | |
| | | | | micr | sec |
| | | | PKP Z' | 0.1 | 0.6 |
| | | | pPKP Z' | 0.1 | 0.7 |
| | | Ki | iPKP | 20 30 01.8 | |
| | | | ipPKP | 20 30 20.3 | |
| | | | iPKS | 20 33 38.0 | |
| | | | | micr | sec |
| | | | PKP Z' | 0.1 | 1.5 |
| | | | Mx E | 0.7 | 17 |
| | | | Mx Z | 1.1 | 18 |
| | | Sk | iPKP | 20 29 53.1 | |
| | | | ipPKP | 20 30 09.5 | |
| | | Um | iPKP | 20 29 55.7 | |
| | | | ipPKP | 20 30 12.6 | |
| | | | iPKS | 20 33 26.1 | |
| | | Ud | iPKP | 20 29 46.9 | |
| | | | ipPKP | 20 30 03.2 | |
| | | | iPP | 20 31 31.1 | |
| | | South Sandwich Islands. h = 60 km (Up,Ki,Sk,Um,Ud). | | | |
| " | 12 | Um | iPKP | 00 58 26.7 | |
| | | New Hebrides Islands (h = 35 km). | | | |
| " | 12 | Up | iPKP | 00 59 45.5 | |
| | | | iPKS | 01 03 10.8 | |
| | | (cont.) | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970
Aug. 12 (cont.)

| | | | | |
|---|---|---|---|---|
| Up | | | micr | sec |
| | Mx | E | 1.3 | 22 |
| | Mx | N | 3.0 | 21 |
| | Mx | Z | 3.4 | 21 |
| Ki | iPKP | | 00 59 31.3 | |
| | | | micr | sec |
| | Mx | E | 1.0 | 18 |
| | Mx | N | 1.1 | 18 |
| | Mx | Z | 1.1 | 18 |
| Sk | iPKP | | 00 59 42.6 | |
| Um | iPKP | | 00 59 38.1 | |
| | i | | 01 00 00.7 | |
| Ud | iPKP | | 00 59 47.5 | |
| | iPP | | 01 02 00.3 | |
| | iPKS | | 01 03 10.1 | |
| De | iPKP | | 00 59 55.0 | |
| | iPKS | | 01 03 20.8 | |
| | i | | 01 03 29.4 | |

New Hebrides Islands
(h = 40 km).
M = 5.8 (Up,Ki).

" 12

| | | | | |
|---|---|---|---|---|
| Up | iPKP | | 01 58 39.4 | |
| | iPKS | | 02 01 59.3 | |
| | | | micr | sec |
| | Mx | E | 3.2 | 21 |
| | Mx | N | 9.9 | 22 |
| | Mx | Z | 9.4 | 22 |
| Ki | iPKP | | 01 58 24.6 | |
| | | | micr | sec |
| | PKP | Z' | 0.2 | 1.1 |
| | Mx | E | 5.2 | 21 |
| | Mx | N | 3.8 | 21 |
| | Mx | Z | 6.7 | 21 |
| Sk | iPKP | | 01 58 36.3 | |
| Um | iPKP | | 01 58 30.9 D | |
| | iPKS | | 02 01 56.5 | |
| Ud | i(PKP) | | 01 58 34.3 | |
| | iPKP | | 01 58 41.9 | |
| | iPKS | | 02 02 03.6 | |
| De | i(PKP) | | 01 58 35.0 | |
| | iPKP | | 01 58 48.1 | |
| | iPKS | | 02 02 13.4 | |

New Hebrides Islands.
(h = 45 km).
M = 6.4 (Up,Ki).

" 12

| | | | |
|---|---|---|---|
| Ki | i(P) | | 06 56 41.2 |
| Sk | iP | | 06 56 39.0 |

" 12

| | | | |
|---|---|---|---|
| Up | iPKS | | 08 32 29.7 |
| Ki | iPKP | | 08 28 41.2 |
| Sk | iPKP | | 08 28 51.9 |
| Um | iPKP | | 08 28 47.1 |
| Ud | ePKP | | 08 28 58 |
| | iPKS | | 08 32 20.3 |
| De | iPKP | | 08 29 03.4 |

New Hebrides Islands
(h = 25 km).

1970
Aug. 12

| | | | |
|---|---|---|---|
| Ki | iPKP | | 08 40 14.5 |
| Sk | iPKP | | 08 40 26.2 |
| Um | iPKP | | 08 40 20.8 |
| Ud | iPKP | | 08 40 30.7 |

New Hebrides Islands
(h = 40 km).

" 12

| | | | |
|---|---|---|---|
| Up | iPKP | | 09 24 53.2 |
| Ki | iPKP | | 09 24 39.1 |
| Sk | iPKP | | 09 24 50.7 |
| Um | iPKP | | 09 24 45.1 |
| Ud | iPKP | | 09 24 55.2 |
| | iPKS | | 09 28 14.7 |
| De | iPKP | | 09 25 01.6 |
| | iPKS | | 09 28 36.1 |

New Hebrides Islands
(h = 35 km).

" 12

| | | | | |
|---|---|---|---|---|
| Up | iP | | 09 36 57.3 | |
| | i | | 09 37 30.0 | |
| | | | micr | sec |
| | Mx | E | 5.1 | 22 |
| | Mx | N | 7.3 | 19 |
| | Mx | Z | 12 | 22 |
| Ki | iP | | 09 36 45.7 | |
| | | | micr | sec |
| | P | Z' | 0.1 | 1.5 |
| | Mx | E | 16 | 20 |
| | Mx | N | 6.1 | 21 |
| | Mx | Z | 16 | 20 |
| Sk | iP | | 09 36 38.4 | |
| Um | iP | | 09 36 51.7 | |
| Ud | iP | | 09 36 40.1 | |
| De | iP | | 09 36 48.8 | |

Nicaragua (h = N).
M = 6.1 (Up,Ki).

" 12

| | | | |
|---|---|---|---|
| Um | i(P) | | 09 55 44.4 |
| Ud | iP | | 09 55 57.7 |

" 12

| | | | | |
|---|---|---|---|---|
| Up | | | micr | sec |
| | Mx | E | 1.3 | 22 |
| | Mx | N | 2.0 | 20 |
| | Mx | Z | 4.1 | 21 |
| Ki | iP | | 10 36 57.4 | |
| | | | micr | sec |
| | Mx | E | 3.5 | 20 |
| | Mx | N | 2.5 | 19 |
| | Mx | Z | 3.8 | 20 |
| Sk | iP | | 10 36 50.6 | |
| Um | iP | | 10 37 03.1 | |
| Ud | iP | | 10 36 55.9 | |
| De | iP | | 10 37 01.2 | |

Nicaragua (h = N).
M = 5.8 (Up,Ki).

" 12

| | | | |
|---|---|---|---|
| Up | iP | | 10 52 11.2 |
| Ud | iP | | 10 52 11.2 |

Aleutian Islands (h = 35 km).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Aug. | 12 | Ki | iSg | | 11 52 23.6 | |
| | | Sk | e | | 11 52 27 | |
| | | | iSg | | 11 52 31.7 | |
| | | Um | iSg | | 11 52 50.8 | |
| | | Nordland, Norway. | | | | |
| " | 12 | Up | iSg | | 12 32 43.3 | |
| | | Um | i | | 12 33 06.9 | |
| | | | iSg | | 12 33 15.6 | |
| | | Ud | eSg | | 12 33 42 | |
| | | Esthonia. | | | | |
| | | Explosion? | | | | |
| " | 12 | Ki | iPKP | | 12 53 42.8 | |
| | | Sk | iPKP | | 12 53 54.4 | |
| | | Um | iPKP | | 12 53 49.3 | |
| | | Ud | iPKP | | 12 54 03.5 | |
| | | New Hebrides Islands | | | | |
| | | (h = 30 km). | | | | |
| " | 12 | Up | iP | | 14 02 33.9 | |
| " | 12 | Um | iPKP | | 17 30 10.8 | |
| | | New Hebrides Islands | | | | |
| | | (h = N). | | | | |
| " | 12 | Up | iP | | 18 54 57.7 | |
| | | Ki | iP | | 18 54 31.7 | |
| | | Sk | iP | | 18 55 00.0 | |
| | | Um | iP | | 18 54 41.1 | |
| | | Ud | iP | | 18 55 07.3 | |
| | | De | iP | | 18 55 19.5 | |
| | | Ryukyu Islands (h = 90 km). | | | | |
| " | 12 | Up | iPg | | 19 29 14.5 | |
| | | | iSg | | 19 29 36.7 | |
| | | | | | micr | sec |
| | | | Sg | Z' | 0.1 | 0.5 |
| | | Ki | iSg | | 19 32 07.7 | |
| | | Sk | ePg | | 19 29 32 | |
| | | | iSg | | 19 30 08.3 | |
| | | Um | iPn | | 19 29 22.1 | |
| | | | i | | 19 30 06.1 | |
| | | | iSg | | 19 30 11.0 | |
| | | Ud | iPg | | 19 29 17.8 | |
| | | | iSg | | 19 29 42.7 | |
| | | De | iSg | | 19 31 21.0 | |
| | | Hälsingland, Sweden, | | | | |
| | | 61.6°N, 16.4°E. | | | | |
| | | Origin time = 19 28 37. | | | | |
| | | Felt. | | | | |
| " | 12 | Up | iP | | 22 57 15.6 | |
| | | | i | | 22 57 18.5 | |
| | | Ki | iP | | 22 56 29.1 | |
| | | Sk | iP | | 22 57 05.6 | |
| | | Um | iP | | 22 56 50.0 | |
| | | (cont.) | | | | |
| 1970 Aug. | 12 | (cont.) | | | | |
| | | Ud | iP | | 22 57 22.0 | |
| | | De | iP | | 22 57 38.6 | |
| | | Kurile Islands (h = 70 km). | | | | |
| " | 13 | Up | iPKP | | 00 42 06.4 | |
| | | | i | | 00 42 10.3 | |
| | | | | | micr | sec |
| | | | PKP | Z' | 0.1 | 0.7 |
| | | Um | iPKP | | 00 41 52.2 | |
| | | | i | | 00 42 06.4 | |
| | | Ud | iPKP | | 00 42 08.1 | C |
| | | | i | | 00 42 12.2 | |
| | | De | iPKP | | 00 42 18.7 | C |
| | | Tonga-Kermadec Islands | | | | |
| | | (h = 90 km). | | | | |
| " | 13 | Up | iP | | 02 24 20.6 | C |
| | | Ki | iP | | 02 24 57.1 | |
| | | Ud | iP | | 02 24 22.6 | |
| " | 13 | Up | iP | | 04 36 23.2 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 0.8 |
| | | | Mx | E | 0.6 | 20 |
| | | | Mx | N | 1.5 | 24 |
| | | | Mx | Z | 2.1 | 30 |
| | | Ki | iP | | 04 36 14.9 | C |
| | | | | | micr | sec |
| | | | P | Z' | 0.3 | 1.3 |
| | | | Mx | E | 1.0 | 20 |
| | | | Mx | Z | 1.2 | 19 |
| | | Sk | iP | | 04 36 33.1 | |
| | | | iPP | | 04 40 56.0 | |
| | | Um | iP | | 04 36 16.1 | |
| | | | i | | 04 39 43.1 | |
| | | | iSKS | | 04 46 46 | |
| | | Ud | iP | | 04 36 32.0 | C |
| | | | i | | 04 39 43.4 | |
| | | | iPP | | 04 40 54.2 | |
| | | De | iP | | 04 36 34.1 | |
| | | | i | | 04 40 43.7 | |
| | | Sumbawa Island (h = 120 km). | | | | |
| | | m = 6.7, M = 5.5 (Up,Ki). | | | | |
| " | 13 | Up | iP | | 07 10 58.4 | |
| | | Ki | eP | | 07 10 53 | |
| | | Sk | iP | | 07 11 14.1 | |
| | | Um | iP | | 07 10 53.7 | |
| | | Ud | iP | | 07 11 13.0 | |
| | | Burma-India (h = 40 km). | | | | |
| " | 13 | Sk | iSg | | 12 05 33.8 | |
| | | Um | iSg | | 12 04 15.0 | |
| | | Ud | iLgl | | 12 04 41.9 | |
| | | De | eLgl | | 12 05 09 | |
| | | Esthonia, | | | | |
| | | 59.7°N, 25.6°E. | | | | |
| | | Origin time = 12 01 32. | | | | |
| | | Explosion? | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 | | | | | | |
| Aug. | 13 | Ki | iP | | 13 41 38.0 | |
| | | Um | iP | | 13 41 35.3 | |
| | | Sumatra (h = 60 km). | | | | |
| " | 13 | De | iP | | 19 35 48.0 | |
| | | Lake Baikal (h = N). | | | | |
| " | 13 | Ki | iPKP | | 23 07 58.1 | C |
| | | Sk | ePKP | | 23 08 10 | |
| | | Um | iPKP | | 23 08 04.0 | |
| " | 13 | Up | iP | | 23 14 35.3 | |
| | | Ud | iP | | 23 14 34.9 | |
| | | Aleutian Islands (h = 60 km). | | | | |
| " | 13 | Up | eP | | 23 40 25 | |
| | | Ki | iP | | 23 39 58.7 | |
| | | | | | micr sec | |
| | | | Mx | E | 0.9 17 | |
| | | | Mx | Z | 1.3 18 | |
| | | Um | iP | | 23 40 09.3 | |
| | | | i | | 23 40 22.4 | |
| | | | iSKS | | 23 50 41 | |
| | | De | eP | | 23 40 43 | |
| | | Mariana Islands (h = 45 km). | | | | |
| " | 14 | Ki | eP | | 01 33 14 | |
| | | Ud | iP | | 01 33 25.1 | |
| | | Pamir. | | | | |
| " | 14 | Ki | iP | | 03 48 06.9 | |
| | | Sk | iP | | 03 48 35.1 | |
| | | Um | iP | | 03 48 36.8 | |
| | | Ud | iP | | 03 49 01.4 | C |
| | | | i | | 03 49 07.0 | |
| | | De | iP | | 03 49 27.0 | |
| | | Alaska (h = 20 km). | | | | |
| " | 14 | Um | iP | | 09 01 41.6 | |
| | | Ud | iP | | 09 01 55.2 | |
| | | | ipP | | 09 02 12.7 | |
| | | Japan. | | | | |
| | | h = 65 km (Ud). | | | | |
| " | 14 | De | iPg | | 09 19 54.8 | |
| | | | iSg | | 09 20 31.9 | |
| " | 14 | Ki | iPn | | 11 16 21.8 | |
| | | | iSn | | 11 17 20.6 | |
| | | | iSg | | 11 17 45.6 | |
| | | Sk | iSg | | 11 20 08.7 | |
| | | Um | i | | 11 18 18.2 | |
| | | | iSg | | 11 18 29.1 | |
| | | Northwest Russia. | | | | |
| | | Origin time = 11 15 05. | | | | |
| | | Explosion? | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 | | | | | | |
| Aug. | 14 | Up | i(P) | | 16 02 26.7 | |
| | | Um | iP | | 16 02 37.1 | C |
| " | 14 | Sk | eP | | 20 37 43 | |
| | | Um | iP | | 20 37 37.7 | |
| | | Ud | iP | | 20 38 06.2 | |
| | | De | iP | | 20 38 17.1 | |
| " | 14 | Up | i(P) | | 21 26 36.6 | |
| | | Ki | i(P) | | 21 26 22.0 | |
| | | Ud | iP | | 21 27 00.8 | |
| | | | i | | 21 27 14.6 | |
| " | 14 | Ki | iP | | 21 38 04.3 | |
| | | Um | iP | | 21 37 31.2 | |
| " | 15 | Ud | iP | | 01 11 57.1 | C |
| | | | i | | 01 13 28.5 | |
| " | 15 | Up | iP | | 02 50 40.8 | C |
| | | | i | | 02 50 48.4 | |
| | | Ki | iP | | 02 49 44.4 | |
| | | Um | iP | | 02 50 12.4 | |
| | | Ud | iP | | 02 50 37.2 | |
| | | Aleutian Islands (h = 30 km). | | | | |
| " | 15 | Up | iPKP | | 07 19 54.6 | D |
| | | | ipPKP | | 07 20 20.3 | |
| | | | | | micr sec | |
| | | | PKP | Z' | 0.1 0.6 | |
| | | Ki | e(PKP) | | 07 19 46 | |
| | | | i | | 07 20 31.1 | |
| | | Sk | ePKP | | 07 19 47 | |
| | | Um | iPKP | | 07 19 43.5 | |
| | | Ud | iPKP | | 07 19 56.5 | D |
| | | | ipPKP | | 07 20 21.8 | |
| | | De | iPKP | | 07 20 06.6 | D |
| | | Tonga-Kermadec Islands. | | | | |
| | | h = 90 km (Up,Ud). | | | | |
| " | 15 | Um | i | | 11 33 10.0 | |
| | | | i(Sg) | | 11 33 36.3 | |
| " | 15 | Up | iPKP | | 11 47 01.3 | |
| | | | iPKS | | 11 50 35.0 | |
| | | Ki | iPKP | | 11 46 48.0 | |
| | | Sk | iPKP | | 11 47 00.1 | |
| | | Um | iPKP | | 11 46 54.2 | |
| | | Ud | iPKP | | 11 47 04.4 | |
| | | | iPKS | | 11 50 26.7 | |
| | | | i | | 11 50 34.3 | |
| | | De | iPKP | | 11 47 10.5 | |
| | | | iPKS | | 11 50 38.7 | |
| | | New Hebrides Islands (h = N). | | | | |
| " | 15 | Ki | iPn | | 13 21 45.2 | |
| | | (cont.) | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | |
|---|---|---|---|---|---|
| 1970 Aug. | 15 | (cont.) | | | |
| | | Ki | iSn | 13 22 33.5 | |
| | | | iLgl | 13 22 48.7 | |
| | | Sk | e(Lgl) | 13 25 36 | |
| | | Um | iSg | 13 24 17.1 | |
| | | Northwest Russia. | | | |
| | | Origin time = 13 20 42. | | | |
| | | Explosion? | | | |
| " | 15 | Ki | iP | 17 05 09.9 | |
| | | Ud | iP | 17 06 09.0 | |
| " | 15 | Up | iP | 17 42 59.8 | |
| | | Sk | iP | 17 42 54.6 | |
| | | Um | iP | 17 42 38.6 | D |
| | | Ud | iP | 17 43 07.4 | |
| | | South of Japan (h = 80 km). | | | |
| " | 15 | Up | iP | 19 37 58.3 | |
| | | Um | iP | 19 37 41.1 | C |
| | | Bonin Islands (h = 540 km). | | | |
| " | 15 | Up | iP | 21 18 32.6 | |
| | | Ki | iP | 21 18 16.0 | |
| | | Sk | iP | 21 18 38.1 | |
| | | Um | iP | 21 18 21.9 | |
| | | Ud | iP | 21 18 41.0 | C |
| | | Talaud Islands (h = 100 km). | | | |
| " | 15 | Up | iP | 23 02 21.6 | |
| | | Ki | iP | 23 01 36.5 | |
| | | Um | iP | 23 01 57.7 | |
| | | Ud | iP | 23 02 27.8 | |
| " | 15 | Up | iP | 23 09 58.0 | C |
| | | Ki | iP | 23 09 40.9 | C |
| | | Sk | iP | 23 10 04.0 | |
| | | Um | iP | 23 09 46.3 | |
| | | Ud | iP | 23 10 07.4 | |
| " | 16 | Up | i(Lgl) | 05 38 33.9 | |
| | | Ki | iPn | 05 34 18.0 | |
| | | | iSn | 05 35 16.1 | |
| | | | iSg | 05 35 46.2 | |
| | | Sk | eSn | 05 37 14 | |
| | | | iLgl | 05 38 04.2 | |
| | | Um | iSn | 05 35 56.7 | |
| | | | iSg | 05 36 30.6 | |
| | | Ud | i(Lgl) | 05 39 07.0 | |
| | | De | i(Lgl) | 05 40 36.0 | |
| | | Northwest Russia, 67.5°N, 33.2°E. | | | |
| | | Origin time = 05 33 04. | | | |
| | | Explosion? | | | |
| " | 16 | Ud | iP | 09 54 39.2 | |
| | | | ipP | 09 55 28.8 | |
| | | Aleutian Islands. | | | |
| | | h = 210 km (Ud). | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1970 Aug. | 16 | Up | iP | 10 50 12.3 | |
| | | | i | 10 50 16.6 | |
| | | Ki | iP | 10 51 28.3 | |
| | | Sk | eP | 10 50 51 | |
| | | Um | iP | 10 50 52.1 | |
| | | | i | 10 51 06.5 | |
| | | Ud | iP | 10 50 17.2 | |
| | | | i | 10 50 20.4 | |
| | | De | iP | 10 49 38.4 | |
| | | Ionian Sea (h = 50 km). | | | |
| " | 16 | Ki | iPn | 16 15 44.5 | |
| | | | iSn | 16 16 30.4 | |
| | | | iSg | 16 16 46.1 | |
| | | Sk | e(Lgl) | 16 19 33 | |
| | | Um | iSn | 16 17 39.6 | |
| | | | iSg | 16 18 14.0 | |
| | | Northwest Russia. | | | |
| | | Origin time = 16 14 45. | | | |
| | | Explosion? | | | |
| " | 16 | Up | i(Sg) | 20 04 42.4 | |
| | | Ki | e | 20 07 53 | |
| | | Um | i | 20 06 06.4 | |
| " | 17 | Up | iP | 02 46 48.5 | |
| | | Sk | iP | 02 47 33.6 | |
| | | Um | iP | 02 47 31.5 | |
| | | Ud | iP | 02 46 57.2 | |
| | | Albania. | | | |
| " | 17 | Um | iP | 04 27 20.2 | |
| | | Ud | iP | 04 26 40.0 | |
| | | Albania. | | | |
| " | 17 | Ki | eP | 10 24 19 | |
| | | Sk | iP | 10 24 50.5 | |
| | | Um | iP | 10 24 20.9 | |
| | | Ud | iP | 10 24 45.3 | |
| | | | i | 10 24 49.6 | |
| | | De | iP | 10 24 46.1 | |
| | | Sinkiang. | | | |
| " | 17 | Um | iP | 13 16 23.5 | |
| " | 17 | Ki | eSg | 14 35 48 | |
| | | Sk | eSg | 14 35 06 | |
| | | Um | iSg | 14 33 47.8 | |
| | | Esthonia. | | | |
| | | Origin time = 14 31 07. | | | |
| | | Explosion? | | | |
| " | 18 | Ki | iPKP | 01 45 31.5 | |
| | | | i | 01 45 42.1 | |
| | | Sk | iPKP | 01 45 45.9 | |
| | | Um | iPKP | 01 45 40.6 | C |
| | | Ud | iPKP | 01 45 52.4 | |
| | | | i | 01 46 02.8 | |
| | | New Zealand (h = 90 km). | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Aug. | 18 | Sk | i(P) | | 12 52 00.9 | |
| | | Um | i(P) | | 12 52 40.5 | |
| | | Ud | i(P) | | 12 53 46.6 | |
| " | 18 | Ki | eSg | | 13 04 49 | |
| | | Sk | iSg | | 13 03 52.9 | |
| | | Um | iSg | | 13 02 46.1 | |
| | | De | iSg | | 13 03 24.8 | |
| | | Esthonia. | | | | |
| | | Origin time = 13 00 02. | | | | |
| | | Explosion? | | | | |
| " | 18 | Ud | i(P) | | 13 09 05.2 | |
| " | 18 | Up | iP | | 17 04 41.8 | |
| | | | | | micr sec | |
| | | | P | Z' | 0.1 0.5 | |
| | | Ki | iP | | 17 04 27.4 D | |
| | | | | | micr sec | |
| | | | P | Z' | 0.1 1.0 | |
| | | Sk | iP | | 17 04 48.3 | |
| | | Um | iP | | 17 04 32.0 D | |
| | | Ud | iP | | 17 04 50.4 D | |
| | | De | iP | | 17 04 56.8 | |
| | | Celebes Sea (h = 560 km). | | | | |
| | | m = 6.0 (Up,Ki). | | | | |
| " | 18 | Up | iP | | 17 44 57.2 | |
| | | Ki | iP | | 17 46 12.2 | |
| | | Sk | iP | | 17 45 39.6 | |
| | | | i | | 17 45 45.3 | |
| | | Um | iP | | 17 45 34.8 | |
| | | Ud | iP | | 17 45 06.7 C | |
| | | De | iP | | 17 44 26.9 | |
| | | Greece (h = 30 km). | | | | |
| " | 18 | Up | iP | | 18 02 06.0 | |
| | | | i | | 18 02 25.4 | |
| | | | iS | | 18 10 10 | |
| | | | | | micr sec | |
| | | | P | Z' | 0.3 1.3 | |
| | | | Mx | E | 1.3 17 | |
| | | | Mx | N | 3.8 19 | |
| | | | Mx | Z | 3.7 19 | |
| | | Ki | iP | | 18 01 10.0 C | |
| | | | ipP | | 18 01 20.0 | |
| | | | iS | | 18 08 29 | |
| | | | | | micr sec | |
| | | | P | Z' | 0.2 1.0 | |
| | | | Mx | E | 3.3 18 | |
| | | | Mx | N | 4.5 21 | |
| | | | Mx | Z | 5.5 20 | |
| | | Sk | iP | | 18 01 36.3 C | |
| | | | ipP | | 18 01 46.1 | |
| | | Um | iP | | 18 01 39.6 C | |
| | | | ipP | | 18 01 48.9 | |
| | | | iS | | 18 09 23 | |
| | | (cont.) | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Aug. | 18 | (cont.) | | | | |
| | | Ud | iP | | 18 02 01.8 C | |
| | | | ipP | | 18 02 11.2 | |
| | | De | iP | | 18 02 26.2 | |
| | | | ipP | | 18 02 34.3 | |
| | | Alaska. | | | | |
| | | h = 35 km (Ki,Sk,Um,Ud,De). | | | | |
| | | m = 6.1, M = 5.6 (Up,Ki). | | | | |
| " | 18 | Um | iP | | 18 47 29.5 | |
| | | Italy. | | | | |
| " | 18 | Up | iP | | 23 15 33.9 | |
| | | Ki | iP | | 23 14 49.3 | |
| | | Um | iP | | 23 15 08.5 | |
| | | Ud | iP | | 23 15 40.1 C | |
| | | Japan. | | | | |
| " | 19 | Ki | iP | | 01 08 05.1 | |
| | | Um | iP | | 01 07 54.9 | |
| | | Hindu Kush. | | | | |
| " | 19 | Up | iP | | 02 06 09.9 | |
| | | | iS | | 02 09 33 | |
| | | | | | micr sec | |
| | | | P | Z' | 0.2 0.8 | |
| | | | Mx | E | 6.9 21 | |
| | | | Mx | N | 13 18 | |
| | | | Mx | Z | 11 18 | |
| | | Ki | iP | | 02 07 30.1 | |
| | | | | | micr sec | |
| | | | P | Z' | 0.1 1.0 | |
| | | | Mx | E | 9.8 17 | |
| | | | Mx | N | 12 14 | |
| | | | Mx | Z | 14 14 | |
| | | Sk | iP | | 02 06 54.2 | |
| | | Um | iP | | 02 06 51.9 C | |
| | | | i | | 02 07 05.4 | |
| | | | iS | | 02 10 55 | |
| | | Ud | iP | | 02 06 16.2 | |
| | | | i | | 02 06 26.3 | |
| | | De | iP | | 02 05 34.5 | |
| | | | i | | 02 05 46.3 | |
| | | Albania (h = N). | | | | |
| | | m = 5.4, M = 5.4 (Up,Ki). | | | | |
| " | 19 | Um | iP | | 02 14 36.7 | |
| | | Greece. | | | | |
| " | 19 | Ki | iP | | 03 15 04.4 | |
| | | Sk | iP | | 03 15 42.8 | |
| | | Um | iP | | 03 15 23.5 | |
| | | Ud | iP | | 03 15 52.9 | |
| | | Japan (h = N). | | | | |
| " | 19 | Up | Mx | | 03 20 | |
| | | (cont.) | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970
Aug. 19 (cont.)

| | | | | | |
|---|---|---|---|---|---|
| | Up | | | micr | sec |
| | | Mx | E | 0.6 | 20 |
| | | Mx | N | 0.8 | 20 |
| | | Mx | Z | 1.4 | 21 |
| | Ki | Mx | | 03 18 | |
| | | | | micr | sec |
| | | Mx | E | 1.6 | 23 |
| | | Mx | N | 1.7 | 20 |
| | | Mx | Z | 1.8 | 21 |

Solomon Islands (h = 30 km).
M = 5.6 (Up,Ki).

| | | | | |
|---|---|---|---|---|
| " 19 | Up | iP | 06 00 42.0 | |
| | Ki | iP | 06 00 25.2 | |
| | Um | iP | 06 00 31.1 | C |
| | Ud | iP | 06 00 50.6 | C |

Negros (h = N).

| | | | | |
|---|---|---|---|---|
| " 19 | Um | iP | 06 35 10.4 | |
| | | i | 06 35 14.5 | |
| " 19 | Ud | iPg | 07 14 04.5 | |
| | | iSg | 07 14 36.2 | |
| | | iRg | 07 14 45.4 | |
| | De | iPg | 07 14 08.4 | |
| | | iSg | 07 14 39.2 | |

Skagerrak,
58.3°N, 10.4°E.
Origin time = 07 13 17.
Explosion.

| | | | | |
|---|---|---|---|---|
| " 19 | Ud | iPg | 07 29 04.7 | |
| | | iSg | 07 29 36.0 | |
| | | iRg | 07 29 45.2 | |
| | De | iPg | 07 29 08.8 | |
| | | iSg | 07 29 40.3 | |

Skagerrak,
58.3°N, 10.4°E.
Origin time = 07 28 17.
Explosion.

| | | | | |
|---|---|---|---|---|
| " 19 | Sk | iSg | 07 46 24.3 | |
| | Ud | iPg | 07 44 16.3 | |
| | | iSg | 07 44 47.5 | |
| | | iRg | 07 44 57.4 | |
| | De | iPg | 07 44 21.1 | |
| | | iSg | 07 44 52.5 | |

Skagerrak,
58.3°N, 10.4°E.
Origin time = 07 43 29.
Explosion.

| | | | | |
|---|---|---|---|---|
| " 19 | Ud | iPg | 08 01 28.3 | |
| | | iSg | 08 01 59.7 | |
| | De | iPg | 08 01 33.2 | |
| | | iSg | 08 02 05.3 | |

(cont.)

1970
Aug. 19 (cont.)

Skagerrak,
58.3°N, 10.4°E.
Origin time = 08 00 41.
Explosion.

| | | | | |
|---|---|---|---|---|
| " 19 | Ud | ePg | 08 15 47 | |
| | | iSg | 08 16 19.5 | |
| | | iRg | 08 16 28.3 | |
| | De | iSg | 08 16 24.7 | |

Skagerrak,
58.3°N, 10.4°E.
Origin time = 08 15 01.
Explosion.

| | | | | |
|---|---|---|---|---|
| " 19 | Ud | iPg | 08 31 36.0 | |
| | | iSg | 08 32 06.1 | |
| | | iRg | 08 32 15.1 | |
| | De | iSg | 08 32 11.5 | |

Skagerrak,
58.3°N, 10.4°E.
Origin time = 08 30 48.
Explosion.

| | | | | |
|---|---|---|---|---|
| " 19 | Up | iP | 10 08 05.6 | |
| | Ki | eP | 10 07 13 | |
| | Um | iP | 10 07 39.3 | |
| | Ud | iP | 10 08 10.8 | |
| | De | iP | 10 08 30.3 | |

Kamchatka (h = 55 km).

| | | | | |
|---|---|---|---|---|
| " 19 | Ki | iP | 11 19 55.8 | |

Formosa.

| | | | | | |
|---|---|---|---|---|---|
| " 19 | Up | iP | 12 23 54.5 | C | |
| | | | micr | sec | |
| | | Mx | E | 1.1 | 12 |
| | | Mx | N | 1.2 | 10 |
| | | Mx | Z | 1.2 | 10 |
| | Ki | iP | 12 25 18.4 | | |
| | | | micr | sec | |
| | | P | Z' | 0.1 | 1.2 |
| | | Mx | E | 0.9 | 11 |
| | | Mx | N | 0.6 | 8 |
| | | Mx | Z | 0.7 | 10 |
| | Sk | iP | 12 24 30.4 | | |
| | Um | iP | 12 24 40.1 | | |
| | | iS | 12 28 39 | | |
| | Ud | iP | 12 23 50.7 | | |

Italy (h = N).
M = 4.7 (Up,Ki).

| | | | | |
|---|---|---|---|---|
| " 19 | Ki | iPn | 12 41 31.7 | |
| | | iSn | 12 42 19.8 | |
| | | iLgl | 12 42 33.1 | |

Origin time = 12 40 28.

| | | | |
|---|---|---|---|
| " 19 | Ud | iPKP | 14 44 15.9 |
| | De | iPKP | 14 44 27.3 |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delar

| | | | | | |
|---|---|---|---|---|---|
| 1970 Aug. | 19 | Ud | iP | | 15 42 48.6 |
| " | 19 | Up | iP | | 15 47 35.7 |
| | | Um | iP | | 15 46 48.1 |
| | | Ud | iP | | 15 47 27.6 |
| | | | i | | 15 47 48.6 |
| " | 19 | Sk | iP | | 15 56 09.0 |
| " | 19 | Um | iP | | 16 16 02.4 |
| | | De | e(P) | | 16 16 18 |
| | | | i | | 16 16 19.0 |
| " | 19 | Ud | iP | | 22 52 38.3 |
| | | | i | | 22 52 41.3 |
| " | 20 | Ki | iP | | 05 50 02.3 |
| | | Ud | iP | | 05 49 05.3 |
| | | De | iP | | 05 48 37.6 |
| " | 20 | Ki | ePn | | 12 41 17 |
| | | | iLgl | | 12 43 30.0 |
| | | Sk | iSg | | 12 43 04.0 |
| | | Um | iSg | | 12 41 49.2 |
| | | Ud | iSg | | 12 42 26.6 |
| | | | i | | 12 42 33.5 |
| | | De | iLgl | | 12 42 45.0 |
| | | Esthonia, 59.7°N, 25.6°E. Origin time = 12 39 06. Explosion? | | | |
| " | 20 | Um | iP | | 12 54 23.8 |
| " | 20 | De | iPKP | | 13 12 28.8 |
| | | Loyalty Islands (h = 100 km). | | | |
| " | 20 | Ki | iPn | | 13 18 43.6 |
| | | | iSn | | 13 19 30.2 |
| | | | iLgl | | 13 19 45.2 |
| | | Sk | eLgl | | 13 22 28 |
| | | Um | iSg | | 13 21 22.5 |
| | | Northwest Russia, 69.4°N, 30.0°E. Origin time = 13 17 43. Explosion? | | | |
| " | 20 | Ki | eP | | 14 23 06 |
| | | Um | iP | | 14 23 11.8 |
| | | Ud | iP | | 14 23 32.9 |
| | | | i | | 14 23 37.4 |
| | | Luzon (h = 55 km). | | | |
| " | 20 | Up | iP | | 15 37 09.8 |
| | | Ki | iP | | 15 37 47.8 |
| | | | i | | 15 37 57.6 |
| | | Sk | iP | | 15 37 44.8 |
| | | Um | iP | | 15 37 23.5 |
| | | (cont.) | | | |
| 1970 Aug. | 20 | (cont.) | | | |
| | | Ud | iP | | 15 37 24.3 |
| | | De | eP | | 15 37 07 |
| | | Iran (h = 30 km). | | | |
| " | 20 | Um | iP | | 16 44 03.9 |
| | | Off east coast of USA. Underwater explosion. | | | |
| " | 20 | Um | iP | | 17 21 47.6 |
| " | 20 | Ki | ePKP | | 18 33 45 |
| | | Sk | e(PKP) | | 18 34 00 |
| | | Um | iPKP | | 18 33 50.7 |
| | | | i | | 18 33 57.6 |
| | | New Hebrides Islands (h = 20 km). | | | |
| " | 20 | Up | iP | | 19 59 53.4 |
| " | 21 | Up | iP | | 00 54 55.4 C |
| | | | iPcP | | 00 55 23.7 |
| | | | | | micr sec |
| | | | P | Z' | 0.2 0.5 |
| | | Ki | iP | | 00 54 08.4 C |
| | | | | | micr sec |
| | | | P | Z' | 0.1 0.8 |
| | | Sk | iP | | 00 54 44.1 C |
| | | Um | iP | | 00 54 29.7 C |
| | | Ud | iP | | 00 55 01.3 C |
| | | De | iP | | 00 55 19.5 |
| | | Kurile Islands (h = 80 km). m = 6.0 (Up,Ki). | | | |
| " | 21 | Ud | i(P) | | 11 30 26.6 |
| " | 21 | Up | eSg | | 11 36 39 |
| | | Um | iSg | | 11 37 12.4 |
| | | Ud | iLgl | | 11 37 41.8 |
| | | Esthonia. Origin time = 11 34 29. Explosion? | | | |
| " | 21 | Ki | iP | | 12 07 52.7 |
| | | Sk | iP | | 12 08 18.5 |
| | | Um | iP | | 12 08 25.0 |
| | | Ud | iP | | 12 08 44.2 |
| | | De | iP | | 12 09 07.8 |
| | | Alaska (h = 15 km). | | | |
| " | 21 | Ki | iPn | | 12 14 04.1 |
| | | | iSn | | 12 15 03.8 |
| | | | iLgl | | 12 15 22.7 |
| | | Sk | i(Lgl) | | 12 17 50.5 |
| | | Um | iSg | | 12 16 11.6 |
| | | Ud | i(Lgl) | | 12 18 48.9 |
| | | Northwest Russia. Origin time = 12 12 46. Explosion? | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delar

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Aug. | 21 | Ud | iP | | 14 42 03.6 | |
| " | 21 | Up | iP | | 14 58 24.3 | |
| | | Ki | iP | | 14 58 48.9 | |
| | | Ud | iP | | 14 58 01.8 | |
| " | 21 | Up | iP | | 15 33 22.1 | |
| | | | iPP | | 15 34 56.5 | |
| | | Ki | iP | | 15 33 37.2 | |
| | | Sk | iP | | 15 33 49.8 | |
| | | | iPP | | 15 35 43.7 | |
| | | Um | iP | | 15 33 22.1 | |
| | | | iPP | | 15 34 54.9 | |
| | | Ud | iP | | 15 33 42.2 | |
| | | Hindu Kush (h = 100 km). | | | | |
| " | 21 | Ki | iPg | | 16 00 35.7 | |
| | | | iSg | | 16 01 11.3 | |
| | | Sk | iSg | | 16 01 18.2 | |
| | | Um | iPn | | 16 00 42.9 | |
| | | | iSn | | 16 01 25.4 | |
| | | | iSg | | 16 01 39.7 | |
| | | Nordland, Norway, 66.4°N, 14.4°E. Origin time = 15 59 42. | | | | |
| " | 21 | Ud | iP | | 21 26 32.5 | |
| " | 21 | Up | iPKP | | 22 45 48.0 | |
| | | Ki | iPKP | | 22 45 30.0 | |
| | | Sk | iPKP | | 22 45 42.1 | |
| | | Um | iPKP | | 22 45 35.6 | |
| | | Ud | iPKP | | 22 45 49.7 | C |
| | | De | iPKP | | 22 46 02.0 | |
| | | South of Kermadec Islands (h = 15 km). | | | | |
| " | 22 | Up | iP | | 04 20 38.7 | |
| | | Sk | iP | | 04 21 05.5 | |
| | | Ud | iP | | 04 20 55.3 | |
| | | Afghanistan-USSR. | | | | |
| " | 22 | Up | iP | | 06 13 34.4 | |
| " | 22 | Ki | e | | 09 10 22 | |
| | | | i(Sg) | | 09 10 36.9 | |
| " | 22 | Up | iP | | 11 37 41.0 | |
| | | | | | micr sec | |
| | | | P | Z' | 0.2 1.3 | |
| | | Ki | iP | | 11 36 47.7 | C |
| | | | | | micr sec | |
| | | | P | Z' | 0.1 1.0 | |
| | | Sk | iP | | 11 37 24.6 | C |
| | | Um | iP | | 11 37 13.1 | |
| | | | i | | 11 37 21.5 | |
| | | Ud | iP | | 11 37 44.9 | |
| | | (cont.) | | | | |
| 1970 Aug. | 22 | (cont.) | | | | |
| | | De | iP | | 11 38 04.9 | |
| | | Kamchatka (h = N). m = 6.0 (Up,Ki). | | | | |
| " | 22 | Up | iP | | 12 09 38.5 | |
| | | Ki | | | micr sec | |
| | | | Mx | E | 0.5 12 | |
| | | | Mx | Z | 0.3 12 | |
| | | Sk | iP | | 12 10 18.9 | |
| | | Um | i(P) | | 12 10 26.8 | |
| | | Ud | iP | | 12 09 45.4 | |
| | | Greece (h = N). | | | | |
| " | 22 | Ki | iP | | 12 59 58.4 | |
| | | Halmahera (h = 60 km). | | | | |
| " | 22 | Up | iP | | 17 13 28.0 | |
| | | Ki | eP | | 17 14 30 | |
| | | Ud | iP | | 17 13 33.3 | |
| " | 22 | Up | e(Lgl) | | 17 35 55 | |
| | | Ki | iPg | | 17 33 16.2 | |
| | | | iSg | | 17 33 54.3 | |
| | | Sk | iPg | | 17 33 20.2 | |
| | | | iSg | | 17 33 57.6 | |
| | | Um | iPn | | 17 33 25.2 | |
| | | | iSn | | 17 34 07.1 | |
| | | | iSg | | 17 34 21.7 | |
| | | Ud | i(Lgl) | | 17 35 47.3 | |
| | | Nordland, Norway, 66.4°N, 14.4°E. Origin time = 17 32 24. | | | | |
| " | 22 | Up | iSg | | 17 45 37.9 | |
| | | Sk | eSg | | 17 47 55 | |
| | | Ud | iSn | | 17 45 29.3 | |
| | | | iSg | | 17 46 01.9 | |
| | | De | iPg | | 17 43 45.7 | |
| | | | iSg | | 17 44 28.8 | |
| | | Northern Poland, 54.4°N, 18.3°E. Origin time = 17 42 41. Explosion? | | | | |
| " | 23 | Up | eP | | 02 54 18 | |
| | | Ki | iP | | 02 54 09.8 | |
| | | Sk | iP | | 02 54 03.2 | |
| | | | i | | 02 54 24.5 | |
| | | Mexico (h = 45 km). | | | | |
| " | 23 | Up | iP | | 03 46 15.2 | |
| | | Ki | iP | | 03 47 06.3 | |
| | | Sk | eP | | 03 46 29 | |
| | | Um | eP | | 03 46 41 | |
| | | | i | | 03 46 46.8 | |
| | | Ud | iP | | 03 46 10.3 | |
| | | Ascension Island (h = N). | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | |
|---|---|---|---|---|---|
| 1970 Aug. | 23 | Up | iPKP | | 05 16 38.4 |
| | | Ki | iPKP | | 05 16 34.2 |
| | | Sk | iPKP | | 05 16 34.6 |
| | | Um | iPKP | | 05 16 34.6 |
| | | | i | | 05 16 41.7 |
| | | Ud | iPKP | | 05 16 41.4 |
| | | De | iPKP | | 05 16 50.2 |
| | | Fiji Islands (h = 560 km). | | | |
| " | 23 | Up | iP | | 06 37 41.4 |
| | | Um | iP | | 06 37 46.7 |
| " | 23 | Up | iP | | 09 16 32.8 |
| | | Ki | iP | | 09 16 15.1 |
| | | Sk | iP | | 09 16 38.9 |
| | | Um | iP | | 09 16 21.2 |
| | | Ud | iP | | 09 16 42.0 |
| | | Luzon (h = 90 km). | | | |
| " | 23 | Up | iP | | 11 13 17.6 |
| | | | iS | | 11 18 10 |
| | | | | | micr sec |
| | | | Mx | E | 0.8 17 |
| | | | Mx | N | 0.7 15 |
| | | | Mx | Z | 1.3 16 |
| | | Ki | iP | | 11 13 23.9 |
| | | | | | micr sec |
| | | | Mx | E | 0.6 15 |
| | | | Mx | N | 0.6 14 |
| | | | Mx | Z | 0.5 16 |
| | | Sk | iP | | 11 12 53.5 |
| | | Um | iP | | 11 13 28.6 |
| | | Ud | iP | | 11 12 59.8 |
| | | De | iP | | 11 13 09.3 |
| | | North Atlantic Ocean (h = N). | | | |
| | | M = 4.7 (Up,Ki). | | | |
| " | 23 | Ud | iP | | 11 42 16.0 |
| | | | i | | 11 42 22.7 |
| | | Albania. | | | |
| " | 23 | Ud | iP | | 17 27 46.6 C |
| | | Iran. | | | |
| " | 23 | Up | iP | | 19 05 29.3 |
| | | | ipP | | 19 05 37.1 |
| | | Ki | iP | | 19 05 29.4 C |
| | | | ipP | | 19 05 36.2 |
| | | Sk | iP | | 19 05 50.9 |
| | | Ud | iP | | 19 05 46.7 |
| | | De | iP | | 19 05 46.2 |
| | | Sumatra. | | | |
| | | h = 25 km (Up,Ki). | | | |
| " | 24 | Sk | iP | | 02 11 46.6 |
| | | Um | iP | | 02 11 28.7 |
| | | Ud | iP | | 02 11 59.9 |
| | | Japan (h = 45 km). | | | |
| 1970 Aug. | 24 | Um | iP | | 02 23 11.8 |
| " | 24 | Sk | iPKP2 | | 07 14 04.4 |
| | | Macquarie Islands region (h = 20 km). | | | |
| " | 24 | Up | iPKP | | 09 52 19.7 C |
| | | | | | micr sec |
| | | | PKP | Z' | 0.2 1.0 |
| | | Ki | ePKP | | 09 52 00 |
| | | Um | iPKP | | 09 52 07.4 |
| | | | i | | 09 52 19.5 |
| | | Ud | iPKP | | 09 52 21.1 C |
| | | | i | | 09 52 50.9 |
| | | De | iPKP | | 09 52 31.4 C |
| | | Tonga-Kermadec Islands (h = 60 km). | | | |
| " | 24 | Up | iPKP | | 12 50 26.5 |
| | | | ePKP2 | | 12 51 34 |
| | | | ePP | | 12 55 32 |
| | | | | | micr sec |
| | | | Mx | E | 6.4 22 |
| | | | Mx | N | 3.9 21 |
| | | | Mx | Z | 6.8 21 |
| | | Ki | iPKP | | 12 50 17.4 |
| | | | iPKP2 | | 12 51 23.3 |
| | | | iPP | | 12 55 01.1 |
| | | | | | micr sec |
| | | | Mx | E | 4.3 19 |
| | | | Mx | N | 3.1 19 |
| | | | Mx | Z | 6.0 20 |
| | | Sk | ePKP | | 12 50 18 |
| | | | iPKP2 | | 12 51 20.9 |
| | | | ePP | | 12 55 11 |
| | | Um | ePKP | | 12 50 22 |
| | | | iPKP2 | | 12 51 33.9 |
| | | | iPP | | 12 55 08.4 |
| | | Ud | ePKP | | 12 50 19 |
| | | | iPKP2 | | 12 51 25.8 |
| | | | iPP | | 12 55 14.6 |
| | | De | iPKP | | 12 50 21.2 |
| | | | iPKP2 | | 12 51 28.3 |
| | | | iPP | | 12 55 15.0 |
| | | South Pacific Ocean (h = N). | | | |
| | | M = 6.6 (Up,Ki). | | | |
| " | 24 | Ki | iP | | 13 06 08.5 |
| | | Ud | iP | | 13 06 32.7 |
| | | Mindanao (h = 130 km). | | | |
| " | 24 | Um | eP | | 13 16 19 |
| | | Ud | iP | | 13 16 25.5 |
| | | Iran. | | | |
| " | 24 | Ud | i | | 15 26 47.5 |
| | | | iSg | | 15 26 54.2 |

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Aug. | 24 | (cont.) | | | | |
| | | De | iPg | | 15 24 35.6 | |
| | | | iSg | | 15 25 17.7 | |
| | | Northern Poland. | | | | |
| | | Origin time = 15 23 32. | | | | |
| | | Explosion? | | | | |
| | | Cf Aug. 22, 17 45. | | | | |
| " | 24 | Ud | iP | | 15 39 32.9 | |
| | | Kurile Islands (h = 90 km). | | | | |
| " | 24 | Ki | eP | | 16 42 20 | |
| | | Um | iP | | 16 41 53.8 | |
| | | Ud | iP | | 16 41 50.2 | |
| | | De | iP | | 16 41 23.2 | |
| | | Turkey (h = N). | | | | |
| " | 25 | Up | iP | | 01 44 03.2 | |
| | | | i | | 01 44 07.0 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.2 | 1.2 |
| | | | Mx | E | 1.8 | 10 |
| | | | Mx | N | 2.3 | 13 |
| | | | Mx | Z | 1.9 | 10 |
| | | Ki | iP | | 01 45 31.5 | C |
| | | | i | | 01 45 38.5 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 1.1 |
| | | | Mx | E | 2.9 | 15 |
| | | | Mx | N | 1.7 | 11 |
| | | | Mx | Z | 1.4 | 11 |
| | | Sk | iP | | 01 44 50.6 | |
| | | Um | iP | | 01 44 50.2 | C |
| | | | iS | | 01 48 46 | |
| | | Ud | iP | | 01 44 08.9 | |
| | | | i | | 01 44 12.0 | C |
| | | | i | | 01 49 57.0 | |
| | | De | iP | | 01 43 24.1 | |
| | | | i | | 01 43 29.8 | |
| | | Yugoslavia (h = 10 km). | | | | |
| | | m = 5.3, M = 4.9 (Up,Ki). | | | | |
| | | Double P at some of our stations: Up,Ki,Ud,De. | | | | |
| " | 25 | Up | iP | | 03 53 55.0 | |
| | | | iPcP | | 03 54 22.9 | |
| | | Ki | iP | | 03 53 08.0 | |
| | | Um | iP | | 03 53 28.8 | |
| | | Ud | iP | | 03 53 59.8 | |
| | | De | iP | | 03 54 18.9 | |
| | | Kurile Islands (h = 50 km). | | | | |
| " | 25 | Up | iP | | 10 17 26.6 | |
| | | Ki | iP | | 10 16 58.2 | |
| | | Sk | iP | | 10 17 24.9 | |
| | | Um | iP | | 10 17 10.9 | |
| | | Ud | iP | | 10 17 34.1 | |
| | | (cont.) | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Aug. | 25 | (cont.) | | | | |
| | | De | iP | | 10 17 45.3 | |
| | | Volcano Islands (h = 45 km). | | | | |
| " | 25 | Sk | iP | | 12 03 01.5 | |
| " | 25 | Up | iPKP | | 12 05 10.3 | |
| | | Ki | iSKP | | 12 07 42.3 | |
| | | Um | iSKP | | 12 07 52.9 | |
| | | Ud | iPKP | | 12 05 12.0 | |
| | | | i | | 12 05 32.8 | |
| | | | iSKP | | 12 08 04.9 | |
| | | De | iPKP | | 12 05 23.0 | D |
| | | | ipPKP | | 12 07 21.1 | |
| | | | iSKP | | 12 08 13.5 | |
| | | Tonga-Kermadec Islands. | | | | |
| | | h = 520 km (De). | | | | |
| " | 25 | Up | iSg | | 12 20 53.0 | |
| | | Ki | iSg | | 12 23 25.4 | |
| | | Sk | iSg | | 12 22 44.8 | |
| | | Um | iSg | | 12 21 24.7 | |
| | | Ud | iLgl | | 12 21 52.6 | |
| | | De | eLgl | | 12 22 16 | |
| | | Esthonia, | | | | |
| | | 59.7°N, 25.6°E. | | | | |
| | | Origin time = 12 18 43. | | | | |
| | | Explosion? | | | | |
| " | 25 | Sk | iSg | | 13 03 14.3 | |
| | | Um | iSg | | 13 02 05.4 | |
| | | Ud | iSg | | 13 02 21.3 | |
| | | De | iSg | | 13 02 43.3 | |
| | | Esthonia. | | | | |
| | | Explosion? | | | | |
| " | 25 | Sk | iSg | | 13 05 52.7 | |
| | | Ud | i | | 13 04 45.0 | |
| | | | iSg | | 13 04 53.0 | |
| | | Probably south Norway. | | | | |
| " | 25 | Ki | e | | 13 20 41 | |
| | | | iSg | | 13 21 13.8 | |
| | | Sk | eS$^{x}$ | | 13 21 16 | |
| | | | iSg | | 13 21 50.6 | |
| | | Um | iS$^{x}$ | | 13 19 51.0 | |
| | | | iSg | | 13 20 00.9 | |
| | | Ud | i | | 13 20 52.2 | |
| | | | iSg | | 13 21 41.8 | |
| | | De | eSn | | 13 21 25 | |
| | | | iSg | | 13 22 27.6 | |
| | | Lake Ladoga, | | | | |
| | | 61.3°N, 31.4°E. | | | | |
| | | Origin time = 13 16 50. | | | | |
| | | Explosion? | | | | |
| " | 25 | Ud | i(Sg) | | 14 11 50.6 | |
| | | (cont.) | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Aug. | 25 | (cont.) | | | | |
| | | De | iPg | | 14 11 10.9 | |
| | | | iSg | | 14 11 35.8 | |
| | | | eRg | | 14 11 44 | |
| " | 25 | Ud | iP | | 14 18 01.4 | |
| | | De | iP | | 14 18 07.2 | |
| " | 25 | Up | iP | | 19 20 21.9 | C |
| | | Um | iP | | 19 20 18.4 | |
| | | Ud | iP | | 19 20 33.8 | |
| | | Andaman Islands (h = N). | | | | |
| " | 25 | Um | iP | | 20 06 51.1 | |
| | | Ud | iP | | 20 07 23.0 | |
| | | South of Japan (h = N). | | | | |
| " | 26 | Up | iSg | | 13 49 11.6 | |
| | | Sk | iSg | | 13 50 59.4 | |
| | | Um | iSg | | 13 49 46.1 | |
| | | Ud | iSn | | 13 49 44.0 | |
| | | | iLgl | | 13 50 17.0 | |
| | | De | e | | 13 50 18 | |
| | | | iLgl | | 13 50 38.9 | |
| | | Esthonia. | | | | |
| | | Origin time = 13 47 01. | | | | |
| | | Explosion? | | | | |
| " | 26 | Up | iP | | 15 24 03.1 | C |
| | | | iS | | 15 34 04 | |
| | | | | | micr | sec |
| | | | Mx | N | 1.9 | 16 |
| | | | Mx | Z | 2.4 | 15 |
| | | Ki | iP | | 15 23 43.5 | C |
| | | | iS | | 15 33 26 | |
| | | | | | micr | sec |
| | | | Mx | E | 1.8 | 14 |
| | | | Mx | N | 1.9 | 14 |
| | | | Mx | Z | 1.9 | 14 |
| | | Sk | eP | | 15 24 07 | |
| | | Um | iP | | 15 23 49.8 | |
| | | | iS | | 15 33 39 | |
| | | Ud | iP | | 15 24 12.5 | C |
| | | | ipP | | 15 24 26.2 | |
| | | De | iP | | 15 24 19.1 | C |
| | | | ipP | | 15 24 33.3 | |
| | | Luzon. | | | | |
| | | h = 50 km (Ud,De). | | | | |
| | | M = 5.8 (Up,Ki). | | | | |
| " | 26 | Up | iSg | | 17 04 29.2 | |
| | | Ud | iPg | | 17 03 18.6 | |
| | | | iSg | | 17 03 48.0 | |
| | | De | iPg | | 17 03 07.5 | |
| | | | iSg | | 17 03 30.8 | |
| | | West coast of Sweden, | | | | |
| | | 58.0°N, 11.8°E. | | | | |
| | | Origin time = 17 02 33. | | | | |
| 1970 Aug. | 26 | Ki | iSg | | 17 50 48.0 | |
| | | Sk | iSg | | 17 50 52.7 | |
| | | Um | iSg | | 17 51 15.0 | |
| | | Nordland, Norway. | | | | |
| | | Origin time = 17 49 19. | | | | |
| " | 26 | Up | iPKP | | 18 32 39.7 | |
| | | Ud | iPKP | | 18 32 42.3 | |
| | | De | iPKP | | 18 32 53.7 | |
| | | Fiji Islands (h = 550 km). | | | | |
| " | 26 | Up | iP | | 21 06 20.8 | |
| | | | | | micr | sec |
| | | | Mx | E | 1.0 | 18 |
| | | | Mx | N | 0.7 | 15 |
| | | | Mx | Z | 1.3 | 17 |
| | | Ki | iP | | 21 05 42.5 | |
| | | | | | micr | sec |
| | | | Mx | E | 0.7 | 15 |
| | | | Mx | N | 1.0 | 15 |
| | | | Mx | Z | 1.0 | 16 |
| | | Sk | iP | | 21 06 15.1 | |
| | | Um | iP | | 21 05 59.3 | |
| | | Ud | iP | | 21 06 27.6 | |
| | | De | iP | | 21 06 42.2 | |
| | | Japan (h = 45 km). | | | | |
| | | M = 5.2 (Up,Ki). | | | | |
| " | 26 | Um | i(P) | | 22 46 48.8 | |
| " | 26 | Up | iP | | 22 55 11.3 | |
| | | Ki | iP | | 22 54 49.2 | |
| | | Sk | iP | | 22 55 15.6 | |
| | | Um | iP | | 22 54 57.5 | |
| | | Ud | iP | | 22 55 20.5 | |
| " | 27 | Um | i(P) | | 02 34 12.5 | |
| " | 27 | Up | iPg | | 07 01 35.3 | |
| | | | iSg | | 07 02 03.6 | |
| | | Ud | iSg | | 07 02 47.8 | |
| | | De | iPg | | 07 01 54.6 | |
| | | | iSg | | 07 02 33.5 | |
| | | | iRg | | 07 02 40.6 | |
| | | Gotland, Sweden, | | | | |
| | | 57.8°N, 18.9°E. | | | | |
| | | Origin time = 07 00 53. | | | | |
| | | Probably explosion. | | | | |
| " | 27 | Ud | iPKP | | 13 19 51.4 | |
| | | | iSKP | | 13 22 36.8 | |
| | | De | iPKP | | 13 20 03.2 | D |
| | | Fiji Islands (h = 640 km). | | | | |
| " | 27 | Ud | i | | 13 39 37.1 | |
| | | | i(Sg) | | 13 39 55.3 | |
| | | De | i | | 13 37 42.3 | |
| | | | i(Sg) | | 13 38 04.9 | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970
Aug. 27 Um iP 15 13 44.4
De iP 15 14 23.5

" 27 Up iP 15 34 24.5
Ki iP 15 33 39.3
Um iP 15 33 59.6
Ud iP 15 34 30.9
Kurile Islands.

" 27 Up iP 16 40 51.9
i 16 40 55.5

| | | micr | sec |
|---|---|---|---|
| P | Z' | 0.1 | 0.8 |
| Mx | E | 0.7 | 16 |
| Mx | N | 1.5 | 15 |
| Mx | Z | 1.2 | 15 |

Ki iP 16 40 29.7
i 16 40 33.9

| | | micr | sec |
|---|---|---|---|
| P | Z' | 0.1 | 1.0 |

Sk iP 16 41 00.7
Um iP 16 40 39.6
Ud iP 16 41 00.2
i 16 41 04.7
De iP 16 41 12.8
i 16 42 05.5
Luzon (h = 30 km).
m = 6.0 (Up,Ki).
Double P at Up,Ki,Ud.
P at Sk,Um,De corresponds to the second of the double P.

" 27 Up iPKS 16 45 12

| | | micr | sec |
|---|---|---|---|
| Mx | E | 0.8 | 18 |
| Mx | N | 1.7 | 21 |
| Mx | Z | 1.8 | 22 |

Ki

| | | micr | sec |
|---|---|---|---|
| Mx | E | 2.0 | 20 |
| Mx | N | 1.7 | 20 |
| Mx | Z | 2.4 | 21 |

Tonga Islands (h = 25 km).
M = 5.9 (Up,Ki).

" 27 Ki i(Sg) 18 00 05.3

" 27 Up iP 19 57 31.9
i 19 57 43.3
iSKS 20 07 57

| | | micr | sec |
|---|---|---|---|
| Mx | E | 2.2 | 19 |
| Mx | N | 1.3 | 21 |
| Mx | Z | 3.2 | 20 |

Ki iP 19 57 17.5
i 19 57 27.0
(cont.)

1970
Aug. 27 (cont.)
Ki

| | | micr | sec |
|---|---|---|---|
| Mx | E | 3.9 | 18 |
| Mx | N | 2.2 | 18 |
| Mx | Z | 3.5 | 18 |

Sk iP 19 57 09.5
i 19 57 13.6
Um iP 19 57 26.2
i 19 57 39.0
iSKS 20 07 51
Ud iP 19 57 23.0
i 19 57 39.2
De iP 19 57 30.5
i 19 57 39.0
Mexico (h = 30 km).
M = 5.9 (Up,Ki).

" 27 Ki iP 21 29 29.7
Um i(P) 21 28 47.8

" 27 Up iP 23 33 02.5
Sk iP 23 33 14.2
Ud iP 23 33 04.9

" 28 Up iP 01 17 36.0
iPKP 01 21 20.9
iSKS 01 28 03

| | | micr | sec |
|---|---|---|---|
| PKP | Z' | 0.1 | 0.8 |
| Mx | E | 5.4 | 23 |
| Mx | N | 6.8 | 22 |
| Mx | Z | 6.1 | 23 |

Ki iP 01 17 05.6
iPKP 01 20 47.6
i 01 21 13.3
iPKKP 01 32 34.0

| | | micr | sec |
|---|---|---|---|
| Mx | E | 11 | 25 |
| Mx | N | 9.2 | 24 |
| Mx | Z | 17 | 25 |

Sk iP 01 17 30.6
iPKP 01 21 21.8
Um iP 01 17 18.5
iPKP 01 21 15.3
Ud iP 01 17 38.7
iPKP 01 21 23.3
iPP 01 22 28.9
De eP 01 17 50
iPKP 01 21 29.2 C
iPKS 01 25 00.5
New Ireland (h = 90 km).
M = 6.4 (Up,Ki).

" 28 Up iP 01 34 17.8
ipP 01 34 28.6

| | | micr | sec |
|---|---|---|---|
| pP | Z' | 0.1 | 0.5 |

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970 Aug. 28 (cont.)

| | | | | |
|---|---|---|---|---|
| | Ki | iP | 01 34 13.3 | |
| | | ipP | 01 34 23.9 | |
| | Sk | iP | 01 34 34.6 | |
| | | ipP | 01 34 46.2 | |
| | Um | iP | 01 34 10.9 | |
| | | ipP | 01 34 21.6 | |
| | Ud | iP | 01 34 31.1 | C |
| | | ipP | 01 34 42.5 | |
| | De | iP | 01 34 32.5 | |
| | | ipP | 01 34 43.5 | |

India-East Pakistan.
h = 45 km (Up,Ki,Sk,Um,Ud, De).
The phase interpreted as pP is somewhat bigger than P.

" 28

| | | | |
|---|---|---|---|
| Ki | iP | 02 43 41.6 | |
| Um | iP | 02 43 49.7 | |

Mexico (h = 100 km).

" 28

| | | | |
|---|---|---|---|
| Ud | iP | 05 55 36.3 | C |
| | i | 05 55 41.3 | |
| De | iP | 05 55 41.5 | C |

Sinkiang.

" 28

| | | | |
|---|---|---|---|
| Ud | i | 09 04 29.2 | |
| | i(Sg) | 09 04 39.3 | |
| De | i | 09 02 28.3 | |
| | i(Sg) | 09 02 45.8 | |

This event resembles Aug. 27, 13 39.

" 28

| | | | |
|---|---|---|---|
| Sk | e(Sg) | 09 03 22 | |
| Um | i(Sg) | 09 02 29.9 | |

" 28

| | | | | |
|---|---|---|---|---|
| Up | i(PKP) | 10 25 43.6 | | |
| | iPKP | 10 25 51.2 | | |
| | i | 10 25 59.6 | | |
| | | micr | sec | |
| | PKP | Z' | 0.4 | 0.8 |
| | Mx | N | 1.5 | 24 |
| | Mx | Z | 1.6 | 20 |
| Ki | iPKP | 10 25 31.0 | | |
| | | micr | sec | |
| | PKP | Z' | 0.2 | 1.7 |
| Sk | i(PKP) | 10 25 41.9 | | C |
| | iPKP | 10 25 46.0 | | |
| | i | 10 25 57.9 | | |
| Um | i(PKP) | 10 25 38.7 | | |
| | iPKP | 10 25 41.5 | | |
| | i | 10 25 51.4 | | |
| Ud | i(PKP) | 10 25 45.5 | | |
| | iPKP | 10 25 52.8 | | |
| | i | 10 26 03.1 | | |
| De | i(PKP) | 10 25 51.2 | | |

(cont.)

1970 Aug. 28 (cont.)

| | | | |
|---|---|---|---|
| De | iPKP | 10 26 00.8 | |
| | i | 10 27 31.6 | |

South of Kermadec Islands (h = 90 km).

" 28

| | | | |
|---|---|---|---|
| Ki | iP | 14 40 05.2 | |

Alaska (h = 40 km).

" 28

| | | | | |
|---|---|---|---|---|
| Up | iP | 15 03 08.1 | | |
| Ki | eP | 15 04 22 | | |
| Sk | iP | 15 03 49.4 | | |
| Um | iP | 15 03 46.4 | | |
| Ud | iP | 15 03 14.8 | | |
| De | iP | 15 02 35.9 | | |

Greece.

" 28

| | | | | |
|---|---|---|---|---|
| Up | iP | 18 34 14.3 | | |
| | | micr | sec | |
| | Mx | E | 0.9 | 19 |
| | Mx | Z | 1.5 | 19 |
| Ki | iP | 18 33 53.9 | | |
| | | micr | sec | |
| | Mx | E | 0.6 | 15 |
| Sk | eP | 18 34 21 | | |
| Um | iP | 18 34 00.8 | | |
| | ipP | 18 34 11.1 | | |
| Ud | iP | 18 34 23.7 | | |
| | ipP | 18 34 31.6 | | |
| De | iP | 18 34 33.3 | | |

Luzon.
h = 30 km (Um,Ud).
M = 5.2 (Up,Ki).

" 28

| | | | |
|---|---|---|---|
| Up | iPKP2 | 23 07 54.6 | |
| Ki | iPKP | 23 07 24.2 | |
| Sk | iPKP | 23 07 37.9 | C |
| Um | iPKP | 23 07 33.0 | |
| Ud | iPKP | 23 07 44.1 | |

New Zealand (h = 50 km).

" 29

| | | |
|---|---|---|
| Up | iP | 00 00 53.1 |

Alaska (h = 100 km).

" 29

| | | | |
|---|---|---|---|
| Up | iPKP | 00 51 27.5 | |
| Ki | ePKP | 00 51 08 | |
| Sk | iPKP | 00 51 22.5 | |
| Um | iPKP | 00 51 17.6 | |
| Ud | iPKP | 00 51 28.6 | |

South of Kermadec Islands (h = 90 km).

" 29

| | | | | |
|---|---|---|---|---|
| Up | iP | 01 54 01.4 | | D |
| | iPP | 01 56 39.3 | | |
| | | micr | sec | |
| | P | Z' | 0.4 | 0.7 |
| Ki | iP | 01 53 24.0 | | D |

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970
Aug. 29 (cont.)

| | | | | | |
|---|---|---|---|---|---|
| Ki | ipP | | 01 54 30.4 | | |
| | iPP | | 01 55 47.2 | | |
| | | | micr | sec | |
| | P | Z' | 0.4 | 1.0 | |
| | PP | Z' | 0.1 | 1.3 | |
| Sk | iP | | 01 53 56.8 | | D |
| | iPP | | 01 56 31.4 | | |
| Um | iP | | 01 53 39.9 | | D |
| | iPP | | 01 56 10.8 | | |
| Ud | iP | | 01 54 09.1 | | D |
| | ipP | | 01 55 14.0 | | |
| | iPP | | 01 56 49.0 | | |
| De | iP | | 01 54 23.0 | | D |
| | iPP | | 01 57 14.7 | | |

Japan.
h = 280 km (Ki,Ud).
m = 6.1 (Up,Ki).
The dilatational P-motion is preceded by a small compression.

" 29

| | | | | | |
|---|---|---|---|---|---|
| Up | iP | | 03 12 11.8 | | |
| Ki | iP | | 03 12 13.6 | | |
| Sk | iP | | 03 11 58.9 | | |
| De | iP | | 03 12 01.4 | | |

Venezuela (h = 25 km).

" 29

| | | | | | |
|---|---|---|---|---|---|
| Up | iP | | 10 46 30.0 | | |
| Sk | iP | | 10 47 13.8 | | |
| Um | iP | | 10 47 13.0 | | |
| Ud | iP | | 10 46 35.9 | | |
| De | iP | | 10 45 58.5 | | |

Albania (h = 40 km).

" 29

| | | | | | |
|---|---|---|---|---|---|
| Ki | iPn | | 12 48 48.9 | | |
| | iSn | | 12 49 37.5 | | |
| | iLgl | | 12 49 51.5 | | |
| Sk | eLgl | | 12 52 37 | | |
| Um | iSg | | 12 52 21.6 | | |

Northwest Russia,
68.9°N, 31.2°E.
Origin time = 12 47 43.
Explosion?

" 29

| | | | | | |
|---|---|---|---|---|---|
| Ki | i(P) | | 13 40 28.5 | | |
| | | | micr | sec | |
| | (P) | Z' | 0.1 | 1.0 | |

" 29

| | | | | | |
|---|---|---|---|---|---|
| Up | eP | | 13 50 48 | | |

" 29

| | | | | | |
|---|---|---|---|---|---|
| Up | iP | | 14 52 58.6 | | |
| Um | iP | | 14 53 40.7 | | |
| Ud | iP | | 14 53 05.2 | | |

Greece.

" 29

| | | | | | |
|---|---|---|---|---|---|
| Up | iP | | 15 09 16.3 | | |
| | | | micr | sec | |
| | P | Z' | 0.1 | 0.9 | |
| | Mx | E | 0.9 | 12 | |

(cont.)

1970
Aug. 29 (cont.)

| | | | | | |
|---|---|---|---|---|---|
| Up | Mx | N | 0.6 | 0.9 | |
| Ki | iP | | 15 08 29.1 | | |
| | | | micr | sec | |
| | P | Z' | 0.1 | 1.0 | |
| | Mx | E | 1.3 | 14 | |
| | Mx | N | 0.8 | 13 | |
| | Mx | Z | 0.8 | 15 | |
| Sk | iP | | 15 09 07.6 | | C |
| Um | iP | | 15 08 49.2 | | C |
| Ud | iP | | 15 09 23.8 | | C |
| De | iP | | 15 09 42.5 | | |

Eastern Russia (h = N).
m = 5.8, M = 5.3 (Up,Ki).

" 29

| | | | |
|---|---|---|---|
| Ki | iPn | 15 13 02.0 | |
| | iSn | 15 13 50.5 | |
| | iLgl | 15 14 04.2 | |
| Um | iSg | 15 15 32.9 | |

Northwest Russia,
68.9°N, 31.2°E.
Origin time = 15 11 56.
Explosion?

" 29

| | | | |
|---|---|---|---|
| Ud | iP | 18 08 30.4 | |

Turkey.

" 30

| | | | |
|---|---|---|---|
| Up | iP | 00 27 38.3 | |

Aleutian Islands (h = 80 km).

" 30

| | | | |
|---|---|---|---|
| De | iPKP | 00 47 44.6 | |

New Ireland (h = 60 km).

" 30

| | | | | | |
|---|---|---|---|---|---|
| Up | iP | | 00 49 12.8 | | C |
| | ipP | | 00 49 18.6 | | |
| | iS | | 00 58 08 | | |
| | | | micr | sec | |
| | P | Z' | 0.3 | 1.0 | |
| | pP | Z' | 0.3 | 0.5 | |
| | Mx | E | 3.8 | 22 | |
| | Mx | N | 4.1 | 22 | |
| | Mx | Z | 3.0 | 23 | |
| Ki | iP | | 00 48 19.9 | | |
| | ipP | | 00 48 25.6 | | |
| | | | micr | sec | |
| | P | Z' | 0.1 | 1.0 | |
| | pP | Z' | 0.1 | 1.0 | |
| | Mx | E | 3.3 | 18 | |
| | Mx | N | 2.8 | 23 | |
| | Mx | Z | 2.0 | 19 | |
| Sk | iP | | 00 48 56.7 | | |
| Um | iP | | 00 48 44.8 | | C |
| | ipP | | 00 48 50.6 | | |
| Ud | iP | | 00 49 16.4 | | |
| De | iP | | 00 49 38.0 | | C |
| | ipP | | 00 49 43.6 | | |

Kamchatka.
h = 20 km (Up,Ki,Um,De).
m = 6.2, M = 5.7 (Up,Ki).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Aug. | 30 | Up | iP | | 03 24 30.9 | C | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.1 | 0.5 | |
| | | Ki | iP | | 03 23 37.8 | C | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.1 | 1.0 | |
| | | Sk | iP | | 03 24 14.5 | | |
| | | Um | iP | | 03 24 02.7 | C | |
| | | Ud | iP | | 03 24 34.3 | | |
| | | De | iP | | 03 24 55.9 | C | |
| | | Kamchatka (h = N). | | | | | |
| | | m = 6.1 (Up,Ki). | | | | | |
| " | 30 | Up | iP | | 07 13 59.8 | | |
| | | Ki | eP | | 07 13 07 | | |
| | | Um | iP | | 07 13 31.0 | | |
| | | Ud | iP | | 07 14 04.2 | | |
| | | Kamchatka. | | | | | |
| | | Origin time = 07 03 27. | | | | | |
| " | 30 | Up | iP | | 08 12 57.3 | | |
| | | Um | i(P) | | 08 12 40.9 | | |
| " | 30 | Um | iP | | 09 30 32.0 | C | |
| | | Ud | iP | | 09 30 05.1 | | |
| " | 30 | Up | iP | | 11 29 56.0 | | |
| " | 30 | Up | iP | | 12 15 48.4 | | |
| | | Um | iP | | 12 15 24.9 | | |
| | | | ipP | | 12 15 38.2 | | |
| | | Ud | iP | | 12 15 55.8 | | |
| | | Japan. | | | | | |
| | | h = 50 km (Um). | | | | | |
| " | 30 | Up | iP | | 12 38 58.1 | | |
| | | Ki | iP | | 12 39 28.8 | | |
| | | Sk | iP | | 12 39 39.1 | | |
| | | Um | iP | | 12 39 08.3 | | |
| | | Ud | iP | | 12 39 13.2 | | |
| | | De | iP | | 12 39 01.0 | | |
| | | Iran. | | | | | |
| " | 30 | Up | eP | | 16 24 06 | | |
| | | | i | | 16 24 39.2 | | |
| | | Ki | iP | | 16 24 34.3 | | |
| | | | iPP | | 16 25 51.4 | | |
| | | Sk | eP | | 16 24 43 | | |
| | | | iPP | | 16 25 49.9 | | |
| | | Um | iP | | 16 24 13.9 | | |
| | | | iPP | | 16 25 15.6 | | |
| | | Ud | iP | | 16 24 20.2 | C | |
| | | De | iP | | 16 24 11.4 | | |
| | | | iPP | | 16 25 25.5 | | |
| | | Iran (h = N). | | | | | |
| " | 30 | Up | iSg | | 17 00 15.3 | | |
| | | Ki | eSg | | 17 01 04 | | |
| | | (cont.) | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Aug. | 30 | (cont.) | | | | | |
| | | Sk | eSg | | 17 01 28 | | |
| | | Um | iSg | | 16 59 37.0 | | |
| | | Lake Ladoga. | | | | | |
| " | 30 | Um | iP | | 17 53 17.8 | | |
| " | 30 | Up | iP | | 17 55 30.2 | D | |
| | | | iPP | | 17 57 33 | | |
| | | | iS | | 18 03 07.2 | | |
| | | | iX | | 18 21 55.9 | | |
| | | | i(P'P') | | 18 23 48.8 | | |
| | | | iP'P' | | 18 24 04.0 | | |
| | | | i | | 18 24 21.6 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 3.0 | 0.6 | |
| | | | P'P' | Z' | 0.7 | 0.8 | |
| | | | Mx | E | 20 | 16 | |
| | | | Mx | N | 23 | 19 | |
| | | | Mx | Z | 25 | 17 | |
| | | Ki | iP | | 17 54 40.6 | D | |
| | | | iPP | | 17 56 47 | | |
| | | | iS | | 18 01 33.3 | | |
| | | | e(P'P') | | 18 23 26 | | |
| | | | i | | 18 24 12.6 | | |
| | | | iP'P' | | 18 24 23.8 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 7.6 | 0.9 | |
| | | | P'P' | Z' | 1.4 | 1.8 | |
| | | | Mx | E | 17 | 14 | |
| | | | Mx | N | 25 | 15 | |
| | | | Mx | Z | 19 | 15 | |
| | | Sk | iP | | 17 55 16.6 | D | |
| | | | iS | | 18 02 41.9 | | |
| | | | i | | 18 24 04.4 | | |
| | | | iP'P' | | 18 24 15.2 | | |
| | | Um | iP | | 17 55 03.3 | D | |
| | | | iS | | 18 02 17.1 | | |
| | | | i | | 18 22 22.9 | | |
| | | | i(P'P') | | 18 23 40.9 | | |
| | | | iP'P' | | 18 24 02.5 | | |
| | | Ud | iP | | 17 55 35.2 | D | |
| | | | iS | | 18 03 16.2 | | |
| | | | iX | | 18 21 45.8 | | |
| | | | i(P'P') | | 18 23 43.0 | | |
| | | | iP'P' | | 18 24 01.3 | | |
| | | De | iP | | 17 55 54.7 | D | |
| | | | iS | | 18 03 54.5 | | |
| | | | i(P'P') | | 18 23 30.2 | | |
| | | | iP'P' | | 18 24 01.6 | | |

Okhotsk Sea (h = 650 km).
m = 6.9, M = 6.5 (Up,Ki).
M uncorrected for focal depth.
(P'P') are early arrivals of P'P'. The phases marked X (Up,Ud) are probably also P'P', but with reflection at about 650 km depth.

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | |
|---|---|---|---|---|---|
| 1970 Aug. | 30 | Up | i(P) | 18 26 40.5 | |
| " | 30 | Up | iP | 18 32 23.4 | |
| | | Ki | iP | 18 31 48.7 C | |
| | | Sk | iP | 18 32 14.2 | |
| | | Um | iP | 18 32 05.3 | |
| | | Ud | iP | 18 32 25.9 | |
| " | 30 | Ki | eP | 18 57 40 | |
| | | Sk | iP | 18 57 20.1 | |
| | | Um | iP | 18 57 27.9 | |
| | | Ud | iP | 18 57 07.2 | |
| | | | i | 18 57 11.5 | |
| " | 30 | Ki | eP | 20 07 44 | |
| | | Sk | iP | 20 07 54.5 | |
| | | Um | iP | 20 08 19.0 | |
| | | Ud | iP | 20 08 40.9 | |
| | | | i | 20 08 52.5 | |
| " | 30 | Up | iP | 20 46 51.9 C | |
| | | | | micr sec | |
| | | | P Z' | 0.1 0.5 | |
| | | Ki | iP | 20 45 58.6 C | |
| | | Sk | iP | 20 46 36.0 | |
| | | Um | iP | 20 46 24.0 C | |
| | | Ud | iP | 20 46 55.6 | |
| | | De | iP | 20 47 16.6 C | |
| | | Kamchatka (h = N). | | | |
| " | 30 | Ud | iP | 20 57 38.2 | |
| | | Aleutian Islands (h = 230 km). | | | |
| " | 30 | Um | iP | 23 06 03.8 | |
| | | Ud | iP | 23 06 33.4 | |
| | | Japan (h = 80 km). | | | |
| " | 31 | Um | iP | 04 18 13.0 | |
| | | Ud | iP | 04 18 13.6 D | |
| | | Caucasus. | | | |
| " | 31 | Up | iP | 04 27 22.4 | |
| | | Ki | e(P) | 04 28 47 | |
| | | Sk | iP | 04 28 02.8 | |
| | | Um | iP | 04 28 02.4 | |
| | | Ud | iP | 04 27 27.3 | |
| | | Albania (h = 70 km). | | | |
| " | 31 | Up | iSg | 05 46 40.2 | |
| | | Ud | $iS^x$ | 05 47 20.5 | |
| | | | iSg | 05 47 39.2 | |
| | | De | iPg | 05 45 39.6 | |
| | | | iSg | 05 46 33.1 | |
| | | Near coast of Lithuania. | | | |
| | | Explosion? | | | |
| " | 31 | Up | iSg | 05 53 38.2 | |
| | | (cont.) | | | |
| | | Ud | $iS^x$ | 05 54 11.1 | |
| | | | iSg | 05 54 27.6 | |
| | | De | iPg | 05 52 31.3 | |
| | | | iSg | 05 53 24.3 | |
| | | Near coast of Lithuania. | | | |
| | | Explosion? | | | |
| 1970 Aug. | 31 | (cont.) | | | |
| " | 31 | Up | iP | 08 01 03.2 D | |
| | | | | micr sec | |
| | | | P Z' | 0.1 0.5 | |
| | | Ki | iP | 08 00 30.7 | |
| | | Sk | iP | 08 00 59.9 | |
| | | Um | iP | 08 00 44.5 | |
| | | Ud | iP | 08 01 09.7 D | |
| | | De | iP | 08 01 22.1 | |
| | | Bonin Islands (h = 420 km). | | | |
| " | 31 | Up | iP | 12 59 34.6 | |
| | | Um | iP | 12 59 07.0 | |
| | | Ud | iP | 12 59 40.6 | |
| | | | ipP | 12 59 53.4 | |
| | | De | iP | 13 00 14.0 | |
| | | Kamchatka. | | | |
| | | h = 45 km (Ud). | | | |
| " | 31 | Um | i(Sg) | 17 17 07.6 | |

Markus Båth
September 15, 1971

SEISMOLOGICAL INSTITUTE
BOX 517
S-751 20 UPPSALA 1
SWEDEN

# S E I S M O L O G I C A L  B U L L E T I N

## U P P S A L A,  K I R U N A,  S K A L S T U G A N,  U M E Å,

## U D D E H O L M  and  D E L A R Y

| | | | | |
|---|---|---|---|---|
| Uppsala | (Up): | 59°51.5'N, | 17°37.6'E; | h = 14 m |
| Kiruna | (Ki): | 67°50.4'N, | 20°25.0'E; | h = 390 m |
| Skalstugan | (Sk): | 63°34.8'N, | 12°16.8'E; | h = 580 m |
| Umeå | (Um): | 63°48.9'N, | 20°14.2'E; | h = 16 m |
| Uddeholm | (Ud): | 60°05.4'N, | 13°36.4'E; | h = 240 m |
| Delary | (De): | 56°28.2'N, | 13°52.2'E; | h = 150 m |

## S E P T E M B E R  1 - 30, 1970

1970 Sep. 1 Up iP 01 11 34.6 C
i 01 11 37.5
iS 01 15 32
micr sec
P Z' 0.1 0.6
Mx E 2.6 12
Mx N 1.9 12
Mx Z 1.6 13
Ki iP 01 12 50.1
micr sec
Mx E 3.5 13
Mx N 1.6 10
Mx Z 1.0 13
Sk iP 01 12 14.3
Um iP 01 12 17.7
iS 01 16 39
Ud iP 01 11 42.0 C
i 01 11 45.6
iS 01 15 46.6
De iP 01 11 05.7
Greece (h = 15 km).
M = 5.2 (Up,Ki).

" 1 Up iP 03 58 59.5
Sk e(P) 03 59 13
Ud iP 03 58 45.6 C

" 1 Up iP 05 24 23.9 D
iPP 05 28 06.4
iSKS 05 34 54
micr sec
P Z' 0.2 0.9
Mx E 5.4 17
Mx N 11 18
Mx Z 9.7 20
(cont.)

1970 Sep. 1 (cont.)
Ki iP 05 23 55.3 D
iPP 05 27 10.4
micr sec
P Z' 1.1 1.5
PP Z' 0.5 2.0
Mx E 11 16
Mx N 11 21
Mx Z 13 18
Sk iP 05 24 19.9
iPP 05 27 59.7
Um iP 05 24 07.5 D
iSKS 05 34 33
Ud iP 05 24 29.7
iPP 05 28 17.1
De iP 05 24 42.0
iPP 05 28 29.7
i 05 28 36.1
Mariana Islands (h = 40 km).
m = 6.6, M = 6.4 (Up,Ki).

" 1 Ud iP 05 43 30.3
Ionian Islands.

" 1 Up Mx 06 37
micr sec
Mx E 1.0 17
Mx N 1.8 15
Mx Z 2.5 16
Java (h = 60 km).

" 1 Ud iP 07 33 35.8
North Atlantic Ocean (h = N).

" 1 Ki iPn 12 27 16.6
iSn 12 28 03.0
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | |
|---|---|---|---|---|---|
| 1970 Sep. | 1 | (cont.) | | | |
| | | Ki | iLgl | | 12 28 17.3 |
| | | Sk | i(Lgl) | | 12 31 07.7 |
| | | Um | iSg | | 12 29 50.6 |
| | | Northwest Russia. | | | |
| | | Origin time = 12 26 16. | | | |
| | | Explosion? | | | |
| " | 1 | Um | iPn | | 12 42 08.7 |
| | | | i | | 12 43 13.9 |
| | | | iSg | | 12 43 32.9 |
| | | Ud | iSn | | 12 43 31.2 |
| | | | iLgl | | 12 43 57.0 |
| | | De | iLgl | | 12 44 28.3 |
| | | Esthonia. | | | |
| | | Origin time = 12 40 48. | | | |
| | | Explosion? | | | |
| " | 1 | Sk | iP | | 14 53 42.5 |
| " | 1 | Up | iP | | 15 37 19.7 |
| | | Sk | iP | | 15 37 32.0 |
| | | Ud | iP | | 15 37 12.4 |
| | | North of Ascension Island | | | |
| | | (h = N). | | | |
| " | 1 | Ud | iP | | 16 16 37.2 |
| | | North of Ascension Island | | | |
| | | (h = N). | | | |
| " | 1 | Ud | iP | | 16 42 47.4 |
| | | Ionian Islands. | | | |
| " | 1 | Up | iP | | 17 16 19.4 |
| | | Ki | iP | | 17 15 50.7 |
| | | Sk | iP | | 17 16 15.8 |
| | | Um | iP | | 17 16 03.0 |
| | | Ud | iP | | 17 16 25.2 |
| | | Mariana Islands (h = 25 km). | | | |
| " | 1 | Ki | iP | | 18 45 52.5 |
| | | Mariana Islands (h = 30 km). | | | |
| " | 2 | Up | iP | | 01 21 52.3 |
| | | | i | | 01 21 54.0 |
| | | | | micr | sec |
| | | | P | Z' 0.1 | 0.5 |
| | | Ki | iP | | 01 20 59.4 |
| | | Sk | iP | | 01 21 37.0 |
| | | Um | iP | | 01 21 25.5 |
| | | Ud | iP | | 01 21 56.5 |
| | | De | iP | | 01 22 18.4 |
| | | Kamchatka (h = 60 km). | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1970 Sep. | 2 | Up | iP | | 04 02 08.6 C |
| | | | | micr | sec |
| | | | P | Z' 0.1 | 0.5 |
| | | Ki | iP | | 04 01 15.3 C |
| | | | | micr | sec |
| | | | P | Z' 0.1 | 1.0 |
| | | Sk | iP | | 04 01 52.0 |
| | | Um | iP | | 04 01 40.4 |
| | | Ud | iP | | 04 02 12.5 |
| | | De | iP | | 04 02 33.0 |
| | | Kamchatka (h = 60 km). | | | |
| | | m = 6.0 (Up,Ki). | | | |
| " | 2 | Up | iP | | 07 55 06.2 |
| | | Ki | iP | | 07 55 09.7 |
| | | Um | iP | | 07 55 03.8 |
| | | Ud | iP | | 07 55 17.5 |
| | | De | iP | | 07 55 14.3 |
| | | Sumatra (h = 30 km). | | | |
| " | 2 | Up | iPg | | 11 11 13.4 |
| | | | iSg | | 11 11 28.5 |
| | | | iRg | | 11 11 36.6 |
| | | Sk | iLgl | | 11 13 47.5 |
| | | Ud | iSg | | 11 12 19.1 |
| | | De | iSg | | 11 12 38.0 |
| | | Baltic Sea, | | | |
| | | 58.7°N, 18.3°E. | | | |
| | | Origin time = 11 10 49. | | | |
| | | Explosion. | | | |
| " | 2 | Ki | iPn | | 11 32 26.5 |
| | | | iSn | | 11 33 25.6 |
| | | | iSg | | 11 33 49.7 |
| | | Sk | iLgl | | 11 36 09.9 |
| | | | iSg | | 11 36 21.8 |
| | | Um | iSg | | 11 34 41.0 |
| | | Northwest Russia, | | | |
| | | 67.5°N, 33.3°E. | | | |
| | | Origin time = 11 31 10. | | | |
| | | Explosion? | | | |
| " | 2 | Up | i(P) | | 12 30 34.5 |
| | | Ud | iP | | 12 30 49.3 |
| " | 2 | Ki | iPn | | 12 30 58.0 |
| | | | iSn | | 12 31 46.4 |
| | | | iLgl | | 12 32 02.4 |
| | | Origin time = 12 29 54. | | | |
| | | Explosion? | | | |
| " | 2 | Ki | iSg | | 16 35 41.6 |
| | | Sk | iSg | | 16 35 46.7 |
| | | (cont.) | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970
Sep. 2 (cont.)

| | | | | |
|---|---|---|---|---|
| | Um | iSn | 16 35 55.1 | |
| | | iSg | 16 36 09.2 | |

Nordland, Norway.
Origin time = 16 34 13.

" 2

| | | | | |
|---|---|---|---|---|
| | Ki | iP | 20 09 25.0 | |
| | | ipP | 20 09 57.5 | |
| | Sk | eP | 20 09 46 | |
| | Um | iP | 20 09 18.7 | |
| | | ipP | 20 09 50.5 | |
| | Ud | iP | 20 09 38.0 | |
| | | ipP | 20 10 11.4 | |

Tadzhik-Sinkiang.
h = 160 km (Ki,Um,Ud).

" 2

| | | | | |
|---|---|---|---|---|
| | Ud | iP | 23 55 57.7 | |

" 3

| | | | | |
|---|---|---|---|---|
| | Up | iP | 01 53 26.7 | |
| | Ud | iP | 01 53 33.9 | |

Bonin Islands (h = N).

" 3

| | | | | |
|---|---|---|---|---|
| | Ki | eP | 02 47 28 | |
| | Um | iP | 02 47 20.0 | |
| | Ud | iP | 02 47 38.2 | |

Hindu Kush.

" 3

| | | | | |
|---|---|---|---|---|
| | Up | iP | 05 37 27.9 | |
| | | i | 05 37 36.6 | |
| | | iS | 05 41 56 | |
| | | | micr | sec |
| | | P | Z' 0.2 | 1.0 |
| | | Mx | E 2.2 | 17 |
| | | Mx | N 1.9 | 16 |
| | | Mx | Z 3.2 | 17 |
| | Ki | iP | 05 38 19.2 | |
| | | i | 05 38 32.8 | |
| | | | micr | sec |
| | | P | Z' 0.1 | 1.0 |
| | | Mx | E 5.1 | 14 |
| | | Mx | N 2.4 | 13 |
| | | Mx | Z 2.5 | 15 |
| | Sk | iP | 05 38 13.3 | |
| | | i | 05 38 27.5 | |
| | Um | iP | 05 37 47.6 | C |
| | | i | 05 37 58.6 | |
| | Ud | iP | 05 37 40.2 | |
| | | i | 05 37 47.2 | |
| | De | iP | 05 37 17.5 | |

Turkey (h = 25 km).
m = 5.6, M = 5.0 (Up,Ki).

" 3

| | | | |
|---|---|---|---|
| Ki | iP | 08 04 51.9 | |
| Um | iP | 08 05 03.8 | |

Mariana Islands (h = 45 km).

1970
Sep. 3

| | | | | |
|---|---|---|---|---|
| Up | iPKP | 09 51 33.8 | |
| | ePKS | 09 55 02 | |
| | | micr | sec |
| | Mx | E 1.7 | 22 |
| | Mx | N 3.3 | 23 |
| | Mx | Z 3.0 | 23 |
| Ki | iPKP | 09 51 18.6 | |
| | | micr | sec |
| | Mx | E 2.6 | 23 |
| | Mx | N 2.3 | 23 |
| | Mx | Z 2.3 | 23 |
| Sk | iPKP | 09 51 30.6 | |
| | ePKS | 09 54 51 | |
| Um | iPKP | 09 51 25.3 | |
| Ud | iPKP | 09 51 36.7 | |
| | iPKS | 09 55 04.7 | |
| De | i(PKP) | 09 51 31.6 | |
| | iPKP | 09 51 42.8 | |
| | iPKS | 09 55 12.1 | |

New Hebrides Islands (h = 45 km
M = 6.1 (Up,Ki).

" 3

| | | | |
|---|---|---|---|
| Sk | eSg | 15 28 20 | |
| Ud | iPg | 15 26 48.9 | |
| | iSg | 15 27 13.9 | |

Probably south Norway.
Origin time = 15 26 11.

" 3

| | | | |
|---|---|---|---|
| Ki | iPg | 16 46 37.2 | |
| | iSg | 16 47 01.7 | |
| Sk | iSg | 16 48 46.3 | |

Probably northwest coast of Norway.
Origin time = 16 45 59.

" 3

| | | | |
|---|---|---|---|
| Up | iSg | 17 04 44.6 | |
| Ud | iSg | 17 05 01.3 | |
| De | iPg | 17 02 45.4 | |
| | iSg | 17 03 26.1 | |

Northern Poland,
54.4°N, 17.6°E.
Origin time = 17 01 43.
Explosion?

" 3

| | | | |
|---|---|---|---|
| Ki | iPg | 17 03 52.2 | |
| | iSg | 17 04 16.8 | |
| Sk | iSg | 17 06 02.2 | |

Probably northwest coast of Norway.
Origin time = 17 03 14.

" 3

| | | | |
|---|---|---|---|
| Sk | iP | 19 08 33.7 | |
| Um | iP | 19 08 14.0 | |
| Ud | iP | 19 08 44.5 | |

USSR-Mongolia.

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 | | | | | | |
| Sep. | 3 | Up | iP | | 22 44 44.1 | |
| | | | ePn | | 22 44 59 | |
| | | Ki | iPn | | 22 45 39.4 | |
| | | Sk | iPn | | 22 45 47.6 | |
| | | Ud | iP | | 22 44 32.7 | |
| | | Turkmen SSR (h = 35 km). | | | | |
| " | 4 | Up | iP | | 01 04 24.7 | |
| " | 4 | Ki | e(P) | | 03 21 10 | |
| " | 4 | Ud | iP | | 06 20 36.1 | |
| " | 4 | Up | iP | | 13 19 12.8 | |
| | | | ipP | | 13 20 09.9 | |
| | | | | | micr sec | |
| | | | pP | Z' | 0.1 1.0 | |
| | | Ki | iP | | 13 19 24.2 | C |
| | | Sk | iP | | 13 19 41.1 | |
| | | | ipP | | 13 20 37.4 | |
| | | Um | iP | | 13 19 14.0 | |
| | | | ipP | | 13 20 08.8 | |
| | | Ud | iP | | 13 19 30.9 | |
| | | | ipP | | 13 20 27.0 | |
| | | Hindu Kush. | | | | |
| | | h = 280 km (Up,Sk,Um,Ud). | | | | |
| " | 4 | Ki | iP | | 22 56 24.5 | |
| " | 4 | Ki | iP | | 23 34 19.3 | |
| | | Yugoslavia (h = 40 km). | | | | |
| " | 4 | Ud | iP | | 23 47 07.9 | |
| " | 5 | Ki | iPKP | | 00 53 14.7 | |
| | | New Hebrides Islands | | | | |
| | | (h = 55 km). | | | | |
| " | 5 | Up | iP | | 03 55 00.6 | |
| | | | | | micr sec | |
| | | | P | Z' | 0.1 0.5 | |
| | | Ki | iP | | 03 54 36.6 | |
| | | | i | | 03 54 40.2 | |
| | | Sk | iP | | 03 55 04.4 | |
| | | Um | iP | | 03 54 44.1 | |
| | | Ud | iP | | 03 55 10.1 | |
| | | Formosa (h = 45 km). | | | | |
| " | 5 | Ki | iP | | 05 09 39.4 | |
| " | 5 | Ki | iP | | 06 16 21.6 | |
| " | 5 | Up | iP | | 08 01 55.1 | D |
| | | | ipP | | 08 03 50.1 | |
| | | | iS | | 08 09 38 | |
| | | (cont.) | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 | | | | | | |
| Sep. | 5 | (cont.) | | | | |
| | | Up | iScS | | 08 10 48 | |
| | | | isS | | 08 13 00 | |
| | | | iP'P' | | 08 30 31.2 | |
| | | | i | | 08 33 05.4 | |
| | | | | | micr sec | |
| | | | P | Z' | 1.1 0.9 | |
| | | | pP | Z' | 0.4 1.0 | |
| | | | Mx | E | 3.2 19 | |
| | | | Mx | N | 3.1 17 | |
| | | | Mx | Z | 2.9 18 | |
| | | Ki | iP | | 08 01 04.7 | D |
| | | | i | | 08 01 08.4 | |
| | | | ipP | | 08 02 55.7 | |
| | | | iS | | 08 08 03 | |
| | | | iScS | | 08 09 54 | |
| | | | iP'P' | | 08 30 48.4 | |
| | | | | | micr sec | |
| | | | P | Z' | 2.1 0.9 | |
| | | | pP | Z' | 0.6 1.5 | |
| | | | Mx | E | 3.5 12 | |
| | | | Mx | N | 3.1 12 | |
| | | | Mx | Z | 1.5 12 | |
| | | Sk | iP | | 08 01 41.3 | D |
| | | | i | | 08 01 44.5 | |
| | | | ipP | | 08 03 36.3 | |
| | | Um | iP | | 08 01 27.8 | D |
| | | | i | | 08 01 31.3 | |
| | | | ipP | | 08 03 20.6 | |
| | | | iS | | 08 08 49 | |
| | | | iScS | | 08 10 19 | |
| | | | isS | | 08 12 03 | |
| | | Ud | iP | | 08 01 59.7 | D |
| | | | i | | 08 02 03.2 | |
| | | | ipP | | 08 03 55.4 | |
| | | | iP'P' | | 08 30 18.8 | |
| | | De | iP | | 08 02 19.2 | D |
| | | | i | | 08 02 22.3 | |
| | | | ipP | | 08 04 16.6 | |
| | | Okhotsk Sea. | | | | |
| | | h = 610 km (Up,Ki,Sk,Um,Ud,De). | | | | |
| | | m = 6.3, M = 5.8 (Up,Ki). | | | | |
| | | M uncorrected for focal depth. | | | | |
| | | Double P, in average 3.4 sec | | | | |
| | | apart, the second considerably | | | | |
| | | larger than the first one. | | | | |
| " | 5 | Up | iP | | 11 47 55.8 | |
| | | | | | micr sec | |
| | | | Mx | E | 2.6 22 | |
| | | | Mx | N | 3.4 21 | |
| | | | Mx | Z | 3.2 20 | |
| | | Ki | iP | | 11 48 31.4 | |
| | | | ipP | | 11 48 40.8 | |
| | | | | | micr sec | |
| | | | Mx | E | 2.2 16 | |
| | | (cont.) | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Sep. | 5 | (cont.) | | | | |
| | | Ki | Mx | N | 3.4 | 22 |
| | | | Mx | Z | 3.8 | 23 |
| | | Sk | iP | | 11 48 32.0 | |
| | | Um | iP | | 11 48 07.2 | |
| | | Ud | iP | | 11 48 07.0 | |
| | | | ipP | | 11 48 18.5 | |
| | | Arabian Sea. | | | | |
| | | h = 40 km (Ki,Ud). | | | | |
| | | M = 5.5 (Up,Ki). | | | | |
| " | 5 | Up | iP | | 13 47 38.7 C | |
| | | | i | | 13 47 50.3 | |
| | | | | | micr | sec |
| | | | Mx | N | 1.0 | 20 |
| | | Ki | iP | | 13 47 21.8 | |
| | | | | | micr | sec |
| | | | Mx | E | 1.2 | 13 |
| | | | Mx | N | 2.3 | 16 |
| | | | Mx | Z | 1.0 | 13 |
| | | Sk | iP | | 13 47 49.9 | |
| | | Um | iP | | 13 47 24.1 | |
| | | Ud | iP | | 13 47 50.1 | |
| | | | i | | 13 48 09.6 | |
| | | De | iP | | 13 48 04.3 | |
| | | Szechwan, China (h = N). | | | | |
| | | M = 5.2 (Up,Ki). | | | | |
| " | 5 | Sk | iP | | 15 19 39.1 | |
| | | Um | i(P) | | 15 19 10.3 | |
| " | 5 | Ki | iP | | 19 14 02.2 | |
| | | | i | | 19 14 14.1 | |
| | | | eT | | 19 19 07 | |
| | | | i | | 19 19 36.1 | |
| | | Sk | iP | | 19 14 38.7 | |
| | | | iS | | 19 16 21.7 | |
| | | Um | iP | | 19 14 51.5 | |
| | | | iS | | 19 17 09.3 | |
| | | Norwegian Sea (h = N). | | | | |
| " | 5 | Up | iP | | 19 33 57.0 | |
| | | Ki | iP | | 19 34 05.2 | |
| | | | ipP | | 19 34 42.5 | |
| | | Sk | iP | | 19 34 26.6 | |
| | | Um | iP | | 19 33 53.2 | |
| | | Ud | iP | | 19 34 13.7 C | |
| | | Hindu Kush. | | | | |
| | | h = 180 km (Ki). | | | | |
| " | 6 | Up | iP | | 01 18 43.1 | |
| " | 6 | Up | iP | | 04 09 52.5 C | |
| | | | iPn | | 04 10 57.2 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.2 | 0.6 |
| | | (cont.) | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Sep. | 6 | (cont.) | | | | |
| | | Ki | iP | | 04 09 37.0 C | |
| | | | iPn | | 04 10 37.0 | |
| | | | iPP | | 04 10 51.2 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.4 | 0.5 |
| | | Sk | iP | | 04 10 08.1 C | |
| | | | iPP | | 04 11 30.7 | |
| | | Um | iP | | 04 09 37.7 | |
| | | Ud | iP | | 04 10 09.1 C | |
| | | | iPP | | 04 11 33.5 | |
| | | De | iP | | 04 10 16.0 C | |
| | | | iPP | | 04 11 42.4 | |
| | | Kazakh SSR. | | | | |
| | | m = 6.4 (Up,Ki). | | | | |
| | | Underground explosion. | | | | |
| " | 6 | Ki | ePn | | 05 50 48 | |
| | | | iSn | | 05 51 46.5 | |
| | | | iLgl | | 05 52 06.8 | |
| | | Um | iSx | | 05 52 41.9 | |
| | | | iSg | | 05 53 00.2 | |
| | | Probably northwest Russia. | | | | |
| | | Origin time = 05 49 34. | | | | |
| | | Explosion? | | | | |
| " | 6 | Ki | i | | 10 18 06.2 | |
| | | | i(Sg) | | 10 18 24.3 | |
| " | 6 | Up | iP | | 15 53 19.5 | |
| | | Ki | iP | | 15 52 26.4 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 1.0 |
| | | Sk | iP | | 15 52 50.8 | |
| | | | i | | 15 52 56.0 | |
| | | Um | iP | | 15 52 55.0 | |
| | | Ud | iP | | 15 53 15.2 | |
| | | Alaska (h = 5 km). | | | | |
| " | 7 | De | iPKP | | 03 50 44.5 | |
| | | Fiji Islands (h = 500 km). | | | | |
| " | 7 | Ki | iP | | 05 39 03.3 | |
| | | Um | iP | | 05 39 28.9 | |
| | | | iPcP | | 05 40 06.3 | |
| | | Ud | iP | | 05 39 54.3 | |
| | | Aleutian Islands (h = N). | | | | |
| " | 7 | Up | iP | | 09 29 33.7 C | |
| | | Ki | iP | | 09 29 00.2 | |
| | | Sk | iP | | 09 29 30.2 | |
| | | Um | iP | | 09 29 14.4 | |
| | | Ud | iP | | 09 29 40.9 | |
| | | De | iP | | 09 29 53.7 | |
| | | South of Japan (h = 390 km). | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Sep. | 7 | Um | iP | | 12 58 45.8 | |
| | | Yugoslavia (h = 35 km). | | | | |
| " | 7 | Up | iP | | 14 06 18.2 | |
| | | Ki | eP | | 14 07 56 | |
| | | Sk | iP | | 14 07 01.3 | |
| | | Um | iP | | 14 07 07.7 | |
| | | Ud | iP | | 14 06 32.3 | |
| | | De | iP | | 14 05 39.9 | |
| | | Italy (h = 35 km). | | | | |
| " | 7 | Up | iP | | 18 21 14.8 | |
| | | Ki | iP | | 18 20 58.9 | |
| | | Sk | iP | | 18 20 58.4 | |
| | | Um | iP | | 18 21 09.9 | |
| | | Ud | iP | | 18 21 09.3 | |
| | | De | iP | | 18 21 18.9 | |
| | | Mexico (h = N). | | | | |
| " | 7 | Up | iP | | 21 02 35.0 | |
| | | | i | | 21 02 39.9 | |
| | | | iS | | 21 05 37 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.4 | 0.6 |
| | | | Mx | E | 3.7 | 10 |
| | | | Mx | N | 5.9 | 10 |
| | | | Mx | Z | 7.4 | 10 |
| | | Ki | eP | | 21 04 03 | |
| | | | i | | 21 04 07.4 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.5 | 1.2 |
| | | | Mx | E | 7.4 | 10 |
| | | | Mx | N | 12 | 10 |
| | | | Mx | Z | 7.9 | 10 |
| | | Sk | iP | | 21 03 21.6 | C |
| | | | iPP | | 21 03 44.4 | |
| | | | iLgl | | 21 09 31.6 | |
| | | Um | iP | | 21 03 25.0 | |
| | | | iS | | 21 07 03 | |
| | | Ud | iP | | 21 02 38.4 | C |
| | | | i | | 21 02 43.3 | |
| | | | iLgl | | 21 07 31.8 | |
| | | De | iP | | 21 01 48.8 | |
| | | Yugoslavia (h = 5 km). | | | | |
| | | m = 5.8, M = 5.5 (Up,Ki). | | | | |
| | | Double P, small and large, | | | | |
| | | 4.9 sec apart, especially | | | | |
| | | clear at Up and Ud. | | | | |
| " | 7 | Sk | iP | | 21 27 51.5 | |
| | | Ud | iP | | 21 27 43.2 | |
| | | Kashmir. | | | | |
| " | 7 | Up | iP | | 21 32 28.6 | |
| " | 7 | Ki | iP | | 21 46 25.1 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Sep. | 8 | Um | iP | | 01 05 54.5 | |
| | | Ud | iP | | 01 06 27.0 | |
| " | 8 | Um | iP | | 07 34 27.2 | |
| | | Ud | iP | | 07 33 53.5 | |
| | | Albania (h = 25 km). | | | | |
| " | 8 | Ud | iSg | | 10 16 56.6 | |
| | | De | iPg | | 10 14 51.3 | |
| | | | iSg | | 10 15 09.8 | |
| | | Probably southern Baltic Sea. | | | | |
| | | Origin time = 10 14 23. | | | | |
| | | Explosion? | | | | |
| " | 8 | Ud | iPKP | | 11 54 01.7 | |
| | | Fiji Islands (h = 570 km). | | | | |
| " | 8 | Ki | iP | | 12 53 25.1 | |
| | | Um | iP | | 12 53 05.6 | |
| | | De | iP | | 12 52 59.3 | |
| | | Iran (h = 20 km). | | | | |
| " | 8 | De | iPKP | | 14 46 01.0 | |
| | | Tonga-Kermadec Islands | | | | |
| | | (h = 520 km). | | | | |
| " | 8 | Ki | ePg | | 16 05 44 | |
| | | | iSg | | 16 06 22.9 | |
| | | Sk | iPg | | 16 05 50.1 | |
| | | | iSg | | 16 06 29.5 | |
| | | Um | iSn | | 16 06 36.4 | |
| | | | iSg | | 16 06 50.1 | |
| | | Nordland, Norway, | | | | |
| | | 66.5°N, 14.2°E. | | | | |
| | | Origin time = 16 04 51. | | | | |
| | | Solution checked with Tromsö | | | | |
| | | reading of Pg. | | | | |
| " | 8 | Up | iP | | 17 01 30.6 | |
| | | Ki | iP | | 17 00 48.3 | |
| | | Um | iP | | 17 01 07.3 | |
| | | Japan (h = 70 km). | | | | |
| " | 9 | Up | iP | | 00 18 25.9 | |
| | | Ki | iP | | 00 19 23.5 | |
| | | Ud | iP | | 00 18 37.2 | |
| | | De | iP | | 00 18 03.8 | |
| | | Cyprus (h = N). | | | | |
| " | 9 | Up | iPKP | | 00 56 58.2 | |
| | | Sk | iPKP | | 00 56 51.4 | |
| | | Um | iPKP | | 00 56 45.9 | |
| | | Ud | iPKP | | 00 57 00.7 | |
| | | | ipPKP | | 00 57 16.0 | |
| | | De | iPKP | | 00 57 09.5 | |
| | | Kermadec Islands. | | | | |
| | | h = 50 km (Ud). | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | |
|---|---|---|---|---|---|
| 1970 | | | | | |
| Sep. | 9 | Up | iP | 03 12 46.3 | |
| | | Sk | iP | 03 13 29.4 | |
| | | Um | iP | 03 13 15.1 | |
| | | Ud | iP | 03 12 58.5 | |
| | | Turkey. | | | |
| | | Origin time = 03 07 51. | | | |
| " | 9 | Up | iP | 05 30 58.7 | |
| | | Sk | iP | 05 31 43.6 | |
| | | Um | iP | 05 31 30.9 | |
| | | Ud | iP | 05 31 08.9 | |
| | | | i | 05 31 12.3 | |
| | | Turkey. | | | |
| | | Origin time = 05 26 05. | | | |
| " | 9 | Ki | i(P) | 08 57 58.7 | |
| | | | i | 08 58 08.0 | |
| " | 9 | Um | iP | 10 27 56.5 | |
| | | Ud | eP | 10 28 24 | |
| " | 9 | Ki | iPn | 12 48 12.4 | |
| | | | iSn | 12 49 00.2 | |
| | | | iLgl | 12 49 14.0 | |
| | | Origin time = 12 47 08. | | | |
| " | 9 | Up | i(Lgl) | 15 43 20.7 | |
| | | Um | iSg | 15 43 55.0 | |
| | | Possibly Esthonia. | | | |
| | | Explosion? | | | |
| " | 9 | Up | iP | 19 30 29.0 | |
| | | | ipP | 19 30 40.7 | |
| | | Ki | iP | 19 29 57.3 | |
| | | | ipP | 19 30 08.3 | |
| | | Sk | iP | 19 30 29.4 | |
| | | Um | iP | 19 30 10.3 | |
| | | | ipP | 19 30 22.3 | |
| | | Ud | iP | 19 30 38.6 | |
| | | | ipP | 19 30 51.0 | |
| | | De | iP | 19 30 49.7 | |
| | | Ryukyu Islands. | | | |
| | | h = 45 km (Up,Ki,Um,Ud). | | | |
| " | 9 | Ud | eP | 20 06 19 | |
| " | 9 | Up | iP | 20 52 27.8 | |
| " | 9 | Ki | iPn | 20 53 41.4 | |
| | | | iSn | 20 54 27.7 | |
| | | | iLgl | 20 54 39.7 | |
| | | Origin time = 20 52 38. | | | |
| " | 9 | Ud | iP | 23 43 01.9 | |
| | | Crete. | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1970 | | | | | |
| Sep. | 10 | Up | iP | 02 50 44.5 | |
| | | Ki | iP | 02 50 57.5 | |
| | | Um | iP | 02 50 41.3 | |
| | | Ud | eP | 02 51 02 | |
| | | West Pakistan (h = 20 km). | | | |
| " | 10 | Ki | eP | 15 09 05 | |
| | | Sk | iP | 15 08 31.9 | |
| | | Ud | iP | 15 08 29.6 | |
| | | North Atlantic Ocean. | | | |
| " | 10 | Ki | iP | 16 55 16.5 | |
| | | Mariana Islands (h = 9 km). | | | |
| " | 11 | Ki | ePKP | 01 23 58 | |
| | | | i | 01 24 10.4 | |
| | | | | micr | sec |
| | | | Mx E | 1.0 | 15 |
| | | | Mx Z | 0.8 | 14 |
| | | South Pacific Ocean (h = N). | | | |
| " | 12 | Ud | eP | 01 31 14 | |
| " | 12 | Up | iP | 08 43 29.0 | |
| | | Sk | iP | 08 44 10.6 | |
| | | Um | iP | 08 44 12.1 | |
| | | Ud | iP | 08 43 29.2 | |
| | | Yugoslavia (h = 45 km). | | | |
| " | 12 | Ki | iPKP | 11 57 09.5 | |
| | | Um | iPKP | 11 56 54.2 | |
| | | South Sandwich Islands | | | |
| | | (h = N). | | | |
| " | 12 | Um | iP | 12 15 30.2 | |
| " | 12 | Up | iP | 14 42 57.7 | |
| | | | | micr | sec |
| | | | P Z' | 0.1 | 1.0 |
| | | | Mx N | 1.1 | 18 |
| | | | Mx Z | 1.7 | 18 |
| | | Ki | iP | 14 42 25.2 | C |
| | | | | micr | sec |
| | | | P Z' | 0.1 | 1.0 |
| | | | Mx E | 1.2 | 15 |
| | | | Mx N | 0.8 | 15 |
| | | | Mx Z | 1.4 | 14 |
| | | Sk | iP | 14 42 33.1 | |
| | | Um | iP | 14 42 43.8 | C |
| | | Ud | iP | 14 42 49.9 | |
| | | De | iP | 14 43 06.0 | C |
| | | California (h = 9 km). | | | |
| | | m = 5.8, M = 5.5 (Up,Ki). | | | |
| " | 12 | Up | eP | 15 43 52 | |
| | | Ud | iP | 15 43 58.0 | |
| | | Kurile Islands (h = 60 km). | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | |
|---|---|---|---|---|---|
| 1970 Sep. | 13 | Um | iPKP | 04 00 37.5 | |
| | | New Hebrides Islands (h = 140 km). | | | |
| " | 13 | Up | iP | 04 59 53.5 | |
| | | Ki | iP | 04 59 20.9 | |
| | | Ud | iP | 04 59 46.3 | |
| | | California (h = 10 km). | | | |
| " | 13 | Ki | iP | 05 18 48.1 | |
| | | Um | iP | 05 18 51.7 | |
| | | Ud | iP | 05 19 12.3 | |
| | | Halmahera (h = 150 km). | | | |
| " | 13 | Um | iP | 07 19 23.2 | |
| | | Ud | iP | 07 19 16.2 | |
| " | 13 | Up | iP | 08 41 14.0 | |
| | | | ipP | 08 42 03.8 | |
| | | Ki | ipP | 08 42 03.6 | |
| | | Um | iP | 08 41 15.4 | |
| | | | ipP | 08 42 00.6 | |
| | | Ud | ipP | 08 42 13.6 | |
| | | Sumatra. h = 190 km (Up,Um). | | | |
| " | 13 | Up | iP | 14 00 23.6 | |
| | | Ki | iP | 13 59 55.0 | |
| | | Sk | eP | 14 00 22 | |
| | | Um | iP | 14 00 05.9 C | |
| | | Ud | iP | 14 00 30.4 | |
| | | Volcano Islands (h = 25 km). | | | |
| " | 13 | Sk | iP | 16 24 45.5 | |
| | | Um | iP | 16 25 18.1 | |
| | | Ud | iP | 16 24 48.5 | |
| | | North Atlantic Ocean (h = N). | | | |
| " | 13 | Ki | iSg | 16 28 36.5 | |
| | | Sk | eSg | 16 28 44 | |
| | | | i | 16 28 48.6 | |
| | | Um | iSg | 16 29 18.3 | |
| | | Probably Nordland, Norway. | | | |
| " | 13 | Up | iP | 16 58 38.5 | |
| | | Ud | iP | 16 58 54.8 | |
| | | Hindu Kush. | | | |
| " | 13 | Up | iP | 21 22 05.0 | |
| | | | | micr | sec |
| | | | Mx E | 0.9 | 19 |
| | | | Mx N | 1.0 | 17 |
| | | | Mx Z | 1.3 | 20 |
| | | Ki | iP | 21 21 26.9 | |
| | | | i | 21 21 43.9 | |
| | | (cont.) | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1970 Sep. | 13 | (cont.) | | | |
| | | Ki | | micr | sec |
| | | | Mx E | 0.9 | 17 |
| | | | Mx Z | 0.8 | 17 |
| | | Sk | iP | 21 21 39.4 | |
| | | Um | iP | 21 21 48.3 | |
| | | | i | 21 22 09.9 | |
| | | Ud | iP | 21 21 58.8 | |
| | | | i | 21 22 02.4 | |
| | | | i | 21 22 20.4 | |
| | | California (h = N). | | | |
| | | M = 5.3 (Up,Ki). | | | |
| " | 14 | Ki | iP | 01 06 23.6 | |
| | | | ipP | 01 06 30.2 | |
| | | | | micr | sec |
| | | | P Z' | 0.1 | 1.5 |
| | | Sk | iP | 01 06 43.4 | |
| | | | ipP | 01 06 50.8 | |
| | | | iPP | 01 10 45.1 | |
| | | Um | iP | 01 06 27.0 C | |
| | | | ipP | 01 06 34.4 | |
| | | | iPP | 01 10 22.2 | |
| | | Ud | eP | 01 06 50 | |
| | | Celebes. h = 25 km (Ki,Sk,Um). | | | |
| " | 14 | Um | iP | 01 36 15.5 | |
| " | 14 | Up | e(P) | 05 10 25 | |
| | | Ud | iP | 05 10 41.4 C | |
| " | 14 | Ud | iP | 06 22 22.4 | |
| " | 14 | Ki | Mx | 07 27 | |
| | | | | micr | sec |
| | | | Mx E | 0.7 | 11 |
| | | Turkey (h = 35 km). | | | |
| " | 14 | Up | iP | 09 51 17.6 | |
| | | | i | 09 51 23.0 | |
| | | | | micr | sec |
| | | | P Z' | 0.1 | 0.9 |
| | | Ki | iP | 09 51 15.9 | |
| | | | i | 09 51 20.5 | |
| | | | | micr | sec |
| | | | P Z' | 0.1 | 1.0 |
| | | Sk | iP | 09 51 39.7 C | |
| | | | i | 09 51 44.2 | |
| | | Um | iP | 09 51 15.3 | |
| | | Ud | iP | 09 51 34.6 | |
| | | | i | 09 51 39.4 | |
| | | De | iP | 09 51 34.8 | |
| | | Sinkiang (h = N). | | | |
| | | m = 5.5 (Up,Ki). | | | |
| | | Multiple P. | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Sep. | 14 | Up | iP | | 09 56 11.6 | C |
| | | | iS | | 10 05 18 | |
| | | | | | micr sec | |
| | | | P | Z' | 0.2 0.7 | |
| | | | Mx | E | 14 22 | |
| | | | Mx | N | 14 19 | |
| | | | Mx | Z | 21 23 | |
| | | Ki | iP | | 09 55 30.7 | C |
| | | | iS | | 10 04 10 | |
| | | | iScS | | 10 05 29.2 | |
| | | | | | micr sec | |
| | | | P | Z' | 0.2 1.2 | |
| | | | Mx | E | 15 20 | |
| | | | Mx | N | 11 21 | |
| | | | Mx | Z | 15 16 | |
| | | Sk | iP | | 09 56 04.5 | C |
| | | | i(ScS) | | 10 06 23.7 | |
| | | Um | iP | | 09 55 48.8 | C |
| | | | iS | | 10 04 45 | |
| | | Ud | iP | | 09 56 18.4 | C |
| | | De | iP | | 09 56 34.2 | C |
| | | Japan (h = 45 km). | | | | |
| | | m = 6.3, M = 6.4 (Up,Ki). | | | | |
| " | 14 | Up | i(P) | | 10 22 53.3 | |
| | | De | e(P) | | 10 22 08 | |
| " | 14 | Up | iP | | 11 25 44.2 | |
| | | Ki | iP | | 11 25 06.8 | |
| | | Sk | iP | | 11 25 40.8 | |
| | | Um | iP | | 11 25 22.6 | |
| | | Ud | iP | | 11 25 51.3 | |
| | | Sea of Japan (h = 530 km). | | | | |
| " | 14 | Ki | iPg | | 12 03 05.1 | |
| | | | iSg | | 12 03 41.0 | |
| | | Sk | eSn | | 12 03 31 | |
| | | | iSg | | 12 03 44.8 | |
| | | Um | iPg | | 12 03 21.1 | |
| | | | iSn | | 12 03 55.3 | |
| | | | iSg | | 12 04 09.2 | |
| | | Nordland, Norway, | | | | |
| | | 66.3°N, 14.6°E. | | | | |
| | | Origin time = 12 02 12. | | | | |
| " | 14 | Up | iP | | 12 55 00.5 | |
| | | Ki | iP | | 12 54 15.2 | |
| | | Um | iP | | 12 54 35.8 | |
| | | Kurile Islands (h = 30 km). | | | | |
| " | 14 | Ki | iP | | 14 03 07.8 | |
| | | Ud | iP | | 14 04 00.2 | |
| | | Kurile Islands. | | | | |
| " | 14 | Ki | iPKP | | 15 36 50.1 | |
| | | (cont.) | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Sep. | 14 | (cont.) | | | | |
| | | Um | iPKP | | 15 36 47.8 | |
| | | Ud | iPKP | | 15 36 40.7 | |
| | | Chile (h = N). | | | | |
| " | 14 | Um | iPKP | | 15 41 53.8 | |
| | | Chile (h = N). | | | | |
| " | 14 | Up | | | micr sec | |
| | | | Mx | E | 0.8 18 | |
| | | | Mx | N | 0.9 18 | |
| | | | Mx | Z | 1.2 19 | |
| | | Ki | iPKP | | 15 55 42.4 | |
| | | | | | micr sec | |
| | | | Mx | E | 1.2 20 | |
| | | | Mx | Z | 1.1 20 | |
| | | Um | iPKP | | 15 55 40.9 | |
| | | Ud | iPKP | | 15 55 31.7 | |
| | | Chile (h = 30 km). | | | | |
| | | M = 5.6 (Up,Ki). | | | | |
| " | 14 | Up | iP | | 16 18 35.8 | C |
| | | | | | micr sec | |
| | | | P | Z' | 0.1 0.5 | |
| | | Ki | iP | | 16 18 45.4 | C |
| | | | iPP | | 16 20 28.4 | |
| | | | | | micr sec | |
| | | | P | Z' | 0.1 1.0 | |
| | | Sk | iP | | 16 19 01.8 | |
| | | | ePP | | 16 20 42 | |
| | | Um | iP | | 16 18 34.0 | |
| | | | iPP | | 16 20 15.2 | |
| | | Ud | iP | | 16 18 52.4 | C |
| | | | iPP | | 16 20 30.3 | |
| | | De | iP | | 16 18 49.0 | |
| | | Hindu Kush (h = 220 km). | | | | |
| | | m = 5.4 (Up,Ki). | | | | |
| " | 14 | Ud | iP | | 17 18 42.6 | |
| | | | i | | 17 20 16.0 | |
| | | Kurile Islands. | | | | |
| " | 14 | Um | iP | | 18 25 14.5 | |
| | | Ud | i(P) | | 18 25 16.8 | |
| " | 14 | Up | iP | | 18 28 06.8 | |
| | | Ki | iP | | 18 27 21.5 | |
| | | Um | iP | | 18 27 41.9 | |
| | | Ud | iP | | 18 28 13.2 | |
| | | Kurile Islands (h = N). | | | | |
| " | 14 | Up | iP | | 18 50 51.7 | |
| | | Ki | iP | | 18 50 06.1 | |
| | | Um | iP | | 18 50 27.0 | |
| | | Ud | iP | | 18 50 58.1 | |
| | | Kurile Islands (h = N). | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delar

| 1970 | | | | | | |
|---|---|---|---|---|---|---|
| Sep. | 14 | Up | iP | | 19 55 36.6 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 0.5 |
| | | Ki | iP | | 19 54 50.0 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 1.0 |
| | | Sk | iP | | 19 55 26.0 | |
| | | Um | iP | | 19 55 11.5 | |
| | | | i | | 19 55 26.3 | |
| | | Ud | iP | | 19 55 42.7 | |
| | | De | iP | | 19 56 00.1 | |
| | | Kurile Islands (h = 30 km). | | | | |
| | | m = 6.1 (Up,Ki). | | | | |
| " | 14 | Ud | eP | | 21 02 33 | |
| " | 15 | Ud | iP | | 00 10 24.2 | |
| " | 15 | Ki | iP | | 04 04 07.5 | |
| | | | iS | | 04 05 37.7 | |
| | | | iT | | 04 09 02.8 | |
| | | | i | | 04 09 38.8 | |
| | | | | | micr | sec |
| | | | Mx | E | 0.7 | 15 |
| | | | Mx | Z | 0.6 | 13 |
| | | Sk | iP | | 04 04 48.1 | |
| | | | iS | | 04 06 34.4 | |
| | | Um | iP | | 04 04 55.3 | |
| | | | iS | | 04 06 45.0 | |
| | | | i(Sn) | | 04 07 14.8 | |
| | | | iT | | 04 11 47.4 | |
| | | Ud | iP | | 04 05 35.5 | |
| | | | i(Sn) | | 04 08 31.4 | |
| | | Norwegian Sea (h = N). | | | | |
| " | 15 | Um | iP | | 05 50 42.4 | |
| | | Ud | iP | | 05 51 13.0 | |
| | | Japan (h = 45 km). | | | | |
| " | 15 | Up | iPKP | | 09 54 20.6 | |
| | | Ki | iPKP | | 09 54 13.0 | |
| | | Sk | iPKP | | 09 54 14.8 | |
| | | Um | ePKP | | 09 54 14 | |
| | | Ud | iPKP | | 09 54 21.9 | |
| | | De | iPKP | | 09 54 32.5 | |
| | | Fiji Islands (h = 620 km). | | | | |
| " | 15 | Up | iP | | 11 08 26.6 | |
| | | | i | | 11 08 30.8 | |
| | | | iSKS | | 11 18 55 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 1.0 |
| | | | Mx | E | 1.4 | 19 |
| | | | Mx | N | 1.1 | 19 |
| | | (cont.) | | | | |

| 1970 | | | | | | |
|---|---|---|---|---|---|---|
| Sep. | 15 | (cont.) | | | | |
| | | Up | Mx | Z | 1.6 | 20 |
| | | Ki | iP | | 11 08 07.4 | |
| | | | eSKS | | 11 18 32 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.2 | 1.4 |
| | | | Mx | E | 1.2 | 17 |
| | | | Mx | N | 1.4 | 20 |
| | | | Mx | Z | 1.6 | 17 |
| | | Sk | iP | | 11 08 30.2 | |
| | | Um | iP | | 11 08 13.8 | |
| | | | i | | 11 08 18.6 | |
| | | | iSKS | | 11 18 39 | |
| | | Ud | iP | | 11 08 34.0 | |
| | | De | iP | | 11 08 39.6 | |
| | | Mindanao (h = N). | | | | |
| | | m = 6.2, M = 5.5 (Up,Ki). | | | | |
| " | 15 | Ki | iPn | | 12 34 32.3 | |
| | | | iPx | | 12 34 40.6 | |
| | | | iSn | | 12 35 18.7 | |
| | | | iLg1 | | 12 35 31.8 | |
| | | | iSg | | 12 35 36.1 | |
| | | Sk | iLg1 | | 12 38 21.2 | |
| | | Um | iSg | | 12 37 06.9 | |
| | | Ud | iLg1 | | 12 39 32.3 | |
| | | Northwest Russia, | | | | |
| | | 69.2°N, 30.6°E. | | | | |
| | | Origin time = 12 33 29. | | | | |
| | | Explosion? | | | | |
| " | 15 | Up | iSg | | 12 50 15.0 | |
| | | Ki | eSg | | 12 52 41 | |
| | | Sk | iSg | | 12 52 04.3 | |
| | | Um | iSg | | 12 50 45.8 | |
| | | Ud | iLg1 | | 12 51 15.2 | |
| | | De | eLg1 | | 12 51 39 | |
| | | Esthonia, | | | | |
| | | 59.7°N, 25.6°E. | | | | |
| | | Origin time = 12 48 03. | | | | |
| | | Explosion? | | | | |
| " | 15 | Up | i(Sn) | | 16 21 47.5 | |
| | | | iSg | | 16 22 28.6 | |
| | | Sk | e(Sn) | | 16 22 00 | |
| | | | iSg | | 16 22 30.4 | |
| | | Ud | iPg | | 16 20 34.7 | |
| | | | iSg | | 16 21 28.4 | |
| | | De | ePn | | 16 20 28 | |
| | | | eSn | | 16 21 22 | |
| | | | eSg | | 16 21 41 | |
| | | Southwest coast of Norway, | | | | |
| | | 58.3°N, 6.5°E. | | | | |
| | | Origin time = 16 19 15. | | | | |
| | | Solution confirmed by | | | | |
| | | Kongsberg readings. | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Sep. | 15 | Ud | i(Sg) | | 17 01 25.6 | |
| | | | i(Rg) | | 17 01 38.5 | |
| | | De | i | | 17 01 28.3 | |
| " | 15 | Ud | iP | | 19 06 14.2 | |
| | | Ionian Islands. | | | | |
| " | 15 | Up | iPKP | | 21 02 41.6 | |
| | | | i | | 21 02 47.7 | |
| | | | | | micr | sec |
| | | | PKP | Z' | 0.1 | 0.9 |
| | | Ki | e(PKP) | | 21 02 30 | |
| | | Sk | iPKP | | 21 02 35.1 | C |
| | | | i | | 21 02 43.3 | |
| | | Um | iPKP | | 21 02 29.9 | C |
| | | | i | | 21 02 43.8 | |
| | | Ud | iPKP | | 21 02 43.4 | C |
| | | | i | | 21 02 55.2 | |
| | | De | iPKP | | 21 02 51.9 | C |
| | | | i | | 21 03 03.2 | |
| | | Kermadec Islands (h = 35 km). | | | | |
| " | 15 | Ud | iP | | 23 28 07.6 | |
| | | Mozambique Channel (h = N). | | | | |
| " | 16 | Up | ePKP | | 00 55 10 | |
| | | | ipPKP | | 00 55 19.5 | |
| | | | | | micr | sec |
| | | | pPKP | Z' | 0.1 | 0.6 |
| | | Ki | i(pPKP) | | 00 55 04.3 | |
| | | Sk | iPKP | | 00 55 04.5 | |
| | | | ipPKP | | 00 55 13.8 | |
| | | Um | iPKP | | 00 55 00.3 | |
| | | Ud | iPKP | | 00 55 13.8 | C |
| | | | ipPKP | | 00 55 22.5 | |
| | | De | iPKP | | 00 55 22.5 | |
| | | | ipPKP | | 00 55 31.3 | |
| | | Kermadec Islands. | | | | |
| | | h = 35 km (Up,Sk,Ud,De). | | | | |
| " | 16 | Up | iP | | 02 02 44.5 | |
| | | | iSKS | | 02 13 09 | |
| | | | | | micr | sec |
| | | | Mx | E | 3.3 | 24 |
| | | | Mx | N | 3.1 | 19 |
| | | | Mx | Z | 3.9 | 20 |
| | | Ki | iP | | 02 02 15.3 | |
| | | | ipP | | 02 02 33.3 | |
| | | | iPP | | 02 05 59.5 | |
| | | | iSKS | | 02 12 37 | |
| | | | | | micr | sec |
| | | | Mx | E | 4.3 | 20 |
| | | | Mx | N | 3.1 | 19 |
| | | | Mx | Z | 8.2 | 20 |
| | | Sk | iP | | 02 02 40.0 | |
| | | (cont.) | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Sep. | 16 | (cont.) | | | | |
| | | Um | iP | | 02 02 26.6 | |
| | | | ipP | | 02 02 43.7 | |
| | | | iPP | | 02 06 21.8 | |
| | | | iSKS | | 02 12 49 | |
| | | Ud | eP | | 02 02 48 | |
| | | De | iP | | 02 02 59.3 | |
| | | Mariana Islands. | | | | |
| | | h = 60 km (Ki,Um). | | | | |
| | | M = 6.0 (Up,Ki). | | | | |
| " | 16 | Up | iP | | 03 16 58.7 | |
| | | Ki | iP | | 03 16 36.1 | |
| | | Sk | iP | | 03 17 04.1 | |
| | | Um | iP | | 03 16 44.8 | |
| | | Ud | iP | | 03 17 08.2 | |
| | | | i | | 03 17 26.0 | |
| | | De | iP | | 03 17 18.7 | |
| | | Formosa (h = N). | | | | |
| " | 16 | Up | iP | | 03 45 25.6 | |
| | | Ki | iP | | 03 44 53.8 | |
| | | Um | iP | | 03 45 06.9 | |
| | | Ud | iP | | 03 45 32.9 | |
| | | De | iP | | 03 45 44.8 | |
| | | Bonin Islands (h = 430 km). | | | | |
| " | 16 | Ki | iP | | 04 14 01.5 | |
| | | | | | micr | sec |
| | | | Mx | E | 0.7 | 17 |
| | | | Mx | Z | 1.1 | 18 |
| | | Um | iP | | 04 14 06.6 | |
| | | Ud | iP | | 04 14 25.8 | |
| | | Banda Sea (h = N). | | | | |
| " | 16 | Ki | eP | | 07 08 13 | |
| " | 16 | De | iP | | 10 19 20.8 | |
| " | 16 | Ud | iP | | 10 35 07.6 | |
| " | 16 | Up | i(Lgl) | | 11 33 20.7 | |
| | | Um | i(Sg) | | 11 33 55.5 | |
| | | Possibly Esthonia. | | | | |
| | | Explosion? | | | | |
| " | 16 | Up | iP | | 12 34 53.4 | |
| " | 16 | Ki | iPn | | 12 43 09.8 | |
| | | | iSn | | 12 43 57.8 | |
| | | | iLgl | | 12 44 11.6 | |
| | | Sk | iSn | | 12 46 01.5 | |
| | | | iLgl | | 12 46 59.5 | |
| | | Um | $iS^x$ | | 12 45 21.2 | |
| | | | iSg | | 12 45 41.8 | |
| | | (cont.) | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| 1970 | | | | |
|---|---|---|---|---|
| Sep. | 16 | (cont.) | | |
| | | Northwest Russia, | | |
| | | 69.0°N, 31.0°E. | | |
| | | Origin time = 12 42 06. | | |
| | | Explosion? | | |
| " | 16 | Ki | iP | 12 57 19.1 |
| | | Sk | iP | 12 57 12.4 |
| " | 16 | Up | iSg | 13 01 02.4 |
| | | Ki | eSg | 13 03 53 |
| | | Sk | iSg | 13 03 00.6 |
| | | Um | iSg | 13 01 52.0 |
| | | Ud | iSg | 13 02 01.1 |
| | | De | iSg | 13 02 29.9 |
| | | Esthonia. | | |
| | | Origin time = 12 59 08. | | |
| | | Explosion? | | |
| " | 16 | Ud | iP | 13 58 18.6 |
| | | | i(Sg) | 13 58 46.6 |
| " | 16 | Up | iSg | 15 11 13.5 |
| | | Ud | iSg | 15 11 28.8 |
| | | De | iPg | 15 08 59.7 |
| | | | iSg | 15 09 39.4 |
| | | Northern Poland, | | |
| | | 53.9°N, 16.6°E. | | |
| | | Origin time = 15 08 00. | | |
| | | Explosion? | | |
| " | 16 | Ud | iPg | 16 47 51.0 |
| | | | iSg | 16 48 14.7 |
| | | Origin time = 16 47 13. | | |
| | | Probably explosion. | | |
| " | 16 | Up | iP | 17 10 15.4 |
| | | Ki | iP | 17 10 19.3 |
| | | Sk | iP | 17 10 39.1 |
| | | Ud | iP | 17 10 32.1 D |
| | | De | iP | 17 10 30.0 |
| | | Tadzhik-Sinkiang (h = 170 km). | | |
| " | 16 | Up | iP | 19 59 14.5 |
| " | 16 | Ki | iP | 21 28 06.1 |
| " | 16 | Ud | iP | 21 33 29.7 |
| " | 16 | Ud | iP | 21 44 43.4 |
| " | 17 | Ki | eP | 02 50 20 |
| | | Um | iP | 02 50 48.6 |
| | | Alaska (h = 90 km). | | |

| 1970 | | | | |
|---|---|---|---|---|
| Sep. | 17 | Up | iP | 03 41 22.1 |
| | | Ki | iP | 03 40 50.8 C |
| | | Sk | iP | 03 41 19.3 C |
| | | Um | iP | 03 41 04.1 |
| | | Ud | iP | 03 41 29.2 |
| | | De | iP | 03 41 41.1 |
| | | Bonin Islands (h = 510 km). | | |
| " | 17 | Ki | iPKP | 05 02 22.0 |
| | | Sk | iPKP | 05 02 36.2 |
| | | Um | iPKP | 05 02 36.2 |
| | | Ud | ePKP | 05 02 38 |
| | | New Hebrides Islands (h = 25 km) | | |
| " | 17 | Up | iP | 07 12 12.3 |
| | | Ki | eP | 07 11 52 |
| | | Um | iP | 07 12 01.6 |
| | | Ud | iP | 07 12 19.6 |
| | | Banda Sea (h = N). | | |
| " | 17 | Ki | iPg | 08 19 51.6 |
| | | | iSg | 08 20 29.7 |
| | | Sk | iPg | 08 19 56.5 |
| | | | iSg | 08 20 35.9 |
| | | Um | iSn | 08 20 43.6 |
| | | | iSg | 08 20 57.8 |
| | | Ud | iSn | 08 21 40.0 |
| | | | iSg | 08 22 25.0 |
| | | Nordland, Norway, | | |
| | | 66.5°N, 14.0°E. | | |
| | | Origin time = 08 18 56. | | |
| " | 17 | Up | iP | 11 37 23.3 |
| | | Ki | eP | 11 38 13 |
| | | Um | iP | 11 38 03.1 |
| | | Ud | iP | 11 37 21.1 |
| | | De | iP | 11 37 01.4 |
| | | North Atlantic Ocean (h = N). | | |
| " | 17 | Up | iPKP | 11 46 37.3 |
| | | | i | 11 46 44.7 |
| | | Sk | iPKP | 11 46 32.0 C |
| | | Um | iPKP | 11 46 26.7 |
| | | Ud | iPKP | 11 46 38.4 |
| | | De | iPKP | 11 46 48.2 |
| " | 17 | Up | i(P) | 13 55 10.4 |
| " | 17 | Ki | iPKP | 23 33 37.5 |
| | | | ePKKP | 23 43 43 |
| | | Um | iPKP | 23 33 34.6 |
| | | Ud | iPKP | 23 33 25.9 |
| | | | iPKKP | 23 44 14.8 |
| | | Chile-Argentina (h = 120 km). | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| 1970 | | | | | | |
|---|---|---|---|---|---|---|
| Sep. | 18 | Up | iP | | 00 58 48.4 | |
| | | Ud | iP | | 00 58 35.5 | |
| " | 18 | Up | iP | | 02 10 00.8 | |
| | | | iS | | 02 12 39.2 | |
| | | | iSS | | 02 13 24.6 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 0.5 |
| | | | Mx | E | 5.1 | 18 |
| | | | Mx | N | 3.7 | 17 |
| | | | Mx | Z | 3.7 | 19 |
| | | Ki | iP | | 02 08 54.1 | D |
| | | | iS | | 02 10 48.9 | |
| | | | iT | | 02 17 43.9 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.3 | 0.5 |
| | | | Mx | E | 6.2 | 16 |
| | | | Mx | N | 6.3 | 16 |
| | | | Mx | Z | 2.7 | 14 |
| | | Sk | iP | | 02 09 00.0 | |
| | | | i | | 02 09 04.0 | |
| | | | iS | | 02 10 53.1 | |
| | | Um | iP | | 02 09 29.3 | |
| | | | iS | | 02 11 45.0 | |
| | | | iSS | | 02 12 19.4 | |
| | | Ud | iP | | 02 09 43.7 | |
| | | | i | | 02 09 47.3 | |
| | | | iS | | 02 12 17.0 | |
| | | | iSS | | 02 12 46.9 | |
| | | De | iP | | 02 10 29.2 | |
| | | | i | | 02 11 26.4 | |
| | | Jan Mayen (h = N). | | | | |
| | | M = 4.8 (Up,Ki). | | | | |
| " | 18 | Um | iP | | 03 51 12.8 | |
| | | Ud | iP | | 03 51 33.2 | |
| | | Hindu Kush. | | | | |
| " | 18 | Um | iPKP | | 04 33 06.0 | |
| | | Solomon Islands (h = 540 km). | | | | |
| " | 18 | Um | iPKP | | 08 04 57.2 | |
| | | Ud | iPKP | | 08 04 47.9 | |
| | | Chile (h = 30 km). | | | | |
| " | 18 | Up | iP | | 12 29 57.2 | |
| | | Ki | iP | | 12 30 54.2 | |
| | | Ud | iP | | 12 30 11.6 | |
| " | 18 | Ki | iP | | 12 51 28.4 | |
| | | De | eP | | 12 51 23 | |
| " | 18 | Up | iPg | | 13 25 29.7 | |
| | | | $iS^x$ | | 13 26 09.8 | |
| | | | iSg | | 13 26 16.8 | |
| | | (cont.) | | | | |

| 1970 | | | | | | |
|---|---|---|---|---|---|---|
| Sep. | 18 | (cont.) | | | | |
| | | Up | | | micr | sec |
| | | | Sg | Z' | 0.1 | 0.5 |
| | | Ki | iPn | | 13 26 41.5 | |
| | | | eSn | | 13 28 17 | |
| | | | i(Lgl) | | 13 29 05.0 | |
| | | Sk | eSn | | 13 27 37 | |
| | | | i(Lgl) | | 13 28 13.3 | |
| | | Um | iPg | | 13 26 02.0 | |
| | | | iSg | | 13 27 04.4 | |
| | | Ud | i(Pn) | | 13 25 57.4 | |
| | | | i | | 13 27 00.8 | |
| | | | iSg | | 13 27 20.8 | |
| | | De | i(Pn) | | 13 26 09.2 | |
| | | | iSn | | 13 27 17.3 | |
| | | | iSg | | 13 27 52.8 | |
| | | Esthonia, | | | | |
| | | 59.3°N, 24.1°E. | | | | |
| | | Origin time = 13 24 25. | | | | |
| | | Explosion? | | | | |
| " | 18 | Up | iP | | 16 17 54.3 | |
| | | | | | micr | sec |
| | | | Mx | E | 1.8 | 19 |
| | | | Mx | N | 1.1 | 19 |
| | | | Mx | Z | 3.0 | 19 |
| | | Ki | iP | | 16 18 07.6 | |
| | | | i | | 16 18 17.3 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.2 | 1.5 |
| | | | Mx | E | 1.3 | 16 |
| | | | Mx | N | 1.0 | 15 |
| | | | Mx | Z | 1.5 | 15 |
| | | Sk | iP | | 16 17 32.4 | |
| | | Um | iP | | 16 18 06.0 | |
| | | | iS | | 16 22 55 | |
| | | Ud | iP | | 16 17 36.2 | |
| | | De | iP | | 16 17 37.0 | |
| | | North Atlantic Ocean (h = N). | | | | |
| | | M = 4.8 (Up,Ki). | | | | |
| " | 18 | Up | iP | | 16 59 12.1 | |
| | | | i | | 16 59 26.7 | |
| | | Ki | iP | | 17 00 19.4 | |
| | | Sk | iP | | 16 59 51.0 | |
| | | Um | iP | | 16 59 44.1 | |
| | | Ud | iP | | 16 59 20.1 | |
| | | De | iP | | 16 58 48.0 | |
| | | Crete (h = 25 km). | | | | |
| " | 18 | Up | iPP | | 17 45 30.5 | |
| | | Um | i(PKP) | | 17 45 14.1 | |
| | | Ud | iPP | | 17 45 17.5 | C |
| | | Chile-Bolivia (h = 130 km). | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delar

1970
Sep. 18 Up eP 17 52 33
Sk eP 17 52 18
Um iP 17 52 08.1
i 17 52 13.8
Ud iP 17 52 26.2
i 17 52 39.4

" 18 Ud iP 19 41 40.1
i 19 41 56.7
De iP 19 41 03.0
iPP 19 41 37.5
Crete.

" 18 Ki iPKP 19 58 11.7
ipPKP 19 58 38.4
South Sandwich Islands.
h = 100 km (Ki).

" 18 Up iP 20 09 59.2
Sk iP 20 10 26.6
ePP 20 12 18
Um iP 20 10 08.5
Ud iP 20 10 16.2
i 20 10 25.2
De iP 20 10 20.8
i 20 11 41.7
i 20 12 12.4
Hindu Kush (h = N).

" 18 Up micr sec
Mx E 0.6 17
Mx N 0.7 18
Mx Z 1.1 17
Ki ePKP 23 07 52
micr sec
Mx E 1.1 21
Mx Z 1.5 21
Um iPKP 23 07 54.3
Ud iPKP 23 07 45.8
Chile (h = 20 km).
M = 5.6 (Up,Ki).

" 19 Up iP 00 55 07.3
micr sec
P Z' 0.1 0.6
Ki iP 00 54 33.3
Sk iP 00 55 04.2
iPP 00 57 56.2
Um iP 00 54 48.1 D
Ud iP 00 55 15.6 D
i 00 55 28.8
iPP 00 58 14.6
De iP 00 55 28.4
South of Japan (h = 370 km).

1970
Sep. 19 Up iP 01 15 06.7
micr sec
Mx E 0.6 12
Mx N 1.7 17
Mx Z 0.9 15
Ki iP 01 14 44.0
micr sec
Mx E 0.7 14
Mx N 1.2 11
Mx Z 0.8 14
Sk iP 01 15 21.0
Um iP 01 14 49.2
Ud iP 01 15 21.8
i 01 16 16.9
De iP 01 15 31.1
i 01 15 35.2
Mongolia (h = N).
M = 5.1 (Up,Ki).

" 19 Sk iP 02 16 37.7
Colombia (h = 100 km).

" 19 Ki iP 02 31 26.0
Ud iP 02 32 12.0
Aleutian Islands (h = N).

" 19 Ud iP 04 12 41.9
North Atlantic Ocean (h = N).

" 19 Up Mx 07 45
micr sec
Mx E 1.1 19
Mx N 1.0 19
Mx Z 1.9 20
Ki Mx 07 47
micr sec
Mx E 5.1 20
Mx Z 1.4 20
Chile (h = 20 km).
M = 5.9 (Up,Ki).

" 19 Up iP 07 34 16.5

" 19 Ki iP 07 59 53.3
Sk iP 07 59 58.6
iS 08 01 56.5
Um iP 08 00 26.6
Jan Mayen.
Origin time = 07 57 29.

" 19 Ki iPn 09 16 43.8
iSn 09 17 43.4
iLgl 09 18 02.0
Sk iLgl 09 20 30.5
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | |
|---|---|---|---|---|---|
| 1970 Sep. | 19 | (cont.) | | | |
| | | Um | iSn | 09 18 21.5 | |
| | | | iSg | 09 18 55.5 | |
| | | Northwest Russia, 67.5°N, 33.5°E. | | | |
| | | Origin time = 09 15 25. | | | |
| | | Explosion? | | | |
| " | 19 | Ki | i(P) | 10 15 12.1 | |
| " | 19 | Ki | iP | 14 34 09.8 | C |
| | | Sk | iP | 14 34 13.1 | |
| | | | iS | 14 36 16.0 | |
| | | Um | iP | 14 34 44.5 | |
| | | Jan Mayen. | | | |
| | | Origin time = 14 31 45. | | | |
| " | 19 | Ki | iP | 15 27 24.4 | |
| | | Sk | iP | 15 27 28.7 | |
| | | Probably Jan Mayen. | | | |
| " | 19 | Ki | iP | 15 32 01.6 | |
| | | Sk | iP | 15 32 05.6 | |
| | | | iS | 15 34 03.3 | |
| | | Um | i | 15 33 09.7 | |
| | | Jan Mayen. | | | |
| | | Origin time = 15 29 37. | | | |
| " | 19 | Ki | iP | 16 29 36.4 | |
| | | Sk | eP | 16 29 41 | |
| | | Possibly Jan Mayen. | | | |
| " | 19 | Ki | iP | 16 37 02.4 | |
| | | Sk | iP | 16 37 09.0 | |
| | | | iS | 16 39 07.8 | |
| | | Jan Mayen. | | | |
| | | Origin time = 16 34 39. | | | |
| " | 19 | Ki | iP | 16 48 28.9 | |
| | | Sk | eP | 16 48 33 | |
| | | Um | iP | 16 49 03.0 | |
| | | Jan Mayen. | | | |
| | | Origin time = 16 46 04. | | | |
| " | 19 | Up | iP | 16 54 28.8 | |
| | | Ki | iP | 16 53 35.4 | |
| | | Sk | eP | 16 54 08 | |
| | | Um | iP | 16 54 01.5 | |
| | | Ud | iP | 16 54 29.9 | |
| | | Aleutian Islands (h = 45 km). | | | |
| " | 19 | Ki | iP | 18 10 04.5 | |
| | | Sk | iP | 18 10 09.0 | |
| | | Probably Jan Mayen. | | | |
| | | Origin time = 18 07 40. | | | |
| 1970 Sep. | 19 | Ki | iP | 19 49 14.3 | |
| | | Sk | eP | 19 49 20 | |
| | | Probably Jan Mayen. | | | |
| | | Origin time = 19 46 50. | | | |
| " | 19 | Ki | iP | 20 59 39.1 | |
| | | | i(SS) | 21 01 48.4 | |
| | | Sk | iP | 20 59 43.0 | |
| | | | iS | 21 01 39.2 | |
| | | Um | i | 21 00 45.0 | |
| | | Ud | iP | 21 00 28.2 | |
| | | Jan Mayen (h = N). | | | |
| " | 19 | Ki | iP | 21 05 15.2 | |
| | | | iS | 21 07 09.1 | |
| | | Sk | iP | 21 05 19.6 | |
| | | | iS | 21 07 14.2 | |
| | | Um | iP | 21 05 53.7 | |
| | | | iS | 21 08 06.0 | |
| | | Jan Mayen. | | | |
| | | Origin time = 21 02 50. | | | |
| " | 19 | Ki | iP | 21 35 17.0 | |
| | | | iS | 21 37 09.5 | |
| | | Sk | iP | 21 35 21.3 | |
| | | | iS | 21 37 18.0 | |
| | | Um | eP | 21 35 46 | |
| | | | iS | 21 38 09.2 | |
| | | Ud | iP | 21 36 05.8 | |
| | | Jan Mayen (h = N). | | | |
| " | 19 | Ki | iP | 22 00 29.9 | |
| | | | iS | 22 02 24.2 | |
| | | Sk | iP | 22 00 33.7 | |
| | | | iS | 22 02 29.0 | |
| | | Um | iP | 22 01 03.5 | |
| | | | iS | 22 03 21.1 | |
| | | Ud | iP | 22 01 17.0 | |
| | | Jan Mayen (h = N). | | | |
| " | 20 | Ud | iPKP | 00 01 08.4 | |
| | | Chile (h = N). | | | |
| " | 20 | Up | iP | 08 49 58.5 | |
| | | Ki | iP | 08 49 23.7 | |
| | | Um | iP | 08 49 38.5 | |
| | | South of Japan (h = N). | | | |
| " | 20 | Up | iP | 10 49 54.1 | |
| | | Ki | iP | 10 49 19.7 | C |
| | | | i | 10 49 39.5 | |
| | | Sk | iP | 10 49 49.7 | |
| | | Um | iP | 10 49 34.9 | |
| | | | i | 10 49 50.6 | |
| | | Ud | iP | 10 50 00.9 | C |
| | | | i | 10 50 16.8 | |
| | | (cont.) | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | |
|---|---|---|---|---|---|
| 1970 Sep. | 20 | (cont.) | | | |
| | | De | eP | 10 50 14 | |
| | | South of Japan (h = N). | | | |
| " | 20 | Sk | iSg | 15 41 45.3 | |
| | | Ud | iSg | 15 41 12.4 | |
| | | | i | 15 41 20.9 | |
| | | De | iSg | 15 41 54.4 | |
| | | Southwest Norway, 59.7°N, 6.6°E. | | | |
| | | Origin time = 15 39 13. | | | |
| | | Solution obtained by combination with Bergen readings. | | | |
| " | 20 | Ki | iP | 16 54 22.2 | |
| | | | i(SS) | 16 56 33.4 | |
| | | Sk | iP | 16 54 26.9 | |
| | | | iS | 16 56 21.8 | |
| | | Jan Mayen. | | | |
| | | Origin time = 16 51 57. | | | |
| " | 20 | Ki | eP | 17 08 14 | |
| | | | iS | 17 10 07.9 | |
| | | | i(SS) | 17 10 25.4 | |
| | | Sk | iP | 17 08 19.4 | |
| | | | iS | 17 10 14.5 | |
| | | Um | i(SS) | 17 11 36.5 | |
| | | Jan Mayen. | | | |
| | | Origin time = 17 05 50. | | | |
| " | 20 | Up | iP | 17 15 28.2 | |
| | | Ki | eP | 17 15 12 | |
| | | Sk | iP | 17 15 10.2 | |
| | | Um | iP | 17 15 23.5 | |
| | | De | eP | 17 15 26 | |
| | | Mexico (h = N). | | | |
| " | 20 | Up | iP | 18 00 19.2 | |
| | | Ki | eP | 17 59 22 | |
| | | Um | iP | 17 59 49.1 | |
| | | Ud | iP | 18 00 20.5 | |
| | | Aleutian Islands (h = 15 km). | | | |
| " | 21 | Ud | iPKP | 01 30 36.5 | |
| | | De | iPKP | 01 30 48.1 C | |
| | | | i | 01 31 01.2 | |
| | | Tonga-Kermadec Islands (h = N). | | | |
| " | 21 | Up | iSn | 02 07 02.6 | |
| | | | iLgl | 02 07 40.1 | |
| | | Ki | iPn | 02 04 50.5 | |
| | | | iSn | 02 05 24.0 | |
| | | (cont.) | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1970 Sep. | 21 | (cont.) | | | |
| | | Ki | iSg | 02 05 33.2 | |
| | | | | micr | sec |
| | | | Sg Z' | 0.2 | 0.6 |
| | | Sk | iPn | 02 04 56.1 | |
| | | | iSn | 02 05 34.5 | |
| | | | iSg | 02 05 43.3 | |
| | | Um | iPn | 02 05 04.0 | D |
| | | | iSn | 02 05 50.1 | |
| | | | iSg | 02 06 06.0 | |
| | | Ud | iLgl | 02 07 29.2 | |
| | | De | iLgl | 02 09 25.2 | |
| | | Nordland, Norway, 66.5°N, 14.6°E. | | | |
| | | Origin time = 02 04 07. | | | |
| " | 21 | Ki | e(P) | 09 11 56 | |
| | | Ud | iP | 09 11 43.4 | |
| " | 21 | Ud | iP | 12 30 38.7 | |
| | | Hindu Kush. | | | |
| " | 21 | Up | iPKP | 15 59 05.9 | |
| | | | i | 15 59 10.4 | |
| | | | | micr | sec |
| | | | PKP Z' | 0.1 | 0.5 |
| | | Sk | iPKP | 15 59 00.1 | |
| | | Um | iPKP | 15 58 54.2 | |
| | | Ud | iPKP | 15 59 07.4 | |
| | | | i | 15 59 13.6 | |
| | | De | iPKP | 15 59 16.0 | |
| | | | i | 15 59 27.1 | |
| | | Kermadec Islands (h = 370 km). | | | |
| " | 21 | Ud | iP | 16 05 18.7 | |
| " | 21 | Up | iSg | 16 33 52.6 | |
| | | Ud | i(Sn) | 16 33 19.8 | |
| | | | iSg | 16 33 56.7 | |
| | | De | iPg | 16 32 02.9 | |
| | | | iSg | 16 32 19.7 | |
| | | South Baltic Sea, 55.9°N, 15.7°E. | | | |
| | | Origin time = 16 31 37. | | | |
| | | Explosion? | | | |
| " | 21 | Up | iP | 19 13 02.1 | |
| | | Um | iP | 19 13 31.5 | |
| | | Ud | iP | 19 13 11.1 | |
| | | De | iP | 19 12 38.7 | |
| | | Turkey (h = 30 km). | | | |
| " | 21 | Ud | iP | 19 34 43.3 | |
| | | De | iP | 19 34 51.0 | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | |
|---|---|---|---|---|---|
| 1970 Sep. | 22 | Up | iP | 06 43 01.6 | |
| | | Sk | eP | 06 43 41 | |
| | | Ud | iP | 06 43 09.3 | |
| | | Greece. | | | |
| " | 22 | Up | eP | 06 51 02 | |
| | | Sk | iP | 06 51 38.2 | |
| | | Ud | iP | 06 51 05.9 | D |
| | | De | eP | 06 50 32 | |
| | | Greece (h = N). | | | |
| " | 22 | Ud | i(P) | 14 35 45.5 | |
| " | 22 | Ud | iP | 20 07 54.7 | |
| | | Japan (h = 70 km). | | | |
| " | 22 | Um | iP | 22 46 20.8 | |
| | | Ud | iP | 22 46 46.5 | D |
| | | Aleutian Islands (h = N). | | | |
| " | 23 | Up | iP | 06 01 04.5 | |
| | | Um | i(P) | 06 00 45.3 | |
| | | Ud | iP | 06 00 59.2 | |
| " | 23 | Up | i(P) | 11 34 25.0 | |
| | | Ud | iP | 11 34 15.3 | |
| " | 23 | Ki | iPg | 12 07 33.5 | |
| | | | iSg | 12 08 13.2 | |
| | | Sk | iPg | 12 07 39.8 | |
| | | | iSg | 12 08 17.2 | |
| | | Um | iSg | 12 08 41.3 | |
| | | Nordland, Norway, 66.3°N, 14.5°E. | | | |
| | | Origin time = 12 06 44. | | | |
| " | 23 | Ki | iP | 12 15 53.0 | |
| | | Sk | iP | 12 16 22.0 | |
| | | Ud | iP | 12 16 45.9 | |
| | | De | iP | 12 17 10.5 | |
| | | Alaska (h = 100 km). | | | |
| " | 23 | Ki | iPn | 12 45 25.2 | |
| | | | iSn | 12 46 11.3 | |
| | | | iLgl | 12 46 25.6 | |
| | | Sk | i(Lgl) | 12 49 12.0 | |
| | | Probably northwest Russia. | | | |
| | | Origin time = 12 44 24. | | | |
| | | Explosion? | | | |
| " | 23 | Up | Mx | 13 17 | |
| | | | | micr | sec |
| | | | Mx E | 3.2 | 21 |
| | | | Mx N | 5.0 | 19 |
| | | | Mx Z | 6.7 | 19 |
| | | (cont.) | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1970 Sep. | 23 | (cont.) | | | |
| | | Ki | Mx | 13 09 | |
| | | | | micr | sec |
| | | | Mx E | 4.7 | 20 |
| | | | Mx N | 4.8 | 20 |
| | | | Mx Z | 6.1 | 22 |
| | | Solomon Islands (h = 40 km). | | | |
| | | M = 6.2 (Up,Ki). | | | |
| " | 23 | Up | iSg | 14 59 07.3 | |
| | | Ud | iPg | 14 58 51.7 | |
| | | | iSg | 14 59 19.3 | |
| | | | iRg | 14 59 31.0 | |
| | | Origin time = 14 58 10. | | | |
| | | Explosion? | | | |
| " | 23 | Up | iP | 21 13 52.3 | |
| | | | | micr | sec |
| | | | P Z' | 0.2 | 1.0 |
| | | Ki | iP | 21 12 58.6 | |
| | | Sk | iP | 21 13 31.9 | |
| | | Ud | iP | 21 13 52.2 | |
| | | | ipP | 21 14 05.8 | |
| | | Aleutian Islands. | | | |
| | | h = 50 km (Ud). | | | |
| " | 23 | Sk | iP | 23 00 51.9 | |
| | | Ud | iP | 23 01 00.8 | |
| | | Guatemala (h = 80 km). | | | |
| " | 23 | Ud | iP | 23 08 28.1 | |
| | | Guatemala (h = 80 km). | | | |
| " | 24 | Up | Mx | 00 26 | |
| | | | | micr | sec |
| | | | Mx E | 1.4 | 18 |
| | | | Mx N | 2.3 | 19 |
| | | | Mx Z | 3.0 | 19 |
| | | Ki | Mx | 00 23 | |
| | | | | micr | sec |
| | | | Mx E | 2.3 | 18 |
| | | | Mx N | 1.7 | 18 |
| | | | Mx Z | 3.4 | 19 |
| | | Solomon Islands (h = 45 km). | | | |
| | | M = 5.9 (Up,Ki). | | | |
| " | 24 | Ud | iP | 06 19 45.2 | |
| | | Colombia (h = 160 km). | | | |
| " | 24 | Ki | iP | 06 26 07.0 | |
| | | Um | iP | 06 26 13.8 | |
| | | Ud | iP | 06 26 47.3 | |
| | | De | iP | 06 27 00.0 | |
| | | USSR-Mongolia. | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Sep. | 24 | Up | iSg | | 16 13 25.9 | |
| | | Sk | iSg | | 16 14 56.8 | |
| | | Ud | iPg | | 16 12 41.8 | |
| | | | iSg | | 16 13 04.4 | |
| | | | iRg | | 16 13 16.6 | |
| | | De | eSg | | 16 13 14 | |
| | | Västergötland, Sweden, near 58.4°N, 14.2°E. Origin time = 16 12 08. Explosion? | | | | |
| " | 24 | Ki | iSg | | 16 20 06.1 | |
| | | Sk | e(Pg) | | 16 19 38 | |
| | | | iSg | | 16 20 09.3 | |
| | | Um | iSg | | 16 20 31.8 | |
| | | Ud | iSg | | 16 21 59.2 | |
| | | Nordland, Norway, 66.3°N, 14.5°E. Origin time = 16 18 36. | | | | |
| " | 24 | Up | iP | | 16 54 56.4 | |
| | | | | | micr | sec |
| | | | Mx | E | 1.7 | 18 |
| | | | Mx | N | 2.4 | 17 |
| | | | Mx | Z | 1.6 | 17 |
| | | Ki | iP | | 16 54 05.6 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.2 | 1.5 |
| | | | Mx | E | 2.6 | 18 |
| | | | Mx | N | 3.0 | 17 |
| | | | Mx | Z | 2.3 | 17 |
| | | Sk | iP | | 16 54 41.8 | |
| | | Ud | iP | | 16 55 03.4 | C |
| | | Kamchatka (h = 35 km). M = 5.6 (Up,Ki). | | | | |
| " | 24 | Ki | iP | | 18 42 26.1 | |
| | | Sk | iP | | 18 43 12.1 | |
| | | Um | iP | | 18 43 19.0 | |
| | | Ud | iP | | 18 43 56.0 | |
| | | Svalbard (h = N). | | | | |
| " | 24 | Sk | iP | | 21 31 25.1 | |
| | | Ud | iP | | 21 30 54.7 | |
| | | De | iP | | 21 30 22.0 | |
| | | Crete (h = 20 km). | | | | |
| " | 24 | Ud | iP | | 21 49 00.7 | |
| " | 25 | Up | eP | | 00 45 38 | |
| | | | i | | 00 47 38.3 | |
| | | Ki | iP | | 00 45 02.9 | |
| | | | i | | 00 45 19.1 | |
| " | 25 | Ud | iP | | 06 15 56.6 | C |
| | | (cont.) | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Sep. | 25 | (cont.) | | | | |
| | | De | iP | | 06 15 54.8 | |
| | | Tadzhik SSR. | | | | |
| " | 25 | Ud | i(Sg) | | 11 13 00.0 | |
| | | De | i(Sg) | | 11 13 19.9 | |
| " | 25 | Ud | i(P) | | 18 20 23.4 | |
| " | 26 | Up | iP | | 06 18 55.1 | |
| | | Sk | iP | | 06 19 37.1 | |
| | | Ud | iP | | 06 19 03.8 | |
| | | Greece (h = N). | | | | |
| " | 26 | Up | iP | | 12 15 18.3 | |
| | | | iSKS | | 12 25 46 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.3 | 1.1 |
| | | | Mx | E | 11 | 22 |
| | | | Mx | N | 14 | 19 |
| | | | Mx | Z | 17 | 22 |
| | | Ki | iP | | 12 15 17.5 | C |
| | | | iSKS | | 12 25 43 | |
| | | | iS | | 12 25 56 | |
| | | | | | micr | sec |
| | | | P | Z' | 1.5 | 1.8 |
| | | | Mx | E | 19 | 21 |
| | | | Mx | N | 14 | 22 |
| | | | Mx | Z | 16 | 20 |
| | | Sk | iP | | 12 15 03.7 | C |
| | | Um | iP | | 12 15 19.0 | C |
| | | | iS | | 12 25 55 | |
| | | Ud | iP | | 12 15 06.9 | C |
| | | De | iP | | 12 15 08.3 | C |
| | | Colombia (h = 8 km). m = 6.7, M = 6.5 (Up,Ki). Relatively long periods dominate in our P Z' records. | | | | |
| " | 26 | Up | eP | | 15 09 49 | |
| | | | | | micr | sec |
| | | | Mx | E | 2.1 | 22 |
| | | | Mx | N | 1.0 | 19 |
| | | | Mx | Z | 2.9 | 22 |
| | | Ki | iP | | 15 09 49.7 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.2 | 1.5 |
| | | | Mx | E | 1.6 | 18 |
| | | | Mx | Z | 1.1 | 18 |
| | | Sk | iP | | 15 09 35.3 | |
| | | Um | iP | | 15 09 52.1 | |
| | | | i | | 15 09 56.6 | |
| | | Ud | iP | | 15 09 38.8 | |
| | | | i | | 15 09 43.0 | |
| | | De | iP | | 15 09 41.6 | C |
| | | Colombia (h = 15 km). M = 5.5 (Up,Ki). | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Sep. | 26 | Ki | iP | | 16 44 37.2 | | |
| | | Sk | iP | | 16 44 22.4 | | |
| | | Um | iP | | 16 44 38.8 | | |
| | | Colombia (h = N). | | | | | |
| " | 26 | Sk | iP | | 18 25 59.7 | | |
| | | Colombia (h = N). | | | | | |
| " | 27 | Up | i(P) | | 02 02 42.9 | | |
| | | Sk | eP | | 02 01 48 | | |
| " | 27 | Up | iP | | 03 51 22.7 | | |
| | | | iSKS | | 04 01 52 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.1 | 1.0 | |
| | | | Mx | E | 17 | 22 | |
| | | | Mx | N | 7.7 | 22 | |
| | | | Mx | Z | 25 | 22 | |
| | | Ki | iP | | 03 51 23.6 | | |
| | | | i | | 03 51 26.6 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.7 | 1.5 | |
| | | | Mx | E | 26 | 22 | |
| | | | Mx | N | 11 | 21 | |
| | | | Mx | Z | 20 | 21 | |
| | | Sk | iP | | 03 51 08.8 | | |
| | | | i | | 03 51 12.4 | | |
| | | Um | iP | | 03 51 26.9 | | |
| | | Ud | iP | | 03 51 13.1 | | |
| | | | i | | 03 51 16.0 | | |
| | | De | iP | | 03 51 15.8 | | |
| | | | i | | 03 51 18.7 | | |
| | | Colombia (h = 8 km). | | | | | |
| | | m = 6.4, M = 6.5 (Up,Ki). | | | | | |
| | | Double P. | | | | | |
| " | 27 | Ki | iPn | | 04 32 33.2 | | |
| | | | iSn | | 04 33 33.0 | | |
| | | | iLgl | | 04 33 52.5 | | |
| | | Sk | i(Lgl) | | 04 36 21.0 | | |
| | | Probably northwest Russia. | | | | | |
| | | Origin time = 04 31 15. | | | | | |
| | | Explosion? | | | | | |
| " | 27 | Up | iP | | 06 08 49.5 | | |
| " | 27 | Up | iP | | 10 24 19.6 | | |
| | | Ki | iP | | 10 23 59.8 | | |
| | | Philippine Islands (h = N). | | | | | |
| " | 27 | Up | iSg | | 11 49 28.2 | | |
| | | Ki | eSn | | 11 46 07 | | |
| | | | iSg | | 11 46 27.0 | | |
| | | Sk | iSg | | 11 48 56.1 | | |
| | | (cont.) | | | | | |
| 1970 Sep. | 27 | (cont.) | | | | | |
| | | Um | iSg | | 11 47 19.7 | | |
| | | Northwest Russia. | | | | | |
| | | Explosion? | | | | | |
| " | 27 | Up | iP | | 16 01 11.7 | | |
| | | Ki | | | micr | sec | |
| | | | Mx | E | 1.9 | 16 | |
| | | Sk | iP | | 16 01 55.8 | | |
| | | Um | eP | | 16 02 00 | | |
| | | Ud | iP | | 16 01 18.3 | | |
| | | De | eP | | 16 00 51 | | |
| | | Greece-Albania (h = 25 km). | | | | | |
| " | 27 | Up | iP | | 16 07 45.3 | | |
| | | Ud | iP | | 16 07 51.4 | | |
| | | Greece-Albania. | | | | | |
| " | 27 | Up | iP | | 16 38 30.8 | | |
| | | Sk | iP | | 16 39 13.4 | | |
| | | Ud | iP | | 16 38 37.6 | | |
| | | Greece-Albania. | | | | | |
| " | 28 | Up | iSg | | 04 18 43.9 | | |
| | | Sk | iSg | | 04 19 49.1 | | |
| | | Ud | iPg | | 04 18 08.1 | | |
| | | | iSg | | 04 18 15.5 | | |
| | | Central Sweden, | | | | | |
| | | 60.3°N, 14.7°E. | | | | | |
| | | Origin time = 04 17 56. | | | | | |
| " | 28 | Up | iP | | 04 32 29.2 | | |
| | | Ki | iP | | 04 31 35.2 | | |
| | | Sk | iP | | 04 32 05.5 | | |
| | | Um | iP | | 04 32 01.8 | | |
| | | | iPcP | | 04 32 42.2 | | |
| | | Ud | iP | | 04 32 27.5 | | |
| | | De | iP | | 04 32 50.8 | | |
| | | Unimak Island (h = 80 km). | | | | | |
| " | 28 | Up | iPKP | | 07 19 45.2 | | |
| | | | | | micr | sec | |
| | | | PKP | Z' | 0.1 | 0.5 | |
| | | Ki | iPKP | | 07 20 00.0 | | |
| | | Sk | iPKP | | 07 19 50.6 | | |
| | | Um | iPKP | | 07 19 53.6 | | |
| | | Ud | iPKP | | 07 19 43.3 | C | |
| | | South Sandwich Islands | | | | | |
| | | (h = 110 km). | | | | | |
| " | 28 | Up | iP | | 11 44 45.4 | | |
| | | Ki | eP | | 11 44 43 | | |
| | | Sk | iP | | 11 44 15.5 | | |
| | | Ud | iP | | 11 44 22.3 | | |
| | | North Atlantic Ocean (h = N). | | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De= Delary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Sep. | 28 | Up | iP | | 15 44 29.2 | | |
| | | Ki | iP | | 15 43 43.1 | | |
| | | Um | iP | | 15 44 03.8 | | |
| | | Ud | iP | | 15 44 34.8 | | |
| | | Kurile Islands (h = N). | | | | | |
| " | 28 | Up | iP | | 17 32 27.3 | D | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.3 | 0.5 | |
| | | Ki | iP | | 17 31 33.5 | D | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.2 | 1.0 | |
| | | Sk | iP | | 17 32 10.5 | D | |
| | | Um | iP | | 17 31 58.5 | D | |
| | | Ud | iP | | 17 32 30.9 | D | |
| | | De | iP | | 17 32 52.2 | D | |
| | | Kamchatka (h = 120 km). | | | | | |
| | | m = 6.3 (Up,Ki). | | | | | |
| " | 28 | Ki | iP | | 20 00 25.8 | | |
| | | Ud | iP | | 19 59 29.8 | | |
| | | De | iP | | 19 58 57.6 | C | |
| | | Turkey (h = 35 km). | | | | | |
| " | 28 | Up | iP | | 23 55 04.8 | | |
| | | Ki | iP | | 23 55 09.7 | | |
| | | Sk | iP | | 23 54 39.5 | | |
| | | | i | | 23 55 00.8 | | |
| | | Um | iP | | 23 55 09.3 | | |
| | | Ud | iP | | 23 54 45.8 | | |
| | | | i | | 23 55 12.2 | | |
| | | De | iP | | 23 54 54.5 | | |
| | | | i | | 23 55 12.9 | | |
| | | North Atlantic Ocean (h = N). | | | | | |
| " | 29 | Up | iP | | 00 02 36.9 | | |
| | | Ki | iP | | 00 02 33.8 | | |
| | | Sk | iP | | 00 02 06.5 | | |
| | | Um | eP | | 00 02 43 | | |
| | | Ud | iP | | 00 02 17.6 | | |
| | | De | eP | | 00 02 27 | | |
| | | North Atlantic Ocean (h = N). | | | | | |
| " | 29 | Up | iP | | 04 55 07.9 | | |
| | | | ipP | | 04 55 55.9 | | |
| | | | iPP | | 04 58 33.6 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.1 | 1.3 | |
| | | | pP | Z' | 0.1 | 0.8 | |
| | | Ki | iP | | 04 55 02.3 | | |
| | | | ipP | | 04 55 49.9 | | |
| | | | iPP | | 04 58 23.8 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.1 | 1.3 | |
| | | | pP | Z' | 0.9 | 2.1 | |
| | | (cont.) | | | | | |
| 1970 Sep. | 29 | (cont.) | | | | | |
| | | Sk | iP | | 04 54 52.1 | C | |
| | | | ipP | | 04 55 39.3 | | |
| | | | iPP | | 04 58 08.2 | | |
| | | Um | iP | | 04 55 08.0 | C | |
| | | | ipP | | 04 55 56.0 | | |
| | | | iPP | | 04 58 34.4 | | |
| | | Ud | iP | | 04 54 58.4 | C | |
| | | | ipP | | 04 55 45.9 | | |
| | | De | iP | | 04 55 03.7 | C | |
| | | | ipP | | 04 55 51.6 | | |
| | | Nicaragua. | | | | | |
| | | h = 190 km (Up,Ki,Sk,Um,Ud, De). | | | | | |
| | | m = 5.5 (Up,Ki). | | | | | |
| " | 29 | Up | ePKP | | 06 22 28 | | |
| | | | iPKS | | 06 25 44.5 | | |
| | | | | | micr | sec | |
| | | | Mx | E | 3.1 | 20 | |
| | | | Mx | N | 5.0 | 22 | |
| | | | Mx | Z | 5.8 | 22 | |
| | | Ki | iPKP | | 06 22 13.0 | | |
| | | | iPKKP | | 06 32 16.3 | | |
| | | | | | micr | sec | |
| | | | PKP | Z' | 0.1 | 1.0 | |
| | | | Mx | E | 4.7 | 20 | |
| | | | Mx | N | 2.3 | 21 | |
| | | | Mx | Z | 3.8 | 20 | |
| | | Sk | iPKP | | 06 22 24.7 | | |
| | | | iPKS | | 06 25 57.1 | | |
| | | Um | iPKP | | 06 22 18.9 | | |
| | | | iPKKP | | 06 32 03 | | |
| | | Ud | iPKP | | 06 22 28.9 | | |
| | | | iPKS | | 06 25 47.6 | | |
| | | De | iPKP | | 06 22 35.6 | C | |
| | | | iPKS | | 06 25 58.6 | | |
| | | | i | | 06 26 34.3 | | |
| | | New Hebrides Islands (h = 60 km). | | | | | |
| | | M = 6.3 (Up,Ki). | | | | | |
| " | 29 | Up | i(P) | | 08 13 23.5 | | |
| | | Ki | i(P) | | 08 13 02.2 | | |
| | | Um | iP | | 08 12 59.6 | | |
| " | 29 | Ud | iPKP | | 12 30 30.2 | | |
| | | New Hebrides Islands (h = 25 km). | | | | | |
| " | 29 | Up | iP | | 15 44 54.6 | | |
| | | | i | | 15 45 42.1 | | |
| | | Um | i(P) | | 15 45 04.1 | | |
| " | 29 | Up | iP | | 16 57 03.1 | | |
| | | (cont.) | | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970
Sep. 29 (cont.)

| | | | | |
|---|---|---|---|---|
| Up | | | micr | sec |
| | Mx | N | 0.8 | 16 |
| Ki | iP | | 16 56 | 41.1 |
| Sk | iP | | 16 57 | 12.4 |
| Um | iP | | 16 56 | 49.1 |
| | i | | 16 56 | 54.2 |
| Ud | iP | | 16 57 | 12.4 |
| | i | | 16 57 | 17.8 |

Philippine Islands (h = 50 km).

" 29

| | | | |
|---|---|---|---|
| Up | iP | 19 37 | 53.2 C |
| Ki | iP | 19 37 | 15.0 |
| Sk | iP | 19 37 | 47.9 |
| Um | iP | 19 37 | 31.9 |
| | ipP | 19 37 | 43.0 |
| Ud | iP | 19 38 | 00.5 C |
| De | iP | 19 38 | 15.1 |

Japan.
h = 40 km (Um).

" 30

| | | | | |
|---|---|---|---|---|
| Up | iP | 10 04 | 24.4 | |
| | | | micr | sec |
| | Mx | E | 2.3 | 20 |
| | Mx | N | 4.7 | 21 |
| | Mx | Z | 2.2 | 17 |
| Ki | iP | 10 04 | 03.2 | |
| | | | micr | sec |
| | Mx | E | 3.7 | 15 |
| | Mx | N | 3.2 | 16 |
| | Mx | Z | 2.2 | 13 |
| Sk | iP | 10 04 | 36.7 | |
| Um | iP | 10 04 | 13.8 | |
| Ud | iP | 10 04 | 33.2 | |
| De | iP | 10 04 | 46.2 | |

Philippine Islands (h = N).
M = 5.9 (Up,Ki).

" 30

| | | |
|---|---|---|
| Ki | iPKP | 10 25 41.0 |
| Sk | iPKP | 10 25 43.1 |
| Um | iPKP | 10 25 38.3 |
| Ud | iPKP | 10 25 47.3 |
| De | ePKP | 10 25 52 |

New Hebrides Islands
(h = 70 km).

" 30

| | | |
|---|---|---|
| Up | iSg | 10 48 00.1 |
| Sk | eSg | 10 48 53 |
| Ud | iPg | 10 46 44.1 |
| | iSg | 10 47 14.1 |
| De | iPg | 10 46 47.7 |
| | iSg | 10 47 17.6 |
| | iRg | 10 47 32.2 |

Skagerrak,
58.3°N, 10.9°E.
Origin time = 10 46 00.

1970
Sep. 30

| | | | |
|---|---|---|---|
| Ud | iP | 10 55 | 58.0 |

Ionian Islands.

" 30

| | | | |
|---|---|---|---|
| Sk | iP | 11 28 | 50.2 |
| Ud | iP | 11 28 | 34.8 |

" 30

| | | | |
|---|---|---|---|
| Up | iP | 15 39 | 12.7 |

" 30

| | | | |
|---|---|---|---|
| Ud | iP | 16 27 | 25.6 |

Tadzhik SSR.

" 30

| | | | |
|---|---|---|---|
| Ki | iP | 18 23 | 49.7 |
| | i | 18 24 | 01.8 |
| Sk | iP | 18 24 | 15.3 |
| Ud | iP | 18 24 | 45.0 |

Alaska (h = 100 km).

" 30

| | | | |
|---|---|---|---|
| Ki | iP | 21 32 | 22.9 |

Markus Båth
September 24, 1971

SEISMOLOGICAL INSTITUTE
BOX 517
S-751 20 UPPSALA 1
SWEDEN

# S E I S M O L O G I C A L  B U L L E T I N

## U P P S A L A,  K I R U N A,  S K A L S T U G A N,  U M E Å,

## U D D E H O L M  and  D E L A R Y

| | | | |
|---|---|---|---|
| Uppsala | (Up): | 59°51.5'N, | 17°37.6'E; h = 14 m |
| Kiruna | (Ki): | 67°50.4'N, | 20°25.0'E; h = 390 m |
| Skalstugan | (Sk): | 63°34.8'N, | 12°16.8'E; h = 580 m |
| Umeå | (Um): | 63°48.9'N, | 20°14.2'E; h = 16 m |
| Uddeholm | (Ud): | 60°05.4'N, | 13°36.4'E; h = 240 m |
| Delary | (De): | 56°28.2'N, | 13°52.2'E; h = 150 m |

## O C T O B E R  1 - 31, 1970

| | | | | | |
|---|---|---|---|---|---|
| 1970 Oct. | 1 | Up | iP | 00 28 58.7 | D |
| | | | | micr | sec |
| | | | P | Z' 0.1 | 0.6 |
| | | Ki | iP | 00 28 30.4 | D |
| | | Sk | iP | 00 28 56.0 | |
| | | Um | iP | 00 28 41.3 | |
| | | Ud | iP | 00 29 05.5 | |
| | | De | iP | 00 29 16.5 | |
| | | Mariana Islands (h = 190 km). | | | |
| " | 1 | Up | iSg | 07 14 05.0 | |
| | | Ud | iPg | 07 12 45.7 | |
| | | | iSg | 07 13 15.4 | |
| | | De | iPg | 07 12 49.5 | |
| | | | iSg | 07 13 19.5 | |
| | | | iRg | 07 13 30.2 | |
| | | Skagerrak, 58.3°N, 10.9°E. Origin time = 07 12 03. Probably underwater explosion. | | | |
| " | 1 | Up | iP | 07 20 17.4 | |
| | | Ki | eP | 07 19 55 | |
| " | 1 | Sk | i(P) | 09 49 30.6 | |
| | | Ud | i(P) | 09 49 13.1 | |
| " | 1 | Up | iP | 09 52 29.2 | |
| | | | | micr | sec |
| | | | P | Z' 0.1 | 0.6 |
| | | Ki | eP | 09 51 45 | |
| | | Sk | iP | 09 52 20.0 | |
| | | Um | iP | 09 52 02.8 | |
| | | Ud | iP | 09 52 34.2 | |
| | | | i | 09 52 36.3 | |
| | | De | iP | 09 52 54.3 | |
| | | Sakhalin ( = 390 km). | | | |
| 1970 Oct. | 1 | Ki | e(P) | 09 59 13 | |
| | | Ud | i(P) | 10 00 51.5 | |
| " | 1 | Ki | ePn | 12 13 49 | |
| | | | iSn | 12 14 51.2 | |
| | | | iSg | 12 15 17.5 | |
| | | Sk | iSg | 12 18 01.5 | |
| | | Um | iSg | 12 16 34.5 | |
| | | Ud | iLg1 | 12 18 56.0 | |
| | | Northwest Russia, 68.9°N, 34.4°E. Origin time = 12 12 28. Explosion? | | | |
| " | 1 | Ki | iP | 16 46 47.1 | |
| | | Um | iP | 16 46 57.9 | |
| " | 1 | Up | iP | 22 26 47.4 | |
| | | | | micr | sec |
| | | | Mx E | 1.5 | 16 |
| | | | Mx N | 1.3 | 16 |
| | | | Mx Z | 1.3 | 16 |
| | | Ki | eP | 22 28 05 | |
| | | | | micr | sec |
| | | | Mx E | 1.0 | 13 |
| | | | Mx Z | 1.0 | 11 |
| | | Sk | iP | 22 27 28.0 | |
| | | | i | 22 27 32.5 | |
| | | Um | iP | 22 27 28.1 | |
| | | | i | 22 27 48.4 | |
| | | Ud | iP | 22 26 57.9 | |
| | | De | iP | 22 26 19.5 | |
| | | Greece (h = 25 km). M = 4.8 (Up,Ki). | | | |
| " | 1 | Up | eP | 22 43 29 | |
| | | | i | 22 43 40.3 | |
| | | (cont.) | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970
Oct. 1 (cont.)

| | | | | |
|---|---|---|---|---|
| Up | | | micr | sec |
| | Mx | E | 1.5 | 16 |
| | Mx | N | 1.1 | 11 |
| | Mx | Z | 0.9 | 10 |
| Ki | | | micr | sec |
| | Mx | E | 0.6 | 13 |
| | Mx | Z | 0.8 | 14 |
| Sk | iP | | 22 44 08.2 | |
| Um | iP | | 22 44 06.4 | |
| Ud | iP | | 22 43 34.5 | |
| De | iP | | 22 42 59.0 | |

Greece (h = 30 km).
M = 4.7 (Up,Ki).

| | | | |
|---|---|---|---|
| " 2 | Up | iP | 00 37 05.4 |
| | Ki | eP | 00 38 23 |
| | Sk | iP | 00 37 39.2 |
| | Ud | iP | 00 37 08.3 |
| | | i | 00 38 40.7 |
| | De | iP | 00 36 37.1 |

Algeria (h = 35 km).

| | | | |
|---|---|---|---|
| " 2 | Ki | iP | 00 45 55.5 C |
| " 2 | Um | i(P) | 01 39 10.2 |
| | Ud | i(P) | 01 39 49.4 |

" 2 Up

| | | | |
|---|---|---|---|
| | | micr | sec |
| Mx | E | 2.4 | 21 |
| Mx | N | 2.2 | 18 |
| Mx | Z | 2.6 | 20 |
| Ki | | micr | sec |
| Mx | E | 2.9 | 18 |
| Mx | N | 2.5 | 19 |
| Mx | Z | 4.4 | 18 |
| De | iPKP | 06 34 29.6 | |

Solomon Islands (h = 55 km).
M = 6.0 (Up,Ki).

| | | | |
|---|---|---|---|
| " 2 | Up | iPKP | 10 00 01.1 |
| | | i | 10 00 11.8 |
| | | micr | sec |
| | PKP | Z' | 0.1 0.7 |
| | Ki | ePKP | 09 59 41 |
| | Sk | iPKP | 09 59 50.7 |
| | Um | iPKP | 09 59 46.0 |
| | Ud | iPKP | 09 59 59.9 |
| | De | iPKP | 10 00 08.5 |

Kermadec Islands (h = 60 km).

| | | | |
|---|---|---|---|
| " 2 | Up | iPKP | 10 01 49.2 |
| | Ki | iPKP | 10 01 32.6 |
| | Sk | iPKP | 10 01 35.0 |
| | Ud | iPKP | 10 01 48.3 |

Kermadec Islands.
Origin time = 09 42 09.

1970
Oct. 2

| | | | |
|---|---|---|---|
| Up | iPg | | 15 16 49.8 |
| | iSg | | 15 17 09.2 |
| Ud | iSg | | 15 17 41.1 |
| De | iSg | | 15 17 41.4 |

East coast of Sweden,
58.3°N, 17.0°E.
Origin time = 15 16 20.

| | | | |
|---|---|---|---|
| " 2 | Up | iPKP | 19 52 58.1 |
| | Sk | iPKP | 19 52 47.2 |
| | Ud | iPKP | 19 52 57.4 |
| | De | iPKP | 19 53 07.9 |
| | | i | 19 53 16.2 |

Kermadec Islands (h = 45 km).

| | | | |
|---|---|---|---|
| " 3 | Ki | iP | 00 09 58.6 |
| " 3 | Up | iP | 00 26 43.3 |
| | | micr | sec |
| | Mx | E | 1.0 14 |
| | Mx | N | 1.6 16 |
| | Mx | Z | 1.3 17 |
| Ki | iP | | 00 25 48.9 |
| | | micr | sec |
| | Mx | E | 2.0 18 |
| | Mx | N | 2.0 17 |
| | Mx | Z | 1.6 17 |
| Sk | iP | | 00 26 25.9 |
| Ud | iP | | 00 26 46.7 |

Kamchatka (h = 30 km).
M = 5.4 (Up,Ki).

| | | | |
|---|---|---|---|
| " 3 | Sk | iP | 01 36 26.6 |
| | Ud | i(PP) | 01 36 29.3 |

Ionian Islands.

| | | | |
|---|---|---|---|
| " 3 | Ki | eP | 02 54 53 |
| | Sk | iP | 02 54 47.9 |
| | Ud | iP | 02 54 30.4 |

Iran (h = 25 km).

| | | | |
|---|---|---|---|
| " 3 | Up | iP | 05 54 11.6 |
| | | iPcP | 05 54 41.5 |
| | | micr | sec |
| | | P Z' | 0.1 0.6 |
| | Ki | iP | 05 53 25.6 C |
| | | micr | sec |
| | | P Z' | 0.1 0.9 |
| | Sk | iP | 05 54 01.0 |
| | | iPcP | 05 54 32.5 |
| | Um | iP | 05 53 46.1 |
| | Ud | iP | 05 54 17.6 |
| | | iPcP | 05 54 44.9 |
| | De | iP | 05 54 36.3 C |

Okhotsk Sea (h = 470 km).
m = 5.4 (Up,Ki).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Oct. | 3 | Ud | iP | | 07 03 41.7 | C |
| | | Iran (h = 70 km). | | | | |
| " | 3 | Ki | iP | | 08 21 43.5 | |
| | | Sk | iP | | 08 22 15.7 | |
| | | Gulf of Alaska (h = 25 km). | | | | |
| " | 3 | Up | Mx | | 11 47 | |
| | | | | | micr sec | |
| | | | Mx | E | 0.7 16 | |
| | | | Mx | N | 1.4 18 | |
| | | | Mx | Z | 1.4 18 | |
| | | Ki | Mx | | 11 34 | |
| | | | | | micr sec | |
| | | | Mx | E | 1.7 21 | |
| | | | Mx | N | 1.7 20 | |
| | | | Mx | Z | 2.4 21 | |
| | | New Britain (h = 25 km). | | | | |
| | | M = 5.7 (Up,Ki). | | | | |
| " | 3 | Ki | iPn | | 12 47 16.7 | |
| | | | iSn | | 12 48 06.6 | |
| | | | iLgl | | 12 48 19.4 | |
| | | Possibly northwest Russia. | | | | |
| | | Origin time = 12 46 09. | | | | |
| | | Explosion? | | | | |
| " | 3 | Ki | iP | | 14 29 40.5 | C |
| | | | i | | 14 29 45.9 | |
| | | | | | micr sec | |
| | | | P | Z' | 0.2 1.8 | |
| | | Sk | iP | | 14 29 26.1 | |
| | | | i | | 14 29 31.3 | |
| | | Um | iP | | 14 29 48.3 | |
| | | Ud | iP | | 14 29 36.0 | |
| | | De | iP | | 14 29 40.0 | |
| | | Colombia (h = 25 km). | | | | |
| " | 4 | Up | iSKP | | 00 57 52.3 | |
| | | Ki | iSKP | | 00 57 31.1 | |
| | | Um | iSKP | | 00 57 41.1 | |
| | | Ud | iPKP | | 00 55 08.8 | |
| | | | iSKP | | 00 57 55.7 | |
| | | De | iPKP | | 00 55 19.7 | |
| | | Fiji Islands (h = 630 km). | | | | |
| " | 4 | Up | iP | | 11 50 27.3 | |
| | | Ki | iP | | 11 50 05.9 | |
| | | Sk | iP | | 11 50 34.9 | |
| | | Um | iP | | 11 50 13.8 | |
| | | Ud | iP | | 11 50 36.7 | |
| | | De | iP | | 11 50 40.8 | |
| | | Luzon (h = 40 km). | | | | |
| " | 4 | Up | iP | | 17 11 01.4 | |
| | | (cont.) | | | | |
| 1970 Oct. | 4 | (cont.) | | | | |
| | | Ki | iP | | 17 10 46.1 | |
| | | Um | iP | | 17 10 51.2 | |
| | | Ud | iP | | 17 11 09.3 | |
| | | Banda Sea (h = 90 km). | | | | |
| " | 4 | Up | ePKP | | 17 21 40 | |
| | | Ki | iPKP | | 17 21 39.1 | |
| | | | i | | 17 21 48.1 | |
| | | Um | iPKP | | 17 21 39.0 | |
| | | Ud | ePKP | | 17 21 43 | |
| " | 4 | Ki | iP | | 17 51 30.7 | |
| | | Um | iP | | 17 51 48.7 | |
| | | Ud | iP | | 17 51 51.9 | |
| | | Gulf of California (h = N). | | | | |
| " | 5 | Up | iP | | 10 50 40.9 | |
| | | Ki | iP | | 10 50 30.5 | C |
| | | | ipP | | 10 50 38.9 | |
| | | Sk | iP | | 10 50 53.6 | |
| | | Um | iP | | 10 50 26.5 | |
| | | Ud | iP | | 10 50 48.9 | |
| | | | ipP | | 10 50 56.4 | |
| | | De | iP | | 10 50 47.5 | |
| | | | ipP | | 10 50 57.8 | |
| | | Kirghiz-Sinkiang. | | | | |
| | | h = 40 km (Ki,Ud,De). | | | | |
| " | 5 | Ki | ePKP | | 12 03 31 | |
| | | Um | iPKP | | 12 03 30.2 | |
| | | Chile (h = 50 km). | | | | |
| " | 5 | Up | iLgl | | 14 22 41.9 | |
| | | Ki | e(Pg) | | 14 23 19 | |
| | | | iSg | | 14 25 19.9 | |
| | | Sk | iLgl | | 14 24 22.8 | |
| | | | iSg | | 14 24 36.4 | |
| | | Um | iSg | | 14 23 17.5 | |
| | | De | eLgl | | 14 24 15 | |
| | | Esthonia, | | | | |
| | | 59.7°N, 25.6°E. | | | | |
| | | Origin time = 14 20 37. | | | | |
| | | Explosion? | | | | |
| " | 5 | Ki | eSKP | | 14 46 50 | |
| | | Um | iPKP | | 14 44 26.8 | |
| | | | eSKP | | 14 47 07 | |
| | | Ud | iSKP | | 14 47 21.1 | |
| | | De | iPKP | | 14 44 38.4 | |
| | | Fiji Islands (h = 550 km). | | | | |
| " | 5 | Ki | iP | | 14 59 57.2 | |
| | | Um | iP | | 14 59 29.1 | |
| | | Jordan-Syria (h = 30 km). | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Oct. | 5 | Ki | iP | | 16 04 12.2 | |
| | | Sk | iP | | 16 04 27.5 | |
| | | Um | iP | | 16 04 10.8 | |
| | | Ud | iP | | 16 04 25.3 | |
| | | Java (h = 70 km). | | | | |
| " | 5 | Um | iPKP | | 20 00 16.0 | |
| | | De | iPKP | | 20 00 23.3 | |
| | | Fiji Islands (h = 460 km). | | | | |
| " | 5 | Up | iPKP | | 22 12 22.5 | |
| | | Ki | ePKP | | 22 12 02 | |
| | | Sk | iPKP | | 22 12 13.8 | |
| | | | i | | 22 12 22.1 | |
| | | Um | ePKP | | 22 12 10 | |
| | | Ud | iPKP | | 22 12 24.7 | |
| | | | i | | 22 12 31.8 | |
| | | De | iPKP | | 22 12 29.2 | |
| | | | i | | 22 12 39.3 | |
| | | Kermadec Islands (h = 35 km). | | | | |
| " | 5 | Up | iP | | 22 37 14.9 | |
| | | Sk | iP | | 22 37 05.0 | |
| | | Ud | iP | | 22 37 14.6 | |
| " | 5 | Um | iPKP | | 23 07 06.5 | |
| | | Ud | iPKP | | 23 07 11.5 | |
| | | | i | | 23 07 17.2 | |
| | | De | iPKP | | 23 07 22.2 | |
| | | | i | | 23 07 29.6 | |
| " | 5 | Up | eP | | 23 28 08 | |
| | | Ki | iP | | 23 29 36.0 | |
| | | | | | micr | sec |
| | | | Mx | E | 0.5 | 11 |
| | | | Mx | N | 0.7 | 10 |
| | | | Mx | Z | 0.4 | 10 |
| | | Sk | iP | | 23 28 51.9 | |
| | | Um | iP | | 23 28 54.2 | |
| | | Ud | iP | | 23 28 11.6 | |
| | | Yugoslavia (h = 50 km). | | | | |
| " | 6 | Ud | iP | | 04 26 58.6 | |
| | | Kurile Islands (h = 45 km). | | | | |
| " | 6 | Up | iP | | 06 12 39.1 | |
| | | Ki | iP | | 06 12 15.3 | |
| | | Ud | iP | | 06 12 47.5 | |
| " | 6 | Up | i(P) | | 10 04 20.4 | |
| | | | | | micr | sec |
| | | | (P) | Z' | 0.1 | 0.9 |
| " | 6 | Ki | iPn | | 11 52 45.2 | |
| | | | iP[x] | | 11 52 53.9 | |
| | | (cont.) | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Oct. | 6 | (cont.) | | | | |
| | | Ki | iSn | | 11 53 31.6 | |
| | | | iLgl | | 11 53 43.2 | |
| | | Possibly northwest Russia. | | | | |
| | | Origin time = 11 51 43. | | | | |
| | | Explosion? | | | | |
| " | 6 | Up | iP | | 14 09 39.0 | |
| | | Ud | iP | | 14 09 41.3 | |
| " | 6 | Up | iSg | | 15 26 59.4 | |
| | | Ki | i(Sn) | | 15 24 42.4 | |
| | | | iSg | | 15 24 56.5 | |
| | | Sk | iSg | | 15 25 00.9 | |
| | | | i | | 15 25 05.1 | |
| | | Um | iPg | | 15 24 40.8 | |
| | | | iSn | | 15 25 09.8 | |
| | | | iSg | | 15 25 24.6 | |
| | | Ud | iSg | | 15 26 55.6 | |
| | | Nordland, Norway, 66.3°N, 14.6°E. | | | | |
| | | Origin time = 15 23 28. | | | | |
| " | 6 | Ki | iP | | 15 50 57.8 | |
| | | Sk | iP | | 15 50 45.6 | |
| | | Ud | iP | | 15 50 49.0 | |
| | | De | iP | | 15 50 50.8 | |
| | | Colombia (h = 40 km). | | | | |
| " | 6 | Up | iP | | 16 13 44.5 | |
| | | Sk | iP | | 16 13 34.9 | |
| | | Um | iP | | 16 13 29.5 | |
| | | Ud | iP | | 16 13 45.4 | |
| | | | i | | 16 13 55.6 | |
| " | 6 | Up | iP | | 17 20 39.5 | |
| | | Ud | iP | | 17 20 46.0 | |
| | | Luzon (h = 100 km). | | | | |
| " | 6 | Up | iP | | 18 23 46.3 | |
| | | | i | | 18 23 56.5 | |
| | | Ki | iP | | 18 23 18.0 | |
| | | Sk | iP | | 18 23 42.7 | |
| | | Um | iP | | 18 23 35.6 | |
| | | Ud | iP | | 18 23 48.6 | |
| " | 6 | Up | iP | | 21 38 11.4 | |
| | | Ki | iP | | 21 38 05.8 | |
| | | | i | | 21 38 11.7 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.3 | 1.6 |
| | | Sk | iP | | 21 37 57.7 | |
| | | Ud | iP | | 21 38 01.7 | |
| | | De | iP | | 21 37 58.0 | |
| | | Colombia (h = 30 km). | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Oct. | 6 | Up | iP | | 22 13 51.4 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.1 | 1.0 | |
| | | Ki | iP | | 22 13 55.3 | | |
| | | | iPP | | 22 15 26.6 | | |
| | | Sk | iP | | 22 14 18.1 | | |
| | | | i | | 22 14 56.7 | | |
| | | | iPP | | 22 15 52.8 | | |
| | | Um | iP | | 22 13 49.9 | | |
| | | Ud | iP | | 22 14 06.3 | | |
| | | | i | | 22 15 31.4 | | |
| | | | iPP | | 22 15 47.0 | | |
| | | De | iP | | 22 14 04.4 | | |
| | | | i | | 22 15 37.3 | | |
| | | | iPP | | 22 15 48.3 | | |
| | | Tadzhik SSR (h = 70 km). | | | | | |
| " | 6 | Ki | iP | | 23 45 45.2 | | |
| | | Sk | eP | | 23 46 21 | | |
| | | Um | iP | | 23 46 04.5 | | |
| | | Ud | iP | | 23 46 34.7 | | |
| | | Japan (h = 70 km). | | | | | |
| " | 7 | Up | iP | | 00 02 35.9 | | |
| " | 7 | Up | iP | | 02 28 20.8 | | |
| | | Ki | iP | | 02 28 53.4 | | |
| | | Sk | iP | | 02 28 54.3 | | |
| | | | i | | 02 29 02.2 | | |
| | | Ud | iP | | 02 28 35.9 | C | |
| | | De | iP | | 02 28 21.8 | | |
| | | | i | | 02 28 27.7 | | |
| | | Iran (h = 45 km). | | | | | |
| " | 7 | Ki | iPg | | 03 52 57.1 | | |
| | | | iSg | | 03 53 28.6 | | |
| | | Sk | iPg | | 03 52 55.3 | | |
| | | | iSg | | 03 53 35.4 | | |
| | | Um | i | | 03 53 08.0 | | |
| | | | iSg | | 03 53 41.4 | | |
| | | Ud | iSg | | 03 55 24.0 | | |
| | | Sweden-Norway border region, 66.1°N, 15.4°E. | | | | | |
| | | Origin time = 03 52 01. | | | | | |
| " | 7 | Up | iPn | | 10 51 29.7 | | |
| | | | iPP | | 10 51 47.3 | | |
| | | Ki | iP | | 10 52 10.0 | | |
| | | | iPn | | 10 52 34.0 | | |
| | | | | | micr | sec | |
| | | | Mx | E | 1.4 | 10 | |
| | | | Mx | N | 2.2 | 10 | |
| | | | Mx | Z | 1.6 | 10 | |
| | | Sk | eP | | 10 52 00 | | |
| | | | iPn | | 10 52 20.5 | | |
| | | (cont.) | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Oct. | 7 | (cont.) | | | | | |
| | | Sk | iLi | | 11 00 14.1 | | |
| | | Um | iP | | 10 51 20.7 | | |
| | | | i | | 10 51 31.6 | | |
| | | Ud | iP | | 10 51 23.5 | | |
| | | | i | | 10 51 34.1 | | |
| | | | iSn | | 10 56 40.8 | | |
| | | De | iP | | 10 51 26.1 | | |
| | | | i | | 10 51 34.5 | | |
| | | Caucasus (h = N). | | | | | |
| " | 7 | Up | iP | | 16 12 11.6 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.1 | 0.8 | |
| | | Ki | iP | | 16 11 18.9 | | |
| | | Sk | iP | | 16 11 51.9 | | |
| | | Ud | iP | | 16 12 12.6 | D | |
| | | | ipP | | 16 12 19.1 | | |
| | | De | iP | | 16 12 34.5 | | |
| | | Aleutian Islands. | | | | | |
| | | h = 25 km (Ud). | | | | | |
| " | 8 | Sk | eP | | 01 23 27 | | |
| " | 8 | Up | iP | | 01 53 20.4 | C | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.1 | 0.5 | |
| | | Ki | iP | | 01 52 34.0 | | |
| | | Sk | iP | | 01 53 09.6 | C | |
| | | Um | iP | | 01 52 55.2 | C | |
| | | Ud | iP | | 01 53 26.5 | C | |
| | | De | iP | | 01 53 44.0 | | |
| | | Okhotsk Sea (h = 490 km). | | | | | |
| " | 8 | Up | iP | | 05 03 43.0 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.2 | 0.5 | |
| | | | Mx | E | 1.7 | 18 | |
| | | | Mx | N | 2.8 | 20 | |
| | | | Mx | Z | 1.9 | 20 | |
| | | Ki | iP | | 05 02 49.8 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.3 | 1.0 | |
| | | | Mx | E | 1.1 | 19 | |
| | | | Mx | N | 1.4 | 18 | |
| | | | Mx | Z | 1.4 | 16 | |
| | | Sk | iP | | 05 03 26.3 | C | |
| | | Um | iP | | 05 03 15.2 | C | |
| | | | ipP | | 05 03 32.1 | | |
| | | Ud | iP | | 05 03 47.0 | C | |
| | | | ipP | | 05 04 01.7 | | |
| | | | iS | | 05 12 16.6 | | |
| | | De | iP | | 05 04 08.9 | C | |
| | | Kamchatka. | | | | | |
| | | h = 60 km (Um,Ud). | | | | | |
| | | m = 6.4, M = 5.4 (Up,Ki). | | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Oct. | 8 | Up | iPKP | 07 17 24.4 | | | |
| | | Ki | iPKP | 07 17 07.5 | | | |
| | | | i | 07 17 20.3 | | | |
| | | | iSKP | 07 19 58.4 | | | |
| | | Sk | iPKP | 07 17 19.7 | | | |
| | | Um | iPKP | 07 17 15.0 | | | |
| | | | i | 07 17 27.7 | | | |
| | | Ud | iPKP | 07 17 28.7 | | | |
| | | De | iPKP | 07 17 40.6 | | | |
| | | Fiji Islands (h = 580 km). | | | | | |
| " | 8 | Up | iPKP | 10 58 24.5 | | | |
| | | Ki | ePKP | 10 57 08 | | | |
| | | Sk | iPKP | 10 58 16.4 C | | | |
| | | Um | iPKP | 10 58 03.0 | | | |
| | | Ud | iPKP | 10 58 25.2 | | | |
| | | De | iPKP | 10 58 33.5 | | | |
| | | Kermadec Islands (h = 50 km). | | | | | |
| " | 8 | Up | iPKP | 11 27 21.0 | | | |
| | | Sk | iPKP | 11 27 15.8 | | | |
| | | | i | 11 27 27.0 | | | |
| | | Ud | iPKP | 11 27 24.4 | | | |
| | | De | iPKP | 11 27 34.0 | | | |
| | | Kermadec Islands (h = 50 km). | | | | | |
| " | 8 | Up | iP | 13 13 11.0 | | | |
| | | | ipP | 13 13 21.2 | | | |
| | | | | micr | sec | | |
| | | | P | Z' 0.1 | 0.5 | | |
| | | Ki | iP | 13 12 17.4 C | | | |
| | | Sk | iP | 13 12 49.2 | | | |
| | | Ud | iP | 13 13 10.7 C | | | |
| | | | ipP | 13 13 21.5 | | | |
| | | De | iP | 13 13 32.8 | | | |
| | | | ipP | 13 13 44.1 | | | |
| | | Aleutian Islands. | | | | | |
| | | h = 40 km (Up,Ud,De). | | | | | |
| " | 8 | De | iPKP | 15 29 48.2 | | | |
| | | Tonga Islands (h = N). | | | | | |
| " | 8 | Sk | e | 15 32 05 | | | |
| | | | i(Rg) | 15 32 08.4 | | | |
| " | 8 | Up | iP | 20 27 43.9 | | | |
| | | Ki | iP | 20 27 19.3 | | | |
| | | Ud | iP | 20 27 48.2 | | | |
| | | Luzon (h = 80 km). | | | | | |
| " | 8 | Up | eP | 22 19 10 | | | |
| | | | i | 22 19 12.7 | | | |
| | | | | micr | sec | | |
| | | | Mx | E 0.6 | 12 | | |
| | | | Mx | N 0.6 | 13 | | |
| | | | Mx | Z 0.9 | 14 | | |
| | | (cont.) | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Oct. | 8 | (cont.) | | | | | |
| | | Ki | eP | 22 20 23 | | | |
| | | | | micr | sec | | |
| | | | Mx | E 1.2 | 15 | | |
| | | | Mx | Z 0.5 | 11 | | |
| | | Sk | iP | 22 19 51.4 | | | |
| | | | i | 22 20 04.9 | | | |
| | | | iPP | 22 20 31.6 | | | |
| | | Um | iP | 22 19 51.2 | | | |
| | | Ud | iP | 22 19 18.3 | | | |
| | | | i | 22 19 24.5 | | | |
| | | De | iP | 22 18 42.3 C | | | |
| | | Greece (h = 60 km). | | | | | |
| | | M = 4.6 (Up,Ki). | | | | | |
| " | 8 | Up | iP | 23 23 46.4 | | | |
| | | Um | iP | 23 23 21.7 | | | |
| | | Ud | iP | 23 23 52.8 | | | |
| | | Kurile Islands (h = N). | | | | | |
| " | 8 | Up | iP | 23 47 13.5 D | | | |
| | | | iPcP | 23 47 37.2 | | | |
| | | | | micr | sec | | |
| | | | P | Z' 0.2 | 0.5 | | |
| | | | Mx | E 2.5 | 19 | | |
| | | | Mx | N 2.8 | 20 | | |
| | | | Mx | Z 2.5 | 16 | | |
| | | Ki | iP | 23 46 27.7 D | | | |
| | | | i | 23 46 38.9 | | | |
| | | | | micr | sec | | |
| | | | P | Z' 0.1 | 1.0 | | |
| | | | Mx | E 2.7 | 16 | | |
| | | | Mx | N 3.1 | 19 | | |
| | | | Mx | Z 7.3 | 19 | | |
| | | Sk | iP | 23 47 03.6 | | | |
| | | Um | iP | 23 46 48.4 D | | | |
| | | | iS | 23 55 23 | | | |
| | | Ud | iP | 23 47 19.9 | | | |
| | | De | iP | 23 47 37.4 | | | |
| | | Kurile Islands (h = 15 km). | | | | | |
| | | m = 6.3, M = 5.7 (Up,Ki). | | | | | |
| " | 9 | Up | iP | 00 17 58.3 D | | | |
| " | 9 | Up | iP | 00 32 33.5 | | | |
| | | Ud | eP | 00 32 26 | | | |
| | | Algeria (h = 15 km). | | | | | |
| " | 9 | Up | iP | 01 03 39.1 | | | |
| | | | | micr | sec | | |
| | | | Mx | E 0.7 | 10 | | |
| | | | Mx | N 0.9 | 15 | | |
| | | | Mx | Z 1.3 | 14 | | |
| | | Ki | | micr | sec | | |
| | | | Mx | E 1.5 | 15 | | |
| | | | Mx | N 0.8 | 13 | | |
| | | | Mx | Z 1.0 | 13 | | |
| | | (cont.) | | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970 Oct. 9 (cont.)

| | | | | |
|---|---|---|---|---|
| | Sk | iP | | 01 04 19.2 |
| | Um | iP | | 01 04 17.7 |
| | Ud | iP | | 01 03 44.4 |
| | | i | | 01 03 47.1 |
| | De | iP | | 01 03 08.2 |

Ionian Sea (h = 15 km).
M = 4.8 (Up,Ki).

| | | | | | |
|---|---|---|---|---|---|
| " 9 | Up | iP | | | 01 26 07.3 |
| | | ePP | | | 01 27 36 |
| | | | | micr | sec |
| | | Mx | E | 0.8 | 14 |
| | | Mx | N | 0.8 | 14 |
| | | Mx | Z | 0.9 | 12 |
| | Ki | iP | | | 01 26 12.5 |
| | | iPP | | | 01 27 38.8 |
| | | | | micr | sec |
| | | Mx | E | 0.6 | 12 |
| | | Mx | Z | 0.7 | 10 |
| | Sk | iP | | | 01 26 31.5 |
| | | iPP | | | 01 28 07.6 |
| | Um | iP | | | 01 26 03.0 |
| | | iPP | | | 01 27 30.8 |
| | Ud | iP | | | 01 26 22.2 |
| | | iPP | | | 01 27 57.0 |
| | De | iP | | | 01 26 22.2 |
| | | iPP | | | 01 28 02.3 |

Tadzhik SSR (h = 80 km).
M = 5.0 (Up,Ki).

| | | | |
|---|---|---|---|
| " 9 | Ud | iP | 01 33 09.5 |
| " 9 | Ud | iP | 03 18 15.8 |

Ionian Sea.

| | | | |
|---|---|---|---|
| " 9 | Up | iP | 03 37 08.2 |
| | Sk | eP | 03 37 51 |
| | Ud | iP | 03 37 14.5 |
| | De | eP | 03 36 39 |

Greece.

| | | | |
|---|---|---|---|
| " 9 | Up | iP | 04 41 30.7 |
| | Ud | iP | 04 41 38.4 |

Mindanao (h = 40 km).

| | | | |
|---|---|---|---|
| " 9 | Sk | eP | 07 39 40 |
| | Ud | iP | 07 39 02.3 |
| | De | iP | 07 38 29.7 |

Mediterranean Sea (h = N).

| | | | |
|---|---|---|---|
| " 9 | Up | iP | 09 12 28.6 |
| | Sk | iP | 09 12 44.7 |
| | | ipP | 09 13 22.8 |
| | Um | iP | 09 12 26.5 |
| | Ud | iP | 09 12 45.3 |

(cont.)

1970 Oct. 9 (cont.)

| | | | |
|---|---|---|---|
| | De | iP | 09 12 41.9 |

Hindu Kush.
h = 180 km (Sk).

| | | | | |
|---|---|---|---|---|
| " 9 | Up | iP | | 10 29 16.9 |
| | Ki | iP | | 10 28 56.9 |
| | Sk | iP | | 10 29 21.5 |
| | Um | iP | | 10 29 02.7 |
| | Ud | iP | | 10 29 23.0 |
| | | i | | 10 29 25.2 |
| | De | eP | | 10 29 29 |

Mindanao (h = 35 km).

| | | | | |
|---|---|---|---|---|
| " 9 | Up | iP | | 11 18 18.1 |
| | | | micr | sec |
| | | P | Z' 0.1 | 0.5 |
| | Ki | iP | | 11 17 24.7 |
| | Sk | iPcP | | 11 18 29.4 |
| | Um | eP | | 11 17 50 |
| | | iPcP | | 11 18 25.9 |
| | Ud | iP | | 11 18 18.0 |
| | De | eP | | 11 18 40 |

Aleutian Islands (h = 40 km).

| | | | |
|---|---|---|---|
| " 9 | Up | iSg | 12 11 49.7 |
| | Ki | eSg | 12 14 21 |
| | Sk | iSg | 12 13 43.2 |
| | Um | iSg | 12 12 23.3 |
| | Ud | eSn | 12 12 16 |
| | | iLgl | 12 12 54.4 |
| | De | iPn | 12 11 29.7 |
| | | eSn | 12 12 46 |
| | | iLgl | 12 13 17.2 |

Esthonia,
59.7°N, 25.6°E.
Origin time = 12 09 41.
Explosion?

| | | | |
|---|---|---|---|
| " 9 | Ki | i(P) | 12 52 21.6 |
| | Um | i(P) | 12 54 18.0 |
| " 9 | Sk | eP | 13 13 22 |
| | Um | iP | 13 13 19.4 |
| | Ud | iP | 13 13 31.2 |

| | | | | |
|---|---|---|---|---|
| " 9 | Up | iP | | 13 56 17.7 |
| | | iPP | | 13 57 41.9 |
| | | | micr | sec |
| | | Mx | E 0.7 | 15 |
| | | Mx | N 0.6 | 15 |
| | | Mx | Z 1.2 | 15 |
| | Ki | iP | | 13 56 23.4 |
| | Sk | eP | | 13 56 43 |
| | | iPP | | 13 58 20.8 |

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | |
|---|---|---|---|---|---|
| 1970 Oct. | 9 | (cont.) | | | |
| | | Um | iP | 13 56 14.5 | |
| | | | i(PP) | 13 57 24.9 | |
| | | Ud | iP | 13 56 34.6 | |
| | | | iPP | 13 58 08.3 | |
| | | De | iP | 13 56 32.9 | |
| | | | iPP | 13 58 09.4 | |
| | | Tadzhik SSR (h = 45 km). | | | |
| " | 9 | Up | iSg | 16 20 47.0 | |
| | | Ud | iSg | 16 21 01.1 | |
| | | De | iPg | 16 18 48.3 | |
| | | | iSg | 16 19 25.5 | |
| | | Near Baltic coast of Poland, 54.5°N, 17.0°E. | | | |
| | | Origin time = 16 17 50. | | | |
| | | Explosion? | | | |
| " | 9 | Ki | iP | 17 20 40.3 | |
| | | Formosa (h = 50 km). | | | |
| " | 9 | Up | iSg | 17 40 47.9 | |
| | | Ki | iSg | 17 38 45.1 | |
| | | Sk | iPg | 17 38 10.9 | |
| | | | iSg | 17 38 49.7 | |
| | | Um | iPg | 17 38 24.0 | |
| | | | iSg | 17 39 12.4 | |
| | | Ud | eSg | 17 40 39 | |
| | | | i | 17 40 56.4 | |
| | | Nordland, Norway, 66.3°N, 14.6°E. | | | |
| | | Origin time = 17 37 16. | | | |
| " | 9 | Up | iP | 18 57 37.3 | |
| | | Ki | iP | 18 57 47.0 | |
| | | Sk | iP | 18 58 03.5 | |
| | | Um | iP | 18 57 36.2 C | |
| | | Ud | iP | 18 57 54.3 | |
| | | | ipP | 18 58 21.5 | |
| | | De | iP | 18 57 50.5 | |
| | | Hindu Kush. | | | |
| | | h = 140 km (Ud). | | | |
| " | 10 | Up | iP | 00 27 56.0 C | |
| | | Ki | iP | 00 27 03.3 | |
| | | Sk | eP | 00 27 37 | |
| | | Um | iP | 00 27 29.5 C | |
| | | | ipP | 00 27 39.2 | |
| | | Ud | iP | 00 27 55.7 | |
| | | | ipP | 00 28 06.8 | |
| | | De | iP | 00 28 18.5 | |
| | | Aleutian Islands. | | | |
| | | h = 40 km (Um,Ud). | | | |
| " | 10 | Up | iP | 09 05 24.2 | |
| | | (cont.) | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Oct. | 10 | (cont.) | | | | |
| | | Up | | | micr | sec |
| | | | P | Z' | 0.1 | 0.5 |
| | | | Mx | E | 5.0 | 20 |
| | | | Mx | N | 15 | 21 |
| | | | Mx | Z | 6.1 | 19 |
| | | Ki | iP | | 09 05 34.4 | |
| | | | ipP | | 09 05 46.5 | |
| | | | iS | | 09 15 56 | |
| | | | | | micr | sec |
| | | | pP | Z' | 0.3 | 1.1 |
| | | | Mx | E | 8.1 | 16 |
| | | | Mx | N | 8.0 | 19 |
| | | | Mx | Z | 8.3 | 16 |
| | | Sk | iP | | 09 05 42.7 | |
| | | | ipP | | 09 05 54.5 | |
| | | Um | iP | | 09 05 26.4 D | |
| | | | iS | | 09 15 34 | |
| | | Ud | iP | | 09 05 34.0 | |
| | | De | iP | | 09 05 28.6 | |
| | | | i | | 09 05 49.1 | |
| | | Indian Ocean. | | | | |
| | | h = 45 km (Ki,Sk). | | | | |
| | | M = 6.4 (Up,Ki). | | | | |
| " | 10 | Up | iP | | 10 48 59.3 | |
| | | Ki | iP | | 10 48 11.3 | |
| | | Um | iP | | 10 48 33.1 | |
| | | Ud | iP | | 10 49 04.7 | |
| | | | ipP | | 10 49 15.2 | |
| | | De | eP | | 10 49 23 | |
| | | Kurile Islands. | | | | |
| | | h = 40 km (Ud). | | | | |
| " | 10 | Up | iP | | 10 53 02.8 | |
| | | Ki | e(P) | | 10 52 00 | |
| | | Ud | iP | | 10 52 56.1 | |
| " | 10 | Up | iP | | 13 53 15.1 | |
| | | Sk | iP | | 13 53 54.3 | |
| | | Ud | iP | | 13 53 23.0 C | |
| | | De | iP | | 13 52 46.9 | |
| | | Ionian Sea (h = 20 km). | | | | |
| " | 10 | Ud | iP | | 18 21 59.3 | |
| " | 10 | Up | iPKP | | 22 19 29.9 C | |
| | | | i | | 22 19 35.2 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.2 | 0.9 |
| | | | Mx | E | 2.3 | 20 |
| | | | Mx | N | 5.0 | 24 |
| | | | Mx | Z | 3.0 | 19 |
| | | Ki | ePKP | | 22 19 16 | |
| | | (cont.) | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Oct. | 10 | (cont.) | | | | |
| | | Ki | | | micr | sec |
| | | | Mx | E | 2.1 | 19 |
| | | Sk | iPKP | | 22 19 | 26.3 |
| | | Um | iPKP | | 22 19 | 19.2 C |
| | | Ud | iPKP | | 22 19 | 29.4 |
| | | | i | | 22 19 | 36.0 |
| | | De | iPKP | | 22 19 | 34.2 |
| | | | i | | 22 19 | 41.0 |
| | | Kermadec Islands (h = N). | | | | |
| | | M = 6.2 (Up,Ki). | | | | |
| " | 10 | Um | iP | | 22 36 | 41.4 |
| | | Ud | iP | | 22 36 | 46.3 |
| " | 11 | Up | iPKP | | 01 15 | 05.3 |
| | | Ki | iPKP | | 01 14 | 47.1 |
| | | Um | iPKP | | 01 14 | 55.2 |
| | | Ud | iPKP | | 01 15 | 09.1 |
| | | New Zealand (h = 190 km). | | | | |
| " | 11 | Up | iPKP | | 01 22 | 50.9 |
| | | Um | iPKP | | 01 22 | 33.8 |
| | | Ud | iPKP | | 01 22 | 46.0 |
| | | De | iPKP | | 01 22 | 55.1 |
| | | South of Kermadec Islands (h = N). | | | | |
| " | 11 | Up | i(P) | | 01 29 | 35.9 |
| " | 11 | Up | iP | | 02 40 | 22.8 |
| | | Sk | iP | | 02 41 | 01.2 |
| | | Um | iP | | 02 41 | 01.4 |
| | | | i | | 02 41 | 06.4 |
| | | Ud | iP | | 02 40 | 28.8 C |
| | | | i | | 02 40 | 32.4 |
| | | De | iP | | 02 39 | 52.2 |
| | | | i | | 02 39 | 56.1 |
| | | Greece (h = 20 km). | | | | |
| " | 11 | Up | iP | | 03 25 | 49.9 |
| | | Ud | iP | | 03 25 | 50.7 |
| | | De | iP | | 03 25 | 21.8 |
| | | Ionian Sea. | | | | |
| " | 11 | Up | iPKP | | 03 36 | 35.8 C |
| | | | i | | 03 36 | 43.0 |
| | | | | | micr | sec |
| | | | PKP | Z' | 0.3 | 0.9 |
| | | | Mx | E | 3.6 | 19 |
| | | | Mx | N | 8.5 | 23 |
| | | | Mx | Z | 8.3 | 23 |
| | | Ki | iPKP | | 03 36 | 20.0 |
| | | | | | micr | sec |
| | | | Mx | E | 4.3 | 16 |
| | | | Mx | Z | 6.4 | 19 |
| | | (cont.) | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Oct. | 11 | (cont.) | | | | |
| | | Sk | iPKP | | 03 36 | 30.6 |
| | | Um | iPKP | | 03 36 | 24.8 |
| | | | i | | 03 36 | 27.0 |
| | | Ud | iPKP | | 03 36 | 36.1 C |
| | | | i | | 03 36 | 40.4 |
| | | De | iPKP | | 03 36 | 46.7 |
| | | Kermadec Islands (h = N). | | | | |
| | | M = 6.6 (Up,Ki). | | | | |
| " | 11 | Up | iP | | 03 41 | 55.9 |
| | | | | | micr | sec |
| | | | Mx | E | 3.0 | 16 |
| | | Ki | eP | | 03 41 | 29 |
| | | | | | micr | sec |
| | | | Mx | E | 2.8 | 12 |
| | | Sk | iP | | 03 41 | 57.8 |
| | | Um | iP | | 03 41 | 41.3 |
| | | Ud | iP | | 03 42 | 04.5 |
| | | Ryukyu Islands (h = 25 km). | | | | |
| | | M = 5.9 (Up,Ki). | | | | |
| " | 11 | Up | i(P) | | 04 02 | 57.4 |
| | | Um | iP | | 04 02 | 47.1 |
| | | Ud | i(P) | | 04 02 | 56.7 |
| " | 11 | Up | iP | | 04 10 | 32.8 |
| | | Um | iP | | 04 10 | 16.9 |
| " | 11 | Up | i | | 04 47 | 13.8 |
| | | | iSg | | 04 47 | 21.2 |
| | | Ki | iPn | | 04 43 | 09.2 |
| | | | iSn | | 04 44 | 05.9 |
| | | | iSg | | 04 44 | 31.2 |
| | | Sk | iSg | | 04 46 | 59.6 |
| | | Um | $iS^{X}$ | | 04 45 | 00.9 |
| | | | iSg | | 04 45 | 20.1 |
| | | Ud | iLgl | | 04 47 | 46.3 |
| | | Northwest Russia, $67.5^{\circ}$N, $33.0^{\circ}$E. | | | | |
| | | Origin time = 04 41 53. | | | | |
| | | Explosion? | | | | |
| " | 11 | Up | iPKP | | 05 08 | 04.1 |
| | | Sk | iPKP | | 05 07 | 59.7 |
| | | Um | iPKP | | 05 07 | 47.6 |
| | | Ud | iPKP | | 05 08 | 01.1 |
| | | South of Kermadec Islands (h = N). | | | | |
| " | 11 | Up | iP | | 05 11 | 03.8 |
| | | Ud | iP | | 05 11 | 13.1 |
| | | Ryukyu Islands (h = 50 km). | | | | |
| " | 11 | Up | iP | | 05 40 | 19.8 |
| | | (cont.) | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970 Oct. 11 (cont.)

| | | | | |
|---|---|---|---|---|
| Up | | | micr | sec |
| | P | Z' | 0.2 | 1.0 |
| Ki | iP | | 05 39 33.0 | |
| | | | micr | sec |
| | P | Z' | 0.2 | 1.0 |
| Um | iP | | 05 39 53.9 | |
| Ud | iP | | 05 40 25.2 | |
| De | iP | | 05 40 43.1 | |

Kurile Islands (h = 50 km).
m = 6.3 (Up,Ki).

" 11

| | | | | |
|---|---|---|---|---|
| Up | iPKP | | 05 57 53.6 | C |
| | | | micr | sec |
| | PKP | Z' | 0.1 | 0.8 |
| | Mx | E | 1.4 | 19 |
| | Mx | N | 4.7 | 23 |
| | Mx | Z | 5.3 | 23 |
| Ki | iPKP | | 05 57 33.7 | |
| Sk | iPKP | | 05 57 48.2 | |
| Um | iPKP | | 05 57 41.5 | |
| | i | | 05 57 43.7 | |
| Ud | iPKP | | 05 57 55.2 | C |
| De | iPKP | | 05 58 04.2 | |

South of Kermadec Islands
(h = 30 km).

" 11

| | | | |
|---|---|---|---|
| Up | iPKP | 06 30 10.3 | |
| Um | iPKP | 06 29 55.1 | |
| Ud | iPKP | 06 30 15.7 | |
| De | iPKP | 06 30 24.8 | |

South of Kermadec Islands.
Origin time = 06 10 23.

" 11 Um iP 06 34 17.9

" 11

| | | | |
|---|---|---|---|
| Up | iPKP | 06 57 39.5 | |
| Um | iPKP | 06 57 21.0 | |
| | i | 06 57 36.5 | |
| Ud | iPKP | 06 57 37.0 | |

South of Kermadec Islands
(h = N).

" 11

| | | | |
|---|---|---|---|
| Up | iPKP | 07 04 53.7 | |
| Sk | ePKP | 07 04 50 | |
| Um | iPKP | 07 04 43.6 | |
| | i | 07 04 56.1 | |
| Ud | iPKP | 07 04 55.4 | |

Kermadec Islands (h = N).

" 11

| | | | |
|---|---|---|---|
| Up | iP | 10 36 58.1 | |
| Ki | iP | 10 36 03.5 | |
| Sk | iP | 10 36 40.9 | |
| Um | iP | 10 36 29.3 | |
| Ud | iP | 10 37 00.0 | C |
| De | iP | 10 37 22.8 | C |

Kamchatka (h = N).

1970 Oct. 11

| | | | |
|---|---|---|---|
| Up | iP | 10 43 28.7 | |
| | i | 10 43 49.3 | |
| Ud | iP | 10 43 37.3 | |

Ryukyu Islands (h = N).

" 11

| | | | |
|---|---|---|---|
| Up | iPKP | 11 46 29.4 | |
| | i | 11 46 41.9 | |
| Sk | iPKP | 11 46 24.2 | |
| Um | iPKP | 11 46 16.0 | |
| Ud | iPKP | 11 46 29.4 | |

South of Kermadec Islands
(h = N).

" 11 Up iP 12 02 43.0

" 11 Um iP 18 21 18.5

" 11

| | | | |
|---|---|---|---|
| Up | iPKP | 20 46 00.1 | |
| Um | iPKP | 20 45 48.0 | |
| Ud | iPKP | 20 46 00.4 | |
| De | e(PKP) | 20 46 15 | |

Kermadec Islands (h = N).

" 11 Up iP 21 11 50.9

" 11

| | | | |
|---|---|---|---|
| Up | iPKP | 22 48 18.9 | |
| Sk | ePKP | 22 48 09 | |
| Um | iPKP | 22 48 01.2 | |
| Ud | iPKP | 22 48 15.2 | |

South of Kermadec Islands
(h = N).

" 12

| | | | |
|---|---|---|---|
| Up | ePKP | 07 19 46 | |
| Sk | iPKP | 07 19 41.0 | |
| Um | iPKP | 07 19 34.5 | |
| Ud | iPKP | 07 19 47.2 | |
| De | iPKP | 07 19 52.1 | |

South of Kermadec Islands
(h = N).

" 12

| | | | |
|---|---|---|---|
| Um | iP | 07 22 23.5 | |
| Ud | iP | 07 22 32.0 | |
| De | eP | 07 22 54 | |

" 12

| | | | |
|---|---|---|---|
| Um | iPKP | 07 27 30.0 | |
| Ud | iPKP | 07 27 42.0 | |

Probably south of Kermadec
Islands.

" 12

| | | | |
|---|---|---|---|
| Up | iPKP | 07 30 31.9 | |
| Sk | iPKP | 07 30 21.9 | |
| Um | iPKP | 07 30 14.5 | |
| Ud | iPKP | 07 30 25.0 | |
| De | iPKP | 07 30 34.4 | |

South of Kermadec Islands
(h = N).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970 Oct. 12 Up iPKP 07 32 10.3
i 07 32 20.2
Sk iPKP 07 32 04.3
Um iPKP 07 31 58.2
i 07 32 03.3
Ud iPKP 07 32 10.2
De iPKP 07 32 22.4
South of Kermadec Islands.
Origin time = 07 12 21.

" 12 Up iP 08 17 15.8
Ud eP 08 17 34
i 08 17 46.9
De iP 08 17 07.9
Caucasus.

" 12 Up iPKP 08 22 52.1
Sk iPKP 08 22 42.4
Um iPKP 08 22 34.0
Ud iPKP 08 22 46.7
South of Kermadec Islands.
Origin time = 08 02 58.

" 12 Up iP 09 43 16.1
micr sec
P Z' 0.2 0.5
Ki iP 09 42 37.4 D
micr sec
P Z' 0.2 0.5
Sk iP 09 43 12.1
Um iP 09 42 53.8 D
Ud iP 09 43 24.3 D
De iP 09 43 39.6
Russia-China (h = 560 km).
m = 5.8 (Up,Ki).

" 12 Up iPKP 11 50 22.7
Sk iPKP 11 50 12.9
Um iPKP 11 50 04.9 C
Ud iPKP 11 50 15.2
i 11 50 22.9
South of Kermadec Islands
(h = N).

" 12 Up i 12 15 29.4
Ud iPg 12 14 40.3
iSg 12 14 58.8
De ePg 12 14 49
iSg 12 15 18.9
Probably Västergötland,
Sweden.
Origin time = 12 14 06.

" 12 Up iSg 13 01 50.4
Sk iSg 13 03 39.5
(cont.)

1970 Oct. 12 (cont.)
Um iSg 13 02 22.0
Ud iSn 13 02 23.2
iSg 13 02 51.7
De eLgl 13 03 14
Esthonia,
59.7°N, 25.6°E.
Origin time = 12 59 39.
Explosion?

" 12 Up iPKP 13 56 01.8
Sk iPKP 13 55 48.9
ipPKP 13 56 03.1
Um iPKP 13 55 44.1
ipPKP 13 55 58.1
Ud iPKP 13 55 56.0
ipPKP 13 56 09.9
South of Kermadec Islands.
h = 50 km (Sk,Um,Ud).
Origin time = 13 36 07.

" 12 Up iP 20 17 48.3
Ud iP 20 17 46.5
De iP 20 17 58.7
Gulf of California (h = N).

" 13 Up iP 00 59 11.2
Turkey.

" 13 Up iP 01 33 07.3
i 01 33 19.8

" 13 Up iPKP 08 31 55.7 C
Sk iPKP 08 31 48.2
Um iPKP 08 31 39.6
Ud iPKP 08 31 51.4
ipPKP 08 32 03.3
South of Kermadec Islands.
h = 45 km (Ud).

" 13 Sk iSg 13 01 30.2
Um iSg 13 00 22.3
Ud iSg 13 00 30.9
Esthonia,
59.3°N, 23.4°E.
Origin time = 12 57 46.
Explosion?

" 13 Sk iSg 13 03 58.8
Um iSg 13 02 50.5
Ud iSg 13 03 00.6
De eSg 13 03 26
Esthonia,
59.3°N, 23.4°E.
Origin time = 13 00 15.
Explosion?

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Oct. | 13 | Ki | i | | 16 02 03.4 | |
| | | | iSg | | 16 02 08.4 | |
| | | Sk | iPg | | 16 01 35.3 | |
| | | | iSg | | 16 02 15.0 | |
| | | Um | iSg | | 16 02 22.2 | |
| | | Ud | iSg | | 16 04 03.6 | |
| | | Sweden-Norway border region, 66.1°N, 15.4°E. Origin time = 16 00 41. | | | | |
| " | 13 | Up | iP | | 18 33 48.7 | |
| | | Ki | iP | | 18 33 16.7 | |
| | | Sk | eP | | 18 33 46 | |
| | | Um | iP | | 18 33 30.4 | |
| | | | i | | 18 33 48.3 | |
| | | Ud | iP | | 18 33 55.4 | |
| | | De | eP | | 18 34 10 | |
| | | Bonin Islands (h = N). | | | | |
| " | 13 | Up | i(PP) | | 19 12 14.4 | |
| | | | iPP | | 19 12 31.1 | |
| | | | | | micr | sec |
| | | | Mx | E | 0.7 | 19 |
| | | | Mx | N | 1.3 | 21 |
| | | | Mx | Z | 1.2 | 19 |
| | | Ki | iP | | 19 07 28.1 | |
| | | | i(PP) | | 19 11 39.0 | |
| | | | iPP | | 19 11 54.4 | |
| | | | | | micr | sec |
| | | | PP | Z' | 0.2 | 1.4 |
| | | Sk | iPKP | | 19 11 51.1 | |
| | | | iPP | | 19 12 28.8 | |
| | | | iPKKP | | 19 23 00.0 | |
| | | Um | i(PP) | | 19 12 01.7 | |
| | | | iPP | | 19 12 10.4 | |
| | | Ud | iP | | 19 07 56.2 | |
| | | | i(PP) | | 19 12 29.8 | |
| | | | iPP | | 19 12 40.7 | |
| | | | iPKKP | | 19 22 44.0 | |
| | | De | iPKP | | 19 11 56.9 | |
| | | | iPP | | 19 12 55.7 | |
| | | | iPKKP | | 19 22 38.7 | |
| | | New Guinea (h = 120 km). | | | | |
| " | 13 | Ud | iP | | 20 02 23.6 C | |
| | | Greece. | | | | |
| " | 13 | Ki | e | | 20 16 16 | |
| | | | iSg | | 20 16 23.0 | |
| | | Sk | iSg | | 20 16 27.5 | |
| | | Um | iSg | | 20 16 50.7 | |
| | | Nordland, Norway. Origin time = 20 14 55. | | | | |
| " | 13 | Up | iP | | 20 21 12.4 | |
| | | Ki | iP | | 20 20 19.6 | |
| | | (cont.) | | | | |
| 1970 Oct. | 13 | (cont.) | | | | |
| | | Sk | eP | | 20 20 59 | |
| | | Um | iP | | 20 20 44.4 C | |
| | | Ud | iP | | 20 21 16.3 | |
| | | De | iP | | 20 21 37.2 | |
| | | Kamchatka (h = N). | | | | |
| " | 13 | Sk | iP | | 23 33 59.2 | |
| | | Um | iP | | 23 34 14.3 | |
| | | Ud | iP | | 23 34 06.8 | |
| | | Guatemala (h = 100 km). | | | | |
| " | 14 | Up | iP | | 00 45 11.9 | |
| | | Ki | iP | | 00 45 21.5 | |
| | | Sk | iP | | 00 45 37.8 | |
| | | Um | iP | | 00 45 11.6 | |
| | | Ud | iP | | 00 45 28.8 | |
| | | India-West Pakistan (h = N). | | | | |
| " | 14 | Sk | iPKP | | 03 30 42.1 | |
| | | Um | iPKP | | 03 30 36.4 | |
| | | Ud | iPKP | | 03 30 49.5 | |
| " | 14 | Up | iP | | 06 04 24.9 | |
| | | | iS | | 06 08 02 | |
| | | | | | micr | sec |
| | | | P | Z' | 2.2 | 0.5 |
| | | | Mx | E | 15 | 5 |
| | | | Mx | N | 25 | 6 |
| | | | Mx | Z | 23 | 6 |
| | | Ki | iP | | 06 02 54.8 C | |
| | | | iS | | 06 05 07 | |
| | | | | | micr | sec |
| | | | P | Z' | 9.1 | 0.5 |
| | | | Mx | E | 31 | 6 |
| | | | Mx | N | 68 | 6 |
| | | | Mx | Z | 28 | 6 |
| | | Sk | iP | | 06 04 03.9 C | |
| | | | i | | 06 06 16.6 | |
| | | Um | iP | | 06 03 32.4 C | |
| | | | i | | 06 03 43 | |
| | | | iS | | 06 06 13 | |
| | | Ud | iP | | 06 04 35.4 C | |
| | | De | iP | | 06 05 08.1 C | |
| | | Novaya Zemlya. m = 6.9 (Up,Ki). Underground explosion. The second phase at Um is very conspicuous on LP records and larger than P; probably, it is Pn. A similar but less pronounced phase is found on LP records of Ki. Corresponding Sn-phases probably also exist, but they are less clear. | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Oct. | 14 | Ki | eP | | 06 39 13 | |
| | | Sk | eP | | 06 38 58 | |
| | | Um | iP | | 06 39 09.2 | |
| | | Ud | iP | | 06 38 46.7 | |
| " | 14 | Sk | iPKP | | 07 22 11.6 | |
| | | Um | iPKP | | 07 22 04.8 | |
| | | | i | | 07 22 18.8 | |
| | | Ud | iPKP | | 07 22 17.5 | |
| " | 14 | Up | iP | | 07 25 26.4 | |
| | | Ki | iP | | 07 24 41.9 | |
| | | Sk | eP | | 07 25 17 | |
| | | Um | iP | | 07 25 01.2 | |
| | | Ud | iP | | 07 25 32.5 | C |
| | | Kurile Islands (h = 40 km). | | | | |
| " | 14 | Up | | | micr | sec |
| | | | Mx | E | 1.0 | 21 |
| | | | Mx | N | 1.0 | 19 |
| | | | Mx | Z | 1.2 | 15 |
| | | Ki | | | micr | sec |
| | | | Mx | E | 1.6 | 13 |
| | | | Mx | Z | 1.1 | 12 |
| | | Sk | iP | | 07 38 47.5 | |
| | | Ud | iP | | 07 38 48.4 | |
| | | Sinkiang. | | | | |
| | | M = 5.0 (Up,Ki). | | | | |
| | | Atmospheric nuclear explosion. | | | | |
| | | Clear surface waves recorded on long-period instruments, and in addition indications of recorded atmospheric pressure wave at Um. | | | | |
| " | 14 | Up | iP | | 07 56 15.4 | |
| | | | i | | 07 56 26.2 | |
| | | Ki | iP | | 07 56 00.1 | |
| | | | i | | 07 56 09.6 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 1.5 |
| | | Sk | eP | | 07 56 23 | |
| | | | i | | 07 56 30.3 | |
| | | Um | iP | | 07 56 06.9 | |
| | | | i | | 07 56 15.5 | |
| | | Ud | iP | | 07 56 24.1 | |
| | | | i | | 07 56 33.8 | |
| | | De | iP | | 07 56 41.9 | |
| | | Mindanao (h = 60 km). | | | | |
| | | Double P (the reading at De corresponds to the second, larger P). | | | | |
| " | 14 | Up | iP | | 07 59 54.5 | |
| | | Um | iP | | 07 59 12.8 | |
| | | | i | | 07 59 44.9 | |
| | | (cont.) | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1970 Oct. | 14 | (cont.) | | | |
| | | Ud | iP | | 07 59 59.4 |
| | | | i | | 08 00 27.0 |
| " | 14 | Up | iPKP | | 09 25 46.6 |
| | | | i | | 09 26 07.4 |
| | | Sk | iPKP | | 09 25 40.4 |
| | | Um | iPKP | | 09 25 34.1 |
| | | Ud | iPKP | | 09 25 46.5 |
| | | De | iPKP | | 09 25 57.0 |
| | | South of Kermadec Islands (h = N). | | | |
| " | 14 | Sk | iP | | 10 16 09.3 |
| | | Um | iP | | 10 15 54.0 |
| | | Ud | iP | | 10 16 22.6 |
| | | De | iP | | 10 16 37.6 |
| | | Japan (h = 40 km). | | | |
| " | 14 | Sk | eP | | 10 31 19 |
| | | Ud | iP | | 10 31 03.6 |
| " | 14 | Ki | iPKP | | 10 58 57.5 |
| | | Sk | e(PKP) | | 10 58 58 |
| | | | iPKP | | 10 59 07.2 |
| | | Um | iPKP | | 10 59 03.6 |
| | | Ud | i(PKP) | | 10 59 03.3 |
| | | | iPKP | | 10 59 14.5 |
| | | De | i(PKP) | | 10 59 13.2 |
| | | Fiji Islands (h = 610 km). | | | |
| " | 14 | Up | iP | | 11 13 34.8 |
| " | 14 | Ki | ePn | | 11 21 44 |
| | | | iSn | | 11 22 42.7 |
| | | | iSg | | 11 23 08.1 |
| | | Sk | iLgl | | 11 25 34.3 |
| | | Um | iSg | | 11 24 03.8 |
| | | Ud | iLgl | | 11 26 34.7 |
| | | Northwest Russia, 67.8°N, 33.4°E. | | | |
| | | Origin time = 11 20 27. | | | |
| | | Explosion? | | | |
| " | 14 | Sk | e(Sg) | | 11 47 29 |
| | | Ud | iPg | | 11 45 19.9 |
| | | | iSg | | 11 45 39.9 |
| | | De | iSg | | 11 46 00.3 |
| | | Probably Västergötland, Sweden. | | | |
| | | Origin time = 11 44 50. | | | |
| " | 14 | Um | iPKP | | 12 48 42.9 |
| | | | i | | 12 48 52.5 |
| | | Ud | iPKP | | 12 48 56.5 |
| | | De | iPKP | | 12 49 09.1 |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Oct. | 14 | Up | iP | | 12 53 02.9 | | |
| | | De | iP | | 12 53 37.6 | | |
| " | 14 | Up | eP | | 13 55 05 | | |
| " | 14 | Up | iP | | 14 41 48.9 C | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.1 | 0.8 | |
| | | Ki | iP | | 14 41 14.7 C | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.1 | 1.1 | |
| | | Sk | iP | | 14 41 22.6 C | | |
| | | Um | iP | | 14 41 34.2 C | | |
| | | Ud | iP | | 14 41 40.9 C | | |
| | | De | iP | | 14 41 57.5 C | | |
| | | Nevada. | | | | | |
| | | m = 6.0 (Up,Ki). | | | | | |
| | | Underground explosion. | | | | | |
| " | 14 | Up | iP | | 16 11 37.9 C | | |
| | | | ipP | | 16 11 49.4 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.2 | 0.6 | |
| | | | Mx | E | 0.8 | 18 | |
| | | | Mx | N | 0.7 | 15 | |
| | | | Mx | Z | 1.4 | 18 | |
| | | Ki | iP | | 16 10 51.7 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.2 | 1.0 | |
| | | | Mx | E | 2.1 | 19 | |
| | | | Mx | Z | 1.4 | 16 | |
| | | Sk | iP | | 16 11 27.7 C | | |
| | | Um | iP | | 16 11 12.8 | | |
| | | Ud | iP | | 16 11 44.2 C | | |
| | | De | iP | | 16 12 01.3 C | | |
| | | | ipP | | 16 12 13.2 | | |
| | | Kurile Islands. | | | | | |
| | | h = 45 km (Up,De). | | | | | |
| | | m = 6.4, M = 5.3 (Up,Ki). | | | | | |
| " | 14 | De | iP | | 16 27 02.4 | | |
| " | 14 | Up | iP | | 17 02 08.9 | | |
| | | | ipP | | 17 02 28.0 | | |
| | | Ki | iP | | 17 02 04.0 | | |
| | | | isP | | 17 02 32.9 | | |
| | | Sk | iP | | 17 02 24.6 | | |
| | | Um | iP | | 17 02 02.1 D | | |
| | | Ud | iP | | 17 02 22.1 | | |
| | | | ipP | | 17 02 41.5 | | |
| | | De | ipP | | 17 02 43.8 | | |
| | | Burma. | | | | | |
| | | h = 80 km (Up,Ki,Ud). | | | | | |
| " | 14 | Sk | e | | 18 12 55 | | |
| | | Um | i(P) | | 18 12 00.8 | | |
| | | Ud | i(P) | | 18 13 31.1 | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Oct. | 14 | Ud | iP | | 18 14 25.4 | | |
| " | 14 | Up | iP | | 18 17 03.8 C | | |
| | | | ipP | | 18 17 15.9 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.1 | 0.7 | |
| | | Ki | iP | | 18 16 18.3 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.1 | 1.0 | |
| | | Sk | iP | | 18 16 53.6 | | |
| | | Um | iP | | 18 16 39.2 | | |
| | | | ipP | | 18 16 51.3 | | |
| | | Ud | iP | | 18 17 09.9 C | | |
| | | | ipP | | 18 17 22.0 | | |
| | | De | iP | | 18 17 28.1 | | |
| | | Kurile Islands. | | | | | |
| | | h = 45 km (Up,Um,Ud). | | | | | |
| | | m = 6.1 (Up,Ki). | | | | | |
| " | 14 | Up | iP | | 18 26 41.5 C | | |
| | | | iS | | 18 35 42 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.4 | 0.9 | |
| | | | Mx | E | 8.3 | 17 | |
| | | | Mx | N | 9.2 | 15 | |
| | | | Mx | Z | 11 | 17 | |
| | | Ki | iP | | 18 25 55.7 C | | |
| | | | iS | | 18 34 25 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.4 | 1.0 | |
| | | | Mx | E | 25 | 19 | |
| | | | Mx | N | 14 | 19 | |
| | | | Mx | Z | 21 | 16 | |
| | | Sk | iP | | 18 26 31.4 C | | |
| | | Um | iP | | 18 26 16.9 | | |
| | | | iS | | 18 34 58 | | |
| | | Ud | iP | | 18 26 48.0 C | | |
| | | De | iP | | 18 27 05.6 | | |
| | | | ipP | | 18 27 16.2 | | |
| | | Kurile Islands. | | | | | |
| | | h = 40 km (De). | | | | | |
| | | m = 6.6, M = 6.4 (Up,Ki). | | | | | |
| " | 14 | Up | iP | | 18 37 40.0 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.1 | 0.8 | |
| | | Ki | iP | | 18 36 54.3 C | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.1 | 1.0 | |
| | | Sk | iP | | 18 37 29.3 | | |
| | | Um | iP | | 18 37 15.3 | | |
| | | Ud | iP | | 18 37 45.9 C | | |
| | | De | iP | | 18 38 05.2 | | |
| | | Kurile Islands (h = 45 km). | | | | | |
| | | m = 6.0 (Up,Ki). | | | | | |
| " | 14 | Up | iP | | 18 46 18.0 | | |

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Oct. | 14 | (cont.) | | | | | |
| | | Ki | iP | | | 18 45 34.6 | |
| | | Sk | eP | | | 18 46 09 | |
| | | Um | iP | | | 18 45 54.1 | |
| | | Ud | iP | | | 18 46 24.7 | |
| | | De | iP | | | 18 46 45.1 | |
| | | Kurile Islands (h = 50 km). | | | | | |
| " | 14 | Up | iP | | | 19 20 04.3 | |
| | | Ki | iP | | | 19 19 18.3 | |
| | | Ud | iP | | | 19 20 10.4 | |
| | | Kurile Islands. | | | | | |
| | | Origin time = 19 09 02. | | | | | |
| " | 14 | Ki | iPn | | | 20 28 46.5 | |
| | | | iSn | | | 20 29 32.6 | |
| | | | iLgl | | | 20 29 45.8 | |
| | | Sk | iLgl | | | 20 32 29.2 | |
| | | Um | iSg | | | 20 31 20.8 | |
| | | Ud | i(Lgl) | | | 20 33 52.6 | |
| | | Northwest Russia, | | | | | |
| | | 69.1°N, 30.3°E. | | | | | |
| | | Origin time = 20 27 46. | | | | | |
| | | Explosion? | | | | | |
| " | 14 | Sk | iP | | | 20 40 17.2 | |
| | | Ud | iP | | | 20 40 48.9 | |
| | | | i | | | 20 40 54.1 | |
| " | 14 | Ud | iP | | | 20 45 00.0 | |
| " | 14 | Up | iP | | | 21 25 02.1 C | |
| | | | | | | micr | sec |
| | | | P | Z' | | 0.2 | 0.5 |
| | | | Mx | E | | 2.7 | 20 |
| | | | Mx | N | | 4.9 | 20 |
| | | | Mx | Z | | 2.9 | 18 |
| | | Ki | iP | | | 21 24 17.4 | |
| | | | | | | micr | sec |
| | | | P | Z' | | 0.2 | 1.0 |
| | | | Mx | E | | 5.9 | 20 |
| | | | Mx | N | | 5.3 | 21 |
| | | | Mx | Z | | 11 | 17 |
| | | Sk | iP | | | 21 24 52.4 C | |
| | | Um | iP | | | 21 24 37.1 | |
| | | | iS | | | 21 33 15 | |
| | | Ud | iP | | | 21 25 08.4 C | |
| | | De | iP | | | 21 25 26.0 C | |
| | | | i | | | 21 25 47.2 | |
| | | Kurile Islands (h = 40 km). | | | | | |
| | | m = 6.4, M = 5.9 (Up,Ki). | | | | | |
| " | 15 | Up | iP | | | 00 37 30.3 | |
| | | Ki | iP | | | 00 36 44.9 | |
| | | Um | iP | | | 00 37 05.5 | |
| | | Ud | iP | | | 00 37 36.9 | |
| | | Kurile Islands (h = N). | | | | | |
| 1970 Oct. | 15 | Up | iP | | | 01 55 11.4 | |
| | | Ki | iP | | | 01 54 25.8 | |
| | | Sk | eP | | | 01 55 02 | |
| | | Um | iP | | | 01 54 46.5 | |
| | | Ud | iP | | | 01 55 17.7 | |
| | | Kurile Islands (h = N). | | | | | |
| " | 15 | Up | iP | | | 02 03 15.0 | |
| | | Ki | iP | | | 02 02 29.7 | |
| | | Um | iP | | | 02 02 50.5 | |
| | | Ud | iP | | | 02 03 21.5 | |
| | | Kurile Islands (h = N). | | | | | |
| " | 15 | Up | iP | | | 02 17 57.4 | |
| " | 15 | Up | iP | | | 02 18 54.3 | |
| | | Sk | iP | | | 02 18 45.6 | |
| | | Um | iP | | | 02 18 30.9 | |
| | | Ud | iP | | | 02 19 02.0 | |
| | | Kurile Islands. | | | | | |
| | | Origin time = 02 07 53. | | | | | |
| " | 15 | Um | iP | | | 03 01 35.9 | |
| | | Ud | iP | | | 03 01 56.3 | |
| " | 15 | Up | iP | | | 04 03 02.4 | |
| | | | | | | micr | sec |
| | | | Mx | E | | 0.5 | 10 |
| | | | Mx | N | | 1.0 | 16 |
| | | | Mx | Z | | 0.6 | 10 |
| | | Ki | iP | | | 04 03 00.5 C | |
| | | | | | | micr | sec |
| | | | Mx | N | | 1.0 | 7 |
| | | | Mx | Z | | 0.3 | 7 |
| | | Sk | iP | | | 04 03 23.5 | |
| | | Um | iP | | | 04 02 55.4 | |
| | | Ud | iP | | | 04 03 18.7 | |
| | | | iPP | | | 04 05 03.4 | |
| | | De | iP | | | 04 03 19.4 C | |
| | | Sinkiang (h = N). | | | | | |
| | | M = 5.1 (Up,Ki). | | | | | |
| " | 15 | Ki | iP | | | 04 50 03.1 | |
| | | Sk | eP | | | 04 50 25 | |
| | | Um | iP | | | 04 49 59.3 | |
| | | Ud | iP | | | 04 50 21.3 | |
| | | De | iP | | | 04 50 21.9 | |
| | | Sinkiang (h = N). | | | | | |
| " | 15 | Up | iP | | | 05 26 38.9 | |
| | | Um | iP | | | 05 26 21.5 | |
| | | | i | | | 05 26 36.5 | |
| | | Ud | iP | | | 05 26 34.4 | |
| | | | i | | | 05 26 55.5 | |
| " | 15 | Up | iPKP | | | 12 31 30.9 | |
| | | (cont.) | | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Oct. | 15 | (cont.) | | | | |
| | | Up | iSKP | 12 34 22.2 | | |
| | | Ki | iPKP | 12 31 26.3 | | |
| | | | eSKP | 12 33 55 | | |
| | | Sk | ePKP | 12 31 36 | | |
| | | | iSKP | 12 34 14.6 | | |
| | | Um | iPKP | 12 31 32.4 | | |
| | | | iSKP | 12 34 09.1 | | |
| | | Ud | iPKP | 12 31 36.0 | | |
| | | | i | 12 31 43.5 | | |
| | | | iSKP | 12 34 24.0 | | |
| | | De | iPKP | 12 31 41.6 | | |
| | | Fiji Islands (h = 560 km). | | | | |
| " | 15 | Sk | e(P) | 12 45 22 | | |
| | | Um | i(P) | 12 44 50.9 | | |
| | | Ud | iP | 12 45 28.1 | | |
| " | 15 | Ki | iPKP | 14 44 50.1 | | |
| | | Um | iPKP | 14 44 45.3 | | |
| | | Ud | ePKP | 14 44 52 | | |
| " | 15 | Up | iP | 15 36 25.7 | | |
| | | | ipP | 15 36 39.1 | | |
| | | Ki | iP | 15 35 41.2 | | |
| | | | | micr | sec | |
| | | | Mx E | 1.2 | 22 | |
| | | | Mx Z | 0.4 | 11 | |
| | | Sk | iP | 15 36 18.1 | | |
| | | Um | iP | 15 36 00.8 | | |
| | | Ud | iP | 15 36 32.1 C | | |
| | | | ipP | 15 36 47.4 | | |
| | | De | iP | 15 36 50.7 | | |
| | | Japan. | | | | |
| | | h = 55 km (Up,Ud). | | | | |
| " | 15 | Up | iSg | 18 06 41.5 | | |
| | | Sk | e(Sn) | 18 05 02 | | |
| | | | iSg | 18 05 17.6 | | |
| | | Ud | iPg | 18 04 57.1 | | |
| | | | iSg | 18 05 41.5 | | |
| | | De | iLgl | 18 07 01.6 | | |
| | | Norway, | | | | |
| | | 61.9°N, 7.4°E. | | | | |
| | | Origin time = 18 03 47. | | | | |
| " | 16 | Ud | eP | 00 17 18 | | |
| " | 16 | Up | iP | 01 56 04.4 | | |
| | | Ki | iP | 01 55 25.9 | | |
| | | Sk | iP | 01 56 00.2 | | |
| | | Um | iP | 01 55 42.1 | | |
| | | Ud | iP | 01 56 12.9 | | |
| | | De | iP | 01 56 29.2 | | |
| | | Sea of Japan (h = 460 km). | | | | |
| " | 16 | Um | iP | 04 48 37.3 | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Oct. | 16 | Up | iP | 05 37 27.5 C | | |
| | | | iPP | 05 40 03.1 | | |
| | | | iP'P' | 06 05 24.1 | | |
| | | | | micr | sec | |
| | | | P Z' | 0.3 | 1.1 | |
| | | | Mx E | 6.8 | 19 | |
| | | | Mx N | 9.2 | 17 | |
| | | | Mx Z | 6.5 | 17 | |
| | | Ki | iP | 05 36 46.5 C | | |
| | | | iS | 05 45 24 | | |
| | | | | micr | sec | |
| | | | P Z' | 0.3 | 1.0 | |
| | | | Mx E | 12 | 18 | |
| | | | Mx N | 7.2 | 18 | |
| | | | Mx Z | 8.6 | 17 | |
| | | Sk | iP | 05 37 19.5 | | |
| | | | iPP | 05 39 49.4 | | |
| | | | eP'P' | 06 05 31 | | |
| | | Um | iP | 05 37 04.2 C | | |
| | | | iS | 05 45 53 | | |
| | | | iP'P' | 06 05 28.9 | | |
| | | Ud | iP | 05 37 34.6 C | | |
| | | De | iP | 05 37 50.0 C | | |
| | | | iPP | 05 40 31.1 | | |
| | | Japan (h = 25 km). | | | | |
| | | m = 6.4, M = 6.2 (Up,Ki). | | | | |
| " | 16 | Ki | eP | 10 14 40 | | |
| | | Um | iP | 10 14 14.7 | | |
| " | 16 | Um | iP | 10 39 03.5 | | |
| | | Ud | iP | 10 39 05.4 | | |
| | | De | e(P) | 10 39 25 | | |
| " | 16 | Up | iP | 10 55 02.5 | | |
| | | Ki | iP | 10 54 22.3 | | |
| | | Sk | iP | 10 54 56.1 | | |
| | | Um | iP | 10 54 40.0 | | |
| | | | i | 10 54 43.8 | | |
| | | Ud | iP | 10 55 10.1 | | |
| | | | i | 10 55 14.3 | | |
| | | De | eP | 10 55 24 | | |
| | | Japan (h = 25 km). | | | | |
| " | 16 | Sk | i(P) | 12 05 26.1 | | |
| " | 16 | Up | iP | 15 49 53.7 | | |
| | | Um | iP | 15 49 25.7 | | |
| | | Ud | iP | 15 49 55.7 D | | |
| | | De | iP | 15 50 06.0 | | |
| " | 16 | De | iP | 16 23 03.4 | | |
| | | Aleutian Islands (h = 45 km). | | | | |
| " | 16 | Um | iP | 16 58 43.2 | | |
| | | Japan (h = 45 km). | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Oct. | 17 | Ud | iP | | 00 36 20.2 | |
| " | 17 | Up | i(P) | | 00 56 18.1 | |
| | | Ud | iP | | 00 55 57.5 | |
| " | 17 | Up | iP | | 01 55 24.2 | |
| | | Ki | ePn | | 01 56 53 | |
| | | Sk | iP | | 01 56 06.5 | |
| | | | i | | 01 57 48.1 | |
| | | Um | iP | | 01 55 46.1 | |
| | | | i | | 01 55 53.3 | |
| | | | iSn | | 02 00 43.5 | |
| | | Ud | iP | | 01 55 41.4 | |
| | | | iSn | | 02 00 08.2 | |
| | | De | iP | | 01 55 13.2 | |
| | | Turkey (h = N). | | | | |
| " | 17 | Up | iP | | 02 03 49.5 | |
| | | Ki | iP | | 02 03 22.8 | |
| | | Um | e(P) | | 02 03 33 | |
| | | Ud | iP | | 02 03 59.2 | |
| " | 17 | Ki | iP | | 02 20 41.5 | |
| | | Ud | i(P) | | 02 19 55.1 | |
| " | 17 | Up | iP | | 03 22 40.1 | |
| | | | | | micr | sec |
| | | | Mx | E | 1.1 | 19 |
| | | | Mx | N | 1.0 | 19 |
| | | | Mx | Z | 1.5 | 19 |
| | | Ki | iP | | 03 22 16.8 | |
| | | Sk | iP | | 03 22 43.6 | |
| | | Um | iP | | 03 22 26.8 | |
| | | Ud | iP | | 03 22 49.6 | |
| | | De | iP | | 03 22 58.6 | |
| | | Formosa (h = 50 km). | | | | |
| " | 17 | Up | iP | | 05 41 00.0 | |
| | | Ki | iP | | 05 40 53.7 | |
| | | | | | micr | sec |
| | | | Mx | E | 0.9 | 12 |
| | | | Mx | N | 0.8 | 13 |
| | | | Mx | Z | 0.9 | 12 |
| | | Sk | iP | | 05 41 19.5 | |
| | | Um | iP | | 05 40 50.6 | |
| | | | i | | 05 42 33.8 | |
| | | Ud | iP | | 05 41 16.6 | |
| | | | i | | 05 41 21.4 | |
| | | De | iP | | 05 41 18.8 | |
| | | Kirghiz-Sinkiang (h = N). | | | | |
| " | 17 | Ki | i(Sg) | | 11 16 45.1 | |
| | | Sk | e(Sg) | | 11 18 49 | |
| | | Um | i(Sg) | | 11 17 33.6 | |
| " | 17 | Ki | iPn | | 12 51 16.0 | |
| | | (cont.) | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Oct. | 17 | (cont.) | | | | |
| | | Ki | iSn | | 12 52 04.4 | |
| | | | iLgl | | 12 52 19.7 | |
| | | Sk | iSg | | 12 55 10.3 | |
| | | Um | iSg | | 12 53 33.5 | |
| | | Northwest Russia, | | | | |
| | | 68.2°N, 31.1°E. | | | | |
| | | Origin time = 12 50 12. | | | | |
| | | Explosion? | | | | |
| " | 17 | Up | iP | | 13 50 52.6 | |
| | | | ipP | | 13 51 05.2 | |
| | | Ki | iP | | 13 50 08.5 | |
| | | Sk | epP | | 13 50 55 | |
| | | Um | iP | | 13 50 29.0 | |
| | | Ud | iP | | 13 50 59.8 | |
| | | | ipP | | 13 51 11.5 | |
| | | Kurile Islands. | | | | |
| | | h = 45 km (Up,Ud). | | | | |
| " | 17 | Ud | i(P) | | 14 19 32.0 | |
| | | De | iP | | 14 19 14.4 | |
| " | 17 | Up | iP | | 14 27 53.1 | |
| | | Ud | iP | | 14 27 58.9 | |
| " | 17 | Up | iP | | 15 44 51.3 | |
| | | Um | iP | | 15 44 28.2 | |
| | | Ud | iP | | 15 44 58.9 | |
| | | | ipP | | 15 45 10.9 | |
| | | Kurile Islands. | | | | |
| | | h = 45 km (Ud). | | | | |
| | | Origin time = 15 33 49. | | | | |
| " | 17 | Up | iPKP | | 16 40 33.1 | |
| | | Sk | iPKP | | 16 40 25.3 | |
| | | Um | ePKP | | 16 40 23 | |
| | | Ud | iPKP | | 16 40 33.6 | |
| | | De | ePKP | | 16 40 43 | |
| " | 17 | Um | iP | | 20 11 43.9 | |
| | | Ud | iP | | 20 11 56.3 | |
| | | Sumatra (h = 70 km). | | | | |
| " | 17 | Up | iPKP | | 21 58 04.9 | |
| | | | i | | 21 58 10.7 | |
| | | Ki | iPKP | | 21 57 50.9 | |
| | | Sk | iPKP | | 21 57 58.2 | |
| | | Um | iPKP | | 21 57 53.9 | C |
| | | Ud | iPKP | | 21 58 06.1 | |
| | | | i | | 21 58 14.0 | |
| " | 17 | Up | iP | | 22 43 45.4 | |
| | | Sk | iP | | 22 43 35.5 | |
| | | Um | iP | | 22 44 00.7 | |
| | | Ud | iP | | 22 43 36.0 | C |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Oct. | 18 | Up | iPKP | | 01 25 48.3 | D |
| | | | | | micr | sec |
| | | | PKP | Z' | 0.4 | 0.6 |
| | | Ki | iPKP | | 01 25 30.9 | |
| | | Sk | ePKP | | 01 25 42 | |
| | | Um | iPKP | | 01 25 36.9 | |
| | | | i | | 01 25 45.4 | |
| | | Ud | iPKP | | 01 25 50.5 | D |
| | | De | iPKP | | 01 26 00.6 | D |
| | | | ipPKP | | 01 28 10.4 | |
| | | Tonga-Kermadec Islands. | | | | |
| | | h = 580 km (De). | | | | |
| " | 18 | Ud | iP | | 03 49 17.0 | |
| | | Japan (h = 45 km). | | | | |
| " | 18 | Up | iP | | 06 14 13.0 | |
| | | Ki | iP | | 06 13 26.1 | |
| | | Um | iP | | 06 13 49.1 | |
| | | Ud | iP | | 06 14 21.2 | C |
| | | Kurile Islands (h = 230 km). | | | | |
| " | 18 | Up | iP | | 06 18 21.6 | |
| | | Ki | iP | | 06 18 56.4 | |
| | | | i | | 06 19 13.0 | |
| | | Sk | iP | | 06 18 55.5 | |
| | | Um | iP | | 06 18 34.2 | |
| | | Ud | iP | | 06 18 36.5 | |
| | | De | iP | | 06 18 22.0 | |
| | | Iran (h = 40 km). | | | | |
| " | 18 | Up | iP | | 08 15 31.1 | |
| | | Um | iP | | 08 15 11.8 | |
| | | Ud | iP | | 08 15 25.1 | |
| " | 18 | Up | iP | | 09 24 32.5 | |
| | | Um | i(P) | | 09 24 18.8 | |
| " | 18 | Ud | iPKP | | 09 38 42.7 | |
| | | Samoa Islands (h = 35 km). | | | | |
| " | 18 | Up | iP | | 11 14 33.7 | |
| " | 18 | Ki | iP | | 13 48 56.8 | |
| " | 18 | Ud | iPKP | | 16 33 31.6 | D |
| | | De | iPKP | | 16 33 42.7 | |
| | | Tonga-Kermadec Islands | | | | |
| | | (h = 30 km). | | | | |
| " | 18 | Up | iPKP | | 18 48 17.8 | |
| | | | i | | 18 48 25.2 | |
| | | | | | micr | sec |
| | | | PKP | Z' | 0.1 | 1.0 |
| | | Ki | iPKP | | 18 47 57.9 | |
| | | Sk | iPKP | | 18 48 12.1 | |
| | | (cont.) | | | | |
| 1970 Oct. | 18 | (cont.) | | | | |
| | | Um | iPKP | | 18 48 07.3 | |
| | | | i | | 18 48 15.2 | |
| | | Ud | iPKP | | 18 48 19.5 | C |
| | | South of Kermadec Islands | | | | |
| | | (h = 120 km). | | | | |
| " | 18 | Up | iPKP | | 20 50 50.8 | |
| | | Sk | iPKP | | 20 50 50.5 | |
| | | Um | iPKP | | 20 50 45.2 | |
| | | Ud | iPKP | | 20 50 54.3 | |
| | | De | iPKP | | 20 50 59.5 | D |
| | | New Britain (h = 70 km). | | | | |
| " | 18 | Up | iP | | 21 31 59.4 | |
| | | Ki | iP | | 21 31 59.5 | |
| | | Um | iP | | 21 31 55.8 | |
| | | | ipP | | 21 32 18.2 | |
| | | Ud | iP | | 21 32 11.3 | |
| | | Andaman Islands. | | | | |
| | | h = 90 km (Um). | | | | |
| " | 19 | Ud | iP | | 01 37 49.4 | |
| | | Turkey (h = N). | | | | |
| " | 19 | Up | iP | | 05 48 42.4 | |
| | | Um | iP | | 05 48 50.8 | |
| | | Ud | iP | | 05 48 57.4 | D |
| | | West Pakistan (h = N). | | | | |
| " | 19 | Ki | iP | | 07 00 15.8 | |
| | | Halmahera (h = 80 km). | | | | |
| " | 19 | Up | iP | | 08 19 41.6 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 0.8 |
| | | Ki | iP | | 08 18 56.0 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 1.0 |
| | | Um | iP | | 08 19 16.4 | |
| | | Ud | iP | | 08 19 47.6 | |
| | | Kurile Islands (h = 45 km). | | | | |
| | | m = 6.0 (Up,Ki). | | | | |
| " | 19 | Up | iP | | 10 13 35.5 | |
| | | | i | | 10 13 51.5 | |
| | | Sk | iP | | 10 13 59.0 | |
| | | Ud | iP | | 10 13 48.6 | |
| | | | i | | 10 13 52.7 | |
| | | Tien-Shan. | | | | |
| " | 19 | Ki | iPn | | 12 04 08.5 | |
| | | | iSn | | 12 04 45.9 | |
| | | | iSg | | 12 04 58.8 | |
| | | Origin time = 12 03 17. | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Oct. | 19 | Up | iP | | 13 56 34.2 | |
| | | Um | iP | | 13 55 55.3 | |
| " | 19 | Up | iP | | 18 22 18.9 | |
| | | | i | | 18 22 21.5 | |
| | | | ipP | | 18 22 35.4 | |
| | | | | | micr sec | |
| | | | pP | Z' | 0.1 0.5 | |
| | | Ki | iP | | 18 21 42.8 | |
| | | | ipP | | 18 21 59.0 | |
| | | | i | | 18 22 57.0 | |
| | | Sk | iP | | 18 22 13.9 | |
| | | Um | iP | | 18 21 58.0 | |
| | | | ipP | | 18 22 14.5 | |
| | | Ud | iP | | 18 22 25.5 | |
| | | | ipP | | 18 22 42.1 | |
| | | South of Japan. h = 60 km (Up,Ki,Um,Ud). | | | | |
| " | 20 | Up | iPKP | | 08 44 42.0 | |
| | | | iPKS | | 08 47 55.6 | |
| | | | | | micr sec | |
| | | | PKP | Z' | 0.1 1.0 | |
| | | | PKS | Z' | 0.1 1.0 | |
| | | Ki | iPKP | | 08 44 28.2 | |
| | | | | | micr sec | |
| | | | PKP | Z' | 0.2 0.8 | |
| | | Sk | iPKP | | 08 44 40.2 | |
| | | Ud | iPKP | | 08 44 44.3 | |
| | | De | iPKP | | 08 44 50.0 | |
| | | | iPKS | | 08 48 11.0 | |
| | | New Hebrides Islands (h = 110 km). | | | | |
| " | 20 | Up | iP | | 10 42 02.2 | |
| | | Ki | iP | | 10 42 37.5 | |
| | | Sk | iP | | 10 42 38.3 | |
| | | Um | iP | | 10 42 16.7 | |
| | | Ud | iP | | 10 42 20.6 | C |
| | | De | iP | | 10 42 05.5 | |
| | | Iran (h = 45 km). | | | | |
| " | 20 | Ki | iP | | 18 27 15.3 | |
| " | 20 | Up | iP | | 20 22 58.7 | |
| | | | iPP | | 20 23 11.4 | |
| | | Um | iP | | 20 23 50.4 | |
| | | | iPP | | 20 24 20.9 | |
| | | Yugoslavia (h = 8 km). | | | | |
| " | 20 | Ki | iP | | 23 31 38.8 | |
| | | | iT | | 23 38 01.1 | |
| | | Um | iP | | 23 32 22.2 | |
| | | | i | | 23 32 26.2 | |
| | | Ud | iP | | 23 33 09.9 | |
| | | | i | | 23 33 16.5 | |
| | | Norwegian Sea (h = N). | | | | |
| 1970 Oct. | 21 | Up | i(P) | | 00 03 05.0 | |
| | | Um | iP | | 00 03 24.3 | |
| " | 21 | Um | iP | | 01 25 40.6 | |
| | | Ud | iP | | 01 26 11.0 | |
| | | | ipP | | 01 26 24.4 | |
| | | Japan. h = 50 km (Ud). | | | | |
| " | 21 | Up | iPKP2 | | 08 12 34.5 | |
| | | | | | micr sec | |
| | | | PKP2 | Z' | 0.1 0.5 | |
| | | Ki | iPKP2 | | 08 12 02.9 | |
| | | Um | iPKP2 | | 08 12 18.2 | |
| | | Ud | iPKP2 | | 08 12 38.5 | |
| | | De | iPKP2 | | 08 12 51.5 | |
| | | New Zealand (h = 160 km). | | | | |
| " | 21 | Up | iP | | 08 17 48.1 | |
| | | | iT | | 08 26 32.6 | |
| | | | i | | 08 26 43.4 | |
| | | | | | micr sec | |
| | | | P | Z' | 0.2 1.4 | |
| | | Ki | iP | | 08 16 07.6 | |
| | | | i | | 08 16 10.9 | |
| | | | iT | | 08 21 40.5 | |
| | | | i | | 08 21 59.6 | |
| | | | | | micr sec | |
| | | | P | Z' | 0.4 1.0 | |
| | | Sk | iP | | 08 16 57.2 | |
| | | | iT | | 08 24 48.5 | |
| | | | i | | 08 24 56.7 | |
| | | Um | iP | | 08 16 56.0 | |
| | | | iT | | 08 24 10.2 | |
| | | | i | | 08 24 37.3 | |
| | | Ud | iP | | 08 17 40.8 | C |
| | | | i | | 08 17 47.9 | |
| | | | iT | | 08 26 40.5 | |
| | | De | iP | | 08 18 24.3 | |
| | | | i | | 08 18 27.1 | |
| | | | iT | | 08 28 17.3 | |
| | | Norwegian Sea (h = N). This is the first time that clear T-phases have been observed all over the Swedish network. The reason is that this shock occurred near the area for maximum T-phase generation and had an unusually large magnitude for this location. | | | | |
| " | 21 | Up | iP | | 12 46 45.1 | |
| | | | | | micr sec | |
| | | | P | Z' | 0.1 1.0 | |
| | | Ki | iP | | 12 45 51.2 | |
| | | (cont.) | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Oct. | 21 | (cont.) | | | | | |
| | | Um | eP | | 12 46 18 | | |
| | | | ipP | | 12 46 31.0 | | |
| | | Ud | iP | | 12 46 45.2 | | |
| | | De | iP | | 12 47 07.4 | | |
| | | | ipP | | 12 47 21.2 | | |
| | | Aleutian Islands. | | | | | |
| | | h = 50 km (Um,De). | | | | | |
| " | 21 | Up | iP | | 16 00 52.8 | | |
| | | | | | micr | sec | |
| | | | Mx | E | 1.5 | 20 | |
| | | | Mx | N | 1.2 | 20 | |
| | | | Mx | Z | 2.0 | 21 | |
| | | Ki | iP | | 16 01 22.7 C | | |
| | | Sk | eP | | 16 00 49 | | |
| | | Um | iP | | 16 01 10.2 | | |
| | | Ud | iP | | 16 00 41.7 C | | |
| | | De | iP | | 16 00 31.2 | | |
| | | Atlantic Ocean (h = N). | | | | | |
| " | 21 | Um | i(P) | | 18 33 05.0 | | |
| | | | i | | 18 33 11.1 | | |
| " | 21 | Ki | iP | | 18 46 13.7 | | |
| " | 21 | Um | iP | | 19 06 11.2 | | |
| | | Ud | iP | | 19 06 56.3 C | | |
| " | 21 | Um | iP | | 19 12 19.5 | | |
| | | Ud | iP | | 19 12 51.2 | | |
| " | 21 | Up | i(P) | | 19 17 43.0 | | |
| | | Ki | iP | | 19 17 31.6 | | |
| " | 21 | Um | iP | | 20 30 12.0 | | |
| | | | i | | 20 30 24.4 | | |
| | | Ud | iP | | 20 30 24.2 | | |
| " | 21 | Up | i(P) | | 22 06 27.9 | | |
| | | Um | iP | | 22 05 55.7 | | |
| | | Ud | iP | | 22 06 20.0 | | |
| " | 22 | Um | i(P) | | 01 34 05.5 | | |
| | | Ud | i(P) | | 01 34 29.4 | | |
| " | 22 | Ud | iP | | 02 47 01.8 | | |
| | | | i | | 02 47 15.6 | | |
| | | North Atlantic Ocean | | | | | |
| | | (h = 20 km). | | | | | |
| " | 22 | Up | iP | | 03 04 37.7 | | |
| | | Ki | iP | | 03 03 50.8 | | |
| | | Um | iP | | 03 04 12.7 | | |
| | | Ud | iP | | 03 04 43.9 | | |
| | | De | iP | | 03 05 02.7 | | |
| | | Kurile Islands. | | | | | |
| | | Origin time = 02 53 35. | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Oct. | 22 | Up | iP | | 03 19 47.7 | | |
| | | Ki | iP | | 03 18 53.5 | | |
| | | Sk | iP | | 03 19 24.1 | | |
| | | Um | iP | | 03 19 20.7 | | |
| | | Ud | iP | | 03 19 46.2 C | | |
| | | De | iP | | 03 20 09.2 | | |
| | | Aleutian Islands (h = 70 km). | | | | | |
| " | 22 | Up | iPKP | | 07 21 08.3 | | |
| | | Sk | iPKP | | 07 21 02.5 | | |
| | | Ud | iPKP | | 07 21 08.9 | | |
| " | 22 | Up | Mx | | 07 31 | | |
| | | | | | micr | sec | |
| | | | Mx | E | 0.9 | 19 | |
| | | | Mx | N | 1.0 | 19 | |
| | | | Mx | Z | 1.5 | 19 | |
| | | Ki | Mx | | 07 28 | | |
| | | | | | micr | sec | |
| | | | Mx | E | 1.6 | 20 | |
| | | | Mx | Z | 2.2 | 20 | |
| | | Southeast Pacific Ocean | | | | | |
| | | (h = N). | | | | | |
| | | M = 5.7 (Up,Ki). | | | | | |
| " | 22 | Up | iP | | 23 58 40.1 | | |
| | | Ki | iP | | 23 58 22.1 | | |
| | | Ud | iP | | 23 58 49.4 C | | |
| | | Luzon (h = 65 km). | | | | | |
| " | 23 | Up | iP | | 00 05 07.8 D | | |
| | | | iPcP | | 00 05 37.2 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.4 | 0.5 | |
| | | Ki | iP | | 00 04 21.7 D | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.3 | 1.1 | |
| | | Sk | iP | | 00 04 57.4 D | | |
| | | Um | iP | | 00 04 42.6 D | | |
| | | | iPcP | | 00 05 21.9 | | |
| | | Ud | iP | | 00 05 14.0 D | | |
| | | De | iP | | 00 05 32.2 D | | |
| | | Okhotsk Sea (h = 480 km). | | | | | |
| | | m = 5.9 (Up,Ki). | | | | | |
| " | 23 | Up | i(P) | | 01 17 05.8 | | |
| " | 23 | Up | i(P) | | 01 22 52.2 | | |
| | | | i | | 01 23 41.9 | | |
| | | | i(Sg) | | 01 24 02.1 | | |
| | | Ud | i(P) | | 01 22 57.1 | | |
| " | 23 | Ud | iP | | 03 21 09.0 D | | |
| | | De | i(P) | | 03 21 20.2 | | |
| " | 23 | Ki | iP | | 05 59 11.5 | | |
| " | 23 | Up | iP | | 06 13 14.9 | | |
| | | Ud | iP | | 06 13 22.2 | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 | | | | | | | |
| Oct. | 23 | Ud | iP | | | 10 50 01.4 | |
| | | Turkey. | | | | | |
| " | 23 | Ud | iP | | | 11 03 58.0 | |
| " | 23 | Ki | Mx | | | 12 16 | |
| | | | | | | micr | sec |
| | | | Mx | E | | 0.8 | 18 |
| | | | Mx | Z | | 0.8 | 17 |
| | | Southeast Pacific Ocean | | | | | |
| | | (h = N). | | | | | |
| " | 24 | Up | iP | | | 00 20 25.9 | |
| | | Ki | iP | | | 00 19 31.8 | |
| | | Ud | iP | | | 00 20 23.6 | |
| | | Alaska (h = N). | | | | | |
| " | 24 | Ki | iP | | | 06 15 48.6 | |
| | | Sk | iP | | | 06 15 39.4 | |
| " | 24 | Ud | iP | | | 06 59 46.4 | |
| | | Kamchatka (h = 140 km). | | | | | |
| " | 24 | Up | iP | | | 15 01 14.8 | |
| | | Sk | iP | | | 15 01 53.2 | |
| | | Ud | iP | | | 15 01 22.4 | |
| | | De | iP | | | 15 00 51.8 | |
| | | Dodecanese Islands (h = N). | | | | | |
| " | 24 | Up | iP | | | 21 46 14.2 | |
| " | 25 | Up | iP | | | 05 26 12.8 | |
| | | | i | | | 05 26 36.9 | |
| | | Um | iP | | | 05 26 12.5 | |
| | | Ud | iP | | | 05 26 25.0 | |
| | | | ipP | | | 05 26 32.9 | |
| | | De | eP | | | 05 26 24 | |
| | | | ipP | | | 05 26 29.9 | |
| | | Nicobar Islands. | | | | | |
| | | h = 25 km (Ud,De). | | | | | |
| " | 25 | Ud | iP | | | 06 33 35.7 | |
| " | 25 | Up | iP | | | 07 56 04.5 | |
| | | Um | iP | | | 07 56 01.5 | |
| | | Ud | iP | | | 07 56 17.2 | |
| | | | ipP | | | 07 56 25.2 | |
| | | De | eP | | | 07 56 24 | |
| | | Nicobar Islands. | | | | | |
| | | h = 30 km (Ud). | | | | | |
| " | 25 | Up | iP | | | 08 01 23.4 | |
| " | 25 | Up | iP | | | 10 01 23.5 | |
| " | 25 | Up | iP | | | 10 17 14.9 | |
| | | (cont.) | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 | | | | | | | |
| Oct. | 25 | (cont.) | | | | | |
| | | Um | iP | | | 10 17 12.3 | |
| | | Ud | iP | | | 10 17 26.7 | |
| | | De | iP | | | 10 17 25.0 | |
| | | Nicobar Islands (h = N). | | | | | |
| " | 25 | Up | iP | | | 10 26 55.8 | |
| | | | ipP | | | 10 27 04.3 | |
| | | Ki | iP | | | 10 26 57.3 | |
| | | Um | iP | | | 10 26 52.6 | |
| | | Ud | iP | | | 10 27 07.0 | |
| | | | i | | | 10 27 23.8 | |
| | | De | iP | | | 10 27 05.5 | D |
| | | | ipP | | | 10 27 14.2 | |
| | | Nicobar Islands. | | | | | |
| | | h = 30 km (Up,De). | | | | | |
| " | 25 | Up | iP | | | 11 28 18.2 | |
| | | Ki | iP | | | 11 29 02.7 | |
| | | | | | | micr | sec |
| | | | P | Z' | | 0.3 | 1.0 |
| | | Um | iP | | | 11 28 35.3 | |
| | | Ud | iP | | | 11 28 34.1 | |
| | | De | iP | | | 11 28 16.4 | |
| | | Iran-Iraq (h = 20 km). | | | | | |
| " | 25 | Up | iP | | | 11 31 24.6 | |
| | | Sk | iP | | | 11 31 37.5 | C |
| | | Um | iP | | | 11 31 30.9 | |
| " | 25 | Up | iP | | | 12 13 00.1 | |
| | | | iPP | | | 12 16 17.8 | |
| | | | | | | micr | sec |
| | | | P | Z' | | 0.1 | 1.0 |
| | | | PP | Z' | | 0.1 | 1.3 |
| | | Ki | iP | | | 12 13 29.4 | |
| | | | | | | micr | sec |
| | | | P | Z' | | 0.1 | 1.3 |
| | | Sk | iP | | | 12 13 22.6 | |
| | | Um | iP | | | 12 13 11.2 | |
| | | Ud | iP | | | 12 13 10.0 | |
| | | | iPP | | | 12 16 26.2 | |
| | | De | iP | | | 12 12 57.7 | |
| | | Indian Ocean (h = 25 km). | | | | | |
| | | m = 6.1 (Up,Ki). | | | | | |
| " | 25 | Up | iP | | | 15 21 28.5 | |
| | | | iPP | | | 15 24 25.9 | |
| | | | | | | micr | sec |
| | | | P | Z' | | 0.6 | 1.2 |
| | | | Mx | E | | 13 | 23 |
| | | | Mx | N | | 17 | 21 |
| | | | Mx | Z | | 17 | 21 |
| | | Ki | iP | | | 15 21 31.9 | |
| | | | ipP | | | 15 21 41.5 | |
| | | | | | | micr | sec |
| | | | P | Z' | | 0.2 | 1.0 |
| | | (cont.) | | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | micr | sec |
|---|---|---|---|---|---|---|
| 1970 Oct. | 25 | (cont.) | | | | |
| | | Ki | | | micr | sec |
| | | | pP | Z' | 1.1 | 1.7 |
| | | | Mx | E | 9.2 | 17 |
| | | | Mx | N | 10 | 16 |
| | | | Mx | Z | 12 | 17 |
| | | Sk | iP | | 15 21 46.5 | |
| | | | ipP | | 15 21 58.0 | |
| | | Um | iP | | 15 21 26.8 | |
| | | | ipP | | 15 21 37.8 | |
| | | Ud | i(P) | | 15 21 40.0 | |
| | | | iP | | 15 21 42.3 | |
| | | | ipP | | 15 21 53.7 | |
| | | | iPP | | 15 24 37.7 | |
| | | De | iP | | 15 21 39.8 | |
| | | | ipP | | 15 21 51.2 | |
| | | Nicobar Islands. | | | | |
| | | h = 40 km (Ki,Sk,Um,Ud,De). | | | | |
| | | m = 6.4, M = 6.4 (Up,Ki). | | | | |
| " | 25 | Up | iP | | 15 33 31.5 | |
| | | Ki | iP | | 15 33 32.8 | |
| | | Sk | i(P) | | 15 33 55.9 | |
| | | Um | i(P) | | 15 33 35.5 | |
| | | Ud | iP | | 15 33 43.3 | |
| | | De | iP | | 15 33 49.1 | |
| | | | ipP | | 15 33 56.7 | |
| | | Nicobar Islands. | | | | |
| | | h = 30 km (De). | | | | |
| " | 25 | Up | iP | | 15 54 12.8 | |
| | | | ipP | | 15 54 18.6 | |
| | | Ud | iP | | 15 54 25.2 | |
| | | | ipP | | 15 54 32.3 | |
| | | Nicobar Islands. | | | | |
| | | h = 25 km (Up,Ud). | | | | |
| " | 25 | Up | iP | | 18 01 44.9 | |
| | | | ipP | | 18 01 52.0 | |
| | | Ki | iP | | 18 01 46.0 | |
| | | Um | iP | | 18 01 44.1 | |
| | | | ipP | | 18 01 49.9 | |
| | | Ud | iP | | 18 01 57.2 | |
| | | De | iP | | 18 01 57.2 | |
| | | Nicobar Islands. | | | | |
| | | h = 25 km (Up,Um). | | | | |
| " | 25 | Up | iP | | 18 05 24.2 | |
| | | Ud | iP | | 18 05 36.0 | |
| | | Nicobar Islands (h = N). | | | | |
| " | 25 | Up | iP | | 22 19 56.4 | |
| | | Ki | iP | | 22 19 57.8 | |
| | | Ud | iP | | 22 20 08.1 | |
| | | Nicobar Islands (h = N). | | | | |

| | | | | |
|---|---|---|---|---|
| 1970 Oct. | 25 | Up | iP | 22 32 28.5 |
| | | Ki | iP | 22 32 29.8 |
| | | Um | iP | 22 32 26.1 |
| | | Ud | iP | 22 32 40.4 |
| | | | ipP | 22 32 49.5 |
| | | De | iP | 22 32 38.1 |
| | | Nicobar Islands. | | |
| | | h = 35 km (Ud). | | |
| " | 26 | Ki | iP | 02 14 26.9 |
| | | Mariana Islands (h = 200 km). | | |
| " | 26 | Ud | iP | 07 21 00.0 |
| " | 26 | Ki | iPKP | 08 30 57.1 |
| | | Sk | i(PKP) | 08 31 09.0 |
| | | Um | iPKP | 08 30 56.4 |
| | | | i | 08 31 04.8 |
| | | | iSKP | 08 33 37.3 |
| | | Ud | iPKP | 08 31 06.1 |
| | | | iSKP | 08 33 50.8 |
| | | De | iPKP | 08 31 13.7 |
| | | Fiji Islands (h = 610 km). | | |
| " | 26 | Um | iP | 09 41 37.1 |
| | | Ud | iP | 09 42 02.1 |
| | | Volcano Islands (h = 50 km). | | |
| " | 26 | Up | iP | 10 13 19.7 |
| | | Ud | iP | 10 13 50.4 C |
| | | Hindu Kush (h = 130 km). | | |
| " | 26 | Ki | iP | 11 58 41.8 |
| | | Um | iP | 11 58 51.5 |
| | | | ipP | 11 59 07.4 |
| | | Ud | iP | 11 59 11.1 |
| | | Luzon. | | |
| | | h = 60 km (Um). | | |
| " | 26 | Ki | iP | 13 23 11.6 |
| | | Panama (h = N). | | |
| " | 26 | Um | iP | 13 58 53.5 |
| | | | i | 13 59 32.0 |
| " | 26 | Ki | iP | 17 38 42.9 |
| | | Ud | eP | 17 39 04 |
| | | Mindanao (h = 60 km). | | |
| " | 26 | Ki | iPg | 18 33 16.4 |
| | | | iSg | 18 33 49.3 |
| | | Sk | iPg | 18 33 16.9 |
| | | | iSg | 18 33 53.7 |
| | | Um | iPn | 18 33 21.4 |
| | | | iPg | 18 33 29.5 |
| | | | iSn | 18 34 03.4 |
| | | (cont.) | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Oct. | 26 | (cont.) | | | | | |
| | | Um | iSg | | 18 | 34 | 17.8 |
| | | Ud | iSg | | 18 | 35 | 45.2 |
| | | Nordland. Norway, 66.3°N, 14.6°E. | | | | | |
| | | Origin time = 18 32 21. | | | | | |
| " | 26 | Ki | iP | | 19 | 32 | 52.5 |
| | | Um | iP | | 19 | 33 | 11.0 |
| | | Ud | iP | | 19 | 33 | 41.6 |
| | | Japan (h = 80 km). | | | | | |
| " | 26 | Up | iP | | 20 | 58 | 07.6 |
| | | | iS | | 21 | 01 | 54 |
| | | | i | | 21 | 03 | 52.2 |
| | | | | | micr | | sec |
| | | | P | Z' | 0.4 | | 1.0 |
| | | | Mx | E | 4.5 | | 16 |
| | | | Mx | N | 7.5 | | 15 |
| | | | Mx | Z | 8.5 | | 15 |
| | | Ki | iP | | 20 | 56 | 31.9 |
| | | | i | | 20 | 56 | 34.3 |
| | | | iPP | | 20 | 56 | 45.1 |
| | | | iS | | 20 | 58 | 59 |
| | | | | | micr | | sec |
| | | | P | Z' | 0.7 | | 1.0 |
| | | | PP | Z' | 1.5 | | 1.0 |
| | | | Mx | E | 8.0 | | 14 |
| | | | Mx | N | 11 | | 16 |
| | | | Mx | Z | 23 | | 18 |
| | | Sk | iP | | 20 | 57 | 21.7 |
| | | Um | iP | | 20 | 57 | 23.4 C |
| | | | iPP | | 20 | 57 | 36.6 |
| | | | iS | | 21 | 00 | 26 |
| | | Ud | iP | | 20 | 58 | 02.5 |
| | | De | iP | | 20 | 58 | 41.4 |
| | | | i | | 20 | 58 | 44.9 |
| | | Svalbard (h = 30 km). | | | | | |
| | | m = 5.7, M = 5.2 (Up,Ki). | | | | | |
| | | Double P. | | | | | |
| " | 27 | Up | iP | | 05 | 15 | 27.9 |
| | | Ki | iP | | 05 | 15 | 15.7 |
| | | Sk | iP | | 05 | 15 | 09.6 |
| | | Um | iP | | 05 | 15 | 23.9 |
| | | Ud | iP | | 05 | 15 | 18.6 |
| | | Mexico (h = 80 km). | | | | | |
| " | 27 | Up | iP | | 11 | 30 | 30.5 |
| " | 27 | Up | iP | | 11 | 54 | 28.3 |
| | | Um | iP | | 11 | 54 | 59.5 |
| | | Ud | iP | | 11 | 55 | 27.0 |
| | | De | iP | | 11 | 54 | 49.3 |
| " | 27 | Up | i(P) | | 15 | 39 | 34.4 |
| | | (cont.) | | | | | |
| 1970 Oct. | 27 | (cont.) | | | | | |
| | | Um | iP | | 15 | 39 | 22.7 |
| | | | i | | 15 | 39 | 35.4 |
| | | Ud | iP | | 15 | 39 | 36.8 |
| " | 27 | Um | iP | | 18 | 25 | 36.6 |
| " | 27 | Up | iP | | 22 | 12 | 03.6 |
| | | Ki | iP | | 22 | 11 | 46.3 |
| | | Sk | eP | | 22 | 12 | 09 |
| | | Um | iP | | 22 | 11 | 53.0 |
| | | Ud | iP | | 22 | 12 | 11.6 |
| | | Mindanao (h = 80 km). | | | | | |
| " | 28 | Up | iSg | | 03 | 25 | 25.7 |
| | | Sk | iSn | | 03 | 23 | 38.3 |
| | | | iSg | | 03 | 24 | 09.7 |
| | | Um | iSg | | 03 | 25 | 55.6 |
| | | Ud | iPg | | 03 | 23 | 01.1 |
| | | | iSg | | 03 | 24 | 22.4 |
| | | De | iSg | | 03 | 25 | 22.1 |
| | | Atlantic Ocean, off west coast of Norway, 61.2°N, 0.9°E. | | | | | |
| | | Origin time = 03 20 57. | | | | | |
| " | 28 | Sk | iP | | 06 | 35 | 24.3 |
| | | Um | iP | | 06 | 35 | 17.7 C |
| | | Ud | iP | | 06 | 35 | 29.9 |
| " | 28 | Ki | iP | | 12 | 09 | 35.8 |
| | | Sk | iP | | 12 | 09 | 20.9 |
| | | Colombia (h = 30 km). | | | | | |
| " | 28 | Sk | e(P) | | 15 | 20 | 12 |
| | | Um | iP | | 15 | 20 | 00.4 |
| " | 29 | Up | iP | | 01 | 08 | 30.0 C |
| | | | i | | 01 | 08 | 32.9 |
| | | Ki | iP | | 01 | 07 | 35.8 C |
| | | | i | | 01 | 07 | 38.8 |
| | | | | | micr | | sec |
| | | | P | Z' | 0.1 | | 1.1 |
| | | Sk | iP | | 01 | 08 | 05.6 C |
| | | | i | | 01 | 08 | 08.8 |
| | | Um | iP | | 01 | 08 | 03.2 C |
| | | | i | | 01 | 08 | 05.8 |
| | | | iPcP | | 01 | 08 | 42.7 |
| | | Ud | iP | | 01 | 08 | 28.2 C |
| | | | i | | 01 | 08 | 31.3 |
| | | De | iP | | 01 | 08 | 50.4 C |
| | | | i | | 01 | 08 | 53.6 |
| | | Unimak Island (h = 25 km). | | | | | |
| | | Double P, in average 2.9 sec apart. | | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Oct. | 29 | Sk | eP | | 03 01 06 | |
| | | North Atlantic Ocean (h = N). | | | | |
| " | 29 | Up | Mx | | 03 36 | |
| | | | | | micr | sec |
| | | | Mx | E | 1.4 | 19 |
| | | | Mx | N | 1.5 | 19 |
| | | | Mx | Z | 2.7 | 17 |
| | | Ki | Mx | | 03 30 | |
| | | | | | micr | sec |
| | | | Mx | E | 2.3 | 18 |
| | | | Mx | N | 1.1 | 18 |
| | | | Mx | Z | 2.2 | 18 |
| | | Indian Ocean (h = N). M = 5.9 (Up,Ki). | | | | |
| " | 29 | Up | iP | | 09 23 17.4 | |
| | | | i | | 09 23 23.1 | |
| | | Um | iP | | 09 23 33.0 | |
| | | Ud | iP | | 09 23 30.8 | |
| | | Indian Ocean (h = N). | | | | |
| " | 29 | Um | i(P) | | 15 30 45.4 | |
| " | 29 | Up | iP | | 19 41 32.1 | C |
| | | | i | | 19 41 45.6 | |
| | | Ki | iP | | 19 40 48.8 | |
| | | Sk | iP | | 19 41 27.0 | |
| | | Um | iP | | 19 41 07.9 | |
| | | | i | | 19 41 09.8 | |
| | | Ud | iP | | 19 41 38.0 | C |
| | | De | iP | | 19 41 55.9 | C |
| | | Kurile Islands (h = 70 km). | | | | |
| " | 29 | Up | iP | | 22 31 15.4 | C |
| | | Ud | iP | | 22 31 17.7 | |
| | | De | iP | | 22 31 26.5 | |
| " | 29 | Sk | iP | | 23 26 07.3 | |
| | | Um | iP | | 23 25 47.0 | |
| | | | i | | 23 25 56.6 | |
| | | Japan (h = 60 km). | | | | |
| " | 29 | Up | i(P) | | 23 26 21.1 | |
| | | Ud | iP | | 23 26 16.4 | |
| " | 30 | Ud | iPKP | | 11 12 05.6 | |
| | | Fiji Islands (h = 420 km). | | | | |
| " | 30 | Sk | iP | | 11 25 16.6 | |
| " | 30 | Sk | iP | | 11 56 22.4 | |
| " | 30 | Sk | i(Sg) | | 15 31 12.8 | |
| | | Ud | i(Sg) | | 15 31 50.2 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Oct. | 30 | Up | iP | | 23 56 20.4 | |
| | | Sk | iP | | 23 57 10.9 | |
| | | Um | iP | | 23 57 07.9 | |
| | | Ud | iP | | 23 56 33.8 | |
| | | Greece-Albania. | | | | |
| " | 31 | Up | iP | | 09 20 19.9 | |
| | | | i | | 09 20 32.5 | |
| | | Ki | iP | | 09 20 19.0 | |
| | | Sk | iP | | 09 20 32.6 | |
| | | Um | iP | | 09 20 16.6 | |
| | | Ud | iP | | 09 20 29.1 | C |
| | | Sumatra (h = 15 km). | | | | |
| " | 31 | Um | iP | | 09 51 18.0 | |
| | | Ud | i(P) | | 09 51 25.8 | |
| " | 31 | Um | i(P) | | 10 59 42.9 | |
| " | 31 | Ki | iPn | | 14 33 52.7 | |
| | | | iSn | | 14 34 49.8 | |
| | | | iLgl | | 14 35 07.7 | |
| | | Um | i(Sg) | | 14 36 33.0 | |
| | | Probably northwest Russia. Origin time = 14 32 40. Explosion? | | | | |
| " | 31 | Ki | iP | | 15 05 55.1 | |
| | | Sk | iP | | 15 06 22.0 | |
| | | Kodiak Island (h = 45 km). | | | | |
| " | 31 | Up | iP | | 16 11 45.1 | |
| | | | i | | 16 13 44.3 | |
| | | Ki | iP | | 16 13 19.6 | |
| | | Sk | iP | | 16 12 28.7 | |
| | | Um | iP | | 16 12 27.9 | C |
| | | | i | | 16 12 40.6 | |
| | | Ud | iP | | 16 11 51.5 | |
| | | | i | | 16 12 04.2 | |
| | | De | iP | | 16 11 12.7 | |
| | | | i | | 16 11 23.3 | |
| | | Yugoslavia (h = 25 km). | | | | |
| " | 31 | Up | iP | | 16 19 40.7 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 0.5 |
| | | Ki | iP | | 16 18 48.1 | |
| | | Sk | iP | | 16 19 20.6 | |
| | | Um | iP | | 16 19 13.3 | |
| | | Ud | iP | | 16 19 41.1 | |
| | | De | iP | | 16 20 03.6 | |
| | | Aleutian Islands (h = 40 km). | | | | |
| " | 31 | Up | i(P) | | 18 08 05.6 | |
| | | | i(PP) | | 18 12 12.4 | |
| | | | iPP | | 18 12 33.4 | |

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 | | | | | | |
| Oct. | 31 | (cont.) | | | | |
| | | Up | iPS | | 18 21 58 | |
| | | | ePKKP | | 18 22 33 | |
| | | | i | | 18 22 40.3 | |
| | | | i | | 18 25 17.4 | |
| | | | | | micr | sec |
| | | | (PP) | Z' | 0.1 | 1.2 |
| | | | Mx | E | 42 | 26 |
| | | | Mx | N | 100 | 26 |
| | | | Mx | Z | 66 | 26 |
| | | Ki | iP | | 18 07 23.7 | |
| | | | i | | 18 07 39.4 | |
| | | | i | | 18 10 53.3 | |
| | | | iPP | | 18 11 54.6 | |
| | | | iPKKP | | 18 22 53.6 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.3 | 1.4 |
| | | | Mx | E | 43 | 23 |
| | | | Mx | N | 46 | 22 |
| | | | Mx | Z | 55 | 24 |
| | | Sk | i(P) | | 18 08 07.5 | |
| | | | i(PP) | | 18 12 02.9 | |
| | | | iPP | | 18 12 44.0 | |
| | | | iPKKP | | 18 22 39.3 | |
| | | | i | | 18 23 20.5 | |
| | | Um | i(P) | | 18 07 49.1 | |
| | | | i(PP) | | 18 11 32.4 | |
| | | | iPP | | 18 12 06.7 | |
| | | | iSKS | | 18 18 27 | |
| | | | iPKKP | | 18 22 37.3 | |
| | | Ud | i(PP) | | 18 12 12.2 | |
| | | | iPP | | 18 12 38.3 | |
| | | | iPKKP | | 18 22 33.4 | |
| | | De | i | | 18 12 04.5 | |
| | | | i(PP) | | 18 12 36.6 | |
| | | | iPP | | 18 12 57.2 | |
| | | | iPKKP | | 18 22 25.9 | |
| | | | i | | 18 22 36.7 | |

New Guinea (h = 40 km).
M = 7.3 (Up,Ki).
(PP) denotes early PP-arrivals.

| | | | | | |
|---|---|---|---|---|---|
| " | 31 | Ki | iPn | 19 58 33.1 | |
| | | | iSn | 19 59 18.8 | |
| | | | iLgl | 19 59 33.1 | |
| | | Sk | eSg | 20 02 23 | |
| | | Um | iSg | 20 01 06.1 | |

Northwest Russia,
69.1°N, 30.1°E.
Origin time = 19 57 32.
Explosion?

Markus Båth
November 10, 1971

SEISMOLOGICAL INSTITUTE
BOX 517
S-751 20 UPPSALA 1
SWEDEN

# S E I S M O L O G I C A L  B U L L E T I N

## U P P S A L A,  K I R U N A,  S K A L S T U G A N,  U M E Å,

## U D D E H O L M  and  D E L A R Y

| | | | | |
|---|---|---|---|---|
| Uppsala | (Up): | 59°51.5'N, | 17°37.6'E; | h = 14 m |
| Kiruna | (Ki): | 67°50.4'N, | 20°25.0'E; | h = 390 m |
| Skalstugan | (Sk): | 63°34.8'N, | 12°16.8'E; | h = 580 m |
| Umeå | (Um): | 63°48.9'N, | 20°14.2'E; | h = 16 m |
| Uddeholm | (Ud): | 60°05.4'N, | 13°36.4'E; | h = 240 m |
| Delary | (De): | 56°28.2'N, | 13°52.2'E; | h = 150 m |

## N O V E M B E R  1 - 30, 1970

| 1970 | | | | | | |
|---|---|---|---|---|---|---|
| Nov. | 1 | Up | iP | | 04 43 48.9 | |
| | | | | | micr | sec |
| | | | Mx | E | 1.7 | 18 |
| | | | Mx | N | 1.8 | 18 |
| | | | Mx | Z | 2.3 | 18 |
| | | Ki | | | micr | sec |
| | | | Mx | E | 0.9 | 14 |
| | | | Mx | Z | 1.2 | 15 |
| | | Um | iP | | 04 43 39.2 | |
| | | Mexico (h = N). | | | | |
| | | M = 5.6 (Up,Ki). | | | | |
| " | 1 | Ud | iP | | 05 47 23.0 | |
| | | Hindu Kush. | | | | |
| " | 1 | Ki | iP | | 06 47 14.5 | |
| | | Ud | iP | | 06 46 35.4 | |
| " | 1 | Ki | iP | | 13 09 39.6 | |
| | | Aleutian Islands (h = 90 km). | | | | |
| " | 1 | Up | iPKP | | 13 33 08.0 | |
| | | Ki | iPKP | | 13 33 23.3 | |
| | | | iPKS | | 13 36 45.6 | |
| | | Sk | iPKP | | 13 33 12.7 | |
| | | Um | iPKP | | 13 33 16.2 | |
| | | | iPKS | | 13 36 32.3 | |
| | | Ud | iPKP | | 13 33 06.1 | |
| | | South Sandwich Islands (h = N). | | | | |
| " | 1 | Ki | iP | | 17 20 53.7 | |
| | | Sk | iP | | 17 21 22.1 | |
| | | Um | iP | | 17 21 20.7 | |
| | | Alaska (h = 180 km). | | | | |

| 1970 | | | | | | |
|---|---|---|---|---|---|---|
| Nov. | 1 | Ki | iP | | 20 32 01.3 | |
| | | Um | iP | | 20 32 20.5 | |
| | | Ud | iP | | 20 32 51.1 | |
| | | Japan (h = 120 km). | | | | |
| " | 2 | Up | Mx | | 11 26 | |
| | | | | | micr | sec |
| | | | Mx | E | 1.8 | 19 |
| | | | Mx | N | 2.6 | 21 |
| | | | Mx | Z | 3.2 | 20 |
| | | Ki | Mx | | 11 23 | |
| | | | | | micr | sec |
| | | | Mx | E | 2.0 | 20 |
| | | | Mx | N | 3.4 | 22 |
| | | | Mx | Z | 3.7 | 21 |
| | | Fiji Islands (h = 45 km). | | | | |
| | | M = 6.1 (Up,Ki). | | | | |
| " | 2 | Sk | i(P) | | 12 16 28.4 | |
| | | Yugoslavia. | | | | |
| " | 3 | Up | iPKP | | 00 51 54.6 | |
| | | Ud | iPKP | | 00 51 56.3 | |
| | | De | iPKP | | 00 52 06.2 | |
| | | Tonga-Kermadec Islands | | | | |
| | | (h = 35 km). | | | | |
| " | 3 | Up | iP | | 02 39 58.2 | C |
| | | | ipP | | 02 40 20.2 | |
| | | Ki | iP | | 02 39 01.3 | |
| | | | ipP | | 02 39 21.2 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 1.0 |
| | | (cont.) | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970
Nov. 3 (cont.)

| | | | |
|---|---|---|---|
| Sk | iP | 02 39 29.3 | |
| | ipP | 02 39 50.4 | |
| Um | iP | 02 39 30.7 | C |
| | ipP | 02 39 50.1 | |
| | i | 02 40 54.5 | |
| Ud | iP | 02 39 54.2 | |
| | ipP | 02 40 14.4 | |
| De | iP | 02 40 19.5 | C |
| | ipP | 02 40 41.5 | |

Alaska.
h = 80 km (Up,Ki,Sk,Um,Ud,De).

" 3

| | | | |
|---|---|---|---|
| Up | iP | 02 44 43.2 | |
| Um | iP | 02 44 25.1 | |
| Ud | iP | 02 44 40.5 | |

" 3

| | | | |
|---|---|---|---|
| Up | iP | 09 06 48.3 | |

" 3

| | | | |
|---|---|---|---|
| Up | iPKP | 09 43 03.1 | |
| Ki | iPKP | 09 42 54.2 | |
| Sk | e(PKP) | 09 42 55 | |
| Um | iPKP | 09 43 01.1 | |
| Ud | iPKP | 09 42 55.3 | |

Easter Island region
(h = N).

" 3

| | | | |
|---|---|---|---|
| Ki | iPg | 11 32 05.4 | |
| | iSg | 11 32 30.4 | |
| | i | 11 32 56.0 | |
| Sk | eSg | 11 34 50 | |
| Um | iSg | 11 34 31.6 | |

Probably coast region of
northwest Norway.

" 3

| | | | |
|---|---|---|---|
| Up | iP | 15 16 11.1 | |
| Sk | iP | 15 16 50.7 | |
| Ud | iP | 15 16 14.6 | |

Ionian Islands.

" 3

| | | | |
|---|---|---|---|
| Up | iP | 15 24 20.4 | |
| | | micr | sec |
| | P | Z' 0.1 | 0.7 |
| Ki | iP | 15 24 01.0 | C |
| | ipP | 15 24 19.4 | |
| | | micr | sec |
| | P | Z' 0.1 | 1.3 |
| Sk | iP | 15 24 25.9 | |
| | ipP | 15 24 45.5 | |
| Um | iP | 15 24 07.6 | C |
| Ud | iP | 15 24 30.5 | |
| | ipP | 15 24 50.7 | |

Luzon.
h = 70 km (Ki,Sk,Ud).
m = 6.0 (Up,Ki).

1970
Nov. 3

| | | | |
|---|---|---|---|
| Ki | iSg | 19 46 57.4 | |
| Sk | iSg | 19 47 00.6 | |
| Um | iSg | 19 47 23.3 | |

Nordland, Norway.
Origin time = 19 45 28.

" 3

| | | | |
|---|---|---|---|
| Um | iP | 23 20 51.6 | |
| Ud | iP | 23 21 10.4 | C |

" 4

| | | | |
|---|---|---|---|
| Up | iP | 06 09 49.5 | |
| | iPn | 06 10 50.3 | |
| | iPP | 06 11 08.6 | |
| | | micr | sec |
| | P | Z' 0.1 | 0.5 |
| | PP | Z' 0.1 | 0.5 |
| Ki | iP | 06 09 34.2 | C |
| | | micr | sec |
| | P | Z' 0.2 | 0.5 |
| Sk | iP | 06 10 05.5 | C |
| | iPn | 06 11 21.2 | |
| Um | iP | 06 09 34.6 | C |
| | iPn | 06 10 33.2 | |
| | iPP | 06 10 48.9 | |
| Ud | iP | 06 10 06.2 | C |
| | iPn | 06 11 17.2 | |
| De | iP | 06 10 13.8 | C |

Kazakh SSR.
m = 6.1 (Up,Ki).
Underground explosion.

" 4

| | | | |
|---|---|---|---|
| Ud | iSg | 10 35 57.1 | |
| De | iPg | 10 33 59.6 | |
| | iSg | 10 34 14.4 | |

Probably underwater explosion
in the southern Baltic Sea.
Origin time = 10 33 38.

" 4

| | | | |
|---|---|---|---|
| Ud | eSg | 10 41 34 | |
| De | iPg | 10 39 31.2 | |
| | iSg | 10 39 46.0 | |

Probably underwater explosion
in the southern Baltic Sea.
Origin time = 10 39 09.

" 4

| | | | |
|---|---|---|---|
| Ki | ePKP | 18 02 12 | |
| Sk | iPKP | 18 02 23.5 | |
| Um | iPKP | 18 02 16.8 | |
| Ud | iPKP | 18 02 29.4 | |

New Hebrides Islands
(h = 45 km).

" 4

| | | | |
|---|---|---|---|
| Ki | iP | 20 29 04.5 | |
| Sk | i(P) | 20 29 03.3 | |

" 5

| | | | |
|---|---|---|---|
| Sk | eP | 05 42 28 | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Nov. | 5 | Ki | i(P) | | 05 57 04.6 | |
| " | 5 | Up | iP | | 07 33 47.1 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 0.5 |
| | | Ki | iP | | 07 32 53.6 | |
| | | Ud | iP | | 07 33 46.8 | |
| | | De | eP | | 07 34 09 | |
| | | Aleutian Islands (h = 35 km). | | | | |
| " | 5 | Sk | iP | | 08 35 17.8 | |
| | | Colombia (h = 25 km). | | | | |
| " | 5 | Up | iP | | 11 41 28.9 | |
| | | Sk | iP | | 11 41 15.4 | |
| | | Um | iP | | 11 41 26.4 | |
| " | 5 | Up | iP | | 13 24 46.3 | |
| | | Ki | iP | | 13 24 43.9 C | |
| | | | | | micr | sec |
| | | | P | Z' | 0.2 | 1.8 |
| | | | Mx | E | 2.3 | 24 |
| | | | Mx | Z | 1.0 | 17 |
| | | Sk | iP | | 13 24 32.4 C | |
| | | Um | iP | | 13 24 46.0 | |
| | | | iS | | 13 35 22 | |
| | | Ud | iP | | 13 24 37.5 | |
| | | Panama (h = N). | | | | |
| " | 5 | Ki | e | | 13 48 03 | |
| | | | i(Sg) | | 13 48 49.9 | |
| " | 5 | Um | iP | | 15 11 31.7 | |
| | | Ud | iP | | 15 11 41.5 | |
| | | Nevada. | | | | |
| | | Underground explosion. | | | | |
| " | 5 | Up | iP | | 16 53 01.4 | |
| | | Sk | iP | | 16 53 13.4 | |
| | | Ud | iP | | 16 52 48.6 | |
| " | 5 | Up | iP | | 16 57 36.1 | |
| | | Ki | eP | | 16 57 49 | |
| | | Sk | iP | | 16 58 05.4 | |
| | | Um | iP | | 16 57 38.2 | |
| | | Ud | iP | | 16 57 56.5 | |
| | | Hindu Kush (h = 210 km). | | | | |
| " | 5 | Ki | eP | | 20 44 36 | |
| | | North Atlantic Ocean (h = N). | | | | |
| " | 6 | Ki | iP | | 07 19 59.4 | |
| | | | | | micr | sec |
| | | | Mx | E | 1.1 | 12 |
| | | | Mx | Z | 0.4 | 12 |
| | | Iceland (h = 8 km). | | | | |
| 1970 Nov. | 6 | Um | iSg | | 10 43 52.5 | |
| | | Ud | iSg | | 10 44 27.5 | |
| | | Probably Esthonia. | | | | |
| | | Explosion?. | | | | |
| " | 6 | Ki | iPg | | 11 05 05.5 | |
| | | | iSn | | 11 05 29.4 | |
| | | | iSg | | 11 05 44.8 | |
| | | Sk | eSg | | 11 07 54 | |
| | | Um | $iS^x$ | | 11 06 05.2 | |
| | | | iSg | | 11 06 16.4 | |
| | | Northern Finland, | | | | |
| | | 66.5°N, 27.9°E. | | | | |
| | | Origin time = 11 04 00. | | | | |
| " | 6 | Ki | iP | | 11 29 36.8 | |
| | | | | | micr | sec |
| | | | Mx | E | 1.1 | 14 |
| | | | Mx | N | 1.1 | 14 |
| | | | Mx | Z | 0.7 | 14 |
| | | Um | iP | | 11 29 52.2 | |
| | | Iceland (h = N). | | | | |
| " | 6 | Up | i(P) | | 11 49 15.8 | |
| | | | i | | 11 49 27.2 | |
| | | | i | | 11 49 52.9 | |
| " | 6 | Up | iP | | 13 14 24.7 | |
| | | Um | iP | | 13 14 46.2 | |
| | | Ud | iP | | 13 14 39.3 | |
| | | Caucasus. | | | | |
| " | 6 | Sk | i(P) | | 13 32 22.5 | |
| | | De | i(P) | | 13 31 25.3 | |
| " | 6 | Sk | iP | | 17 15 15.6 | |
| | | Um | i(P) | | 17 14 59.9 | |
| " | 6 | Um | iP | | 19 42 08.1 | |
| | | Ud | i(P) | | 19 42 00.0 | |
| " | 6 | Um | iP | | 20 16 23.1 | |
| | | Ud | iP | | 20 16 22.6 C | |
| | | Indian Ocean (h = N). | | | | |
| " | 6 | Up | iP | | 22 02 41.4 | |
| | | Ud | eP | | 22 02 45 | |
| " | 6 | Up | iP | | 22 38 17.2 | |
| | | Ud | iP | | 22 38 19.2 | |
| | | Aleutian Islands (h = 45 km). | | | | |
| " | 6 | Ki | ePg | | 23 23 40 | |
| | | | iSg | | 23 24 13.0 | |
| | | Sk | iSg | | 23 24 17.8 | |
| | | (cont.) | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Nov. | 6 | (cont.) | | | | |
| | | Um | iSn | | 23 24 27.1 | |
| | | | iSg | | 23 24 41.1 | |
| | | Ud | eSg | | 23 26 07 | |
| | | Nordland, Norway, 66.3°N, 14.6°E. | | | | |
| | | Origin time = 23 22 45. | | | | |
| " | 7 | Up | iP | | 03 34 09.1 | |
| | | Ud | iP | | 03 34 16.2 | |
| | | Kurile Islands (h = N). | | | | |
| " | 7 | Ki | i(Sg) | | 03 48 51.6 | |
| | | Um | i(Sg) | | 03 50 13.0 | |
| " | 7 | Up | iPKP | | 08 04 42.5 | C |
| | | | i | | 08 04 51.9 | |
| | | | | | micr | sec |
| | | | PKP | Z' | 0.1 | 0.5 |
| | | Ki | iPKP | | 08 04 22.1 | |
| | | Sk | iPKP | | 08 04 37.6 | C |
| | | Um | iPKP | | 08 04 32.6 | C |
| | | | ipPKP | | 08 04 55.2 | |
| | | Ud | iPKP | | 08 04 44.1 | C |
| | | | ipPKP | | 08 05 12.1 | |
| | | South of Kermadec Islands. | | | | |
| | | h = 90 km (Um,Ud). | | | | |
| " | 7 | Up | i(Sg) | | 11 11 43.6 | |
| " | 7 | Ki | iP | | 11 16 50.4 | |
| " | 7 | Up | i(P) | | 11 30 52.4 | |
| | | | | | micr | sec |
| | | | (P) | Z' | 0.1 | 1.0 |
| | | Ki | iP | | 11 30 36.1 | |
| | | Ud | iP | | 11 30 39.7 | |
| " | 7 | Up | iP | | 18 28 01.4 | |
| | | Ki | iP | | 18 28 02.6 | |
| | | Ud | iP | | 18 28 19.1 | |
| | | Kirghiz SSR (h = 25 km). | | | | |
| " | 7 | Up | iP | | 19 19 41.6 | |
| | | Ki | eP | | 19 20 37 | |
| | | Um | iP | | 19 20 05.0 | |
| | | Ud | iP | | 19 19 58.7 | |
| | | Caucasus. | | | | |
| " | 7 | Up | iP | | 23 30 31.7 | |
| | | | ipP | | 23 30 43.3 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 1.0 |
| | | | Mx | E | 1.5 | 20 |
| | | | Mx | N | 1.1 | 19 |
| | | | Mx | Z | 1.9 | 20 |
| | | (cont.) | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Nov. | 7 | (cont.) | | | | |
| | | Ki | iP | | 23 30 11.9 | |
| | | | ipP | | 23 30 22.9 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.2 | 1.2 |
| | | Sk | eP | | 23 30 38 | |
| | | | i | | 23 31 11.6 | |
| | | Um | iP | | 23 30 18.0 | |
| | | | i(sP) | | 23 30 34.7 | |
| | | Ud | iP | | 23 30 40.4 | C |
| | | Luzon. | | | | |
| | | h = 40 km (Up,Ki). | | | | |
| | | m = 6.0 (Up,Ki). | | | | |
| " | 8 | Up | iP | | 00 14 36.7 | |
| | | Ki | iP | | 00 15 11.9 | |
| | | | iSn | | 00 21 27.3 | |
| | | Sk | eP | | 00 15 14 | |
| | | Um | iP | | 00 14 48.0 | |
| | | | iSn | | 00 20 24.4 | |
| | | Ud | iP | | 00 14 54.2 | |
| | | Caspian Sea (h = 55 km). | | | | |
| " | 8 | Up | iP | | 09 25 57.6 | |
| | | | | | micr | sec |
| | | | Mx | E | 0.9 | 16 |
| | | | Mx | N | 1.5 | 19 |
| | | Ki | iP | | 09 25 40.2 | C |
| | | | | | micr | sec |
| | | | Mx | E | 1.6 | 10 |
| | | | Mx | N | 3.0 | 17 |
| | | | Mx | Z | 1.2 | 11 |
| | | Sk | iP | | 09 26 08.3 | |
| | | Um | iP | | 09 25 43.8 | |
| | | | iPcP | | 09 26 45.6 | |
| | | Ud | iP | | 09 26 09.2 | |
| | | Szechwan (h = 40 km). | | | | |
| | | M = 5.4 (Up,Ki). | | | | |
| " | 8 | Up | iP | | 11 38 01.7 | |
| | | Ud | iP | | 11 38 20.5 | |
| | | Hindu Kush. | | | | |
| " | 8 | Up | iP | | 15 11 57.8 | |
| | | | ipP | | 15 12 05.2 | |
| | | | | | micr | sec |
| | | | pP | Z' | 0.1 | 0.6 |
| | | | Mx | E | 5.1 | 18 |
| | | | Mx | N | 6.4 | 21 |
| | | | Mx | Z | 9.2 | 18 |
| | | Ki | iP | | 15 11 39.5 | |
| | | | ipP | | 15 11 47.3 | |
| | | | | | micr | sec |
| | | | pP | Z' | 0.2 | 1.0 |
| | | | Mx | E | 7.4 | 17 |
| | | | Mx | N | 4.1 | 20 |
| | | | Mx | Z | 5.4 | 19 |
| | | (cont.) | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Nov. | 8 | (cont.) | | | | | |
| | | Sk | iP | | 15 12 01.2 | C | |
| | | Um | iP | | 15 11 45.8 | | |
| | | | i(sP) | | 15 11 56.1 | | |
| | | | iS | | 15 22 22 | | |
| | | Ud | iP | | 15 12 05.6 | | |
| | | Mindanao. | | | | | |
| | | h = 30 km (Up,Ki). | | | | | |
| | | M = 6.3 (Up,Ki). | | | | | |
| " | 8 | Up | iP | | 22 49 59.6 | | |
| | | | iPP | | 22 54 29.9 | | |
| | | | i | | 22 54 48.1 | | |
| | | | iS | | 23 01 52 | | |
| | | | | | micr | sec | |
| | | | Mx | E | 48 | 36 | |
| | | | Mx | N | 110 | 35 | |
| | | | Mx | Z | 35 | 26 | |
| | | Ki | iP | | 22 49 39.5 | | |
| | | | i | | 22 53 23.8 | | |
| | | | iPP | | 22 53 49.8 | | |
| | | | iSKS | | 23 00 14 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.2 | 1.4 | |
| | | | PP | Z' | 0.4 | 2.0 | |
| | | | Mx | E | 28 | 19 | |
| | | | Mx | N | 28 | 24 | |
| | | | Mx | Z | 34 | 19 | |
| | | Sk | iPP | | 22 54 27.9 | | |
| | | | i | | 22 54 47.0 | | |
| | | Um | iP | | 22 49 47.8 | | |
| | | | iPP | | 22 54 07.5 | | |
| | | | iSKS | | 23 00 26 | | |
| | | Ud | iP | | 22 50 11.0 | | |
| | | New Guinea (h = N). | | | | | |
| | | m = 6.6, M = 7.0 (Up,Ki). | | | | | |
| " | 8 | Ki | eP | | 23 22 05 | | |
| | | Virgin Islands (h = 70 km). | | | | | |
| " | 9 | Ki | iP | | 02 15 26.3 | | |
| | | Aleutian Islands (h = 50 km). | | | | | |
| " | 9 | Up | i | | 06 09 06.2 | | |
| | | | i(Sg) | | 06 09 33.8 | | |
| " | 9 | Um | iP | | 09 02 42.5 | | |
| " | 9 | Ud | iPKP | | 14 48 33.4 | | |
| | | Tonga-Kermadec Islands | | | | | |
| | | (h = 590 km). | | | | | |
| " | 9 | Up | iP | | 15 59 43.6 | | |
| | | Um | i(P) | | 15 59 26.4 | | |
| | | Ud | i(P) | | 15 59 19.7 | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Nov. | 9 | Up | iP | | 17 49 09.2 | C | |
| | | | iPP | | 17 50 39.3 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.1 | 0.7 | |
| | | Ki | iP | | 17 49 40.3 | C | |
| | | | iPP | | 17 51 21.5 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.2 | 1.0 | |
| | | Sk | iP | | 17 49 42.8 | C | |
| | | | ipP | | 17 50 06.8 | | |
| | | Um | iP | | 17 49 19.9 | C | |
| | | | ipP | | 17 49 45.1 | | |
| | | | iPP | | 17 51 02.4 | | |
| | | Ud | iP | | 17 49 25.1 | C | |
| | | | ipP | | 17 49 47.6 | | |
| | | | iPP | | 17 51 03.9 | | |
| | | De | iP | | 17 49 10.9 | C | |
| | | | ipP | | 17 49 31.1 | | |
| | | Iran. | | | | | |
| | | h = 110 km (Sk,Um,Ud,De). | | | | | |
| | | m = 5.8 (Up,Ki). | | | | | |
| " | 9 | Up | iP | | 21 34 51.1 | | |
| " | 10 | Up | iP | | 00 37 16.8 | | |
| | | | i | | 00 37 24.6 | | |
| | | | ipP | | 00 38 35.2 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.1 | 0.5 | |
| | | Ki | iP | | 00 36 40.9 | | |
| | | | i | | 00 36 48.9 | | |
| | | | ipP | | 00 37 58.9 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.1 | 1.0 | |
| | | | pP | Z' | 0.2 | 1.2 | |
| | | Sk | iP | | 00 37 13.0 | | |
| | | | i | | 00 37 22.1 | | |
| | | | ipP | | 00 38 31.4 | | |
| | | | iPP | | 00 39 58.6 | | |
| | | Um | iP | | 00 36 56.3 | | |
| | | | i | | 00 37 03.9 | | |
| | | | ipP | | 00 38 14.7 | | |
| | | Ud | iP | | 00 37 24.6 | | |
| | | | i | | 00 37 31.6 | | |
| | | | ipP | | 00 38 43.1 | | |
| | | De | iP | | 00 37 35.5 | | |
| | | Japan. | | | | | |
| | | h = 350 km (Up,Ki,Sk,Um,Ud). | | | | | |
| | | m = 5.7 (Up,Ki). | | | | | |
| | | Double P, in average 7.7 sec apart. | | | | | |
| " | 10 | Ki | eP | | 01 29 31 | | |
| | | Ud | iP | | 01 29 57.9 | | |
| | | Mindanao (h = N). | | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | |
|---|---|---|---|---|---|
| 1970 Nov. | 10 | Ki | iP | | 02 57 53.0 |
| | | Mindanao (h = N). | | | |
| " | 10 | Ki | iP | | 06 47 21.5 |
| | | Sk | iP | | 06 48 10.2 |
| " | 10 | Ki | eP | | 10 52 16 |
| | | Sk | iP | | 10 52 05.4 |
| | | Panama-Costa Rica (h = N). | | | |
| " | 10 | Up | iPKP | | 14 07 21.8 |
| | | | i | | 14 07 26.2 |
| | | | | | micr sec |
| | | | PKP | Z' | 0.1 0.5 |
| | | Ki | ePKP | | 14 07 02 |
| | | Sk | iPKP | | 14 07 14.3 |
| | | Um | iPKP | | 14 07 09.4 |
| | | Ud | iPKP | | 14 07 21.6 C |
| | | | i | | 14 07 28.3 |
| | | South of Kermadec Islands (h = 35 km). | | | |
| " | 10 | Ki | i(P) | | 16 13 54.2 |
| | | Sk | iP | | 16 14 43.3 |
| " | 11 | Up | iPKP | | 03 13 34.2 |
| | | | i | | 03 13 41.7 |
| | | Sk | iPKP | | 03 13 23.2 |
| | | Um | iPKP | | 03 13 16.0 |
| | | | i | | 03 13 24.1 |
| | | Ud | i(PKP) | | 03 13 36.7 C |
| | | South of Kermadec Islands (h = 55 km). | | | |
| " | 11 | Up | iP | | 08 44 03.6 |
| | | | i | | 08 44 14.2 |
| " | 11 | Up | iP | | 11 57 53.7 |
| | | | iPcP | | 11 58 17.3 |
| | | Um | iP | | 11 57 27.1 |
| | | Ud | iP | | 11 57 54.4 |
| | | Kurile Islands (h = 50 km). | | | |
| " | 11 | Up | iP | | 12 06 09.7 |
| | | | iPcP | | 12 06 31.7 |
| | | Um | iP | | 12 05 45.2 |
| | | Probably Kurile Islands. | | | |
| " | 11 | Ki | iPn | | 12 47 08.3 |
| | | | iSn | | 12 47 56.3 |
| | | | iLgl | | 12 48 09.1 |
| | | Origin time = 12 46 04. | | | |
| | | Explosion? | | | |
| " | 11 | Ki | iSg | | 12 56 32.5 |
| | | Sk | eSg | | 12 55 44 |
| | | (cont.) | | | |
| 1970 Nov. | 11 | (cont.) | | | |
| | | Um | iSg | | 12 54 21.1 |
| | | Ud | iSg | | 12 54 55.5 |
| | | Esthonia. | | | |
| | | Explosion? | | | |
| " | 11 | Ki | iSg | | 18 51 16.4 |
| | | Sk | iSg | | 18 50 55.1 |
| | | Um | iSg | | 18 51 37.4 |
| | | Coast of Nordland, Norway, 66.2°N, 13.2°E. | | | |
| | | Origin time = 18 49 28. | | | |
| " | 11 | Up | iP | | 21 03 30.7 |
| | | | | | micr sec |
| | | | Mx | E | 6.0 16 |
| | | | Mx | N | 3.2 16 |
| | | | Mx | Z | 3.5 16 |
| | | Ki | iP | | 21 04 36.2 |
| | | | | | micr sec |
| | | | Mx | E | 1.8 13 |
| | | | Mx | N | 1.9 10 |
| | | | Mx | Z | 1.3 12 |
| | | Sk | iP | | 21 04 11.9 |
| | | Um | iP | | 21 04 06.5 |
| | | Ud | iP | | 21 03 39.4 |
| | | De | iP | | 21 03 09.4 |
| | | | i | | 21 03 14.7 |
| | | Dodecanese Islands (h = 45 km). | | | |
| | | M = 5.1 (Up,Ki). | | | |
| " | 11 | Ki | | | micr sec |
| | | | Mx | E | 2.0 20 |
| | | Um | iP | | 21 52 36.9 |
| | | Ud | iP | | 21 52 20.0 |
| | | Ascension Island (h = N). | | | |
| " | 12 | Up | iPKP | | 04 10 10.8 |
| | | Sk | e(PKP) | | 04 10 09 |
| | | Um | iPKP | | 04 09 59.4 |
| | | Ud | iPKP | | 04 10 12.2 |
| | | | i | | 04 10 18.8 |
| | | Kermadec Islands (h = 45 km). | | | |
| " | 12 | Up | iP | | 04 12 13.4 C |
| | | Ki | iP | | 04 11 30.2 C |
| | | Sk | iP | | 04 12 05.4 |
| | | Um | iP | | 04 11 49.5 C |
| | | Ud | iP | | 04 12 20.0 C |
| | | De | iP | | 04 12 37.2 |
| | | Japan (h = 60 km). | | | |
| " | 12 | Up | i(P) | | 06 12 34.3 |
| | | | | | micr sec |
| | | | (P) | Z' | 0.1 0.5 |
| | | Ud | i(P) | | 06 12 13.7 |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Nov. | 12 | Up | iSg | | 06 14 21.1 | |
| | | Sk | iSg | | 06 14 21.6 | |
| | | Ud | iSg | | 06 13 15.8 | |
| | | South Norway. | | | | |
| " | 12 | Up | e(P) | | 06 21 39 | |
| | | | iPS | | 06 36 12 | |
| | | | iPKKP | | 06 36 48.2 | |
| | | | | | micr | sec |
| | | | Mx | E | 13 | 26 |
| | | | Mx | N | 20 | 26 |
| | | | Mx | Z | 9.6 | 26 |
| | | Ki | iP | | 06 21 38.4 | |
| | | | iPP | | 06 26 08.5 | |
| | | | iPKKP | | 06 37 04.7 | |
| | | | | | micr | sec |
| | | | Mx | E | 7.4 | 21 |
| | | | Mx | N | 5.9 | 22 |
| | | | Mx | Z | 9.5 | 22 |
| | | Sk | i(PP) | | 06 26 26.1 | |
| | | | iPKKP | | 06 36 47.7 | |
| | | Um | i(PP) | | 06 25 59.1 | |
| | | | iPP | | 06 26 28.3 | |
| | | | i | | 06 36 23.1 | |
| | | | iPKKP | | 06 36 55.5 | |
| | | Ud | i(PP) | | 06 26 26.0 | |
| | | | iPKKP | | 06 36 41.9 | |
| | | De | iPKP | | 06 26 01.2 | |
| | | | iPKKP | | 06 36 36.7 | |
| | | New Guinea (h = 15 km). | | | | |
| | | M = 6.6 (Up,Ki). | | | | |
| | | (PP) denotes early arrivals of PP. | | | | |
| " | 12 | Up | iPKP | | 07 50 59.2 | |
| | | | | | micr | sec |
| | | | Mx | E | 1.8 | 19 |
| | | | Mx | N | 2.4 | 20 |
| | | | Mx | Z | 3.0 | 19 |
| | | Ki | iPKP | | 07 50 38.9 | |
| | | | i | | 07 50 40.8 | |
| | | | | | micr | sec |
| | | | PKP | Z' | 0.2 | 1.0 |
| | | | Mx | E | 2.0 | 18 |
| | | | Mx | Z | 2.7 | 20 |
| | | Sk | iPKP | | 07 50 53.8 | |
| | | | i | | 07 50 55.7 | |
| | | Um | iPKP | | 07 50 48.2 | C |
| | | | i | | 07 50 50.3 | |
| | | Ud | iPKP | | 07 51 02.9 | |
| | | New Zealand (h = 20 km). | | | | |
| | | M = 6.1 (Up,Ki). | | | | |
| " | 12 | Up | iSg | | 13 14 29.7 | |
| | | Sk | eSg | | 13 14 27 | |
| | | (cont.) | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Nov. | 12 | (cont.) | | | | |
| | | Ud | iPn | | 13 12 24.6 | |
| | | | iSg | | 13 13 31.3 | |
| | | Southwest Norway, | | | | |
| | | 58.6°N, 6.7°E. | | | | |
| | | Origin time = 13 11 22. | | | | |
| " | 12 | Ki | i | | 13 17 58.9 | |
| | | | iPP | | 13 18 24.6 | |
| | | | iSn | | 13 24 30.8 | |
| | | | | | micr | sec |
| | | | Mx | E | 1.4 | 16 |
| | | | Mx | N | 0.9 | 14 |
| | | Sk | iPP | | 13 18 23.6 | |
| | | Um | iS | | 13 22 21.4 | |
| | | | iSn | | 13 24 31.0 | |
| | | Ud | iP | | 13 16 52.8 | |
| | | | iSn | | 13 24 50.2 | |
| | | Iran-USSR (h = 60 km). | | | | |
| " | 12 | Ki | iPn | | 13 32 52.9 | |
| | | | iSn | | 13 33 49.1 | |
| | | | iLgl | | 13 34 08.2 | |
| | | Sk | iLgl | | 13 36 53.1 | |
| | | Um | iSg | | 13 35 31.6 | |
| | | Northwest Russia, | | | | |
| | | 69.0°N, 32.9°E. | | | | |
| | | Origin time = 13 31 39. | | | | |
| | | Explosion? | | | | |
| " | 12 | Ki | iSg | | 16 22 13.0 | |
| | | Sk | iSg | | 16 22 16.4 | |
| | | Um | iSg | | 16 22 38.7 | |
| | | Nordland, Norway. | | | | |
| | | Origin time = 16 20 43. | | | | |
| " | 12 | Ki | iP | | 18 37 29.0 | |
| | | Um | iP | | 18 37 50.6 | C |
| | | Ud | iP | | 18 38 18.2 | |
| | | South of Japan (h = 310 km). | | | | |
| " | 12 | Sk | e(P) | | 20 11 46 | |
| | | Um | i(P) | | 20 11 18.4 | |
| " | 12 | Up | iP | | 22 46 53.4 | |
| | | De | i(P) | | 22 46 24.2 | |
| " | 13 | Up | eP | | 00 35 27 | |
| " | 13 | Up | iPKP | | 02 31 12.0 | |
| | | Sk | iPKP | | 02 31 06.4 | |
| | | Um | iPKP | | 02 30 58.8 | |
| | | Ud | iPKP | | 02 31 12.2 | |
| | | Kermadec Islands (h = 70 km). | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | |
|---|---|---|---|---|---|
| 1970 Nov. | 13 | Ki | eP | 05 58 01 | |
| | | Sk | eP | 05 58 16 | |
| | | Um | iP | 05 58 09.9 | |
| " | 13 | Up | iP | 06 10 55.5 | |
| | | | i | 06 12 18.7 | |
| | | Um | i(P) | 06 10 33.0 | |
| " | 13 | Ki | iP | 06 46 36.1 | |
| | | Sk | iP | 06 46 38.1 | |
| | | Um | i(P) | 06 46 44.7 | |
| " | 13 | Sk | i(P) | 08 36 13.6 | |
| " | 13 | Ud | iP | 08 59 15.2 | |
| | | Mindanao (h = 45 km). | | | |
| " | 13 | Ki | iP | 10 46 55.0 | |
| | | | i(Sg) | 10 47 33.0 | |
| " | 13 | Ki | iPn | 12 13 27.2 | |
| | | | iSn | 12 14 24.9 | |
| | | | iSg | 12 14 48.5 | |
| | | Sk | iLgl | 12 17 10.5 | |
| | | Um | iSn | 12 15 05.8 | |
| | | | iSg | 12 15 39.1 | |
| | | Ud | iLgl | 12 18 12.2 | |
| | | Northwest Russia, 67.5°N, 33.1°E. Origin time = 12 12 12. Explosion? | | | |
| " | 13 | Ud | iP | 12 48 16.3 | |
| | | Japan (h = 80 km). | | | |
| " | 13 | Up | iP | 13 21 22.7 | |
| | | Ki | iP | 13 20 32.2 | |
| | | Ud | iP | 13 21 22.7 | |
| | | De | iP | 13 21 58.1 | |
| | | Aleutian Islands (h = 50 km). | | | |
| " | 13 | Ki | iPn | 13 23 36.4 | |
| | | | iSn | 13 24 18.6 | |
| | | | iSg | 13 24 31.8 | |
| | | Sk | eSg | 13 27 04 | |
| | | Um | iSg | 13 25 34.7 | |
| | | Northwest Russia-Finland border region, 67.7°N, 29.5°E. Origin time = 13 22 38. Explosion? | | | |
| " | 13 | Up | iP1 | 14 29 04.8 | |
| | | | iP2 | 14 29 10.8 | |
| | | | iP3 | 14 29 17.1 | |
| | | (cont.) | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1970 Nov. | 13 | (cont.) | | | |
| | | Up | iS | 14 39 38 | |
| | | | | micr | sec |
| | | | P3 | Z' 0.5 | 1.0 |
| | | | Mx | E 16 | 23 |
| | | | Mx | N 70 | 23 |
| | | | Mx | Z 15 | 23 |
| | | Ki | eP1 | 14 28 49 | |
| | | | iP2 | 14 28 52.9 | |
| | | | iP3 | 14 28 59.0 | |
| | | | iS | 14 39 17 | |
| | | | | micr | sec |
| | | | P3 | Z' 0.5 | 1.1 |
| | | | Mx | E 21 | 22 |
| | | | Mx | N 40 | 23 |
| | | | Mx | Z 25 | 23 |
| | | Sk | iP1 | 14 29 14.4 | |
| | | | iP2 | 14 29 20.8 | |
| | | Um | iP1 | 14 28 55.5 | |
| | | | iP2 | 14 28 59.1 | |
| | | | iP3 | 14 29 03.7 | |
| | | | iS | 14 39 29 | |
| | | Ud | iP1 | 14 29 14.7 | |
| | | | iP2 | 14 29 21.5 | |
| | | | iP3 | 14 29 25.6 | |
| | | De | iP3 | 14 29 29.9 | |
| | | | i | 14 29 32.0 | |
| | | Leyte (h = 15 km). m = 6.7, M = 6.7 (Up,Ki). Triple P: in average P2 - P1 = 5.4 sec, P3 - P1 = 10.4 sec; amplitudes increase in the order P1-P2-P3. | | | |
| " | 13 | Ki | i(P) | 15 59 36.4 | |
| " | 13 | Up | i(P) | 16 23 35.3 | |
| | | Um | iP | 16 23 25.2 | |
| " | 13 | Up | iP | 17 37 38.1 | |
| | | | iPP | 17 39 09.2 | |
| | | | | micr | sec |
| | | | P | Z' 0.2 | 0.6 |
| | | Ki | iP | 17 37 46.0 | |
| | | | iPP | 17 39 22.1 | |
| | | | | micr | sec |
| | | | P | Z' 0.1 | 1.0 |
| | | Sk | iP | 17 38 03.5 | |
| | | | iPP | 17 39 47.4 | |
| | | Um | iP | 17 37 35.6 | |
| | | | ipP | 17 38 01.3 | |
| | | | iPP | 17 39 09.8 | |
| | | Ud | iP | 17 37 54.9 | D |
| | | | ipP | 17 38 21.0 | |
| | | | iPP | 17 39 36.3 | |
| | | (cont.) | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Nov. | 13 | (cont.) | | | | |
| | | De | iP | | 17 37 51.4 | |
| | | | ipP | | 17 38 18.3 | |
| | | | iPP | | 17 39 26.0 | |
| | | Hindu Kush. | | | | |
| | | h = 130 km (Um,Ud,De). | | | | |
| | | m = 5.8 (Up,Ki). | | | | |
| " | 13 | Up | i(P) | | 18 45 13.6 | |
| | | Um | i(P) | | 18 45 53.8 | |
| " | 13 | Up | iP | | 19 13 08.0 | |
| | | Ki | iP | | 19 12 14.6 | |
| | | Sk | eP | | 19 12 48 | |
| | | Um | iP | | 19 12 41.1 | |
| | | Ud | iP | | 19 13 09.7 | |
| | | Aleutian Islands (h = 70 km). | | | | |
| " | 13 | Up | iP | | 20 42 50.4 | |
| " | 13 | Ki | eP | | 21 24 34 | |
| " | 14 | Um | i(P) | | 03 23 40.2 | |
| | | Ud | iP | | 03 24 08.1 | |
| | | | i | | 03 27 30.4 | |
| " | 14 | Up | iP | | 05 04 53.7 | |
| | | | iSKS | | 05 15 16 | |
| | | | | | micr | sec |
| | | | Mx | E | 1.5 | 20 |
| | | | Mx | N | 1.7 | 21 |
| | | | Mx | Z | 2.3 | 18 |
| | | Ki | iP | | 05 04 26.1 | |
| | | | ipP | | 05 04 52.7 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.2 | 1.0 |
| | | | Mx | E | 1.1 | 16 |
| | | | Mx | N | 2.1 | 20 |
| | | | Mx | Z | 1.2 | 17 |
| | | Sk | iP | | 05 04 52.2 | |
| | | Um | iP | | 05 04 36.3 | |
| | | | ipP | | 05 05 02.0 | |
| | | | iSKS | | 05 14 57 | |
| | | Ud | iP | | 05 04 59.0 | |
| | | Mariana Islands. | | | | |
| | | h = 100 km (Ki,Um). | | | | |
| | | M = 5.6 (Up,Ki). | | | | |
| " | 14 | Up | iP | | 08 10 11.3 C | |
| | | | i | | 08 10 12.3 | |
| | | | iPP | | 08 12 55.1 | |
| | | | iS | | 08 19 54 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.4 | 0.9 |
| | | | Mx | E | 27 | 17 |
| | | (cont.) | | | | |
| 1970 Nov. | 14 | (cont.) | | | | |
| | | Up | Mx | N | 36 | 21 |
| | | | Mx | Z | 36 | 16 |
| | | Ki | iP | | 08 09 48.3 C | |
| | | | iPcP | | 08 10 05.7 | |
| | | | iPP | | 08 12 32.3 | |
| | | | iS | | 08 19 13 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.3 | 1.0 |
| | | | Mx | E | 33 | 13 |
| | | | Mx | N | 15 | 13 |
| | | | Mx | Z | 28 | 14 |
| | | Sk | iP | | 08 10 15.3 C | |
| | | Um | iP | | 08 09 55.6 | |
| | | | i | | 08 09 57.6 | |
| | | | iPP | | 08 12 42.7 | |
| | | | iS | | 08 19 25 | |
| | | Ud | iP | | 08 10 21.0 C | |
| | | | i | | 08 10 22.4 | |
| | | | iPP | | 08 13 18.8 | |
| | | De | iP | | 08 10 28.8 C | |
| | | | i | | 08 10 30.2 | |
| | | | iPP | | 08 13 31.6 | |
| | | Formosa (h = 30 km). | | | | |
| | | m = 6.5, M = 6.9 (Up,Ki). | | | | |
| " | 14 | Up | iP | | 08 18 09.4 | |
| | | Ki | iP | | 08 17 47.8 | |
| | | Ud | iP | | 08 18 22.2 | |
| | | Formosa. | | | | |
| | | Origin time = 08 06 20. | | | | |
| " | 14 | Up | i(P) | | 10 22 13.5 | |
| | | | i | | 10 22 51.2 | |
| " | 14 | Ki | eP | | 14 49 18 | |
| | | Um | iP | | 14 49 25.2 | |
| " | 14 | Up | iP | | 16 02 05.7 | |
| | | Um | iP | | 16 01 45.0 | |
| | | Ud | iP | | 16 02 12.7 | |
| | | South of Japan (h = 110 km). | | | | |
| " | 14 | Ud | iP | | 18 04 09.8 | |
| " | 14 | Up | iP | | 18 35 29.3 | |
| | | Ki | iP | | 18 35 06.6 | |
| | | Ud | iP | | 18 35 39.3 | |
| | | Formosa. | | | | |
| | | Origin time = 18 23 38. | | | | |
| " | 14 | Ki | iPn | | 18 39 42.8 | |
| | | | iSn | | 18 40 41.4 | |
| " | 15 | Up | iPKP | | 03 32 01.8 | |
| | | | iSKP | | 03 35 33.1 | |
| | | (cont.) | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Nov. | 15 | (cont.) | | | | | |
| | | Ki | iPKP | | 03 31 53.3 | | |
| | | | iSKP | | 03 35 08.5 | | |
| | | Sk | iPKP | | 03 31 54.2 | | |
| | | Um | iPKP | | 03 32 01.1 | | |
| | | | iSKP | | 03 35 19.0 | | |
| | | Ud | iPKP | | 03 32 03.3 | | |
| | | De | iPKP | | 03 32 14.4 | | |
| | | | ipPKP | | 03 33 02.3 | | |
| | | Tonga-Kermadec Islands. | | | | | |
| | | h = 190 km (De). | | | | | |
| " | 15 | Ki | iP | | 09 30 21.4 | | |
| | | Sk | iP | | 09 30 02.5 | | |
| | | Puerto Rico (h = 50 km). | | | | | |
| " | 15 | Ki | iP | | 10 18 22.7 | | |
| | | | i(Sg) | | 10 18 42.3 | | |
| " | 15 | Ud | iP | | 14 35 40.7 | | |
| | | Iran. | | | | | |
| " | 16 | Ki | iP | | 00 59 12.1 | | |
| " | 16 | Up | iP | | 05 05 15.6 C | | |
| | | | ipP | | 05 05 23.0 | | |
| | | | | | micr | sec | |
| | | | pP | Z' | 0.1 | 0.9 | |
| | | | Mx | E | 2.0 | 11 | |
| | | | Mx | N | 7.0 | 14 | |
| | | | Mx | Z | 2.5 | 10 | |
| | | Ki | iP | | 05 05 06.0 C | | |
| | | | ipP | | 05 05 13.1 | | |
| | | | | | micr | sec | |
| | | | pP | Z' | 0.1 | 0.8 | |
| | | | Mx | E | 3.0 | 13 | |
| | | | Mx | N | 2.6 | 7 | |
| | | | Mx | Z | 3.6 | 14 | |
| | | Sk | iP | | 05 05 33.7 | | |
| | | | ipP | | 05 05 40.6 | | |
| | | Um | eP | | 05 05 12 | | |
| | | | e | | 05 05 18 | | |
| | | | iPP | | 05 06 45.5 | | |
| | | Ud | iP | | 05 05 31.9 C | | |
| | | | ipP | | 05 05 39.3 | | |
| | | | i | | 05 07 52.2 | | |
| | | De | iP | | 05 05 36.1 C | | |
| | | | ipP | | 05 05 43.9 | | |
| | | Sinkiang. | | | | | |
| | | h = 35 km (Up,Ki,Sk,Ud,De). | | | | | |
| | | M = 5.5 (Up,Ki). | | | | | |
| " | 16 | Up | iP | | 06 17 47.6 | | |
| | | Ki | iP | | 06 17 29.4 | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Nov. | 16 | Up | iPKP | | 07 02 43.3 | | |
| | | | | | micr | sec | |
| | | | Mx | E | 1.5 | 20 | |
| | | | Mx | N | 1.5 | 19 | |
| | | | Mx | Z | 1.9 | 20 | |
| | | Ki | | | micr | sec | |
| | | | Mx | E | 3.4 | 26 | |
| | | | Mx | N | 1.7 | 20 | |
| | | | Mx | Z | 2.9 | 19 | |
| | | New Britain (h = 80 km). | | | | | |
| | | M = 5.8 (Up,Ki). | | | | | |
| " | 16 | Up | iP | | 11 37 51.1 | | |
| | | | i(Sg) | | 11 38 31.4 | | |
| " | 16 | Sk | iP | | 12 59 51.5 | | |
| | | Vancouver Island (h = N). | | | | | |
| " | 16 | Up | iP | | 18 32 35.3 | | |
| | | Sk | eP | | 18 33 05 | | |
| | | Ud | iP | | 18 32 37.6 | | |
| | | Greece. | | | | | |
| " | 16 | Um | iP | | 21 37 12.1 | | |
| " | 16 | Ki | iP | | 21 46 35.1 | | |
| | | Molucca Sea (h = N). | | | | | |
| " | 17 | Long-period microseisms (periods around 16-18 sec), especially clear on Um LP N. | | | | | |
| " | 17 | Up | iP | | 00 29 53.5 | | |
| | | Ki | iP | | 00 30 58.0 | | |
| | | | i | | 00 31 10.5 | | |
| | | Sk | eP | | 00 30 35 | | |
| | | Um | iP | | 00 30 23.3 | | |
| | | Ud | iP | | 00 30 03.9 | | |
| | | Turkey (h = 30 km). | | | | | |
| " | 17 | Ki | iP | | 06 34 09.0 | | |
| | | Ud | iP | | 06 33 04.1 | | |
| | | De | iP | | 06 32 32.4 | | |
| | | Crete (h = 45 km). | | | | | |
| " | 17 | Sk | iPKP | | 07 29 12.5 | | |
| | | Um | iPKP | | 07 29 06.9 | | |
| | | Ud | iPKP | | 07 29 18.0 | | |
| " | 17 | Up | iP | | 07 44 58.3 | | |
| | | Ki | iP | | 07 44 26.4 C | | |
| | | Sk | iP | | 07 44 57.7 C | | |
| | | Um | iP | | 07 44 42.9 | | |
| | | Ud | iP | | 07 45 08.9 | | |
| | | South of Japan (h = N). | | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 | | | | | | |
| Nov. | 17 | Um | iP | | 08 55 23.4 | |
| | | Ud | iP | | 08 55 54.9 | |
| " | 17 | Sk | eP | | 12 54 44 | |
| " | 17 | Up | iP | | 18 10 15.2 | |
| | | | ipP | | 18 10 20.1 | |
| | | Ki | iP | | 18 10 01.9 | |
| | | | ipP | | 18 10 07.4 | |
| | | Sk | eP | | 18 10 26 | |
| | | | ipP | | 18 10 32.5 | |
| | | Um | iP | | 18 10 04.1 | |
| | | | ipP | | 18 10 09.5 | |
| | | Ud | iP | | 18 10 27.3 | |
| | | | ipP | | 18 10 32.4 | |
| | | De | eP | | 18 10 37 | |
| | | Yunnan, China. | | | | |
| | | h = 20 km (Up,Ki,Sk,Um,Ud). | | | | |
| " | 17 | Um | iP | | 20 30 42.4 | |
| " | 18 | Ud | iP | | 02 01 02.5 | |
| " | 18 | Up | Mx | | 10 47 | |
| | | | | | micr | sec |
| | | | Mx | E | 2.1 | 22 |
| | | | Mx | N | 4.3 | 21 |
| | | | Mx | Z | 2.3 | 18 |
| | | Ki | Mx | | 10 48 | |
| | | | | | micr | sec |
| | | | Mx | E | 3.2 | 20 |
| | | | Mx | N | 2.0 | 17 |
| | | | Mx | Z | 1.9 | 17 |
| | | Bismarck Sea (h = N). | | | | |
| | | M = 6.1 (Up,Ki). | | | | |
| " | 18 | Ud | i(P) | | 11 13 16.0 | |
| " | 18 | Ki | iPn | | 11 28 18.1 | |
| | | | iSn | | 11 29 17.4 | |
| | | | iLgl | | 11 29 35.9 | |
| | | Sk | iLgl | | 11 31 55.5 | |
| | | Um | iSg | | 11 30 32.1 | |
| | | Northwest Russia, | | | | |
| | | 67.4°N, 33.3°E. | | | | |
| | | Origin time = 11 27 02. | | | | |
| | | Explosion? | | | | |
| " | 18 | Up | i(P) | | 11 42 11.3 | |
| | | Sk | e(P) | | 11 41 21 | |
| " | 18 | Up | iP | | 12 31 08.9 | |
| | | Ki | iP | | 12 31 34.9 | |
| | | Sk | iP | | 12 30 58.9 | |
| | | Um | iP | | 12 31 25.4 | |
| | | North Atlantic Ocean (h = N). | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 | | | | | | |
| Nov. | 18 | Up | iP | | 12 31 17.4 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.2 | 1.0 |
| | | | Mx | E | 4.4 | 21 |
| | | | Mx | N | 13 | 24 |
| | | | Mx | Z | 6.5 | 20 |
| | | Ki | iP | | 12 31 43.7 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.3 | 1.5 |
| | | | Mx | E | 4.0 | 16 |
| | | | Mx | N | 5.9 | 22 |
| | | | Mx | Z | 5.4 | 22 |
| | | Sk | iP | | 12 31 07.2 | |
| | | Ud | iP | | 12 31 03.3 | |
| | | | i | | 12 31 10.9 | |
| | | De | iP | | 12 30 51.2 | |
| | | | i | | 12 30 59.8 | |
| | | North Atlantic Ocean (h = N). | | | | |
| | | m = 6.0, M = 5.6 (Up,Ki). | | | | |
| " | 18 | Up | i(Sg) | | 13 19 03.6 | |
| " | 18 | Up | iP | | 13 53 33.8 | |
| " | 18 | Sk | eSg | | 15 18 37 | |
| | | Um | iSg | | 15 17 18.7 | |
| | | Ud | iLgl | | 15 17 51.6 | |
| | | Esthonia. | | | | |
| | | Origin time = 15 14 38. | | | | |
| | | Explosion? | | | | |
| " | 18 | Up | iPKP | | 17 01 26.5 | |
| | | | iSKP | | 17 04 15.9 | |
| | | | i | | 17 04 26.9 | |
| | | | iSKKP | | 17 12 59.5 | |
| | | | | | micr | sec |
| | | | PKP | Z' | 0.1 | 0.5 |
| | | | SKP | Z' | 0.2 | 1.0 |
| | | Ki | iPKP | | 17 01 21.5 | |
| | | | iSKP | | 17 03 53.0 | |
| | | | | | micr | sec |
| | | | SKP | Z' | 0.4 | 1.6 |
| | | Sk | iPKP | | 17 01 22.0 | |
| | | | iSKP | | 17 04 10.4 | |
| | | Um | iPKP | | 17 01 24.9 | |
| | | | iSKP | | 17 04 04.5 | |
| | | | iSKKP | | 17 13 17.8 | |
| | | Ud | iPKP | | 17 01 28.9 | |
| | | | i | | 17 01 39.2 | |
| | | | iSKP | | 17 04 18.4 | |
| | | | iSKKP | | 17 12 53.6 | |
| | | De | iPKP | | 17 01 40.0 | D |
| | | | iSKP | | 17 04 27.1 | |
| | | Fiji Islands (h = 570 km). | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Nov. | 18 | Up | Mx | | 21 26 | |
| | | | | | micr | sec |
| | | | Mx | N | 1.1 | 18 |
| | | | Mx | Z | 1.8 | 19 |
| | | Ki | Mx | | 21 26 | |
| | | | | | micr | sec |
| | | | Mx | E | 1.5 | 17 |
| | | | Mx | Z | 2.2 | 18 |
| | | Easter Island (h = N). | | | | |
| | | M = 5.8 (Up,Ki). | | | | |
| " | 18 | Ki | iP | | 22 44 45.3 | C |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 1.0 |
| | | Sk | iP | | 22 45 06.5 | |
| | | Ud | iP | | 22 45 10.2 | C |
| | | Halmahera (h = 210 km). | | | | |
| " | 18 | Ki | iP | | 23 30 26.0 | |
| | | | iS | | 23 31 25.0 | |
| | | Sk | iP | | 23 30 52.2 | |
| | | | iS | | 23 32 19.9 | |
| | | Um | iP | | 23 31 05.4 | |
| | | Ud | iP | | 23 31 40.5 | |
| | | Norwegian Sea. | | | | |
| " | 19 | Up | iP | | 00 09 56.5 | |
| " | 19 | Sk | iP | | 12 39 34.4 | |
| " | 19 | Up | iP | | 13 56 47.8 | |
| " | 19 | Um | iP | | 18 06 13.6 | |
| " | 19 | Up | iP | | 18 21 26.9 | |
| | | | i | | 18 21 33.4 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 0.8 |
| | | Ki | iP | | 18 21 51.0 | |
| | | Sk | iP | | 18 21 58.3 | |
| | | Um | iP | | 18 21 37.8 | |
| | | Ud | iP | | 18 21 37.8 | D |
| | | Indian Ocean (h = N). | | | | |
| " | 19 | Up | iP | | 19 34 00.4 | |
| | | Ki | iP | | 19 33 21.8 | |
| | | Um | iP | | 19 33 44.3 | |
| | | Ud | iP | | 19 34 01.3 | |
| | | South of Japan (h = 40 km). | | | | |
| " | 20 | Up | iP | | 04 37 38.9 | |
| " | 20 | Up | iP | | 04 43 59.9 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 0.8 |
| | | Ki | iP | | 04 43 07.0 | |
| | | (cont.) | | | | |
| 1970 Nov. | 20 | (cont.) | | | | |
| | | Sk | iP | | 04 43 38.7 | |
| | | Um | iP | | 04 43 33.0 | |
| | | Ud | iP | | 04 44 00.6 | C |
| | | De | iP | | 04 44 16.3 | |
| | | Aleutian Islands (h = 40 km). | | | | |
| " | 20 | Up | i(P) | | 09 19 05.3 | |
| " | 20 | Up | iPg | | 09 31 19.1 | |
| | | | iSg | | 09 31 42.1 | |
| | | Sk | iSg | | 09 32 23.0 | |
| | | Um | iSg | | 09 32 02.2 | |
| | | | i | | 09 32 08.9 | |
| | | Ud | iPg | | 09 31 29.6 | |
| | | | iSg | | 09 32 02.9 | |
| | | Coast of Hälsingland, Sweden, 61.7°N, 17.5°E. | | | | |
| | | Origin time = 09 30 44. | | | | |
| " | 20 | Up | iPg | | 09 33 20.6 | |
| | | | iSg | | 09 33 44.4 | |
| | | Ki | eSg | | 09 36 09 | |
| | | Sk | iSg | | 09 34 25.2 | |
| | | Um | iPg | | 09 33 32.3 | |
| | | | iSg | | 09 34 03.8 | |
| | | | i | | 09 34 10.4 | |
| | | Ud | iSg | | 09 34 05.2 | |
| | | Coast of Hälsingland, Sweden, 61.7°N, 17.5°E. | | | | |
| | | Origin time = 09 32 46. | | | | |
| " | 20 | Ud | iP | | 11 24 07.3 | |
| | | | i | | 11 24 25.7 | |
| | | Aleutian Islands (h = 35 km). | | | | |
| " | 20 | Up | i | | 11 55 40.8 | |
| | | | iLgl | | 11 55 47.9 | |
| | | Sk | eSn | | 11 57 06 | |
| | | | iLgl | | 11 57 42.2 | |
| | | Um | iSn | | 11 56 11.3 | |
| | | | iLgl | | 11 56 30.2 | |
| | | Ud | iSn | | 11 56 29.3 | |
| | | | iSg | | 11 56 56.7 | |
| | | De | iPn | | 11 55 39.5 | |
| | | | iSg | | 11 57 25.1 | |
| | | Esthonia, 59.3°N, 24.1°E. | | | | |
| | | Origin time = 11 54 00. | | | | |
| | | Explosion? | | | | |
| " | 20 | Ki | iP | | 12 07 31.1 | |
| | | Sk | iP | | 12 07 38.0 | |
| " | 20 | Ud | iP | | 12 55 20.9 | |
| | | Kurile Islands (h = 35 km). | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 | | | | | | | |
| Nov. | 20 | Up | iP | | | 13 59 07.1 | |
| | | | | | | micr | sec |
| | | | Mx | E | | 0.8 | 15 |
| | | | Mx | N | | 2.7 | 17 |
| | | | Mx | Z | | 2.0 | 16 |
| | | Ki | iP | | | 13 58 34.0 | |
| | | | | | | micr | sec |
| | | | Mx | E | | 3.0 | 17 |
| | | | Mx | N | | 5.5 | 18 |
| | | | Mx | Z | | 5.4 | 17 |
| | | Um | iP | | | 13 58 48.4 | |
| | | Ud | iP | | | 13 59 14.0 | |
| | | De | iP | | | 13 59 26.5 | |
| | | Bonin Islands (h = N). | | | | | |
| | | M = 5.8 (Up,Ki). | | | | | |
| " | 20 | Up | iP | | | 13 59 25.3 | |
| | | | | | | micr | sec |
| | | | P | Z' | | 0.3 | 0.7 |
| | | Ki | iP | | | 13 58 40.0 | |
| | | | iPcP | | | 13 59 17.2 | |
| | | | | | | micr | sec |
| | | | P | Z' | | 0.1 | 1.0 |
| | | Sk | iP | | | 13 59 15.3 | |
| | | Um | iP | | | 13 58 59.9 | |
| | | Ud | iP | | | 13 59 30.4 | |
| | | De | iP | | | 13 59 49.1 | |
| | | Kurile Islands (h = 35 km). | | | | | |
| | | m = 6.4 (Up,Ki). | | | | | |
| " | 20 | Up | iP | | | 20 30 09.4 | |
| | | | i | | | 20 30 19.8 | |
| | | Ud | iP | | | 20 30 19.1 | |
| | | Bonin Islands (h = N). | | | | | |
| " | 20 | Ki | iP | | | 21 27 31.7 | |
| | | Bonin Islands (h = N). | | | | | |
| " | 21 | Sk | eP | | | 02 09 13 | |
| | | | i | | | 02 09 23.4 | |
| | | Ud | eP | | | 02 08 40 | |
| | | | i | | | 02 08 51.7 | |
| | | Aegean Sea. | | | | | |
| " | 21 | Ki | eP | | | 02 20 05 | |
| | | Ud | iP | | | 02 19 14.2 | C |
| | | Turkey (h = N). | | | | | |
| " | 21 | Ki | iP | | | 03 04 19.1 | |
| | | Sk | iP | | | 03 04 39.2 | |
| | | Ud | iP | | | 03 04 40.2 | |
| | | Halmahera (h = 70 km). | | | | | |
| " | 21 | Up | iP | | | 06 15 49.3 | |
| " | 21 | Up | iP | | | 08 41 40.0 | |
| | | (cont.) | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 | | | | | | | |
| Nov. | 21 | (cont.) | | | | | |
| | | Up | i | | | 08 41 57.3 | |
| | | | iSn | | | 08 46 49.5 | |
| | | Ki | iP | | | 08 42 17.7 | |
| | | | i | | | 08 42 31.3 | |
| | | | | | | micr | sec |
| | | | P | Z' | | 0.1 | 0.8 |
| | | Sk | iP | | | 08 42 16.4 | |
| | | | iPP | | | 08 43 22.5 | |
| | | | iSn | | | 08 49 02.4 | |
| | | Um | iP | | | 08 41 54.0 | |
| | | | iPP | | | 08 42 55.0 | |
| | | | iSn | | | 08 47 35.4 | |
| | | Ud | iP | | | 08 41 56.5 | C |
| | | | i | | | 08 42 13.6 | |
| | | | iSn | | | 08 47 37.0 | |
| | | De | iP | | | 08 41 41.5 | |
| | | | i | | | 08 42 00.9 | |
| | | Caucasus (h = 70 km). | | | | | |
| " | 21 | Up | iP | | | 09 02 11.3 | |
| | | | i | | | 09 02 33.8 | |
| " | 21 | Up | i(P) | | | 12 00 44.2 | |
| | | | i | | | 12 00 46.9 | |
| | | Um | i(P) | | | 12 00 15.5 | |
| | | Ud | i(P) | | | 12 00 32.6 | |
| " | 21 | Up | iP | | | 12 32 01.7 | C |
| | | | | | | micr | sec |
| | | | P | Z' | | 0.2 | 0.7 |
| | | | Mx | E | | 1.1 | 23 |
| | | | Mx | N | | 1.3 | 16 |
| | | | Mx | Z | | 1.5 | 16 |
| | | Ki | iP | | | 12 31 43.4 | |
| | | | ipP | | | 12 32 00.5 | |
| | | | | | | micr | sec |
| | | | P | Z' | | 0.1 | 0.8 |
| | | | pP | Z' | | 0.1 | 1.1 |
| | | | Mx | E | | 2.2 | 21 |
| | | | Mx | N | | 3.8 | 21 |
| | | | Mx | Z | | 2.7 | 20 |
| | | Um | iP | | | 12 31 49.6 | |
| | | | ipP | | | 12 32 07.7 | |
| | | | iS | | | 12 41 52 | |
| | | Ud | iP | | | 12 32 10.8 | C |
| | | | ipP | | | 12 32 27.2 | |
| | | De | iP | | | 12 32 17.5 | |
| | | | ipP | | | 12 32 33.7 | |
| | | Luzon. | | | | | |
| | | h = 60 km (Ki,Um,Ud,De). | | | | | |
| | | m = 6.2, M = 5.7 (Up,Ki). | | | | | |
| " | 21 | Ki | iPn | | | 12 55 34.7 | |
| | | | iSn | | | 12 56 23.0 | |
| | | | iLgl | | | 12 56 37.8 | |
| | | Origin time = 12 54 32. | | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | |
|---|---|---|---|---|---|
| 1970 Nov. | 21 | Ki | iP | 13 34 35.8 | |
| | | Sk | iP | 13 34 43.7 | |
| " | 21 | Up | iP | 14 49 50.2 | |
| " | 21 | Ki | eSg | 17 33 27 | |
| | | Sk | eSg | 17 33 41 | |
| | | Um | iSg | 17 34 10.3 | |
| | | Nordland, Norway. | | | |
| " | 21 | Ki | eP | 18 08 14 | |
| | | | i | 18 08 26.8 | |
| | | Ud | iP | 18 08 31.4 | |
| | | Java (h = N). | | | |
| " | 21 | Up | iP | 19 36 49.4 | |
| | | Ki | iP | 19 35 55.0 | D |
| | | Sk | iP | 19 36 23.1 | |
| | | Um | iP | 19 36 22.7 | |
| | | De | iP | 19 37 10.6 | |
| | | Alaska (h = 90 km). | | | |
| " | 22 | Up | iPKP | 07 08 28.0 | |
| | | Ki | iPKP | 07 08 09.9 | |
| | | | i | 07 08 35.7 | |
| | | Sk | iPKP | 07 08 23.5 | |
| | | | i | 07 08 29.3 | |
| | | Um | iPKP | 07 08 18.8 | |
| | | Ud | iPKP | 07 08 32.1 | |
| | | | i | 07 08 37.5 | |
| | | New Zealand (h = N). | | | |
| " | 22 | Ki | eP | 07 13 20 | |
| | | Sk | iP | 07 13 37.4 | |
| | | Um | iP | 07 13 24.6 | |
| | | | i | 07 13 30.6 | |
| " | 22 | Up | iP | 12 06 54.7 | |
| | | | ipP | 12 07 20.7 | |
| | | | iPP | 12 10 24.4 | |
| | | | | micr sec | |
| | | | P Z' | 0.1 0.7 | |
| | | Ki | iP | 12 06 27.4 | |
| | | | ipP | 12 06 52.4 | |
| | | | ePP | 12 09 46 | |
| | | | | micr sec | |
| | | | P Z' | 0.1 1.0 | |
| | | Sk | iP | 12 06 52.3 | |
| | | | ipP | 12 07 18.3 | |
| | | | iPP | 12 10 27.6 | |
| | | Um | iP | 12 06 38.8 | |
| | | | ipP | 12 07 04.4 | |
| | | Ud | iP | 12 07 01.1 | |
| | | | ePP | 12 10 43 | |
| | | De | iP | 12 07 12.6 | |
| | | Mariana Islands. | | | |
| | | h = 100 km (Up,Ki,Sk,Um). | | | |
| | | m = 6.1 (Up,Ki). | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1970 Nov. | 22 | Ud | iP | 19 07 05.9 | |
| | | West Pakistan. | | | |
| " | 22 | Ud | iP | 22 13 38.4 | |
| " | 23 | Up | iP | 00 36 03.9 | |
| | | | i(PP) | 00 36 15.3 | |
| | | Ki | iP | 00 34 41.7 | |
| | | | i(PP) | 00 34 51.5 | |
| | | | i | 00 35 07.3 | |
| | | | iS | 00 36 06.7 | |
| | | | eT | 00 40 25 | |
| | | | | micr sec | |
| | | | (PP) Z' | 0.1 0.7 | |
| | | Sk | iP | 00 35 06.3 | C |
| | | | iS | 00 36 46.9 | |
| | | Um | iP | 00 35 24.4 | |
| | | | i | 00 35 26.6 | |
| | | Ud | iP | 00 35 54.7 | |
| | | | i(PP) | 00 36 05.8 | |
| | | | i | 00 37 45.1 | |
| | | De | eP | 00 36 39 | |
| | | Norwegian Sea (h = N). | | | |
| | | Alternatively, (PP) may be another P, arriving 10-11 sec after the first P and larger than the first. | | | |
| " | 23 | Ki | iP | 00 42 38.1 | |
| | | Ud | iP | 00 42 52.1 | |
| | | Tadzhik SSR. | | | |
| " | 23 | Ud | iP | 08 54 48.8 | |
| | | Oregon (h = N). | | | |
| " | 23 | Up | iP | 13 54 27.2 | |
| " | 23 | Ud | i(P) | 18 55 37.7 | |
| " | 23 | Up | iP | 23 06 29.3 | |
| | | Sk | eP | 23 07 09 | |
| | | Ud | iP | 23 06 36.0 | |
| | | | i | 23 06 42.0 | |
| | | Greece. | | | |
| " | 24 | Up | iP | 00 04 47.3 | |
| " | 24 | Up | iP | 00 08 23.6 | |
| " | 24 | Up | iP | 01 49 35.8 | |
| " | 24 | Up | iP | 05 17 19.7 | C |
| | | | ipP | 05 17 47.0 | |
| | | | | micr sec | |
| | | | P Z' | 0.1 0.5 | |
| | | (cont.) | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Nov. | 24 | (cont.) | | | | | |
| | | Ki | iP | | | 05 16 30.9 | C |
| | | | | | | micr | sec |
| | | | P | Z' | 0.1 | 1.2 | |
| | | Sk | iP | | | 05 17 07.6 | |
| | | Um | iP | | | 05 16 53.4 | |
| | | Ud | iP | | | 05 17 24.9 | C |
| | | | isP | | | 05 18 04.0 | |
| | | De | iP | | | 05 17 44.1 | C |
| | | Kurile Islands. | | | | | |
| | | h = 110 km (Up,Ud). | | | | | |
| | | m = 5.8 (Up,Ki). | | | | | |
| " | 24 | Up | iP | | | 11 53 28.4 | |
| | | | ipP | | | 11 53 36.0 | |
| | | | | | | micr | sec |
| | | | pP | Z' | 0.1 | 0.8 | |
| | | | Mx | N | 0.6 | 6 | |
| | | | Mx | Z | 0.9 | 12 | |
| | | Ki | iP | | | 11 53 10.2 | |
| | | | ipP | | | 11 53 18.9 | |
| | | | | | | micr | sec |
| | | | Mx | E | 0.9 | 12 | |
| | | | Mx | N | 1.0 | 15 | |
| | | | Mx | Z | 1.2 | 13 | |
| | | Sk | iP | | | 11 53 41.9 | |
| | | | ipP | | | 11 53 51.1 | |
| | | Um | iP | | | 11 53 13.7 | |
| | | | ipP | | | 11 53 21.1 | |
| | | | iPP | | | 11 54 22.0 | |
| | | Ud | iP | | | 11 53 44.5 | |
| | | | ipP | | | 11 53 52.2 | |
| | | De | iP | | | 11 53 52.6 | |
| | | | ipP | | | 11 53 59.8 | |
| | | Kazakh-Sinkiang. | | | | | |
| | | h = 40 km (Up,Ki,Sk,Um,Ud,De). | | | | | |
| | | M = 5.0 (Up,Ki). | | | | | |
| " | 24 | Ki | iP | | | 15 53 32.0 | C |
| | | Um | iP | | | 15 53 28.5 | |
| | | Ud | iP | | | 15 53 41.8 | C |
| | | De | iP | | | 15 53 40.3 | |
| | | Sumatra (h = 100 km). | | | | | |
| " | 24 | Ud | i | | | 16 07 44.0 | |
| | | | i(Sg) | | | 16 07 48.3 | |
| " | 24 | Ki | iP | | | 17 22 22.4 | |
| | | Sk | iP | | | 17 22 34.7 | |
| | | | iS | | | 17 24 21.7 | |
| | | Um | iP | | | 17 22 59.7 | |
| | | | i | | | 17 24 44.8 | |
| | | | iS | | | 17 25 16.8 | |
| | | Ud | iP | | | 17 23 22.1 | C |
| | | Jan Mayen (h = N). | | | | | |
| 1970 Nov. | 25 | Ki | eP | | | 09 50 15 | |
| | | Sk | eP | | | 09 50 52 | |
| | | Ud | iP | | | 09 51 05.3 | |
| | | Kurile Islands (h = 70 km). | | | | | |
| " | 25 | Ki | iP | | | 11 10 02.9 | |
| | | Sk | iP | | | 11 10 39.3 | |
| | | Ud | iP | | | 11 10 55.0 | |
| | | Kurile Islands (h = 55 km). | | | | | |
| " | 25 | Ki | iP | | | 12 37 32.3 | |
| | | Um | iP | | | 12 37 33.7 | |
| | | Ud | iP | | | 12 38 04.7 | |
| " | 25 | Um | iP | | | 13 25 35.3 | |
| | | | i | | | 13 25 46.4 | |
| | | Japan (h = N). | | | | | |
| " | 25 | Ki | iPn | | | 13 30 10.2 | |
| | | | iSn | | | 13 30 50.0 | |
| | | | iLgl | | | 13 31 05.2 | |
| | | Sk | eLgl | | | 13 33 29 | |
| | | Um | iPg | | | 13 31 00.2 | |
| | | | iSg | | | 13 32 18.2 | |
| | | Northwest Russia-Finland border region. | | | | | |
| | | Origin time = 13 29 18. | | | | | |
| | | Explosion? | | | | | |
| " | 25 | Ki | iPg | | | 15 58 48.6 | |
| | | | iSg | | | 15 59 26.4 | |
| | | Sk | ePg | | | 15 58 52 | |
| | | | $iS^x$ | | | 15 59 29.9 | |
| | | | iSg | | | 15 59 34.9 | |
| | | Um | iPg | | | 15 59 06.3 | |
| | | | iSn | | | 15 59 40.4 | |
| | | | iSg | | | 15 59 53.8 | |
| | | Ud | iSn | | | 16 00 51.8 | |
| | | | i | | | 16 01 20.9 | |
| | | | iSg | | | 16 01 26.5 | |
| | | Nordland, Norway, $66.6^{\circ}$N, $14.1^{\circ}$E. | | | | | |
| | | Origin time = 15 57 53. | | | | | |
| " | 25 | Up | iP | | | 19 11 49.0 | C |
| | | | | | | micr | sec |
| | | | P | Z' | 0.1 | 0.9 | |
| | | Ki | iP | | | 19 11 30.1 | |
| | | Um | iP | | | 19 11 37.0 | C |
| | | Ud | iP | | | 19 11 57.0 | C |
| | | New Guinea (h = 15 km). | | | | | |
| " | 25 | Ki | i(P) | | | 20 53 49.6 | |
| | | Um | iP | | | 20 53 49.5 | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970
Nov. 25 Um iP 21 03 29.8
Japan (h = N).

" 25 Ki iP 21 24 04.9

" 25 Up iP 21 27 55.0

" 25 Up iP 23 49 04.4
Um iP 23 48 44.3
Ud iP 23 49 11.5
South of Japan (h = 50 km).

" 26 Up iP 02 03 05.9
Ki iP 02 04 13.8
Sk iP 02 03 43.8
Ud iP 02 03 11.8 C
De iP 02 02 39.1
Crete (h = N).

" 26 Up iP 02 16 08.1

" 26 Up iP 03 23 11.4 C
iS 03 32 41

| | | micr | sec |
|---|---|---|---|
| P | Z' | 0.1 | 0.8 |
| Mx | E | 2.1 | 16 |
| Mx | N | 3.2 | 20 |
| Mx | Z | 3.2 | 17 |

Ki iP 03 22 30.5
iS 03 31 23

| | | micr | sec |
|---|---|---|---|
| P | Z' | 0.1 | 1.3 |
| Mx | E | 3.6 | 19 |
| Mx | N | 4.8 | 20 |
| Mx | Z | 4.7 | 17 |

Sk iP 03 22 44.9
ipP 03 22 54.3
Um iP 03 22 53.2
ipP 03 23 03.0
iS 03 32 07
Ud iP 03 23 05.4
ipP 03 23 14.6
De iP 03 23 29.2
ipP 03 23 40.6
Oregon.
h = 35 km (Sk,Um,Ud,De).
m = 6.0, M = 5.8 (Up,Ki).

" 26 Ki eSg 10 00 36
Sk iSg 10 00 12.3
Um i 10 00 48.8
iSg 10 00 54.8
Coast of Nordland, Norway,
66.2°N, 13.0°E.
Origin time = 09 58 46.
Cf Nov. 11 at 18 51.

1970
Nov. 26 Up iSg 14 06 24.0
Sk iSg 14 08 09.4
i 14 08 16.1
Um iSg 14 06 42.7
Ud iSg 14 07 25.3
De iLgl 14 07 45.1
Esthonia.
Explosion?

" 26 Up i(P) 15 43 23.0
Um i(P) 15 43 16.7

" 26 Up ePKP 16 34 53
Ud iPKP 16 34 58.9
De iPKP 16 35 09.8
Tonga-Kermadec Islands
(h = 550 km).

" 26 Ki iP 21 29 18.6

" 27 Up iP 08 10 03.0 C
ipP 08 10 25.9
isP 08 10 35.1
Ki iP 08 10 04.6 C
ipP 08 10 27.3
isP 08 10 36.9

| | | micr | sec |
|---|---|---|---|
| P | Z' | 0.1 | 0.8 |

Um iP 08 10 00.2
ipP 08 10 23.0
isP 08 10 31.7
Ud iP 08 10 14.4 C
ipP 08 10 37.2
isP 08 10 46.9
De iP 08 10 11.7 C
ipP 08 10 35.2
isP 08 10 44.6
Nicobar Islands.
h = 90 km (Up,Ki,Um,Ud,De).

" 27 Up iP 09 51 06.9 C
iPP 09 53 55.6

| | | micr | sec |
|---|---|---|---|
| P | Z' | 0.5 | 1.0 |
| PP | Z' | 0.1 | 1.0 |
| Mx | E | 2.0 | 21 |
| Mx | N | 2.7 | 22 |
| Mx | Z | 2.9 | 22 |

Ki iP 09 50 41.8 C

| | | micr | sec |
|---|---|---|---|
| P | Z' | 0.7 | 1.0 |

Sk iP 09 51 10.6 C
Um iP 09 50 51.0
ipP 09 51 06.5
Ud iP 09 51 17.0 C
i 09 51 25.5
iPP 09 54 13.5
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | |
|---|---|---|---|---|---|
| 1970 Nov. | 27 | (cont.) | | | |
| | | De | iP | 09 51 24.8 | C |
| | | | iPP | 09 54 23.7 | |
| | | Formosa. | | | |
| | | h = 60 km (Um). | | | |
| | | m = 6.4 (Up,Ki). | | | |
| " | 27 | Up | i(P) | 12 42 45.2 | |
| | | | i | 12 43 21.2 | |
| " | 27 | Up | i(P) | 13 41 45.0 | |
| | | | i | 13 41 48.3 | |
| | | Ki | i(P) | 13 41 07.3 | |
| | | Ud | i(P) | 13 42 14.2 | |
| " | 27 | Up | iP | 18 04 05.3 | C |
| | | | i | 18 06 30.0 | |
| | | | i | 18 06 45.6 | |
| " | 27 | Um | iP | 19 59 58.1 | |
| | | Ud | iP | 19 59 32.5 | C |
| | | De | iP | 19 59 14.5 | |
| | | South of Ascension Island | | | |
| | | (h = N). | | | |
| " | 27 | Up | i(P) | 21 35 53.2 | |
| | | Um | i(P) | 21 37 47.8 | |
| " | 27 | Up | iP | 22 57 02.4 | |
| | | Ud | iP | 22 57 14.3 | C |
| | | Luzon (h = 30 km). | | | |
| " | 28 | Ud | iP | 00 41 57.2 | |
| " | 28 | Up | iP | 01 09 57.1 | |
| | | Ki | iP | 01 09 45.0 | |
| | | Molucca Sea (h = N). | | | |
| " | 28 | Up | iP | 01 27 08.6 | |
| " | 28 | Up | iPKP | 01 48 58.7 | |
| | | Ki | iPKP | 01 48 47.3 | |
| | | Sk | iPKP | 01 48 58.3 | |
| | | | i | 01 49 02.3 | |
| | | Um | iPKP | 01 48 58.0 | |
| | | Ud | iPKP2 | 01 49 16.1 | |
| | | New Zealand (h = 35 km). | | | |
| " | 28 | Up | iSg | 14 05 55.1 | |
| | | Ki | iSg | 14 03 54.5 | |
| | | Sk | iSg | 14 03 57.9 | |
| | | Um | iPg | 14 03 33.2 | |
| | | | iSn | 14 04 07.5 | |
| | | | iSg | 14 04 21.0 | |
| | | Ud | iSg | 14 05 46.1 | |
| | | Nordland, Norway, | | | |
| | | 66.3°N, 14.8°E. | | | |
| | | Origin time = 14 02 25. | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1970 Nov. | 28 | Ud | iPKP | 15 03 54.5 | C |
| | | Chile (h = 35 km). | | | |
| " | 28 | Up | i(P) | 15 06 05.2 | |
| | | | i | 15 07 47.0 | |
| | | Um | i(P) | 15 06 36.4 | |
| " | 28 | Up | eP | 20 37 12 | |
| | | | iPP | 20 41 44.2 | |
| | | | iPKKP | 20 52 10.8 | |
| | | | | micr sec | |
| | | | Mx E | 1.9 20 | |
| | | | Mx N | 2.1 21 | |
| | | | Mx Z | 2.6 20 | |
| | | Ki | i(PP) | 20 41 30.6 | |
| | | Sk | iPKP | 20 41 11.6 | |
| | | Um | iPKP | 20 41 07.7 | |
| | | Ud | iP | 20 37 17.9 | |
| | | | ePKP | 20 41 17 | |
| | | | iPP | 20 42 12.3 | |
| | | De | iP | 20 37 29.5 | |
| | | | iPKP | 20 41 17.8 | |
| | | | i(PP) | 20 41 55.7 | |
| | | | iPKKP | 20 52 01.7 | |
| | | New Guinea (h = 110 km). | | | |
| " | 28 | Ud | iP | 20 47 01.6 | |
| | | Japan (h = 45 km). | | | |
| " | 29 | Up | iP | 02 11 31.2 | |
| | | | ipP | 02 11 36.3 | |
| | | Ki | iP | 02 11 26.5 | |
| | | Sk | iP | 02 11 53.4 | |
| | | Ud | iP | 02 11 47.3 | |
| | | | ipP | 02 11 51.6 | |
| | | De | eP | 02 11 55 | |
| | | Sinkiang. | | | |
| | | h = 25 km (Up,Ud). | | | |
| " | 29 | Up | iP | 05 19 42.2 | |
| | | | iPP | 05 21 31.7 | |
| | | Ki | iP | 05 19 51.7 | |
| | | Sk | iP | 05 20 08.4 | |
| | | | iPP | 05 21 52.7 | |
| | | Um | iP | 05 19 41.2 | D |
| | | | i(PP) | 05 21 21.6 | |
| | | Ud | iP | 05 19 59.7 | |
| | | De | iP | 05 19 56.7 | |
| | | Hindu Kush (h = 120 km). | | | |
| " | 29 | Up | iSn | 05 37 43.2 | |
| | | | iLgl | 05 38 06.5 | |
| | | Ki | iPg | 05 34 54.4 | |
| | | | iSg | 05 35 15.3 | |
| | | Sk | eSg | 05 37 42 | |
| | | Um | i | 05 35 47.1 | |
| | | | iSg | 05 36 10.3 | |
| | | (cont.) | | | |

Up = Uppsala, Ki = Kiruan, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970
Nov. 29 (cont.)
De eLgl 05 40 14
Torne Valley, Sweden-
Finland border region,
66.9°N, 23.7°E.
Origin time = 05 34 22.

" 29 Up iP 06 13 07.8
iS 06 22 44

| | | micr | sec |
|---|---|---|---|
| P | Z' | 0.1 | 1.1 |
| Mx | E | 8.1 | 23 |
| Mx | N | 17 | 30 |
| Mx | Z | 11 | 25 |

Ki iP 06 13 49.0

| | | micr | sec |
|---|---|---|---|
| P | Z' | 0.1 | 1.3 |
| Mx | E | 14 | 19 |
| Mx | N | 19 | 20 |
| Mx | Z | 7.0 | 18 |

Sk iP 06 13 20.2
i 06 13 36.6
Um iP 06 13 31.1
iS 06 23 30
Ud iP 06 13 03.4
i 06 13 20.3
De i(P) 06 12 52.3
Ascension Island (h = N).
m = 5.9, M = 6.4 (Up,Ki).

" 29 Up iP 09 00 48.4
Um iP 09 00 46.2 C
Ud iP 09 01 04.9 C
De iP 09 01 02.0
Hindu Kush (h = 180 km).

" 29 Ud iP 11 44 58.0
North Atlantic Ocean (h = N).

" 29 Up iP 15 39 23.4
Ki iP 15 39 15.0
Ud iP 15 39 32.2
i 15 39 45.7
Sinkiang (h = N).

" 29 Up iPn 17 44 35.3
Ki eP 17 44 37
Sk iPn 17 45 17.5
i 17 45 38.5
Um iPn 17 44 40.6
Ud iP 17 44 14.7 D
i 17 45 05.7
Turkmen SSR (h = 55 km).

" 29 Up isP 20 14 09.8
(cont.)

1970
Nov. 29 (cont.)
Ki ipP 20 13 42.1

| | | micr | sec |
|---|---|---|---|
| pP | Z' | 0.1 | 1.1 |

Sk iP 20 13 09.4
ipP 20 13 32.4
Um iP 20 13 26.1
ipP 20 13 50.6
isP 20 14 04.8
Ud iP 20 13 18.1
De isP 20 14 00.2
Mexico-Guatemala.
h = 90 km (Sk,Um).

" 30 Up iP 09 53 41.6
i 09 53 47.3
Sk eP 09 54 24
i 09 54 29.9
Um i(P) 09 54 29.9
Ud iP 09 53 54.4
Greece (h = 50 km).

" 30 Ki iPn 13 28 09.7
iSn 13 28 54.1
i(Lgl) 13 29 08.2
Sk iSg 13 31 36.1
Um iSn 13 29 37.1
iSg 13 30 07.0
Northwest Russia-Finland
border region,
67.5°N, 29.7°E.
Origin time = 13 27 12.
Explosion?

" 30 Um iP 20 44 23.6

Markus Båth
December 9, 1971

SEISMOLOGICAL INSTITUTE
BOX 517
S-751 20 UPPSALA
SWEDEN

# S E I S M O L O G I C A L  B U L L E T I N

## U P P S A L A, K I R U N A, S K A L S T U G A N, U M E Å,

## U D D E H O L M and D E L A R Y

| | | | |
|---|---|---|---|
| Uppsala | (Up): | 59°51.5'N, | 17°37.6'E; h = 14 m |
| Kiruna | (Ki): | 67°50.4'N, | 20°25.0'E; h = 390 m |
| Skalstugan | (Sk): | 63°34.8'N, | 12°16.8'E; h = 580 m |
| Umeå | (Um): | 63°48.9'N, | 20°14.2'E; h = 16 m |
| Uddeholm | (Ud): | 60°05.4'N, | 13°36.4'E; h = 240 m |
| Delary | (De): | 56°28.2'N, | 13°52.2'E, h = 150 m |

Remark. From this monthly bulletin onwards, we will be using the regional travel times for events within about 10° as given by M. Båth: Average crustal structure of Sweden, Pure Appl. Geophys., 88: 75-91, 1971. Also the wave notation given in that paper will be used for regional events.

## D E C E M B E R  1 - 31, 1970

1970 Dec. 1 Up iP 01 07 53.2
Ki iP 01 09 03.6
Sk iP 01 08 21.9
Um iP 01 08 33.5
Ud iP 01 07 50.0
De iP 01 07 16.0
Tunisia (h = 25 km).

" 1 Ud i 10 53 32.8
iS 10 53 57.2
De iP 10 50 55.0
iS 10 52 12.3
Germany (h = 20 km).

" 1 Up iPn 12 02 51.2 C
iS 12 07 02

| | | micr | sec |
|---|---|---|---|
| Pn | Z' | 0.2 | 1.0 |
| Mx | E | 0.7 | 13 |
| Mx | N | 1.0 | 17 |

Ki iP 12 03 34.9
iSn 12 09 19.8

| | | micr | sec |
|---|---|---|---|
| Mx | E | 0.9 | 12 |
| Mx | N | 0.5 | 15 |
| Mx | Z | 0.9 | 16 |

Sk iPn 12 03 49.7
i 12 03 55.4
Um iP 12 03 06.9
Ud iP 12 02 59.3
iPn 12 03 12.6
(cont.)

1970 Dec. 1 (cont.)
De iP 12 02 41.0
Turkey (h = 20 km).
M = 4.5 (Up,Ki).

" 1 Sk e(Sg) 14 51 23
Ud i(Sg) 14 50 20.1

" 1 Up

| | | micr | sec |
|---|---|---|---|
| Mx | E | 2.0 | 21 |
| Mx | N | 5.0 | 22 |
| Mx | Z | 3.9 | 20 |

Ki iPKP 18 33 26.1

| | | micr | sec |
|---|---|---|---|
| Mx | E | 4.3 | 22 |
| Mx | N | 1.6 | 18 |
| Mx | Z | 3.3 | 20 |

Ud iPKP 18 33 43.0
Solomon Islands (h = N).
M = 6.2 (Up,Ki).

" 1 Ki i(P) 19 28 23.2
Ud iP 19 28 52.1
Burma.

" 1 Up iP 19 40 09.2
Ki iP 19 39 16.0 C

| | | micr | sec |
|---|---|---|---|
| P | Z' | 0.1 | 1.0 |

Sk iP 19 39 46.6
Um iP 19 39 43.0
ipP 19 39 57.7
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970
Dec. 1 (cont.)

| | | | | |
|---|---|---|---|---|
| | Ud | iP | 19 40 08.4 | C |
| | De | iP | 19 40 31.3 | C |

Aleutian Islands.
h = 55 km (Um).

| | | | | | |
|---|---|---|---|---|---|
| " 1 | Up | iP | 21 20 37.0 | C | |
| | | iPcP | 21 21 03.5 | | |
| | | | micr | sec | |
| | | P | Z' 0.2 | 0.8 | |
| | | Mx | E 3.2 | 17 | |
| | | Mx | N 4.7 | 21 | |
| | | Mx | Z 6.5 | 22 | |
| | Ki | iP | 21 19 44.1 | | |
| | | iPcP | 21 20 29.6 | | |
| | | | micr | sec | |
| | | P | Z' 0.1 | 1.0 | |
| | | Mx | E 3.2 | 16 | |
| | | Mx | N 4.6 | 18 | |
| | | Mx | Z 5.7 | 18 | |
| | Sk | iP | 21 20 15.0 | | |
| | | iPcP | 21 20 48.5 | | |
| | Um | iP | 21 20 10.1 | | |
| | | iPcP | 21 20 46.0 | | |
| | | iS | 21 28 46 | | |
| | Ud | iP | 21 20 36.2 | C | |
| | De | iP | 21 20 58.8 | | |

Aleutian Islands (h = 35 km).
m = 6.2, M = 5.8 (Up,Ki).

| | | | | |
|---|---|---|---|---|
| " 1 | Up | i(P) | 21 32 01.5 | |
| | Ki | iP | 21 30 53.8 | |
| " 1 | Up | iP | 21 40 53.8 | |
| | | iPcP | 21 41 20.2 | |
| | Ud | iP | 21 40 53.6 | |

Aleutian Islands (h = 45 km).

| | | | | |
|---|---|---|---|---|
| " 1 | Ud | iP | 22 53 18.6 | |

Sinkiang (h = N).

| | | | | | |
|---|---|---|---|---|---|
| " 2 | Up | iP | 02 45 56.6 | | |
| | | ipP | 02 46 10.8 | | |
| | | iPcP | 02 46 23.2 | | |
| | | | micr | sec | |
| | | P | Z' 0.2 | 0.8 | |
| | | Mx | E 2.0 | 18 | |
| | | Mx | N 2.6 | 21 | |
| | | Mx | Z 2.0 | 21 | |
| | Ki | iP | 02 45 03.5 | | |
| | | iPcP | 02 45 49.5 | | |
| | | | micr | sec | |
| | | P | Z' 0.1 | 1.0 | |
| | | Mx | E 1.6 | 16 | |
| | | Mx | N 2.1 | 18 | |
| | | Mx | Z 2.4 | 19 | |

(cont.)

1970
Dec. 2 (cont.)

| | | | | |
|---|---|---|---|---|
| | Sk | iP | 02 45 35.5 | |
| | | iPcP | 02 46 08.7 | |
| | Um | iP | 02 45 31.0 | |
| | | iPcP | 02 46 05.3 | |
| | Ud | iP | 02 45 56.9 | C |
| | | ipP | 02 46 10.8 | |
| | De | iP | 02 46 19.1 | C |
| | | ipP | 02 46 32.9 | |

Aleutian Islands.
h = 50 km (Up,Ud,De).
m = 6.2, M = 5.6 (Up,Ki).
Of our stations, the nearer ones exhibit clear PcP but no pP, whereas the more distant stations show clear pP but no PcP, most likely a consequence of the focal mechanism.

| | | | | |
|---|---|---|---|---|
| " 2 | Ki | iPKP | 02 48 02.6 | |

South Sandwich Islands
(h = 40 km).

| | | | | |
|---|---|---|---|---|
| " 2 | Ud | iP | 05 07 59.0 | |

Aleutian Islands (h = 40 km).

| | | | | |
|---|---|---|---|---|
| " 2 | Up | iP | 08 22 35.2 | |
| | Ki | iP | 08 21 43.9 | |
| | De | iP | 08 22 57.5 | |

Aleutian Islands (h = 50 km).

| | | | | | |
|---|---|---|---|---|---|
| " 2 | Up | iP | 09 14 12.2 | C | |
| | | iPcP | 09 14 40.6 | | |
| | | | micr | sec | |
| | | Mx | E 1.0 | 17 | |
| | | Mx | N 1.5 | 19 | |
| | | Mx | Z 2.2 | 17 | |
| | Ki | iP | 09 13 20.3 | | |
| | | | micr | sec | |
| | | Mx | E 1.1 | 16 | |
| | | Mx | N 1.4 | 18 | |
| | | Mx | Z 2.0 | 19 | |
| | Sk | iP | 09 13 52.6 | | |
| | Um | iP | 09 13 47.4 | | |
| | | iPcP | 09 14 19.4 | | |
| | Ud | iP | 09 14 12.3 | | |
| | De | iP | 09 14 34.9 | | |

Aleutian Islands (h = 50 km).
M = 5.3 (Up,Ki).

| | | | | |
|---|---|---|---|---|
| " 2 | Ud | iP | 10 52 32.7 | |

Aleutian Islands (h = 60 km).

| | | | | |
|---|---|---|---|---|
| " 2 | Up | iP | 11 10 02.1 | |
| | Ki | iP | 11 09 17.6 | |

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| 1970 | | | | | | |
|---|---|---|---|---|---|---|
| Dec. | 2 | (cont.) | | | | |
| | | Sk | eP | | 11 09 25 | |
| | | Um | iP | | 11 09 42.3 | |
| | | Ud | iP | | 11 09 47.5 | |
| | | De | iP | | 11 10 13.2 | |
| | | Baffin Island (h = 25 km). | | | | |
| " | 2 | Up | i(P) | | 11 39 25.7 | |
| " | 2 | Up | iP | | 12 47 44.4 | |
| | | Ud | iP | | 12 47 16.8 | |
| " | 2 | Sk | iPKP | | 15 44 42.9 | |
| | | Solomon Islands (h = 35 km). | | | | |
| " | 2 | Up | | | micr | sec |
| | | | Mx | E | 18 | 21 |
| | | | Mx | N | 24 | 20 |
| | | | Mx | Z | 38 | 21 |
| | | Ki | iPKP | | 16 13 13.6 | |
| | | | | | micr | sec |
| | | | Mx | E | 21 | 18 |
| | | | Mx | N | 21 | 20 |
| | | | Mx | Z | 33 | 20 |
| | | Sk | ePKP | | 16 13 26 | |
| | | De | iPKP | | 16 13 26.8 | |
| | | Solomon Islands (h = N). | | | | |
| | | M = 6.9 (Up,Ki). | | | | |
| " | 2 | Up | iP | | 17 45 46.5 | |
| | | | i | | 17 45 53.4 | |
| | | Ki | iP | | 17 45 31.7 | |
| | | Ud | iP | | 17 45 55.0 | |
| | | Celebes (h = 55 km). | | | | |
| " | 2 | Um | iP | | 18 24 38.0 | |
| | | Bering Sea (h = 230 km). | | | | |
| " | 2 | Up | iP | | 18 59 56.2 | |
| | | Ki | i | | 19 00 58.4 | |
| | | | iPn | | 19 01 23.2 | |
| | | Sk | ePn | | 19 01 17 | |
| | | Ud | iP | | 19 00 13.4 | |
| | | Caucasus (h = 55 km). | | | | |
| " | 2 | Up | iP | | 19 22 49.5 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 0.6 |
| | | Ki | iP | | 19 22 26.9 | |
| | | Sk | iP | | 19 22 57.7 | |
| | | Um | iP | | 19 22 33.9 | |
| | | Ud | iP | | 19 23 02.1 | |
| | | Kansu, China (h = 30 km). | | | | |
| " | 3 | Sk | iP | | 00 53 43.0 | |
| | | | i | | 00 53 49.5 | |

| 1970 | | | | | | |
|---|---|---|---|---|---|---|
| Dec. | 3 | Ki | iP | | 05 12 35.9 | |
| | | | iS | | 05 22 59 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.5 | 1.9 |
| | | | Mx | E | 1.4 | 22 |
| | | | Mx | N | 1.1 | 20 |
| | | | Mx | Z | 1.6 | 20 |
| | | Sk | iP | | 05 12 16.8 | |
| | | Um | iP | | 05 12 39.3 | |
| | | | iS | | 05 23 05 | |
| | | Ud | eP | | 05 12 26 | |
| | | De | iP | | 05 12 28.6 | |
| | | Colombia (h = 40 km). | | | | |
| " | √3 | Ki | iP | | 07 16 16.2 | |
| | | | i | | 07 16 23.7 | |
| | | | | | micr | sec |
| | | | Mx | E | 1.4 | 19 |
| | | | Mx | N | 0.9 | 20 |
| | | | Mx | Z | 0.9 | 18 |
| | | Molucca Sea (h = 25 km). | | | | |
| " | 3 | Sk | i(Sg) | | 08 03 48.7 | |
| | | Ud | i(Sg) | | 08 04 40.6 | |
| " | 3 | Up | i(P) | | 08 22 36.4 | |
| | | Ud | iP | | 08 22 42.2 | |
| " | 3 | Ki | ePn | | 09 22 47 | |
| | | | iSn | | 09 23 32.2 | |
| | | | iSgl | | 09 23 48.2 | |
| | | Origin time = 09 21 47. | | | | |
| " | 3 | Up | iP | | 11 30 33.1 | |
| | | | i(Sg) | | 11 31 18.2 | |
| " | 3 | Up | i(P) | | 13 53 11.8 | |
| " | 3 | Up | iP | | 16 11 00.7 | |
| | | Um | iP | | 16 10 35.6 | |
| | | Ud | iP | | 16 11 07.2 | |
| | | Kurile Islands (h = 110 km). | | | | |
| " | 4 | Up | iP | | 02 04 08.0 | |
| | | | iS | | 02 07 51.6 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.2 | 0.6 |
| | | | Mx | E | 3.7 | 10 |
| | | | Mx | N | 3.7 | 9 |
| | | | Mx | Z | 2.5 | 10 |
| | | Ki | iP | | 02 05 00.4 | |
| | | | iSn | | 02 10 05.3 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 0.8 |
| | | | Mx | E | 5.8 | 10 |
| | | | Mx | N | 3.7 | 8 |
| | | | Mx | Z | 5.8 | 8 |

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970 Dec. 4 (cont.)

| | | | | |
|---|---|---|---|---|
| | Sk | iP | 02 04 51.8 | |
| | | i | 02 05 00.7 | |
| | Um | iP | 02 04 29.1 | |
| | | i | 02 04 35.0 | |
| | | iS | 02 08 32 | |
| | Ud | iP | 02 04 26.0 | C |
| | | iS | 02 08 28.9 | |
| | De | iP | 02 04 03.8 | |

Caucasus (h = N).
m = 5.6, M = 5.4 (Up,Ki).

" 4

| | | | |
|---|---|---|---|
| Sk | eP | 10 03 40 | |
| Um | iP | 10 03 56.1 | |

Panama (h = 20 km).

" 4

| | | | |
|---|---|---|---|
| Up | i(P) | 12 00 43.0 | |
| Um | iP | 12 01 12.1 | |

" 4

| | | | |
|---|---|---|---|
| Ki | iPn | 12 56 32.8 | |
| | iSn | 12 57 32.0 | |
| | iS* | 12 57 51.0 | |
| Sk | eSgl | 13 00 23 | |
| Um | iSgl | 12 58 48.9 | |

Northwest Russia,
67.8°N, 34.2°E.
Origin time = 12 55 14.
Explosion.

" 4

| | | | |
|---|---|---|---|
| Up | i(Sg) | 13 45 09.0 | |

" 4

| | | | | |
|---|---|---|---|---|
| Up | iPP | 17 27 49.9 | | |
| | iPS | 17 37 08 | | |
| | | micr | sec | |
| | Mx | E 13 | 23 | |
| | Mx | N 4.7 | 23 | |
| | Mx | Z 20 | 23 | |
| Ki | iPS | 17 37 34 | | |
| | | micr | sec | |
| | Mx | E 6.5 | 21 | |
| | Mx | N 5.7 | 21 | |
| | Mx | Z 7.9 | 21 | |
| Um | i(PP) | 17 27 52 | | |
| | iPP | 17 28 13.7 | | |
| | iPS | 17 37 34 | | |
| Ud | iPP | 17 27 44.2 | | |

Chile (h = 35 km).
M = 6.5 (Up,Ki).

" 4

| | | | |
|---|---|---|---|
| Ud | iP | 18 07 28.9 | |

Greece.

" 4

| | | | |
|---|---|---|---|
| Sk | i(P) | 18 34 50.8 | |

1970 Dec. 4

| | | | |
|---|---|---|---|
| Ki | iSn | 19 08 32.7 | |
| | iSgl | 19 08 48.4 | |
| Um | i | 19 09 16.4 | |
| | iSgl | 19 09 42.8 | |

" 5 Long-period microseisms (periods around 18 sec), especially on Umeå long-period N component.

" 5

| | | | |
|---|---|---|---|
| Up | iP | 05 58 54.3 | |
| Ki | iP | 05 59 02.8 | |
| Sk | eP | 05 59 20 | |
| Um | iP | 05 58 52.4 | |
| Ud | iP | 05 59 10.8 | |

Hindu Kush (h = 200 km).

" 5

| | | | |
|---|---|---|---|
| Ki | iPKP | 22 18 05.2 | |

Tonga Islands (h = 240 km).

" 6

| | | | |
|---|---|---|---|
| Up | iP | 01 03 54.3 | |

Aleutian Islands (h = 70 km).

" 6

| | | | |
|---|---|---|---|
| Up | iP | 01 26 30.8 | |

" 6

| | | | |
|---|---|---|---|
| Up | iP | 04 24 38.8 | |
| Ki | iP | 04 24 24.0 | C |
| | iPP | 04 28 42.8 | |
| Um | iP | 04 24 29.2 | |
| Ud | iP | 04 24 47.6 | |
| De | iP | 04 24 52.8 | |

Banda Sea (h = 120 km).

" 6

| | | | | |
|---|---|---|---|---|
| Up | iP | 12 58 32.9 | | |
| | | micr | sec | |
| | P | Z' 0.1 | 0.5 | |
| Ki | iP | 12 57 48.1 | | |
| Um | iP | 12 58 07.6 | | |
| Ud | iP | 12 58 39.0 | | |
| De | iP | 12 58 57.1 | | |

Kurile Islands (h = 40 km).

" 6

| | | | |
|---|---|---|---|
| Um | iP | 17 47 10.0 | |
| Ud | iP | 17 46 36.7 | |

Ascension Island (h = N).

" 6

| | | | |
|---|---|---|---|
| Ki | iP | 17 55 31.4 | |
| Um | iP | 17 55 12.7 | |
| Ud | iP | 17 54 37.4 | |
| | i | 17 54 43.8 | |

Ascension Island (h = N).

" 6

| | | | |
|---|---|---|---|
| Ki | i(Sg) | 18 13 08.0 | |
| Sk | e(Sg) | 18 13 32 | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Dec. | 6 | Up | iP | | 20 31 55.3 | C | |
| | | | iS | | 20 40 59 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.6 | 0.9 | |
| | | | Mx | E | 22 | 23 | |
| | | | Mx | N | 24 | 23 | |
| | | | Mx | Z | 19 | 24 | |
| | | Ki | iP | | 20 31 12.2 | C | |
| | | | ipP | | 20 31 23.9 | | |
| | | | iS | | 20 39 37 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.4 | 1.2 | |
| | | | Mx | E | 35 | 23 | |
| | | | Mx | N | 13 | 20 | |
| | | | Mx | Z | 15 | 19 | |
| | | Sk | iP | | 20 31 47.3 | C | |
| | | Um | iP | | 20 31 31.3 | C | |
| | | | ipP | | 20 31 42.8 | | |
| | | | iS | | 20 40 13 | | |
| | | Ud | iP | | 20 32 02.0 | C | |
| | | | ipP | | 20 32 11.9 | | |
| | | | iPP | | 20 34 30.7 | | |
| | | De | iP | | 20 32 18.9 | C | |
| | | | ipP | | 20 32 30.5 | | |
| | | | iPP | | 20 35 02.5 | | |
| | | Japan. | | | | | |
| | | h = 40 km (Ki,Um,Ud,De). | | | | | |
| | | m = 6.6, M = 6.6 (Up,Ki). | | | | | |
| " | 7 | Up | i(P) | | 10 14 52.6 | | |
| " | 7 | Ud | iPKP | | 10 59 11.8 | C | |
| | | De | iPKP | | 10 59 27.2 | | |
| | | Tonga-Kermadec Islands | | | | | |
| | | (h = 110 km). | | | | | |
| " | 7 | Ki | iP | | 12 27 05.0 | | |
| | | Sk | iP | | 12 26 50.8 | | |
| | | Um | iP | | 12 27 07.5 | C | |
| | | | i | | 12 27 18.4 | | |
| | | Panama-Colombia (h = 25 km). | | | | | |
| " | 7 | Up | iP | | 21 05 46.6 | | |
| " | 7 | Up | iP | | 21 47 05.1 | D | |
| | | | iPP | | 21 50 08.1 | | |
| | | | iS | | 21 56 41 | | |
| | | | ipS | | 21 57 52 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 1.6 | 0.7 | |
| | | | PP | Z' | 0.5 | 1.0 | |
| | | | Mx | E | 7.2 | 22 | |
| | | | Mx | N | 9.4 | 21 | |
| | | | Mx | Z | 13 | 18 | |
| | | (cont.) | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Dec. | 7 | (cont.) | | | | | |
| | | Ki | iP | | 21 46 31.6 | D | |
| | | | ipP | | 21 47 21.1 | | |
| | | | iPP | | 21 49 12.1 | | |
| | | | iS | | 21 55 42 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 2.5 | 1.1 | |
| | | | PP | Z' | 1.1 | 1.0 | |
| | | | Mx | E | 9.7 | 24 | |
| | | | Mx | N | 19 | 24 | |
| | | | Mx | Z | 10 | 22 | |
| | | Sk | iP | | 21 47 01.3 | D | |
| | | | iPP | | 21 50 01.0 | | |
| | | Um | iP | | 21 46 46.1 | D | |
| | | | iPP | | 21 49 35.6 | | |
| | | | iS | | 21 56 10 | | |
| | | Ud | iP | | 21 47 12.4 | D | |
| | | | iPP | | 21 50 19.4 | | |
| | | | iS | | 21 57 04.0 | | |
| | | De | iP | | 21 47 25.8 | | |
| | | | iPP | | 21 50 42.1 | | |
| | | | iS | | 21 57 29.9 | | |
| | | Near Bonin Islands. | | | | | |
| | | h = 200 km (Ki). | | | | | |
| | | m = 6.8, M = 6.4 (Up,Ki). | | | | | |
| " | 7 | Up | iP | | 22 53 07.4 | | |
| " | 7 | Up | iP | | 23 22 40.6 | | |
| " | 7 | Ud | iP | | 23 37 46.8 | | |
| | | Kurile Islands (h = 70 km). | | | | | |
| " | 8 | Up | iP | | 06 05 38.6 | | |
| " | 8 | Ki | iP | | 09 11 19.7 | D | |
| | | | ipP | | 09 11 28.6 | | |
| | | Um | iP | | 09 11 14.3 | | |
| | | | ipP | | 09 11 23.1 | | |
| | | Ud | iP | | 09 11 27.4 | D | |
| | | | ipP | | 09 11 35.4 | | |
| | | Sumatra. | | | | | |
| | | h = 30 km (Ki,Um,Ud). | | | | | |
| " | 8 | Up | iP | | 12 00 43.3 | | |
| | | Um | iP | | 12 00 33.7 | | |
| | | Ud | iP | | 12 00 58.9 | | |
| | | De | iP | | 12 00 55.6 | | |
| | | Afghanistan-USSR (h = N). | | | | | |
| " | 8 | Ki | iPn | | 12 08 07.4 | | |
| | | | iSn | | 12 08 53.4 | | |
| | | | iSgl | | 12 09 07.4 | | |
| | | Origin time = 12 07 07. | | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Dec. | 8 | Up | iPKKP | | 19 59 22.4 | | |
| | | | | | micr | sec | |
| | | | Mx | E | 4.6 | 20 | |
| | | | Mx | N | 4.7 | 18 | |
| | | | Mx | Z | 7.3 | 19 | |
| | | Ki | | | micr | sec | |
| | | | Mx | E | 5.9 | 18 | |
| | | | Mx | N | 3.3 | 19 | |
| | | | Mx | Z | 9.5 | 22 | |
| | | Um | iPKP | | 19 49 01.8 | | |
| | | Ud | i | | 19 49 28.2 | | |
| | | | iPKKP | | 19 59 28.8 | | |
| | | | i | | 19 59 49.5 | | |
| | | Chile (h = 50 km). | | | | | |
| | | M = 6.3 (Up,Ki). | | | | | |
| " | 8 | Up | iPKP | | 22 30 25.7 | C | |
| | | | i | | 22 30 31.7 | | |
| | | Um | iPKP | | 22 30 24.8 | | |
| | | | i | | 22 30 34.3 | | |
| | | Ud | iPKP | | 22 30 27.5 | | |
| " | 8 | Up | iP | | 22 58 10.3 | | |
| | | Um | i(P) | | 22 58 06.9 | | |
| | | | i | | 22 58 21.6 | | |
| | | Ud | iP | | 22 58 26.9 | | |
| | | Afghanistan-USSR (h = 60 km). | | | | | |
| " | 9 | Up | eP | | 08 15 42 | | |
| | | Ud | iP | | 08 15 28.1 | | |
| | | Mexico (h = 35 km). | | | | | |
| " | 9 | Ki | i(Sg) | | 11 11 40.2 | | |
| " | 9 | Ud | iP | | 18 27 32.3 | | |
| " | 9 | Up | iP | | 19 44 14.8 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.1 | 0.6 | |
| | | Ki | iP | | 19 43 43.6 | | |
| | | Um | iP | | 19 43 56.1 | | |
| | | Ud | iP | | 19 44 24.0 | | |
| | | Japan (h = 180 km). | | | | | |
| " | 10 | Up | iP1 | | 04 48 10.7 | C | |
| | | | iP2 | | 04 48 16.1 | | |
| | | | iPP | | 04 52 14.9 | | |
| | | | iSKS | | 04 58 44 | | |
| | | | iPKKP | | 05 04 48.0 | | |
| | | | i | | 05 04 57.1 | | |
| | | | iP'P' | | 05 13 01.3 | | |
| | | | i | | 05 13 11.4 | | |
| | | | | | micr | sec | |
| | | | P2 | Z' | 0.2 | 1.0 | |
| | | | PP | Z' | 0.4 | 1.4 | |
| | | | Mx | E | 150 | 27 | |
| | | | Mx | N | 72 | 24 | |
| | | | Mx | Z | 250 | 26 | |
| | | (cont.) | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Dec. | 10 | (cont.) | | | | | |
| | | Ki | iP1 | | 04 48 11.4 | | |
| | | | iP2 | | 04 48 18.1 | | |
| | | | i(PP) | | 04 52 22.7 | | |
| | | | ePKKP | | 05 04 42 | | |
| | | | i | | 05 04 56.7 | | |
| | | | | | micr | sec | |
| | | | P2 | Z' | 1.0 | 1.6 | |
| | | | (PP) | Z' | 0.3 | 1.4 | |
| | | | Mx | E | 230 | 26 | |
| | | | Mx | N | 170 | 25 | |
| | | | Mx | Z | 230 | 25 | |
| | | Sk | iP2 | | 04 48 04.1 | | |
| | | | iPP | | 04 51 54.7 | | |
| | | | iPKKP | | 05 05 04.6 | | |
| | | | iP'P' | | 05 13 11.5 | | |
| | | Um | iP1 | | 04 48 16.0 | | |
| | | | iP2 | | 04 48 21.1 | | |
| | | | iPP | | 04 52 17.2 | | |
| | | | iPKKP | | 05 04 50.2 | | |
| | | | iP'P' | | 05 13 07.5 | | |
| | | | i | | 05 13 15.1 | | |
| | | Ud | iP1 | | 04 48 02.2 | | |
| | | | iP2 | | 04 48 07.6 | | |
| | | | iPP | | 04 51 55.6 | | |
| | | | iPKKP | | 05 05 09.3 | | |
| | | | iP'P' | | 05 13 26.5 | | |
| | | De | iP1 | | 04 48 02.4 | | |
| | | | iP2 | | 04 48 09.6 | | |
| | | | iPP | | 04 52 04.4 | | |
| | | | iPKKP | | 05 04 54.4 | | |
| | | | i | | 05 05 02.7 | | |
| | | | iP'P' | | 05 13 05.3 | | |
| | | | i | | 05 13 12.8 | | |
| | | Peru-Ecuador (h = 25 km). | | | | | |
| | | m = 6.8, M = 7.6 (Up,Ki). | | | | | |
| | | Double P: P2 larger than P1, average separation = 6.0 sec. | | | | | |
| | | Also PKKP and P'P' appear in most cases as doublets. | | | | | |
| " | 10 | Ki | iP | | 09 55 06.4 | | |
| | | Alaska (h = 120 km). | | | | | |
| " | 10 | Ki | eP | | 10 25 11 | | |
| | | Um | iP | | 10 25 29.5 | | |
| | | | i | | 10 25 56.0 | | |
| | | De | eP | | 10 26 23 | | |
| | | Aleutian Islands (h = 50 km). | | | | | |
| " | 10 | Ki | i(Sn) | | 16 23 19.4 | | |
| | | | iSg1 | | 16 23 33.3 | | |
| | | Sk | iSg1 | | 16 23 41.1 | | |
| | | (cont.) | | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | |
|---|---|---|---|---|---|
| 1970 Dec. | 10 | (cont.) | | | |
| | | Um | iSn | 16 23 46.4 | |
| | | | iSgl | 16 24 00.1 | |
| | | Ud | iSgl | 16 25 10.4 | |
| | | Nordland, Norway, | | | |
| | | 66.3°N, 14.4°E. | | | |
| | | Origin time = 16 22 04. | | | |
| | | Explosion. | | | |
| " | 11 | Up | iPKP | 06 20 12.5 | |
| | | Ki | iPKP | 06 19 53.4 | C |
| | | Sk | iPKP | 06 20 08.1 | C |
| | | Um | iPKP | 06 20 03.1 | |
| | | Ud | iPKP | 06 20 14.9 | |
| | | South of Kermadec Islands | | | |
| | | (h = 55 km). | | | |
| " | 11 | Up | iP | 07 41 28.2 | |
| | | Ki | iP | 07 41 47.0 | |
| | | Um | eP | 07 41 39 | |
| | | North Atlantic Ocean | | | |
| | | (h = N). | | | |
| " | 11 | Ki | iP | 08 07 35.2 | |
| " | 11 | Um | iP | 10 38 12.8 | |
| | | | i | 10 38 21.6 | |
| | | Ud | iP | 10 37 53.3 | |
| | | Peru-Ecuador (h = 35 km). | | | |
| " | 11 | Um | i(P) | 14 30 19.4 | |
| | | Ud | iP | 14 30 34.4 | |
| " | 11 | Up | iSgl | 15 38 43.9 | |
| | | Ud | iPgl | 15 37 21.7 | |
| | | | iSgl | 15 37 45.1 | |
| | | De | iSgl | 15 38 41.7 | |
| | | Oslo Fjord region. | | | |
| " | 11 | Up | iPKP | 21 04 20.9 | |
| | | | i | 21 04 26.8 | |
| | | Sk | ePKP | 21 04 15 | |
| | | Um | iPKP | 21 04 09.9 | |
| | | Ud | iPKP | 21 04 21.6 | |
| | | Kermadec Islands (h = 200 km). | | | |
| " | 12 | Up | iPKP | 01 29 13.0 | |
| | | | iSKP | 01 32 19.1 | |
| | | | | micr | sec |
| | | | SKP Z' | 0.2 | 1.0 |
| | | Ki | iSKP | 01 31 55.3 | |
| | | | | micr | sec |
| | | | SKP Z' | 0.6 | 1.6 |
| | | Sk | iSKP | 01 32 11.6 | |
| | | (cont.) | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1970 Dec. | 12 | (cont.) | | | |
| | | Um | iPKP | 01 29 07.2 | |
| | | | iSKP | 01 32 06.7 | |
| | | Ud | iPKP | 01 29 15.4 | |
| | | | i(sPKP) | 01 31 45.2 | |
| | | | iSKP | 01 32 20.4 | |
| | | De | iPKP | 01 29 25.9 | C |
| | | | iSKP | 01 32 29.5 | |
| | | Fiji Islands (h = 410 km). | | | |
| " | 12 | Up | iP | 03 16 53.2 | |
| | | Um | iP | 03 17 07.8 | |
| " | 12 | Up | iP | 07 06 45.0 | C |
| | | | iPn | 07 07 00.3 | |
| | | | | micr | sec |
| | | | P Z' | 1.2 | 1.0 |
| | | | Mx E | 1.6 | 14 |
| | | | Mx N | 1.1 | 4 |
| | | Ki | iP | 07 07 08.8 | C |
| | | | iPn | 07 07 32.7 | |
| | | | i | 07 07 52.5 | |
| | | | iSn | 07 13 00.6 | |
| | | | | micr | sec |
| | | | P Z' | 0.6 | 1.0 |
| | | | Mx E | 2.7 | 16 |
| | | | Mx N | 2.0 | 12 |
| | | | Mx Z | 2.4 | 12 |
| | | Sk | iP | 07 07 17.8 | C |
| | | | iPn | 07 07 44.6 | |
| | | Um | iP | 07 06 49.4 | C |
| | | | iPn | 07 07 10.2 | |
| | | Ud | iP | 07 07 03.5 | C |
| | | | iPn | 07 07 27.9 | |
| | | De | iP | 07 06 55.4 | C |
| | | East of the Caspian Sea. | | | |
| | | m = 6.6, M = 5.1 (Up,Ki). | | | |
| | | Underground explosion. | | | |
| | | Pn with amplitudes comparable to those of P are typical for these events. | | | |
| " | 12 | Ud | iP | 11 23 00.5 | |
| | | Iran-USSR (h = 45 km). | | | |
| " | 12 | Ki | iP | 11 31 18.9 | |
| | | Um | iP | 11 31 33.5 | |
| | | Ud | iP | 11 32 05.9 | |
| | | Near Bonin Islands | | | |
| | | (h = 30 km). | | | |
| " | 12 | Ki | iPn | 11 44 19.5 | |
| | | | iSn | 11 44 59.3 | |
| | | | iSgl | 11 45 10.9 | |
| | | (cont.) | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1970
Dec. 12 (cont.)

| | | | |
|---|---|---|---|
| Um | i(Sn) | 11 45 45.4 | |
| | iSgl | 11 46 27.3 | |

Probably northwest Russia.
Explosion.

" 12

| | | | |
|---|---|---|---|
| Ki | i(PKP) | 21 22 33.9 | |
| Sk | i | 21 23 44.8 | |

New Hebrides Islands
(h = 110 km).

" 13

| | | | |
|---|---|---|---|
| Up | iP | 04 14 53.8 | C |
| Ki | iP | 04 14 13.2 | C |
| Sk | iP | 04 14 47.6 | |
| Um | iP | 04 14 30.6 | |
| Ud | iP | 04 15 01.4 | C |
| De | iP | 04 15 17.3 | |

Japan (h = 15 km).

" 13

| | | | |
|---|---|---|---|
| Ki | iP | 12 42 01.5 | D |
| Ud | iP | 12 42 26.5 | |

Mindanao (h = 40 km).

" 13

| | | | | |
|---|---|---|---|---|
| Up | iP | 12 59 54.4 | | |
| | i | 12 59 58.1 | | |
| | ipP | 13 00 18.7 | | |
| | | micr | sec | |
| | P | Z' 0.1 | 1.0 | |
| Ki | iP | 12 59 53.3 | | |
| | ipP | 13 00 18.6 | | |
| | | micr | sec | |
| | P | Z' 0.1 | 1.0 | |
| Sk | iP | 13 00 07.3 | | |
| | ipP | 13 00 32.1 | | |
| Um | iP | 12 59 51.0 | C | |
| | i | 12 59 54.7 | | |
| | ipP | 13 00 15.9 | | |
| Ud | iP | 13 00 03.4 | C | |
| | i | 13 00 07.6 | | |
| | ipP | 13 00 29.2 | | |
| De | iP | 13 00 03.1 | | |

Sumatra.
h = 100 km (Up,Ki,Sk,Um,Ud).
m = 6.0 (Up,Ki).
Double P (Up,Um,Ud).

" 13

| | | | |
|---|---|---|---|
| Ki | iPn | 13 13 24.1 | |
| | iSn | 13 14 13.0 | |
| | iSgl | 13 14 27.5 | |
| Sk | iSgl | 13 17 14.0 | |
| Um | iSgl | 13 15 59.4 | |

Northwest Russia,
69.7°N, 30.7°E.
Origin time = 13 12 20.
Explosion.

1970
Dec. 14

| | | | |
|---|---|---|---|
| Up | iP | 04 18 31.2 | |
| Ki | iP | 04 18 33.6 | |
| Sk | iP | 04 18 17.4 | |
| Um | iP | 04 18 35.9 | |
| Ud | iP | 04 18 20.8 | |

Venezuela (h = 160 km).

" 14

| | | | |
|---|---|---|---|
| Um | iP | 04 55 34.7 | D |
| Ud | iP | 04 56 03.8 | |

Sea of Japan (h = 330 km).

" 14

| | | | |
|---|---|---|---|
| Ud | iPg | 05 26 25.8 | |
| | iSg | 05 26 53.9 | |

" 14

| | | | |
|---|---|---|---|
| Up | iP | 06 13 28.9 | |

" 14

| | | | | |
|---|---|---|---|---|
| Up | iP | 07 36 35.1 | | |
| Ki | iP | 07 36 16.8 | | |
| | | micr | sec | |
| | Mx | E 3.3 | 22 | |
| | Mx | N 1.9 | 23 | |
| | Mx | Z 3.0 | 21 | |
| Um | iP | 07 36 26.5 | | |
| Ud | iP | 07 36 41.5 | | |
| | i | 07 36 48.6 | | |

Molucca Passage (h = N).

" 14

| | | | |
|---|---|---|---|
| Ki | iPn | 13 03 32.7 | |
| | iSn | 13 04 18.8 | |
| | iSgl | 13 04 32.7 | |
| Sk | iSgl | 13 07 20.8 | |
| Um | iSgl | 13 06 08.6 | |

Northwest Russia-Norway
border region,
69.7°N, 30.2°E.
Origin time = 13 02 31.
Explosion.

" 14

| | | | |
|---|---|---|---|
| Ki | iP | 14 58 11.1 | |
| Um | iP | 14 58 40.1 | |

Aleutian Islands (h = 50 km).

" 14

| | | | |
|---|---|---|---|
| Um | i | 15 27 26.0 | |
| | i(Sg) | 15 28 42.4 | |

" 14

| | | | | |
|---|---|---|---|---|
| Up | | micr | sec | |
| | Mx | E 2.1 | 22 | |
| Ki | iP | 21 21 40.4 | | |
| Um | iP | 21 22 07.3 | C | |
| | i | 21 25 00.9 | | |
| Ud | iP | 21 22 37.0 | | |

Aleutian Islands (h = 55 km).

" 14

| | | | |
|---|---|---|---|
| Up | iP | 21 33 08.6 | |
| | i | 21 33 51.8 | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | |
|---|---|---|---|---|---|
| 1970 Dec. | 15 | Up | iP | 02 17 14.4 | |
| | | Ki | iP | 02 17 16.4 | |
| | | Sk | eP | 02 17 29 | |
| | | Um | iP | 02 17 21.9 | |
| | | Ud | iP | 02 17 25.4 | C |
| | | De | iP | 02 17 22.1 | |
| | | Sumatra (h = N). | | | |
| " | 15 | Up | iPgl | 09 27 04.3 | |
| | | | iSgl | 09 27 19.2 | |
| | | | iRg | 09 27 26.7 | |
| | | | | micr sec | |
| | | | Sgl Z' | 0.1 0.5 | |
| | | Sk | eSgl | 09 29 39 | |
| | | Um | iPgl | 09 28 13.8 | |
| | | | iSgl | 09 29 19.8 | |
| | | Ud | iPgl | 09 27 29.6 | |
| | | | iSgl | 09 28 07.5 | |
| | | De | iSgl | 09 28 28.9 | |
| | | Baltic Sea, 58.9°N, 18.1°E. | | | |
| | | Origin time = 09 26 46. | | | |
| | | Underwater explosion. | | | |
| " | 15 | Sk | iP | 10 45 27.6 | |
| | | Um | iP | 10 45 43.5 | |
| | | Mexico (h = N). | | | |
| " | 15 | Ud | i(Sg) | 10 49 31.3 | |
| " | 15 | Um | iP | 13 09 43.3 | |
| " | 15 | Um | iP | 14 29 06.9 | |
| " | 15 | Up | iPKP | 15 43 25.8 | C |
| | | | iSKP | 15 46 30.4 | |
| | | | | micr sec | |
| | | | PKP Z' | 0.1 0.5 | |
| | | | SKP Z' | 0.1 0.6 | |
| | | Ki | iPKP | 15 43 10.8 | C |
| | | | | micr sec | |
| | | | PKP Z' | 0.3 1.0 | |
| | | Sk | iPKP | 15 43 21.6 | C |
| | | | iSKP | 15 46 26.5 | |
| | | Um | iPKP | 15 43 17.1 | C |
| | | | iSKP | 15 46 18.9 | |
| | | Ud | iPKP | 15 43 27.6 | C |
| | | | iSKP | 15 46 34.7 | |
| | | De | iPKP | 15 43 32.6 | C |
| | | | iSKP | 15 46 45.4 | |
| | | New Hebrides Islands (h = 180 km). | | | |
| " | 15 | Ki | iSgl | 15 56 37.4 | |
| | | Sk | iPgl | 15 56 04.2 | |
| | | | iSgl | 15 56 41.8 | |
| | | (cont.) | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1970 Dec. | 15 | (cont.) | | | |
| | | Um | iSgl | 15 56 51.8 | |
| | | Swedish Lapland, 66.0°N, 15.4°E. | | | |
| | | Origin time = 15 55 14. | | | |
| " | 15 | Ud | iP | 21 10 32.3 | |
| " | 16 | Up | iP | 01 13 34.5 | |
| | | | ipP | 01 13 45.4 | |
| | | | | micr sec | |
| | | | P Z' | 0.2 1.0 | |
| | | Ki | iP | 01 13 35.2 | C |
| | | | | micr sec | |
| | | | P Z' | 0.3 1.0 | |
| | | Sk | iP | 01 13 20.9 | C |
| | | | ipP | 01 13 32.2 | |
| | | Um | iP | 01 13 37.7 | C |
| | | | ipP | 01 13 49.1 | |
| | | Ud | iP | 01 13 24.3 | C |
| | | De | iP | 01 13 27.0 | C |
| | | | ipP | 01 13 38.7 | |
| | | Colombia. | | | |
| | | h = 45 km (Up,Sk,Um,De). | | | |
| | | m = 6.5 (Up,Ki). | | | |
| " | 16 | Ud | iP | 03 49 49.0 | |
| " | 16 | Ud | i | 05 05 03.3 | |
| | | | i(Sg) | 05 05 17.0 | |
| " | 16 | Ki | iP | 07 25 09.9 | |
| " | 16 | Ki | i(P) | 08 15 39.3 | |
| | | Um | iP | 08 14 34.8 | |
| " | 16 | Up | iP | 08 57 04.3 | |
| | | Ki | eP | 08 57 05 | |
| | | | i(PP) | 09 00 35.0 | |
| | | Um | iP | 08 57 06.6 | |
| | | Ud | iP | 08 56 55.1 | |
| | | De | iP | 08 56 59.7 | |
| | | Costa Rica (h = 60 km). | | | |
| " | 16 | Um | i(P) | 11 38 36.4 | |
| " | 16 | Ud | iSgl | 12 27 23.5 | |
| | | De | iSgl | 12 27 43.6 | |
| | | Västergötland, Sweden, 58.6°N, 13.3°E. | | | |
| | | Origin time = 12 26 37. | | | |
| | | Solution by combination with Kongsberg readings. | | | |
| " | 16 | Up | i(P) | 13 19 31.0 | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Dec. | 16 | Ki | iP | | 14 56 52.6 | |
| | | Um | i(P) | | 14 56 10.5 | |
| " | 16 | Up | iP | | 16 11 48.8 | |
| | | Ud | iP | | 16 11 41.1 | |
| | | Nevada. | | | | |
| | | Underground explosion. | | | | |
| " | 16 | Up | iP | | 16 35 34.6 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 1.0 |
| | | Ud | iP | | 16 35 35.0 | |
| | | De | iP | | 16 35 02.9 | |
| | | Aleutian Islands (h = 35 km). | | | | |
| " | 16 | Up | iP | | 21 30 22.6 | |
| | | Ki | iP | | 21 30 11.4 | |
| | | | i | | 21 30 24.4 | |
| | | Ud | iP | | 21 30 10.5 | |
| " | 17 | Up | iP | | 07 07 53.2 | C |
| | | | iPn | | 07 08 56.1 | |
| | | | iPP | | 07 09 11.8 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.1 | 0.5 |
| | | | PP | Z' | 0.1 | 0.9 |
| | | Ki | iP | | 07 07 37.5 | C |
| | | | iPP | | 07 08 45.1 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.2 | 0.7 |
| | | Sk | iP | | 07 08 08.7 | C |
| | | | iPn | | 07 09 05.4 | |
| | | | iPP | | 07 09 26.2 | |
| | | Um | iP | | 07 07 38.2 | |
| | | | iPn | | 07 08 23.5 | |
| | | Ud | iP | | 07 08 09.6 | C |
| | | De | iP | | 07 08 16.9 | C |
| | | | iPP | | 07 09 42.9 | |
| | | Kazakh SSR. | | | | |
| | | m = 6.0 (Up,Ki). | | | | |
| | | Underground explosion. | | | | |
| " | 17 | Up | iP | | 07 52 37.8 | |
| | | Ki | iP | | 07 52 40.0 | |
| | | Colombia (h = 20 km). | | | | |
| " | 17 | Up | iPKP | | 09 01 00.0 | |
| | | | iSKP | | 09 04 23.4 | |
| | | | iPKKP | | 09 11 03.8 | |
| | | | | | micr | sec |
| | | | PKP | Z' | 0.1 | 0.5 |
| | | Ki | iPKP | | 09 01 14.0 | |
| | | | iSKP | | 09 04 20.8 | |
| | | | | | micr | sec |
| | | | PKP | Z' | 0.3 | 1.0 |
| | | | SKP | Z' | 1.0 | 2.2 |
| | | | Mx | E | 1.6 | 18 |
| | | | Mx | N | 1.5 | 19 |
| | | | Mx | Z | 2.9 | 19 |
| | | (cont.) | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Dec. | 17 | (cont.) | | | | |
| | | Sk | iPKP | | 09 01 04.4 | |
| | | Um | iPKP | | 09 01 08.1 | |
| | | Ud | iPKP | | 09 00 58.8 | |
| | | | iSKP | | 09 04 23.8 | |
| | | | iPKKP | | 09 11 06.5 | |
| | | De | iPKKP | | 09 11 18.8 | |
| | | South Sandwich Islands | | | | |
| | | (h = 120 km). | | | | |
| " | 17 | Ki | iP | | 09 26 22.5 | |
| | | | i | | 09 26 42.7 | |
| | | | | | micr | sec |
| | | | P | Z' | 0.2 | 1.5 |
| | | Ud | iP | | 09 27 44.5 | |
| | | De | iP | | 09 28 15.8 | |
| | | Arctic Ocean (h = N). | | | | |
| " | 17 | Ud | iP | | 10 09 19.5 | |
| " | 17 | Sk | iP | | 12 46 36.9 | |
| " | 17 | Up | iSgl | | 13 04 20.8 | |
| | | Sk | eSgl | | 13 04 17 | |
| | | Ud | iPgl | | 13 02 27.9 | |
| | | | iSgl | | 13 03 22.4 | |
| | | Southwest Norway, | | | | |
| | | 58.5°N, 6.5°E. | | | | |
| | | Origin time = 13 01 16. | | | | |
| | | Kongsberg readings included | | | | |
| | | in the solution. | | | | |
| " | 17 | Up | iP | | 16 16 48.8 | C |
| | | | | | micr | sec |
| | | | P | Z' | 0.3 | 1.1 |
| | | Ki | iP | | 16 16 14.6 | C |
| | | | | | micr | sec |
| | | | P | Z' | 0.3 | 1.5 |
| | | Sk | iP | | 16 16 22.4 | C |
| | | Um | iP | | 16 16 34.2 | C |
| | | Ud | iP | | 16 16 40.7 | C |
| | | De | iP | | 16 16 57.5 | C |
| | | Nevada. | | | | |
| | | m = 6.3 (Up,Ki). | | | | |
| | | Underground explosion. | | | | |
| " | 18 | Ki | iPKP | | 04 38 10.0 | |
| | | New Zealand (h = 50 km). | | | | |
| " | 18 | Sk | iP | | 11 04 37.9 | |
| " | 18 | Ud | iP | | 12 36 18.5 | |
| " | 18 | Up | iP | | 15 40 02.3 | |
| | | Ki | iP | | 15 39 03.7 | |
| | | | ipP | | 15 39 15.4 | |
| | | (cont.) | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | |
|---|---|---|---|---|---|
| 1970 Dec. | 18 | (cont.) | | | |
| | | Um | iP | 15 39 31.2 | |
| | | | ipP | 15 39 43.5 | |
| | | Ud | iP | 15 39 55.0 | |
| | | De | iP | 15 40 18.3 | |
| | | | ipP | 15 40 30.5 | |
| | | South of Alaska. | | | |
| | | h = 50 km (Ki,Um,De). | | | |
| " | 18 | Up | iP | 15 41 48.8 | |
| | | Ki | iP | 15 41 14.3 | |
| | | Um | iP | 15 41 34.2 | |
| | | Ud | iP | 15 41 40.4 | |
| | | De | iP | 15 41 57.5 | |
| | | Nevada. | | | |
| | | Underground explosion. | | | |
| " | 18 | Ki | iSgl | 17 34 32.5 | |
| | | Sk | eSgl | 17 34 37 | |
| | | Um | iSn | 17 34 46.7 | |
| | | | iSgl | 17 35 00.4 | |
| | | Nordland, Norway, | | | |
| | | 66.4°N, 14.2°E. | | | |
| | | Origin time = 17 33 04. | | | |
| | | Explosion. | | | |
| " | 19 | Long-period microseisms (periods around 18 sec), especially on Umeå long-period N component. | | | |
| " | 19 | Up | iP | 00 02 31.8 | |
| | | | i | 00 02 36.7 | |
| | | | iSKS | 00 12 19 | |
| | | | | micr | sec |
| | | | P Z' | 0.3 | 0.7 |
| | | | Mx E | 1.3 | 17 |
| | | | Mx N | 2.7 | 19 |
| | | | Mx Z | 1.9 | 20 |
| | | Ki | iP | 00 02 16.9 | |
| | | | i | 00 02 21.2 | |
| | | | i | 00 04 32.8 | |
| | | | | micr | sec |
| | | | P Z' | 0.6 | 1.2 |
| | | | Mx E | 2.0 | 18 |
| | | | Mx N | 1.5 | 19 |
| | | | Mx Z | 2.2 | 18 |
| | | Sk | iP | 00 02 37.1 | |
| | | | i | 00 02 42.7 | |
| | | | i | 00 04 51.7 | |
| | | Um | iP | 00 02 21.6 | |
| | | | i | 00 02 26.5 | |
| | | | i | 00 04 25.8 | |
| | | | iS | 00 12 32 | |
| | | | isS | 00 15 53 | |
| | | (cont.) | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1970 Dec. | 19 | (cont.) | | | |
| | | Ud | iP | 00 02 40.1 | |
| | | | i | 00 02 45.3 | |
| | | | ipP | 00 04 34.4 | |
| | | De | iP | 00 02 46.7 | |
| | | | i | 00 02 50.8 | |
| | | Mindanao. | | | |
| | | h = 520 km. (Um,Ud). | | | |
| | | m = 6.6, M = 5.8 (Up,Ki). | | | |
| | | Double P, small and large, with onsets 4.8 sec apart in average. | | | |
| " | 19 | Up | iP | 02 32 38.7 | |
| " | 19 | Up | iPKP | 07 47 45.2 | |
| | | | i | 07 47 48.3 | |
| | | | i | 07 48 27.6 | |
| | | Ki | e(PKP) | 07 47 41 | |
| | | Sk | iPKP | 07 47 37.7 | |
| | | | i | 07 47 51.2 | |
| | | Um | iPKP | 07 47 32.6 | C |
| | | Ud | iPKP | 07 47 46.3 | |
| | | | i | 07 47 53.8 | |
| | | De | iPKP | 07 47 55.5 | |
| | | | i | 07 48 03.2 | |
| | | | iPKP2 | 07 48 12.7 | |
| | | Kermadec Islands (h = 20 km). | | | |
| " | 19 | Up | iP | 10 50 49.1 | C |
| | | | i | 10 50 50.6 | |
| | | | ipP | 10 51 03.6 | |
| | | | iS | 11 01 14 | |
| | | | | micr | sec |
| | | | P Z' | 0.4 | 0.8 |
| | | | Mx E | 3.4 | 20 |
| | | | Mx N | 11 | 21 |
| | | | Mx Z | 5.5 | 21 |
| | | Ki | iP | 10 50 49.8 | C |
| | | | i | 10 50 51.7 | |
| | | | ipP | 10 51 04.1 | |
| | | | iS | 11 01 16 | |
| | | | | micr | sec |
| | | | P Z' | 0.8 | 1.0 |
| | | | Mx E | 6.9 | 18 |
| | | | Mx N | 5.8 | 18 |
| | | | Mx Z | 7.3 | 19 |
| | | Sk | iP | 10 51 02.9 | C |
| | | | i | 10 51 04.9 | |
| | | | ipP | 10 51 17.4 | |
| | | | i(PP) | 10 54 17.3 | |
| | | Um | iP | 10 50 46.5 | C |
| | | | i | 10 50 48.4 | |
| | | | ipP | 10 51 00.6 | |
| | | | i(S) | 11 01 24 | |
| | | (cont.) | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Dec. | 19 | (cont.) | | | | |
| | | Ud | iP | 10 50 58.9 | C | |
| | | | i | 10 51 01.0 | | |
| | | | ipP | 10 51 13.2 | | |
| | | | iPP | 10 54 32.0 | | |
| | | De | iP | 10 50 57.7 | C | |
| | | | i | 10 50 59.5 | | |
| | | | ipP | 10 51 12.8 | | |
| | | | iPP | 10 54 29.6 | | |
| | | Sumatra. | | | | |
| | | h = 60 km (Up,Ki,Sk,Um,Ud,De). | | | | |
| | | m = 6.8, M = 6.3 (Up,Ki). | | | | |
| | | Double P, small and large, | | | | |
| | | with onsets 1.9 sec apart | | | | |
| | | in average. | | | | |
| " | 19 | Up | iP | 12 22 19.3 | C | |
| | | Ki | iP | 12 23 17.3 | | |
| | | Sk | iP | 12 23 04.6 | | |
| | | Ud | iP | 12 22 29.3 | | |
| | | Red Sea (h = 20 km). | | | | |
| " | 19 | Up | iP | 22 50 54.1 | | |
| | | Ki | eP | 22 51 53 | | |
| | | Sk | iP | 22 51 39.3 | | |
| | | Um | iP | 22 51 20.5 | C | |
| | | Ud | iP | 22 51 04.1 | | |
| | | Red Sea (h = 25 km). | | | | |
| " | 20 | Up | i(P) | 05 59 04.0 | | |
| " | 20 | Up | iP | 06 11 09.1 | | |
| | | | | micr | sec | |
| | | | P Z' | 0.1 | 0.8 | |
| | | Ki | iP | 06 10 12.3 | D | |
| | | Sk | iP | 06 10 40.5 | D | |
| | | Um | iP | 06 10 42.0 | D | |
| | | Ud | iP | 06 11 05.7 | | |
| | | De | iP | 06 11 31.0 | | |
| | | Alaska (h = 130 km). | | | | |
| " | 20 | Um | iP | 07 14 51.1 | | |
| " | 20 | Um | i(Sg) | 08 36 29.1 | | |
| " | 20 | Up | iP | 11 06 38.7 | | |
| | | | iX | 11 06 58.8 | | |
| | | | iS | 11 10 35 | | |
| | | | | micr | sec | |
| | | | P Z' | 0.2 | 1.2 | |
| | | | Mx E | 5.4 | 11 | |
| | | | Mx N | 6.9 | 13 | |
| | | | Mx Z | 6.6 | 14 | |
| | | (cont.) | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Dec. | 20 | (cont.) | | | | |
| | | Ki | iP | 11 07 49.1 | | |
| | | | iX | 11 08 09.3 | | |
| | | | i | 11 09 04.5 | | |
| | | | | micr | sec | |
| | | | Mx E | 6.4 | 10 | |
| | | | Mx N | 2.6 | 10 | |
| | | Sk | iP | 11 07 24.9 | | |
| | | | iX | 11 07 37.1 | | |
| | | Um | iP | 11 07 10.4 | | |
| | | | iX | 11 07 25.1 | | |
| | | | iS | 11 11 32 | | |
| | | Ud | iP | 11 06 50.8 | | |
| | | | iX | 11 07 05.8 | | |
| | | De | iP | 11 06 18.9 | | |
| | | Turkey (h = 40 km). | | | | |
| | | M = 5.5 (Up,Ki). | | | | |
| | | The phase marked X is | | | | |
| | | probably P of another shock. | | | | |
| " | 20 | Um | iPKP | 12 14 00.5 | | |
| | | | iSKP | 12 16 31.7 | | |
| | | Ud | iPKP | 12 14 08.2 | | |
| | | De | i(PKP) | 12 14 04.2 | | |
| | | Fiji Islands (h = 640 km). | | | | |
| " | 20 | Ki | i(P) | 16 51 18.8 | | |
| | | Um | iP | 16 50 37.2 | | |
| | | Ud | i(P) | 16 49 24.8 | | |
| " | 20 | Up | i(P) | 20 40 05.6 | | |
| " | 21 | Um | iP | 00 27 51.1 | | |
| | | Turkey (h = 40 km). | | | | |
| " | 21 | Ki | iP | 03 16 48.7 | | |
| | | Leeward Islands (h = 30 km). | | | | |
| " | 21 | Up | iP | 11 04 06.1 | | |
| | | Ki | eP | 11 03 25 | | |
| | | | i | 11 03 28.2 | | |
| | | Um | iP | 11 03 43.4 | | |
| | | Ud | iP | 11 04 09.1 | | |
| | | Kurile Islands (h = 40 km). | | | | |
| " | 21 | Sk | iP | 11 39 21.0 | | |
| | | Mariana Islands (h = 35 km). | | | | |
| " | 21 | Up | iP | 13 06 40.7 | | |
| | | | i | 13 06 47.4 | | |
| | | Ud | iP | 13 06 47.4 | | |
| | | Mindanao (h = N). | | | | |
| " | 21 | Up | i(P) | 13 47 51.6 | | |
| | | (cont.) | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1970 Dec. | 21 | (cont.) | | | | | | |
| | | Ki | e(P) | 13 46 34 | | | | |
| " | 21 | **Ki** | **iP** | 14 18 26.5 | | | | |
| | | Mindanao (h = N). | | | | | | |
| " | 21 | Ud | iP | 14 52 34.9 | | | | |
| | | Caucasus. | | | | | | |
| " | 21 | Ki | iP | 14 54 23.2 | | | | |
| | | | ePKP | 14 58 58 | | | | |
| | | Ud | iPKP | 14 59 09.8 | | | | |
| | | Sumbawa Island (h = 90 km). | | | | | | |
| | | PKP may be mixed with PP. | | | | | | |
| " | 21 | Ki | iP | 21 22 11.6 | | | | |
| " | 22 | Ud | iPKP | 02 49 21.0 | | | | |
| | | De | iPKP | 02 49 32.5 | | | | |
| | | Fiji Islands (h = 610 km). | | | | | | |
| " | 22 | Up | iPKP | 05 56 54.9 | | | | |
| | | Ki | iPKP | 05 56 41.4 | | | | |
| | | Sk | iPKP | 05 56 53.1 | | | | |
| | | Um | iPKP | 05 56 48.7 | | | | |
| | | De | iPKP | 05 57 04.1 | | | | |
| | | New Hebrides Islands (h = 120 km). | | | | | | |
| " | 22 | Up | iPn | 08 02 40.3 | | | | |
| | | | iSn | 08 04 42.4 | | | | |
| | | | i | 08 05 39.6 | | | | |
| | | Ki | iPn | 08 01 00.2 | | | | |
| | | | iSn | 08 01 49.8 | | | | |
| | | | iS* | 08 02 03.2 | | | | |
| | | | iSgl | 08 02 05.9 | | | | |
| | | Sk | iPn | 08 01 47.8 | | | | |
| | | | iSn | 08 03 12.9 | | | | |
| | | Um | iPn | 08 01 50.6 | | | | |
| | | | iSn | 08 03 15.0 | | | | |
| | | Ud | iPn | 08 02 35.6 | | | | |
| | | | iSn | 08 04 34.5 | | | | |
| | | Norwegian Sea, 71.5°N, 13.4°E. | | | | | | |
| | | Origin time = 07 59 52. | | | | | | |
| | | Readings from Finnish and Norwegian stations included in the solution. | | | | | | |
| " | 22 | Ud | iP | 17 15 41.2 | | | | |
| " | 22 | Um | iP | 20 15 38.0 | | | | |
| | | Near Bonin Islands (h = N). | | | | | | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 1970 Dec. | 22 | Up | iP | 21 00 20.2 | | | | |
| | | | | micr | sec | | | |
| | | | P | Z' | 0.2 | 1.5 | | |
| | | Ki | iP | 21 00 42.1 | C | | | |
| | | Um | iP | 21 00 35.9 | | | | |
| | | Ud | iP | 21 00 06.9 | | | | |
| | | De | iP | 21 00 03.6 | | | | |
| | | North Atlantic Ocean (h = N). | | | | | | |
| " | 22 | Up | iP | 21 02 10.9 | | | | |
| | | | i | 21 02 15.9 | | | | |
| | | | | micr | sec | | | |
| | | | P | Z' | 0.2 | 1.3 | | |
| | | Ki | iP | 21 02 29.7 | | | | |
| | | | i | 21 02 36.0 | | | | |
| | | | | micr | sec | | | |
| | | | P | Z' | 0.2 | 1.2 | | |
| | | Sk | iP | 21 01 59.1 | | | | |
| | | Um | iP | 21 02 24.8 | | | | |
| | | Ud | iP | 21 01 56.6 | | | | |
| | | | i | 21 02 01.9 | | | | |
| | | De | iP | 21 01 51.4 | | | | |
| | | | i | 21 01 57.4 | | | | |
| | | North Atlantic Ocean (h = N). | | | | | | |
| | | m = 6.0 (Up,Ki). | | | | | | |
| | | Double P, 5.7 sec apart in average. | | | | | | |
| " | 23 | Up | iP | 07 06 45.3 | C | | | |
| | | | iPn | 07 07 00.8 | | | | |
| | | | iPP | 07 07 26 | | | | |
| | | | | micr | sec | | | |
| | | | P | Z' | 1.1 | 1.0 | | |
| | | | Mx | E | 1.8 | 14 | | |
| | | | Mx | N | 1.2 | 12 | | |
| | | | Mx | Z | 2.6 | 14 | | |
| | | Ki | iP | 07 07 09.0 | C | | | |
| | | | iPn | 07 07 35.4 | | | | |
| | | | i | 07 07 52.9 | | | | |
| | | | iSn | 07 12 57.2 | | | | |
| | | | | micr | sec | | | |
| | | | P | Z' | 0.6 | 1.0 | | |
| | | | Mx | E | 2.3 | 9 | | |
| | | | Mx | N | 1.4 | 10 | | |
| | | | Mx | Z | 2.1 | 9 | | |
| | | Sk | iP | 07 07 18.0 | C | | | |
| | | | iPn | 07 07 48.5 | | | | |
| | | | iPP | 07 08 12.1 | | | | |
| | | Um | iP | 07 06 50.1 | C | | | |
| | | | iPn | 07 07 04.9 | | | | |
| | | Ud | iP | 07 07 03.8 | C | | | |
| | | | i | 07 07 17.3 | | | | |
| | | | iPn | 07 07 27.8 | | | | |

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Dec. | 23 | (cont.) | | | | | |
| | | De | iP | | 07 06 55.9 | C | |
| | | | i | | 07 07 06.4 | | |
| | | | iPn | | 07 07 22.9 | | |
| | | | i | | 07 13 21.7 | | |
| | | East of the Caspian Sea. | | | | | |
| | | m = 6.5, M = 5.1 (Up,Ki). | | | | | |
| | | Underground explosion. | | | | | |
| " | 23 | Ki | iP | | 11 55 42.7 | | |
| | | | i | | 11 56 02.5 | | |
| | | Um | iP | | 11 55 53.1 | | |
| | | Mariana Islands (h = 50 km). | | | | | |
| " | 23 | Um | iSgl | | 13 03 43.3 | | |
| | | Ud | iSgl | | 13 04 18.0 | | |
| | | De | eSgl | | 13 04 40 | | |
| | | Esthonia. | | | | | |
| | | Explosion. | | | | | |
| " | 23 | Up | iP | | 15 36 13.2 | | |
| | | | i | | 15 36 20.9 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.1 | 0.8 | |
| | | Ki | iP | | 15 36 01.6 | C | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.3 | 1.0 | |
| | | Sk | iP | | 15 35 55.6 | C | |
| | | Um | iP | | 15 36 09.9 | | |
| | | Ud | iP | | 15 36 04.7 | C | |
| | | De | iP | | 15 36 12.1 | | |
| | | Mexico (h = 90 km). | | | | | |
| | | m = 6.3 (Up,Ki). | | | | | |
| " | 23 | Ud | iP | | 17 37 39.8 | | |
| | | Caucasus. | | | | | |
| " | 23 | Ud | i(Sg) | | 19 52 18.6 | | |
| " | 23 | Ud | iP | | 22 17 20.2 | | |
| " | 24 | Ud | i(Sg) | | 00 30 32.6 | | |
| " | 24 | Ud | iP | | 01 54 01.0 | | |
| " | 24 | Ud | iP | | 05 28 28.0 | C | |
| " | 24 | Up | i(P) | | 05 54 35.4 | | |
| | | Ud | i(P) | | 05 53 55.9 | C | |
| " | 24 | Ud | iP | | 06 14 13.5 | | |
| 1970 Dec. | 24 | Up | iP | | 08 13 08.5 | C | |
| | | | ipP | | 08 13 34.7 | | |
| | | | iS | | 08 23 25 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.3 | 0.9 | |
| | | | Mx | E | 1.4 | 27 | |
| | | | Mx | Z | 1.8 | 27 | |
| | | Ki | iP | | 08 12 56.4 | C | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.9 | 1.1 | |
| | | Sk | iP | | 08 12 50.6 | C | |
| | | Um | iP | | 08 13 04.9 | C | |
| | | Ud | iP | | 08 12 59.7 | C | |
| | | De | iP | | 08 13 07.1 | C | |
| | | Mexico. | | | | | |
| | | h = 100 km (Up). | | | | | |
| | | m = 6.5 (Up,Ki). | | | | | |
| " | 24 | Up | iP | | 08 33 16.7 | | |
| | | | iPcP | | 08 33 42.2 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.1 | 0.5 | |
| | | Ki | iP | | 08 32 23.4 | C | |
| | | | iPcP | | 08 33 08.3 | | |
| | | Sk | eP | | 08 32 56 | | |
| | | | iPcP | | 08 33 28.4 | | |
| | | Um | iP | | 08 32 49.7 | | |
| | | | iPcP | | 08 33 24.6 | | |
| | | De | iP | | 08 33 38.1 | | |
| | | | iPcP | | 08 33 53.8 | | |
| | | Aleutian Islands | | | | | |
| | | (h = 50 km). | | | | | |
| " | 24 | Ki | iP | | 09 23 14.9 | | |
| | | South of Java (h = 60 km). | | | | | |
| " | 24 | Ud | i(Sg) | | 09 31 26.0 | | |
| " | 25 | Up | iP | | 04 24 36.1 | | |
| | | Um | iP | | 04 25 30.3 | | |
| " | 25 | Up | iPKP | | 04 48 30.7 | C | |
| | | | i | | 04 48 36.5 | | |
| | | Um | iPKP | | 04 48 20.0 | C | |
| | | Ud | iPKP | | 04 48 32.6 | | |
| " | 25 | Up | iSn | | 12 03 29.8 | | |
| | | | iSgl | | 12 03 42.9 | | |
| | | Um | iSgl | | 12 04 15.9 | | |
| | | Ud | iSgl | | 12 04 47.7 | | |
| | | Esthonia, | | | | | |
| | | 59.5°N, 25.3°E. | | | | | |
| | | Origin time = 12 01 40. | | | | | |
| | | Explosion. | | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| 1970 Dec. | | | | | |
|---|---|---|---|---|---|
| | 25 | Up | iSg1 | 12 16 03.3 | |
| | | | iSg2 | 12 16 23.2 | |
| | | Ki | iPn | 12 12 06.1 | |
| | | | iSn | 12 13 05.0 | |
| | | | iSg1 | 12 13 28.5 | |
| | | Sk | iSg1 | 12 15 53.4 | |
| | | Um | iSn | 12 13 44.1 | |
| | | | iSg1 | 12 14 14.0 | |
| | | Ud | iPn | 12 13 33.9 | |
| | | | iSn | 12 15 45.0 | |
| | | | iSg1 | 12 16 53.3 | |
| | | Northwest Russia, 67.3°N, 34.0°E. Origin time = 12 10 49. Explosion. | | | |
| " | 25 | Um | eP | 12 54 59 | |
| | | Ud | eP | 12 55 29 | |
| | | South of Japan (h = 100 km). | | | |
| " | 25 | Up | iP | 13 04 24.9 | C |
| | | | iS | 13 13 15 | |
| | | | | micr | sec |
| | | | P Z' | 0.2 | 1.0 |
| | | | Mx E | 3.1 | 23 |
| | | | Mx N | 5.2 | 25 |
| | | | Mx Z | 7.2 | 24 |
| | | Ki | iP | 13 05 07.3 | C |
| | | | iS | 13 14 37 | |
| | | | | micr | sec |
| | | | P Z' | 0.1 | 1.5 |
| | | | Mx E | 3.2 | 15 |
| | | | Mx N | 3.3 | 19 |
| | | | Mx Z | 3.1 | 18 |
| | | Sk | iP | 13 04 34.0 | C |
| | | | i | 13 04 58.3 | |
| | | | i | 13 05 07.8 | |
| | | Um | iP | 13 04 49.1 | C |
| | | | i | 13 05 05.3 | |
| | | | i | 13 07 19.7 | |
| | | | iS | 13 14 01 | |
| | | Ud | iP | 13 04 17.8 | C |
| | | | i | 13 04 33.4 | |
| | | De | iP | 13 03 57.8 | |
| | | Atlantic Ocean (h = N), m = 6.0, M = 5.8 (Up,Ki). | | | |
| " | 25 | Ud | iP | 14 54 37.0 | |
| | | Aleutian Islands (h = 60 km). | | | |
| " | 25 | Up | iP | 16 29 46.9 | |
| | | | ipP | 16 30 18.0 | |
| | | Ki | iP | 16 29 32.2 | |
| | | | ipP | 16 30 03.2 | |
| | | (cont.) | | | |

| 1970 Dec. | | | | | |
|---|---|---|---|---|---|
| | 25 | (cont.) | | | |
| | | Sk | iP | 16 29 27.6 | |
| | | | esP | 16 30 11 | |
| | | Um | iP | 16 29 48.3 | |
| | | Ud | iP | 16 29 38.5 | |
| | | | ipP | 16 30 08.5 | |
| | | Mexico, h = 115 km (Up,Ki,Sk,Ud). | | | |
| " | 25 | Um | i(Sg) | 16 34 06.6 | |
| " | 25 | Ud | iP | 16 46 59.9 | D |
| | | Hindu Kush (h = 200 km). | | | |
| " | 25 | Ki | iP | 17 20 37.1 | |
| | | Um | iP | 17 20 11.8 | |
| " | 25 | Um | iPKP | 20 07 27.8 | |
| | | Ud | ePKP | 20 07 37 | |
| | | New Hebrides Islands (h = 15 km). | | | |
| " | 25 | Ud | i(P) | 23 17 56.3 | |
| | | | i | 23 18 18.1 | |
| | | Kurile Islands. | | | |
| " | 26 | Ud | iPKP | 06 45 22.0 | |
| | | De | iPKP | 06 45 31.5 | |
| | | Fiji Islands (h = 270 km). | | | |
| " | 26 | Up | iP | 08 06 06.4 | C |
| | | | | micr | sec |
| | | | P Z' | 0.1 | 0.7 |
| | | Ki | iP | 08 06 14.8 | C |
| | | | i | 08 06 23.7 | |
| | | Sk | iP | 08 06 31.8 | |
| | | Um | iP | 08 06 04.8 | |
| | | Ud | iP | 08 06 22.4 | C |
| | | De | iP | 08 06 17.9 | |
| | | Hindu Kush (h = 200 km). | | | |
| " | 26 | Up | iP | 08 58 44.7 | |
| | | Um | iP | 08 58 20.5 | |
| | | | i | 08 58 35.3 | |
| | | Ud | iP | 08 58 41.6 | |
| | | | i | 08 58 58.9 | |
| | | These phases could be PKP instead. | | | |
| " | 26 | Up | iP | 10 14 25.4 | |
| | | | ipP | 10 14 33.0 | |
| | | | | micr | sec |
| | | | P Z' | 0.1 | 1.0 |
| | | | pP Z' | 0.1 | 0.6 |
| | | | Mx E | 1.8 | 23 |
| | | | Mx N | 3.2 | 22 |
| | | | Mx Z | 3.0 | 23 |
| | | (cont.) | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Dec. | 26 | (cont.) | | | | | |
| | | Ki | iP | | 10 14 27.4 | | |
| | | | | | micr | sec | |
| | | | P | Z' | 0.2 | 1.1 | |
| | | | Mx | E | 1.3 | 18 | |
| | | | Mx | N | 1.1 | 14 | |
| | | | Mx | Z | 1.0 | 16 | |
| | | Sk | iP | | 10 14 42.9 | | |
| | | | ipP | | 10 14 50.7 | | |
| | | Um | iP | | 10 14 22.1 | | |
| | | | ipP | | 10 14 29.5 | | |
| | | | iS | | 10 23 55 | | |
| | | Ud | iP | | 10 14 37.8 | C | |
| | | | ipP | | 10 14 44.8 | | |
| | | De | iP | | 10 14 35.5 | | |
| | | | ipP | | 10 14 42.8 | | |
| | | Nicobar Islands. | | | | | |
| | | h = 25 km (Up,Sk,Um,Ud,De). | | | | | |
| | | m = 6.0, M = 5.5 (Up,Ki). | | | | | |
| " | 26 | Up | iP | | 10 27 28.9 | | |
| | | | ipP | | 10 27 37.2 | | |
| | | | | | micr | sec | |
| | | | pP | Z' | 0.1 | 0.8 | |
| | | Ki | iP | | 10 27 30.1 | | |
| | | | ipP | | 10 27 38.3 | | |
| | | Sk | iP | | 10 27 46.1 | | |
| | | | ipP | | 10 27 54.3 | | |
| | | Um | iP | | 10 27 25.8 | | |
| | | | ipP | | 10 27 34.2 | | |
| | | Ud | iP | | 10 27 40.8 | C | |
| | | | ipP | | 10 27 49.0 | | |
| | | De | iP | | 10 27 39.4 | | |
| | | | ipP | | 10 27 47.1 | | |
| | | Nicobar Islands. | | | | | |
| | | h = 30 km (Up,Ki,Sk,Um,Ud,De). | | | | | |
| | | Both in this and the preceding event, the pP phases are larger than the P phases (on short-period vertical-component records). | | | | | |
| " | 26 | Up | iP | | 11 21 32.0 | C | |
| | | Ki | iP | | 11 21 00.6 | | |
| | | Sk | iP | | 11 21 29.1 | | |
| | | Um | iP | | 11 21 14.1 | C | |
| | | Ud | iP | | 11 21 39.2 | | |
| | | De | iP | | 11 21 51.0 | | |
| | | Bonin Islands (h = 520 km). | | | | | |
| " | 26 | Ki | iPn | | 12 49 45.6 | | |
| | | | iSn | | 12 50 34.0 | | |
| | | | iSgl | | 12 50 48.4 | | |
| | | (cont.) | | | | | |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1970 Dec. | 26 | (cont.) | | | | | |
| | | Sk | e(Sn) | | 12 52 34 | | |
| | | | iSgl | | 12 53 16.2 | | |
| | | Um | iSn | | 12 51 14.4 | | |
| | | | iSgl | | 12 51 47.5 | | |
| | | Northwest Russia, | | | | | |
| | | 67.8°N, 31.4°E. | | | | | |
| | | Origin time = 12 48 41. | | | | | |
| | | Explosion. | | | | | |
| " | 26 | Ki | iPn | | 13 25 08.8 | | |
| | | | iSn | | 13 26 13.1 | | |
| | | | iSgl | | 13 26 38.0 | | |
| | | Um | i(Sgl) | | 13 27 47.9 | | |
| | | Probably northwest Russia. | | | | | |
| " | 26 | Ud | iPP | | 13 25 29.8 | | |
| | | Sumba Island (h = N). | | | | | |
| " | 26 | Up | iP | | 19 09 00.0 | | |
| | | | i | | 19 09 09.8 | | |
| | | Kamchatka (h = 170 km). | | | | | |
| " | 26 | Ki | iPKP | | 19 24 38.7 | | |
| | | Um | iPKP | | 19 24 47.7 | | |
| | | Ud | iPKP | | 19 24 55.2 | | |
| | | Fiji Islands (h = 90 km). | | | | | |
| " | 26 | Up | iP | | 19 59 49.3 | | |
| | | Ki | iP | | 20 00 19.6 | | |
| | | Sk | iP | | 20 00 22.4 | | |
| | | Um | iP | | 19 59 59.8 | | |
| | | Ud | iP | | 20 00 04.3 | | |
| | | De | iP | | 19 59 50.8 | | |
| | | Iran (h = 70 km). | | | | | |
| " | 26 | Um | iP | | 21 37 02.8 | | |
| " | 26 | Up | iPKP2 | | 22 06 28.0 | | |
| | | Um | iPKP2 | | 22 06 24.8 | | |
| | | | i | | 22 07 21.0 | | |
| | | Macquarie Islands (h = N). | | | | | |
| " | 26 | Um | i(Sg) | | 23 12 14.2 | | |
| " | 27 | Up | iP | | 05 02 09.6 | | |
| | | Ki | iP | | 05 02 07.5 | | |
| | | Um | iP | | 05 02 04.0 | | |
| | | Ud | iP | | 05 02 19.1 | | |
| | | | ipP | | 05 02 28.0 | | |
| | | Nicobar Islands. | | | | | |
| | | h = 30 km (Ud). | | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | |
|---|---|---|---|---|---|
| 1970 Dec. | 27 | Up | iPKP | 10 31 58.0 | |
| | | Um | iPKP | 10 31 58.7 | |
| | | Ud | iPKP | 10 31 58.9 | |
| | | De | iPKP | 10 32 10.0 | C |
| | | Fiji Islands (h = 560 km). | | | |
| " | 27 | Up | iS* | 11 41 51.5 | |
| | | | iSgl | 11 42 03.1 | |
| | | Ki | iPn | 11 37 57.4 | |
| | | | iSn | 11 38 54.6 | |
| | | | iSgl | 11 39 17.3 | |
| | | Sk | iSgl | 11 41 43.2 | |
| | | Um | iSn | 11 39 35.6 | |
| | | | iSgl | 11 40 08.8 | |
| | | Ud | iSn | 11 41 29.9 | |
| | | | iSgl | 11 42 42.1 | |
| | | Northwest Russia, 67.9°N, 33.6°E. | | | |
| | | Origin time = 11 36 40. | | | |
| | | Explosion. | | | |
| " | 27 | Up | iP | 12 28 22.6 | |
| | | Ki | iP | 12 27 54.7 | C |
| | | Sk | eP | 12 28 26 | |
| | | Um | iP | 12 28 07.3 | |
| | | | i | 12 28 17.3 | |
| | | Ud | eP | 12 28 30 | |
| | | Mariana Islands (h = 140 km). | | | |
| " | 27 | Up | iP | 15 31 22.2 | |
| | | Um | iP | 15 30 53.7 | |
| | | Ud | iP | 15 31 26.0 | |
| | | Kamchatka (h = 120 km). | | | |
| " | 27 | Ki | eP | 18 37 50 | |
| | | Ud | iP | 18 38 09.7 | |
| | | Sumba Island (h = N). | | | |
| " | 27 | Up | iP | 19 25 45.3 | |
| | | Kamchatka (h = 20 km). | | | |
| " | 27 | Up | iP | 20 14 49.7 | |
| | | Ki | iP | 20 14 18.5 | |
| | | Sk | eP | 20 14 47 | |
| | | Um | iP | 20 14 32.3 | |
| | | Ud | iP | 20 14 56.5 | D |
| | | De | iP | 20 15 09.2 | |
| | | Bonin Islands (h = 440 km). | | | |
| " | 27 | Sk | i(P) | 20 55 21.1 | |
| | | Um | iP | 20 55 04.7 | D |
| | | | i | 20 55 21.9 | |
| | | Ud | i(P) | 20 55 54.1 | |
| | | | i | 20 56 06.3 | |
| | | Japan (h = 55 km). | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1970 Dec. | 27 | Up | iPKP | 23 25 23.5 | |
| | | | i | 23 25 29.2 | |
| | | Sk | iPKP | 23 25 17.4 | |
| | | Um | iPKP | 23 25 12.4 | D |
| | | Ud | iPKP | 23 25 25.2 | |
| " | 28 | Sk | iP | 00 14 27.6 | |
| | | Sea of Japan (h = 370 km). | | | |
| " | 28 | Up | iP | 02 02 13.3 | C |
| | | | i | 02 02 21.7 | |
| | | Ki | iP | 02 02 56.7 | C |
| | | Um | iP | 02 02 29.0 | |
| | | | i | 02 02 36.4 | |
| | | Ud | iP | 02 02 28.7 | |
| | | | i | 02 02 37.3 | |
| | | Caucasus (h = 20 km). | | | |
| " | 28 | Up | iP | 02 51 57.1 | |
| | | Um | iP | 02 51 32.0 | |
| | | Ud | iP | 02 52 03.0 | C |
| | | Kurile Islands (h = 70 km). | | | |
| " | 28 | Ki | iP | 03 48 36.0 | |
| | | Um | iP | 03 48 05.7 | |
| | | Ud | iP | 03 47 42.3 | |
| | | Turkey (h = 10 km). | | | |
| " | 28 | Ki | iPgl | 10 46 44.6 | |
| | | | iSgl | 10 47 06.1 | |
| | | Sk | eSgl | 10 49 00 | |
| | | Um | iSgl | 10 48 48.6 | |
| | | Northwest coast of Norway, 68.5°N, 16.8°E. | | | |
| | | Origin time = 10 46 18. | | | |
| " | 28 | Ki | iPgl | 10 47 32.4 | |
| | | | iSgl | 10 47 54.1 | |
| | | Probably same source as for preceding event. | | | |
| " | 28 | Ki | iPgl | 10 48 15.3 | |
| | | | iSgl | 10 48 36.6 | |
| | | Probably same source as for preceding two events. | | | |
| " | 28 | Up | | micr | sec |
| | | | Mx E | 0.5 | 14 |
| | | Ud | iP | 17 06 17.4 | |
| | | Dodecanese Islands (h = 45 km). | | | |
| " | 28 | Um | i(P) | 18 33 07.1 | |
| | | Ud | iP | 18 33 18.8 | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| 1970 | | | | | | |
|---|---|---|---|---|---|---|
| Dec. | 28 | Up | iP | | 20 18 23.9 | |
| | | | iPKP | | 20 22 01.8 | |
| | | | ipPKP | | 20 22 24.5 | |
| | | | iPKKP | | 20 32 34.8 | |
| | | | iX | | 20 35 54.4 | |
| | | | | | micr | sec |
| | | | Mx | E | 11 | 27 |
| | | | Mx | N | 10 | 23 |
| | | | Mx | Z | 14 | 22 |
| | | Ki | iP | | 20 17 55.6 | |
| | | | iSKS | | 20 28 23 | |
| | | | ePKKP | | 20 33 05 | |
| | | | | | micr | sec |
| | | | Mx | E | 9.4 | 23 |
| | | | Mx | N | 9.8 | 22 |
| | | | Mx | Z | 9.5 | 22 |
| | | Sk | iP | | 20 18 17.0 | |
| | | | iPKP | | 20 22 02.8 | |
| | | | ipPKP | | 20 22 22.7 | |
| | | | iPKKP | | 20 32 36.6 | |
| | | | iX | | 20 35 47.3 | |
| | | Um | eP | | 20 18 09 | |
| | | | i | | 20 18 18.4 | |
| | | | iPKP | | 20 21 55.7 | |
| | | | ipPKP | | 20 22 16.7 | |
| | | | i | | 20 23 21.7 | |
| | | | iPKKP | | 20 32 53.6 | |
| | | | iPKKP | | 20 33 08.7 | |
| | | | iX | | 20 35 31.9 | |
| | | Ud | iPKP | | 20 22 04.6 | |
| | | | ipPKP | | 20 22 26.4 | |
| | | | iX | | 20 35 56.6 | |
| | | De | i(P) | | 20 18 53.3 | |
| | | | iPKP | | 20 22 09.8 | |
| | | | ipPKP | | 20 22 31.9 | |

New Ireland.
h = 80 km (Up,Sk,Um,Ud,De).
M = 6.5 (Up,Ki).
The phase X is not explained and may represent an independent event.

| | | | | | | |
|---|---|---|---|---|---|---|
| " | 29 | Up | eP | | 00 54 34 | |
| | | Ki | eP | | 00 55 37 | |
| | | Sk | eP | | 00 55 12 | |
| | | Um | eP | | 00 55 07 | |
| | | | iPP | | 00 55 47.9 | |
| | | Ud | i(P) | | 00 54 32.6 | |
| | | | iP | | 00 54 39.7 | |
| | | De | iP | | 00 54 07.5 | |

Crete (h = 55 km).

| 1970 | | | | | | |
|---|---|---|---|---|---|---|
| Dec. | 29 | Up | iPKP | | 02 45 04.3 | |
| | | | iPP | | 02 46 35.5 | |
| | | | | | micr | sec |
| | | | Mx | E | 11 | 24 |
| | | | Mx | N | 18 | 25 |
| | | | Mx | Z | 23 | 23 |
| | | Ki | ePKP | | 02 44 48 | |
| | | | iPP | | 02 45 42.8 | |
| | | | ePKKP | | 02 55 20 | |
| | | | | | micr | sec |
| | | | Mx | E | 23 | 23 |
| | | | Mx | N | 13 | 22 |
| | | | Mx | Z | 25 | 24 |
| | | Sk | ePKP | | 02 45 00 | |
| | | | i | | 02 46 53.0 | |
| | | | ePKKP | | 02 54 52 | |
| | | Um | iPKP | | 02 44 55.7 | |
| | | | iPP | | 02 46 07.3 | |
| | | Ud | iPKP | | 02 45 06.2 | |
| | | | iPKKP | | 02 54 45.1 | |

Solomon Islands (h = 70 km).
M = 6.8 (Up,Ki).

| | | | | | |
|---|---|---|---|---|---|
| " | 29 | Ki | iP | 06 42 14.5 | |
| | | Sk | iP | 06 42 27.2 | |
| | | | iS | 06 44 09.8 | |
| | | Um | iP | 06 42 48.3 | |

Northeast of Jan Mayen, near 71½°N, 1°W.
Origin time = 06 40 08.
Readings from Finnish stations included in the solution.

| | | | | | |
|---|---|---|---|---|---|
| " | 29 | Sk | eP | 08 15 16 | |
| | | Um | iP | 08 15 28.4 | |

Peru-Ecuador (h = 45 km).

| | | | | | |
|---|---|---|---|---|---|
| " | 29 | Ki | iSg1 | 09 56 09.4 | |
| | | Sk | iSg1 | 09 56 13.6 | |
| | | | iSg2 | 09 56 18.2 | |
| | | Um | iPg1 | 09 55 49.2 | |
| | | | iSn | 09 56 23.9 | |
| | | | iSg1 | 09 56 38.0 | |
| | | Ud | iSg1 | 09 58 03.9 | |

Nordland, Norway, 66.5°N, 14.0°E.
Origin time = 09 54 41.
Explosion.

| | | | | | |
|---|---|---|---|---|---|
| " | 29 | Ki | iP | 10 34 46.0 | C |
| | | Um | iP | 10 35 13.3 | |
| | | | i | 10 36 41.4 | |

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Dec. | 29 | (cont.) | | | | |
| | | Ud | iP | 10 35 38.1 | | |
| | | Aleutian Islands | | | | |
| | | (h = 10 km). | | | | |
| " | 29 | Sk | eP | 12 53 08 | | |
| | | Ud | iP | 12 52 36.4 | | |
| | | | ipP | 12 52 47.1 | | |
| | | De | iP | 12 52 03.2 | | |
| | | Crete. | | | | |
| | | h = 50 km (Ud). | | | | |
| " | 29 | Um | iP | 15 50 10.2 | | |
| | | Ud | iP | 15 50 41.8 | C | |
| | | Kurile Islands (h = N). | | | | |
| " | 29 | Up | iP | 17 28 43.4 | | |
| | | | | micr | sec | |
| | | | P | Z' 0.2 | 1.0 | |
| | | Ki | iP | 17 27 49.8 | | |
| | | Ud | iP | 17 28 44.6 | | |
| | | Aleutian Islands | | | | |
| | | (h = 60 km). | | | | |
| " | 29 | Ki | iP | 20 40 33.8 | | |
| | | Ud | iP | 20 39 37.3 | | |
| | | Dodecanese Islands | | | | |
| | | (h = 15 km). | | | | |
| " | 29 | Ud | iP | 21 09 07.8 | | |
| | | Dodecanese Islands | | | | |
| | | (h = 20 km). | | | | |
| " | 29 | Ki | eP | 22 09 35 | | |
| | | Um | iP | 22 09 32.1 | | |
| | | Ud | iP | 22 09 45.2 | | |
| | | Java (h = 100 km). | | | | |
| " | 30 | Ud | iP | 01 56 56.1 | C | |
| | | | i | 01 57 08.8 | | |
| | | North Atlantic Ocean | | | | |
| | | (h = N). | | | | |
| " | 30 | Up | iPP | 04 00 52.5 | | |
| | | New Ireland (h = 30 km). | | | | |
| " | 30 | Up | iP | 04 20 15.9 | | |
| | | Ki | iP | 04 19 58.0 | | |
| | | Sk | eP | 04 20 20 | | |
| | | Um | iP | 04 20 05.6 | | |
| | | Ud | iP | 04 20 24.7 | D | |
| | | Mindanao (h = 70 km). | | | | |
| 1970 Dec. | 30 | Up | iP | 08 23 33.7 | C | |
| | | | ipP | 08 23 56.9 | | |
| | | | | micr | sec | |
| | | | P | Z' 0.2 | 0.9 | |
| | | | pP | Z' 0.3 | 1.0 | |
| | | Ki | iP | 08 23 33.4 | C | |
| | | | ipP | 08 23 57.5 | | |
| | | | | micr | sec | |
| | | | P | Z' 0.2 | 1.0 | |
| | | Sk | iP | 08 23 48.2 | C | |
| | | | ipP | 08 24 12.1 | | |
| | | Um | iP | 08 23 30.7 | C | |
| | | | ipP | 08 23 54.5 | | |
| | | Ud | iP | 08 23 44.1 | C | |
| | | | ipP | 08 24 07.5 | | |
| | | De | iP | 08 23 42.7 | C | |
| | | | ipP | 08 24 05.9 | | |
| | | Sumatra. | | | | |
| | | h = 90 km (Up,Ki,Sk,Um,Ud,De). | | | | |
| | | m = 6.0 (Up,Ki). | | | | |
| " | 30 | Up | iP | 09 42 49.9 | | |
| | | | | micr | sec | |
| | | | P | Z' 0.1 | 1.0 | |
| | | Ki | eP | 09 42 53 | | |
| | | Sk | iP | 09 43 14.4 | | |
| | | Um | iP | 09 42 46.3 | | |
| | | Ud | iP | 09 43 07.5 | C | |
| | | De | iP | 09 43 06.5 | | |
| | | Kirghiz SSR (h = N). | | | | |
| " | 30 | Ud | i(Sg) | 10 02 51.6 | | |
| " | 30 | Ki | i(Sg) | 12 21 52.9 | | |
| | | Um | i | 12 22 34.0 | | |
| | | | i(Sg) | 12 22 55.1 | | |
| " | 30 | Up | iP | 12 32 42.5 | | |
| | | Ki | iP | 12 31 57.6 | | |
| | | Um | iP | 12 32 17.8 | | |
| | | Ud | iP | 12 32 48.4 | | |
| | | Japan (h = 140 km). | | | | |
| " | 30 | Ud | iP | 13 09 15.8 | | |
| | | De | iP | 13 09 06.9 | | |
| " | 30 | Um | iP | 13 53 43.6 | | |
| " | 30 | Ki | iPn | 13 55 41.1 | | |
| | | | iPgl | 13 55 49.1 | | |
| | | | iSn | 13 56 26.2 | | |
| | | | iSgl | 13 56 42.5 | | |
| | | (cont.) | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | | |
|---|---|---|---|---|---|---|
| 1970 Dec. | 30 | (cont.) | | | | |
| | | Um | iSn | 13 57 08.7 | | |
| | | | iSgl | 13 57 38.6 | | |
| | | Possibly northwest Russia. | | | | |
| | | Explosion. | | | | |
| " | 30 | Ki | i | 13 59 37.8 | | |
| | | | i | 14 00 26.2 | | |
| | | | i | 14 00 38.7 | | |
| " | 30 | Ki | eP | 15 12 19 | | |
| | | Ud | i(P) | 15 12 00.8 | | |
| " | 30 | Ki | iSgl | 16 25 20.8 | | |
| | | Sk | iSgl | 16 25 25.1 | | |
| | | Um | iSgl | 16 25 48.3 | | |
| | | Nordland, Norway. | | | | |
| | | Origin time = 16 23 52. | | | | |
| | | Explosion. | | | | |
| " | 30 | Ki | iP | 19 01 02.5 | | |
| | | Ud | iP | 19 00 06.5 | | |
| | | | i | 19 00 16.9 | | |
| | | Turkey (h = N). | | | | |
| " | 30 | Up | iP | 21 03 43.9 | | |
| | | | i | 21 03 51.5 | | |
| | | | iS | 21 08 43 | | |
| | | | | micr | sec | |
| | | | P | Z' 0.2 | 1.0 | |
| | | | i | Z' 0.3 | 1.0 | |
| | | | Mx | E 3.1 | 20 | |
| | | | Mx | N 3.3 | 18 | |
| | | | Mx | Z 8.0 | 18 | |
| | | Ki | iP | 21 04 33.6 | | |
| | | | | micr | sec | |
| | | | Mx | E 4.0 | 16 | |
| | | | Mx | N 3.1 | 19 | |
| | | | Mx | Z 1.3 | 18 | |
| | | Sk | iP | 21 03 48.4 | | |
| | | | i | 21 04 05.9 | | |
| | | Um | iP | 21 04 12.9 C | | |
| | | | i | 21 04 23.7 | | |
| | | | iS | 21 09 37 | | |
| | | Ud | iP | 21 03 31.0 | | |
| | | | i | 21 03 42.2 | | |
| | | De | iP | 21 03 14.1 | | |
| | | | i | 21 03 25.2 | | |
| | | North Atlantic Ocean (h = N). | | | | |
| | | M = 5.3 (Up,Ki). | | | | |
| " | 31 | Up | iP | 00 39 22.8 | | |
| | | Ud | iP | 00 38 54.6 | | |
| 1970 Dec. | 31 | Up | iP | 02 51 59.2 | | |
| | | | ipP | 02 52 11.1 | | |
| | | Ki | eP | 02 52 00 | | |
| | | | ipP | 02 52 11.5 | | |
| | | Sk | epP | 02 52 27 | | |
| | | Ud | iP | 02 52 11.0 | | |
| | | | ipP | 02 52 23.2 | | |
| | | Andaman Islands. | | | | |
| | | h = 40 km (Up,Ki,Ud). | | | | |
| " | 31 | Up | iP | 05 45 24.2 | | |
| | | Ki | | micr | sec | |
| | | | Mx | E 0.4 | 14 | |
| | | | Mx | N 0.5 | 17 | |
| | | Sk | iP | 05 44 52.7 | | |
| | | Ud | iP | 05 45 12.7 | | |
| | | Off coast of Washington (h = N). | | | | |
| " | 31 | Up | iP | 06 03 54.5 | | |
| | | Ki | iP | 06 03 06.6 | | |
| | | Um | iP | 06 03 28.8 | | |
| | | Ud | iP | 06 04 00.0 | | |
| | | Kurile Islands (h = 45 km). | | | | |
| " | 31 | Ki | iPn | 06 34 10.1 C | | |
| | | | iSn | 06 35 08.1 | | |
| | | | iSgl | 06 35 30.1 | | |
| | | Sk | iPn | 06 35 13.9 | | |
| | | | iSn | 06 36 58.7 | | |
| | | | i(Sgl) | 06 37 57.6 | | |
| | | Um | i | 06 36 02.2 | | |
| | | | iSgl | 06 36 20.6 | | |
| | | Ud | iPn | 06 35 38.5 C | | |
| | | | iSgl | 06 38 51.4 | | |
| | | De | iSgl | 06 40 20.1 | | |
| | | Northwest Russia, | | | | |
| | | 67.8°N, 33.6°E. | | | | |
| | | Origin time = 06 32 53. | | | | |
| | | Explosion? | | | | |
| " | 31 | Up | iPKP | 07 30 39.9 | | |
| | | Ki | ePKP | 07 30 20 | | |
| | | Sk | iPKP | 07 30 32.9 C | | |
| | | Um | iPKP | 07 30 28.3 | | |
| | | | i | 07 30 33.1 | | |
| | | Ud | iPKP | 07 30 41.9 | | |
| | | De | iPKP | 07 30 50.7 | | |
| | | Kermadec Islands | | | | |
| | | (h = 55 km). | | | | |
| " | 31 | Ki | iP | 08 10 33.8 | | |
| | | (cont.) | | | | |

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

| | | | | | |
|---|---|---|---|---|---|
| 1970 | | | | | |
| Dec. | 31 | (cont.) | | | |
| | | Sk | eP | 08 11 22 | |
| | | Ud | iP | 08 11 57.9 | |
| | | West of Spitsbergen | | | |
| | | (h = N). | | | |
| " | 31 | Ud | iP | 09 00 37.2 | |
| | | Mindanao (h = 50 km). | | | |
| " | 31 | Ki | iP | 10 35 47.4 | |
| | | Turkey. | | | |
| " | 31 | Up | iP | 11 49 20.7 | C |
| " | 31 | Up | iP | 12 21 03.8 | |
| " | 31 | Um | iPg | 18 24 20.1 | |
| | | | iSg | 18 24 28.9 | |
| " | 31 | Ki | iP | 21 11 33.8 | |
| " | 31 | Sk | iP | 22 09 27.7 | |
| | | Ud | iP | 22 08 39.5 | |
| | | Italy (h = N). | | | |
| " | 31 | Ki | eP | 23 43 41 | |
| | | Ud | iP | 23 44 34.6 | |
| | | Kurile Islands (h = 70 km). | | | |

Markus Båth
September 28, 1973