SEISMOLOGISKA INSTITUTIONEN
BOX 517
751 20 UPPSALA 1

Seismological Institute
Uppsala

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 A N U A R Y 1 - 31, 1970

1970 Jan.	1	Up	iP			01 56 33.5
			i			01 56 39.1
						micr sec
			P	Z'	0.1	0.9
			Mx	E	0.7	16
			Mx	N	0.9	15
			Mx	Z	1.0	13
		Ki	iP			01 56 33.2
			i			01 56 39.7
						micr sec
			Mx	E	0.7	17
			Mx	N	0.6	15
			Mx	Z	1.1	15
		Sk	iP			01 56 21.6
			i			01 56 26.4
		Um	iP			01 56 34.5
			i			01 56 39.4
		Ud	iP			01 56 23.9
			i			01 56 29.4
		De	iP			01 56 27.9
			i			01 56 33.9
		Costa Rica (h = 50 km).				
		M = 5.4 (Up,Ki).				
		Double P, small and large,				
		average interval 5.6 sec.				
"	1	Up	iP			02 01 37.2
			i			02 01 41.8
		Ki	iP			02 01 12.4
			i			02 01 15.5
		Um	iP			02 01 24.3
		Ud	iP			02 01 47.2
		Ryukyu Islands (h = 40 km).				
"	1	Up	iP			10 05 02.1
						micr sec
			P	Z'	0.1	0.8
		Ki	iP			10 04 14.9
		Um	iP			10 04 36.6
		Ud	iP			10 05 07.1
			i			10 05 38.2
		(cont.)				

1970 Jan.	1	(cont.)		
		De	iP	10 05 26.3
		Kurile Islands (h = N).		
"	1	Up	iPKP	17 30 40.0
			ipPKP	17 30 49.4
				micr sec
			PKP Z'	0.4 1.0
		Ki	iPKP	17 30 19.4
		Sk	iPKP	17 30 33.2
			ipPKP	17 30 41.3
		Um	iPKP	17 30 27.5
			ipPKP	17 30 38.3
		Ud	iPKP	17 30 41.7
			ipPKP	17 30 50.7
		De	iPKP	17 30 50.9
			ipPKP	17 30 59.2
		Kermadec Islands. h = 30 km		
		(Up,Sk,Um,Ud,De).		
"	1	Up	iPKP	18 55 49.3
			ipPKP	18 55 56.0
		Sk	iPKP	18 55 41.4
			ipPKP	18 55 48.9
		Um	iPKP	18 55 38.4
			ipPKP	18 55 45.1
		Ud	iPKP	18 55 50.2
			ipPKP	18 55 58.0
		De	iPKP	18 56 00.2
			ipPKP	18 56 07.3
		Kermadec Islands. h = 25 km		
		(Up,Sk,Um,Ud,De).		
"	1	Up	iPKP	19 01 20.9
			ipPKP	19 01 28.2
		Sk	iPKP	19 01 14.0
			ipPKP	19 01 21.4
		Um	iPKP	19 01 08.9
			ipPKP	19 01 15.3
		Ud	iPKP	19 01 22.2
			ipPKP	19 01 30.5
		(cont.)		

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

1970
Jan. 1 (cont.)

De iPKP 19 01 31.4
ipPKP 19 01 38.8
Kermadec Islands. h = 25 km
(Up,Sk,Um,Ud,De).
Origin time = 18 41 41.
In this and the preceding case
the amplitudes of pPKP Z' are
larger than those of PKP Z',
but not for the event at 17 30.

" 1 Ki iP 19 01 11.9
Leeward Islands (h = N).

" 2 Up iP 05 28 40.5
Sk iP 05 28 24.7
Um iP 05 28 20.4
Ud iP 05 28 42.0

" 2 Up iP 07 35 05.4
Ki eP 07 36 28
Sk iP 07 36 01.5
Um iP 07 35 47.6
Ud iP 07 35 22.8
Rumania (h = 130 km).

" 2 Ki iSg 10 41 26.1
Sk eSg 10 41 41
Um iSg 10 42 06.8
Coast of Nordland, Norway,
66.9°N, 13.7°E.
Origin time = 10 39 52.

" 2 Um iP 11 32 31.5
iSg 11 33 15.2

" 2 Ki eP 11 48 03
Ud iP 11 49 32.3

" 2 Um i(P) 19 50 15.6

" 2 Up iSg 20 07 33.3
Sk eSg 20 05 57
Ud iSg 20 06 30.5
West coast of Norway, near
Ålesund, 62.2°N, 6.2°E.
Origin time = 20 04 15.

" 3 Up iP 06 59 58.1
micr sec
P Z' 0.1 0.9
(cont.)

1970
Jan. 3 (cont.)

Up Mx E 2.0 21
Mx N 2.1 21
Mx Z 2.0 13
Ki iP 07 00 41.8
iPP 07 01 23.7
micr sec
Mx E 2.3 16
Mx N 1.3 14
Mx Z 2.3 11
Sk iP 07 00 36.6
Um iP 07 00 14.0 C
Ud iP 07 00 15.0 C
De iP 06 59 58.0
Caucasus (h = 70 km).
M = 5.0 (Up,Ki).

" 3 Up i(P) 09 22 23.4
Sk i(P) 09 20 30.0

" 3 Ki iPn 11 35 23.2
iP^x 11 35 31.4
iSn 11 36 09.4
iLgl 11 36 21.9
D = 420 km = 3.8°.
Um iSg 11 37 59.9
Northwest Russia.
Origin time = 11 34 22.
Explosion?

" 3 Ki iP 12 21 53.6
Colombia (h = 150 km).

" 3 Up iP 13 26 45.6
Ud iP 13 27 00.8 C
De iP 13 26 43.5
Iran (h = 30 km).

" 3 Sk eP 13 42 13
Ud iP 13 42 15.7
ipP 13 42 27.6
Leeward Islands. h = 45 km (Ud).

" 3 Up Mx 15 51
micr sec
Mx N 1.8 22
Ki Mx 15 49
micr sec
Mx E 1.1 20
Mx N 0.9 19
Celebes (h = 40 km).
M = 5.5 (Up,Ki).

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

1970					
Jan.	3	Ki	iP		16 30 35.9
"	3	Up	iP		16 42 30.5
			i		16 42 31.5
					micr sec
			P	Z'	0.1 0.5
			Mx	E	1.1 15
			Mx	Z	1.5 16
		Ki	iP		16 43 11.9
					micr sec
			Mx	E	1.5 14
			Mx	N	0.8 12
			Mx	Z	1.1 13
		Sk	eP		16 43 08
		Um	iP		16 42 47.5
		Ud	iP		16 42 46.3 C
			i		16 42 51.1
		De	iP		16 42 28.7 C
		Iran (h = 30 km).			
		M = 5.0 (Up,Ki).			
"	4	Up	iPKP		01 22 37.8
		Sk	iPKP		01 22 34.6
			ipPKP		01 22 40.3
		Um	iPKP		01 22 27.0 C
			ipPKP		01 22 34.7
		Ud	iPKP		01 22 39.2
			ipPKP		01 22 46.8
		South of Kermadec Islands.			
		h = 25 km (Sk,Um,Ud).			
"	4	Up	iP		08 44 35.9
		Ki	iP		08 44 25.4
		Sk	eP		08 44 41
		Um	iP		08 44 25.9
		Ud	iP		08 44 44.0
			ipP		08 45 19.9
			i(PP)		08 48 34.0
			iPP		08 48 54.6
		De	iP		08 44 49.6
		Celebes. h = 140 km (Ud).			
"	4	Up	iP		17 11 30.2
			i		17 11 31.6
			iS		17 20 24
					micr sec
			P	Z'	1.1 0.8
			Mx	E	190 17
			Mx	N	500 19
			Mx	Z	170 17
		Ki	iP		17 11 18.4 C
			i		17 11 23.3
		(cont.)			

1970					
Jan.	4	(cont.)			
		Ki	iS		17 20 02
					micr sec
			P	Z'	1.7 1.0
			Mx	E	230 17
			Mx	N	430 21
			Mx	Z	170 16
		Sk	iP		17 11 43.2
			i		17 11 47.6
			i		17 11 51.7
		Um	iP		17 11 20.5 C
			i		17 11 25.5
			i		17 11 29.9
			iS		17 20 07
		Ud	iP		17 11 42.7
			i		17 11 47.8
		De	iP		17 11 49.1
			i		17 11 52.2
		Yunnan, China (h = 30 km).			
		m = 7.2, M = 7.6 (Up,Ki).			
		Multiple P: three phases with increasing amplitudes can be distinguished.			
"	4	Up	iP		17 41 19.6
		Sk	iP		17 41 33.0
		Um	iP		17 41 10.9
		Ud	iP		17 41 34.1
		Yunnan, China.			
		Origin time = 17 30 30.			
"	4	Up	iP		17 43 30.3
					micr sec
			P	Z'	0.1 0.8
		Ki	iP		17 43 16.8
					micr sec
			P	Z'	0.1 0.9
		Sk	iP		17 43 41.8
		Um	iP		17 43 18.5
		Ud	iP		17 43 40.5
		Yunnan, China (h = N).			
		m = 6.1 (Up,Ki).			
"	4	Up	iP		18 42 29.0
		Ki	iP		18 42 15.6
		Um	iP		18 42 18.9
		Ud	iP		18 42 41.3
		Yunnan, China.			
		Origin time = 18 31 40.			
"	4	Up	iP		18 42 58.6
		Ki	iP		18 42 45.6
		Sk	iP		18 43 10.4
		(cont.)			

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

1970
Jan. 4 (cont.)

Um	iP	18 42 48.0
Ud	iP	18 43 11.2

Yunnan, China (h = N).

" 4

Up	iP	20 47 05.0
Ki	iP	20 46 51.6
Ud	eP	20 47 17

Yunnan, China.
Origin time = 20 36 16.

" 4

Um	iP	20 53 04.6
Ud	iP	20 53 33.6

Japan (h = 70 km).

" 4

Up	iP	21 12 07.6
Ud	iP	21 12 20.5

Yunnan, China.
Origin time = 21 01 20.

" 4

Up	iP		21 55 23.1 C	
			micr sec	
	P	Z'	0.1	0.7
	Mx	E	1.4	18
	Mx	N	1.4	17
	Mx	Z	1.4	15
Ki	iP		21 55 09.5	
			micr sec	
	P	Z'	0.1	0.8
	Mx	E	1.8	15
	Mx	N	1.6	16
	Mx	Z	1.4	15
Sk	iP		21 55 34.4	
Um	iP		21 55 12.2 C	
Ud	iP		21 55 34.9	

Yunnan, China (h = N).
m = 6.2, M = 5.4 (Up,Ki).

" 5

Up	iP		00 32 20.0 C	
	ipP		00 32 27.2	
			micr sec	
	pP	Z'	0.1	0.7
	Mx	E	6.4	15
	Mx	N	4.5	20
	Mx	Z	8.0	15
Ki	iP		00 31 59.8 C	
	ipP		00 32 06.4	
			micr sec	
	pP	Z'	0.3	1.3
	Mx	E	6.0	20
	Mx	N	4.0	17
	Mx	Z	6.1	15

(cont.)

1970
Jan. 5 (cont.)

Sk	iP	00 32 32.2
Um	iP	00 32 06.3 C
	ipP	00 32 13.5
Ud	iP	00 32 29.7 C
	ipP	00 32 36.3
De	iP	00 32 38.0
	ipP	00 32 46.4

Luzon. h = 25 km (Up,Ki,Um,Ud, De).
M = 6.2 (Up,Ki).

" 5

Ki	iP	04 23 35.3
Sk	iP	04 24 27.7
Um	iP	04 24 26.3
	i	04 24 38.3
Ud	iP	04 24 58.4

Svalbard-Greenland (h = N).

" 5

Up	iP	04 30 49.2
Ki	eP	04 30 36
Um	iP	04 30 39.5
Ud	iP	04 31 01.4

Yunnan, China (h = N).

" 5

Ki	iP	09 21 09.3
Sk	eP	09 20 43
Um	iP	09 21 07.4
Ud	iP	09 20 46.4

Leeward Islands (h = 20 km).

" 5

Um	iP	09 25 02.6
Ud	iP	09 24 32.4
	i	09 24 48.8
De	iP	09 24 43.0 C

Leeward Islands (h = 20 km).

" 5

Ud	iP	09 36 36.8

Leeward Islands (h = N).

" 5

Up	iSg	11 48 23.0
Ud	iPn	11 47 07.3
	iSx	11 47 35.3
	iSg	11 47 39.6
De	iPg	11 47 03.0
	iSg	11 47 28.2

West coast of Sweden, 58.0°N, 11.7°E.
Origin time = 11 46 ~~26~~ 31.

" 5

Up	iP	12 00 03.5
	i	12 00 06.6

(cont.)

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

1970
Jan. 5 (cont.)

Up			micr sec	
	Mx	E	1.7	15
	Mx	N	4.8	17
	Mx	Z	2.7	17
Ki	iP		11 59 50.1	
			micr sec	
	Mx	E	2.1	15
	Mx	N	3.5	17
	Mx	Z	2.3	12
Sk	eP		12 00 15	
Um	iP		11 59 53.8	
Ud	iP		12 00 13.8	
De	iP		12 00 23.6	

Yunnan, China (h = N).
M = 5.6 (Up,Ki).

" 5	Um	iP	12 32 14.9
" 5	Up	iP	13 58 24.4 C
	Ki	iP	13 57 57.6
	Sk	iP	13 58 25.1
	Um	iP	13 58 07.6
	Ud	iP	13 58 33.1

Ryukyu Islands (h = 110 km).

" 5	Up	iP	14 32 26.6	
	Ki	iP	14 32 10.4	
			micr sec	
	Mx	N	1.0	22
	Sk	eP	14 32 36	
	Um	iP	14 32 15.4	
	Ud	iP	14 32 36.8	

Yunnan, China (h = N).

" 5	Up	iP	18 09 48.5
	Ki	iP	18 09 36.6
	Ud	iP	18 10 01.1

Yunnan, China (h = N).

" 6	Up	iP	00 55 30.7
		i	00 55 58.8
" 6	Up	iP	01 57 44.3
	Ud	iP	01 57 50.2

Kurile Islands (h = N).

" 6	Ki	eP	05 28 27
	Um	iP	05 29 17.9

These phases could be Sg instead of P.

" 6	Up		micr sec	
	Mx	E	1.5	16

(cont.)

1970
Jan. 6 (cont.)

Up	Mx	N	3.8	23
	Mx	Z	11	20
Ki			micr sec	
	Mx	E	5.4	24
	Mx	N	3.2	22
	Mx	Z	7.8	23
Sk	iPKP		05 54 42.2	
Um	iPKP		05 54 35.1	
Ud	iPKP		05 54 49.0	

D'Entrecasteaux Islands (h = 8 km).
M = 6.2 (Up,Ki).

" 6	Up	iP	06 08 27.1
	Um	iP	06 08 00.7
		i	06 08 10.4
	Ud	iP	06 08 33.4 C

Sakhalin (h = 35 km).

" 6	Up	iP	06 28 33.4	
		i	06 28 34.7	
		i	06 30 49.3	
			micr sec	
	P	Z'	0.1	0.5
	Ki	e(P)	06 30 26	
	Sk	iP	06 29 31.9	
	Um	iP	06 29 21.4	
	Ud	iP	06 28 48.4	
	De	iP	06 28 08.1 C	
		i	06 28 21.5	
" 6	Up	iP	06 32 08.7 C	
	Um	iP	06 32 31.3 C	
" 6	Sk	iP	06 34 51.8	
	Um	iP	06 34 13.1	
" 6	Up	iPKP	07 19 40.0 C	
	Sk	iPKP	07 19 32.6	
		i	07 19 40.9	
	Ud	iPKP	07 19 41.8	

Kermadec Islands (h = 370 km).

" 6	Up	iP	07 22 56.3	
			micr sec	
	Mx	E	1.1	20
	Mx	N	1.1	18
	Mx	Z	1.7	18
	Ki	iP	07 22 07.6	
	Um	iP	07 22 32.1	
	Ud	iP	07 23 03.0	

Sakhalin (h = N).

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

1970 Jan.	6	Up	iPKP	07 35 43.6
			i	07 35 47.0
		Sk	iPKP	07 35 36.6
		Um	iPKP	07 35 31.5
		Ud	iPKP	07 35 44.2
		De	iPKP	07 35 53.1
"	6	Up	iP	09 21 24.0
		Ud	iP	09 21 39.2
"	6	Up	iP	09 51 33.7
		Ki	eP	09 51 16
		Ud	iP	09 51 39.9
"	6	Up	iPKP	11 04 10.2
		Sk	iPKP	11 04 03.6
			i	11 04 10.1
		Um	iPKP	11 04 01.4
			i	11 04 19.9
		Ud	iPKP	11 04 10.5
		De	iPKP	11 04 19.6
			i	11 04 28.1
"	6	Up	i	12 48 24.6
			iSg	12 48 38.4
		Ki	iSg	12 51 12.7
		Sk	iSg	12 50 29.0
		Um	iSg	12 49 10.7
		Ud	iSn	12 49 15.6
			iLgl	12 49 42.1
		De	eSg	12 50 18
		Esthonia. Explosion?		
"	6	Up	iP	13 07 16.4
		Ki	iP	13 07 26.9
			ipP	13 07 39.7
				micr sec
			Mx E	1.0 19
		Sk	iP	13 07 03.3 C
		Um	iP	13 07 24.9
		Ud	iP	13 07 04.3 C
		Leeward Islands. h = 45 km (Ki).		
"	6	Up	iP	20 48 19.4
		Ki	iP	20 47 50.8
		Mariana Islands (h = 160 km).		
"	6	Ki	iP	23 40 04.7
		Sk	iP	23 40 21.2
		Um	iP	23 40 06.4
		Ud	iP	23 40 17.1
		Java (h = 90 km).		
"	7	Um	iP	00 51 32.2 C
		(cont.)		

1970 Jan.	7	(cont.)		
		Ud	iP	00 51 01.3
"	7	Up	iP	01 21 52.7
		Ki	iP	01 21 38.8
		Um	iP	01 21 41.8 C
		Ud	iP	01 22 04.6 C
		Yunnan, China (h = N).		
"	7	Up	iP	02 54 07.4
		Ki	iP	02 53 53.1
		Um	iP	02 53 55.6
		Ud	iP	02 54 19.5 C
		Yunnan, China (h = N).		
"	7	Up	iPKP	04 04 07.1
				micr sec
			PKP Z'	0.1 0.7
		Um	iPKP	04 03 55.6
		Ud	iPKP	04 04 08.8
		De	iPKP	04 04 18.9
			i	04 04 23.5
		Tonga-Kermadec Islands (h = 360 km).		
"	7	Up	iPKP	04 09 28.7
				micr sec
			PKP Z'	0.1 0.7
		Um	ipPKP	04 10 48.9
		Ud	iPKP	04 09 30.9
		De	iPKP	04 09 41.3
		Tonga-Kermadec Islands (h = 360 km).		
		Origin time = 03 50 34.		
"	7	Up	iP	08 07 22.8
				micr sec
			Mx E	1.5 16
			Mx N	1.8 18
			Mx Z	2.2 17
		Ki	iP	08 07 32.5
				micr sec
			P Z'	0.3 1.5
			Mx E	4.0 18
			Mx N	1.7 18
			Mx Z	4.5 17
		Sk	iP	08 07 10.2 C
		Um	iP	08 07 31.1
		Ud	iP	08 07 09.4
			ipP	08 07 25.3
		De	iP	08 07 09.3
			ipP	08 07 23.7
		Leeward Islands. h = 55 km (Ud,De).		
		M = 5.7 (Up,Ki).		

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

1970					
Jan.	7	Ki	iP	14 06 34.6	C
			ipP	14 06 43.3	
		Um	iP	14 06 31.5	
			ipP	14 06 40.5	
		De	iP	14 06 44.3	
			ipP	14 06 53.6	
		Sumatra. h = 35 km (Ki,Um,De).			
"	7	Ki	iP	15 46 06.2	C
			ipP	15 46 35.5	
		Um	iP	15 46 15.1	C
			ipP	15 46 40.0	
		Formosa. h = 110 km (Ki,Um).			
"	7	Ki	iP	17 32 32.5	
"	7	Up	iP	18 29 28.7	
			i	18 29 44.4	
		Ki	iP	18 30 01.2	
		Um	iP	18 29 37.1	
		Ud	iP	18 29 43.1	C
		Caspian Sea (h = 40 km).			
"	7	Up	i(Sg)	19 00 48.7	
"	8	Up	iP	07 39 02.8	
		Ki	iP	07 39 09.2	
		Um	iP	07 38 59.9	
		Ud	iP	07 39 20.0	
		De	iP	07 39 17.5	
		Tadzhik SSR (h = 110 km).			
"	8	Ud	iP	08 54 18.2	
		Leeward Islands (h = N).			
"	8	Up	iP	11 18 12.9	
		Ki	iP	11 17 59.0	
		Yunnan, China (h = N).			
"	8	Ud	iP	11 54 55.6	
		Leeward Islands (h = N).			
"	8	Up	iP	16 31 32.4	
		Um	iP	16 31 29.4	
		Guatemala (h = 25 km).			
"	8	Up	iPKP	17 32 04.2	
			i	17 32 11.3	
				micr sec	
			PKP	Z' 0.9	0.5
			Mx	E 3.6	21
			Mx	N 6.8	27
			Mx	Z 5.6	24
		(cont.)			

1970					
Jan.	8	(cont.)			
		Ki	iPKP	17 31 51.3	C
			iSKP	17 35 13.6	
				micr sec	
			PKP	Z' 4.5	1.5
			SKP	Z' 0.6	1.3
			Mx	E 3.2	22
			Mx	N 4.0	23
		Sk	iPKP	17 32 01.1	C
			i	17 32 07.2	
		Um	iPKP	17 31 58.6	C
			i	17 32 02.4	
			iPKS	17 35 49.7	
		Ud	iPKP	17 32 05.6	C
			i	17 32 13.4	
		De	iPKP	17 32 10.7	C
			i	17 32 20.6	
			i	17 32 38.8	
		South of Kermadec Islands (h = 180 km). M = 6.3 (Up,Ki). M uncorrected for focal depth. The first PKP-phases are of smaller amplitude and longer periods than the second ones (Up,Sk,Um,Ud,De).			
"	8	Up	iPKP	19 11 50.9	
			i	19 11 57.2	
		Sk	i(PKP)	19 11 50.2	
		Um	iPKP	19 11 47.0	
		Ud	iPKP	19 11 50.2	
		De	iPKP	19 12 07.3	
"	8	Up	iP	21 26 42.6	C
		Ki	iP	21 26 51.3	C
		Sk	iP	21 27 08.1	
		Um	iP	21 26 40.6	
		Ud	iP	21 26 58.9	
		De	iP	21 26 56.4	
		Hindu Kush (h = 140 km).			
"	8	Um	iP	23 17 15.5	
		Ud	iP	23 17 46.4	
		De	iP	23 18 02.3	
		Japan (h = 45 km).			
"	9	Um	iP	00 04 15.5	
			i	00 04 23.6	
		Japan (h = 80 km).			
"	9	Up	iP	03 20 40.1	
		Um	i(P)	03 20 44.9	

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

1970				
Jan.	9	Up	iPKP	05 02 46.5 C
			ipPKP	05 02 57.0
		Sk	iPKP	05 02 41.3
		Um	iPKP	05 02 36.3
			ipPKP	05 02 45.6
		Ud	iPKP	05 02 47.6 C
		De	iPKP	05 02 55.8
		South of Kermadec Islands.		
		h = 35 km (Up,Um).		
"	9	Um	iP	06 00 24.4
		Ud	iP	06 00 25.1
		Indian Ocean (h = N).		
"	9	Ud	iP	09 29 56.9
		Iran-USSR (h = 25 km).		
"	9	Up	iP	10 42 37.7
		Ki	iP	10 42 23.9
		Um	iP	10 42 27.4
		Ud	iP	10 42 50.1
		Yunnan, China (h = N).		
"	9	Ki	iPn	10 55 12.7
			iSn	10 56 11.7
			iSg	10 56 35.1
			D = 540 km = 4.9°.	
		Sk	eLgl	10 59 01
		Um	eS^{x}	10 57 06
			iSg	10 57 26.8
		Northwest Russia,		
		67.5°N, 33.4°E.		
		Origin time = 10 53 56.		
		Explosion?		
"	9	Up	iSg	11 00 56.5
		Um	iSg	11 01 24.9
		De	iLgl	11 02 18.5
		Esthonia. Explosion?		
"	9	Um	iP	13 13 33.3
		East coast of Africa		
		(h = N).		
"	9	Up	iP	19 36 02.8
			i	19 36 12.3
		Um	iP	19 36 18.0
			i	19 36 23.8
		Indian Ocean (h = N).		
"	9	Um	iPKP	20 17 00.9
		Fiji Islands (h = 440 km).		
"	9	Ki	iP	21 07 47.2
		Kazakh-Sinkiang (h = N).		

1970				
Jan.	9	Up	iP	23 30 12.4
			i(PP)	23 34 12.2
			i	23 34 23.0
		Ki	iP	23 30 04.6 D
			ePP	23 34 13
		Sk	e(PP)	23 34 21
		Um	eP	23 30 06
			i	23 34 31.2
		Ud	iP	23 30 21.5
			e(PP)	23 34 32
		Sumbawa (h = 60 km).		
		(PP) belong to the group of		
		early arriving PP.		
"	10	Ki	iPg	00 03 12.2
			iSn	00 03 42.0
			iSg	00 03 58.6
		Sk	iSg	00 04 16.8
		Um	i(Pn)	00 03 37.0
			iSn	00 04 39.0
			iSg	00 05 10.0
		Norwegian Sea, off Lofoten,		
		near 67 3/4°N, 10 3/4°E.		
		Origin time = 00 02 02.		
"	10	Up	iP	00 45 57.9
			ipP	00 46 15.8
		Ki	iP	00 45 57.4
		Sk	iP	00 45 43.8
		Um	iP	00 46 00.9 C
			ipP	00 46 18.6
		Panama. h = 70 km (Up,Um).		
"	10	Up	iP	00 47 05.9
		Ud	iP	00 47 11.5
		Kurile Islands (h = N).		
"	10	Up	iP	03 29 47.5
		Ki	iP	03 29 23.2
		Formosa (h = N).		
"	10	Up	iP	04 31 48.9
			i	04 31 56.0
		Ki	iP	04 30 54.3
		Sk	iP	04 31 20.4
		Um	iP	04 31 22.8
		Ud	iP	04 31 45.6
		Alaska (h = N).		
"	10	Up	iP	04 57 59.1
		Ki	iP	04 58 02.6
		Sk	iP	04 58 22.9
		Um	iP	04 57 54.8
		Ud	iP	04 58 15.3 D
		De	iP	04 58 14.2
		Tadzhik-Sinkiang (h = 150 km).		

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

1970 Jan.	10	Um	iP	05 50 39.8	
			i	05 50 53.8	
		Mexico (h = N).			
"	10	Up	iPKP	11 46 12.4	C
		Ki	iPKP	11 45 57.0	
		Sk	iPKP	11 46 07.2	C
		Um	iPKP	11 46 02.5	
			i	11 46 15.3	
		Ud	iPKP	11 46 14.4	C
		South of Kermadec Islands (h = 80 km).			
"	10	Up	iP	12 20 18.1	
			i	12 20 22.9	
			iSKS	12 30 49	
			iS	12 31 06	
				micr sec	
			P Z'	0.5 0.7	
			Mx E	160 19	
			Mx N	150 22	
			Mx Z	160 20	
		Ki	iP	12 19 58.8	C
			i	12 20 01.4	
			iS	12 30 45	
				micr sec	
			P Z'	0.9 1.1	
			Mx E	130 18	
			Mx N	85 18	
			Mx Z	210 19	
		Sk	iP	12 20 22.0	C
		Um	iP	12 20 04.8	C
		Ud	iP	12 20 24.5	C
			i	12 20 27.2	
		De	iP	12 20 32.2	C
		Mindanao (h = 70 km).			
		m = 7.1, M = 7.6 (Up,Ki).			
		Multiple P.			
"	10	Ud	iP	12 37 17.4	
			i	12 37 37.2	
"	10	Ki	iPn	12 45 02.6	
			iSn	12 45 53.1	
			iLgl	12 46 06.4	
			D = 470 km = 4.2°.		
		Origin time = 12 43 55.			
"	10	Up	iP	12 58 13.4	
		Ki	iP	12 57 50.8	
		Ud	iP	12 58 16.9	
		Mindanao.			
		Origin time = 12 45 02.			

1970 Jan.	10	Ki	iP	13 03 49.5	
		Ud	iP	13 04 16.1	
		Mindanao.			
		Origin time = 12 51 00.			
"	10	Up	iP	13 22 37.3	
		Ki	iP	13 22 16.1	
			ipP	13 22 38.4	
		Um	iP	13 22 21.4	
			i	13 22 29.1	
			ipP	13 22 43.8	
		Ud	iP	13 22 41.8	
			i	13 22 53.7	
		Mindanao. h = 80 km (Ki,Um).			
"	10	Ki	iP	13 25 58.4	
			i	13 26 14.4	
		Ud	iP	13 26 24.9	
			i	13 26 35.7	
		Mindanao (h = 70 km).			
"	10	Ki	iP	13 42 13.1	
			i	13 42 20.3	
		Ud	iP	13 42 38.7	
		Mindanao (h = 80 km).			
"	10	Up	iP	14 12 50.4	
			i	14 13 07.8	
		Ki	iP	14 12 29.9	C
			i	14 12 54.1	
				micr sec	
			P Z'	0.1 1.0	
		Sk	iP	14 12 56.8	
		Um	iP	14 12 35.9	
			ipP	14 12 55.7	
		Ud	iP	14 12 55.4	C
			ipP	14 13 15.5	
		De	iP	14 13 07.4	
		Mindanao. h = 70 km (Um,Ud).			
"	10	Up	iP	14 29 38.9	
			i	14 29 50.0	
		Ki	iP	14 29 21.3	C
				micr sec	
			P Z'	0.2 1.0	
		Sk	iP	14 29 43.0	
		Um	iP	14 29 27.4	C
		Ud	iP	14 29 47.1	C
		Mindanao (h = 60 km).			
"	10	Ki	iP	15 06 56.8	
		Um	iP	15 07 05.8	
		Ud	iP	15 07 23.2	
		Mindanao (h = 90 km).			

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

1970 Jan.	10	Ki	iP	15 07 53.0
		Um	iP	15 07 58.8
		Ud	iP	15 08 18.4
		Mindanao.		
		Origin time = 14 55 04.		
"	10	Up	iP	15 15 50.7
		Ud	iP	15 15 55.4
"	10	Ki	iP	15 25 13.2
		Ud	iP	15 25 38.7
		Mindanao.		
		Origin time = 15 12 23.		
"	10	Up	iP	15 27 12.2
		Ki	iP	15 26 52.5
		Ud	iP	15 27 17.7
		Mindanao.		
		Origin time = 15 14 03.		
"	10	Ki	iP	15 31 42.4
"	10	Ki	iP	15 39 38.7
		Ud	iP	15 40 03.9 C
		Mindanao (h = 70 km).		
"	10	Up	iP	15 54 35.3 C
		Ki	iP	15 54 05.1
		Sk	iP	15 54 35.3
		Um	iP	15 54 17.4
		Ud	iP	15 54 44.3
		De	iP	15 54 55.9
		Ryukyu Islands (h = 90 km).		
"	10	Ki	iP	16 13 17.2
		Ud	iP	16 13 43.2
		Mindanao (h = 70 km).		
"	10	Up	iP	16 44 00.1
		Ki	iP	16 43 42.9
			ipP	16 43 58.0
		Sk	eP	16 44 03
			i	16 44 10.6
			i	16 44 38.3
		Um	iP	16 43 48.8
		Ud	iP	16 44 08.7
		Mindanao. h = 60 km (Ki).		
"	10	Ki	iP	17 25 26.8
				micr sec
			Mx E	0.8 19
		Ud	iP	17 25 52.3
		Mindanao (h = 70 km).		

1970 Jan.	10	Ki	iP	17 53 14.1 C
		Um	iP	17 53 18.2
		Ud	iP	17 53 40.7
		Mindanao (h = 90 km).		
"	10	Ki	iP	20 44 42.5
		Sk	iP	20 44 12.3
		Ud	iP	20 43 40.9
		De	iP	20 43 08.6
		Crete.		
"	10	Ki	iP	21 45 31.4
		Ud	iP	21 45 55.9
		Mindanao (h = 80 km).		
"	11	Ki	iP	01 43 07.9 C
		Ud	eP	01 43 31
			i	01 43 52.0
		Mindanao (h = 60 km).		
"	11	Um	iP	01 59 40.3
"	11	Ki	eP	03 26 41
			i	03 26 56.1
		Sk	iP	03 26 48.2
		Ud	iP	03 26 37.9
		De	i(P)	03 26 32.5
		Chagos Islands (h = N).		
"	11	Ud	iP	04 45 51.5
"	11	Up	iP	05 15 13.2
				micr sec
			Mx E	2.6 17
			Mx N	2.2 18
			Mx Z	4.0 18
		Ki	iP	05 14 54.9
				micr sec
			P Z'	0.1 1.1
			Mx E	3.1 18
			Mx N	1.9 18
			Mx Z	3.6 18
		Sk	iP	05 15 16.7 C
		Um	iP	05 15 02.7
		Ud	iP	05 15 21.0 C
		Mindanao (h = 70 km).		
		M = 5.9 (Up,Ki).		
"	11	De	iPKP	05 39 02.1
			i	05 39 14.3
		Loyalty Islands (h = 45 km).		
"	11	Up	iP	07 10 38.3
		Um	iP	07 10 15.1

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

1970 Jan.	11	Ki	iSn	08 11 05.5
			iLgl	08 11 27.3
		Sk	eLgl	08 13 53
		Um	iSg	08 12 21.6
		Ud	i(Lgl)	08 14 56.0
		Northwest Russia.		
		Explosion?		
"	11	Ud	iP	12 32 41.0
		Mindanao (h = 70 km).		
"	11	Up	iP	18 01 20.3
		Ki	iP	18 03 29.5
			i	18 03 37.9
"	11	Ki	iP	18 37 12.4
		Mindanao (h = 100 km).		
"	11	Ud	iP	19 58 22.3
		Mindanao (h = 100 km).		
"	11	Ki	iP	21 15 13.6 D
		Ud	iP	21 15 39.2
			i	21 15 50.8
		Mindanao (h = 80 km).		
"	12	Up	iP	02 11 30.3
		Um	iP	02 11 19.4
		Ud	iP	02 11 31.8
"	12	Ki	iP	02 34 09.7
		Ud	iP	02 34 34.9
		Mindanao (h = 90 km).		
"	12	Ki	eP	04 24 21
		Mindanao (h = 90 km).		
"	12	Up	iP	04 38 10.6
		Ki	iP	04 37 52.4
				micr sec
			Mx N	0.8 19
		Sk	iP	04 38 14.6
		Um	iP	04 37 58.6
			i	04 38 07.7
		Ud	iP	04 38 18.6
		De	e(P)	04 38 31
		Mindanao (h = 70 km).		
"	12	Ki	eP	06 37 28
		Mindanao (h = 80 km).		
"	12	Up	iP	09 43 57.7
			i	09 44 00.4
		(cont.)		

1970 Jan.	12	(cont.)		
		Ki	eP	09 43 46
		Um	iP	09 43 47.5
		Ud	iP	09 44 12.3
		Yunnan, China (h = N).		
"	12	Ki	iP	09 52 52.7
		Ud	iP	09 52 39.4
"	12	Ud	iPKP	10 52 33.6
			iSKP	10 54 56.8
		Santa Cruz Islands		
		(h = 660 km).		
"	12	Ki	iPn	13 11 26.3
			iSn	13 12 12.7
			iLgl	13 12 27.7
			D = 430 km = 3.9°.	
		Sk	iLgl	13 15 18.4
		Um	iSn	13 13 21.7
			iSg	13 14 03.0
		Northwest Russia,		
		69.2°N, 30.6°E.		
		Origin time = 13 10 24.		
		Explosion?		
"	12	Up	iP	17 37 54.6
		Ki	iP	17 37 05.1
		Sk	eP	17 37 14
			i	17 37 23.2
		Um	iP	17 37 37.7
			i	17 37 44.3
"	12	Ki	iP	21 28 27.3
		Um	iP	21 28 14.7
		Ud	iP	21 30 00.0
"	13	Ud	i(P)	01 26 43.2
"	13	Ki	eP	03 56 56
		Ud	iP	03 57 06.1
"	13	Um	iP	04 16 17.6 C
"	13	Ki	ePKP	04 31 47
		Um	iPKP	04 31 51.3
		New Hebrides Islands		
		(h = 20 km).		
"	13	Ki	iPn	10 57 01.3
			iSn	10 58 00.2
			iSg	10 58 24.1
			D = 540 km = 4.9°.	
		(cont.)		

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

1970 Jan.	13	(cont.)			
		Sk	e(Lgl)		11 00 49
			iSg		11 00 56.1
		Um	iSg		10 59 13.7
		Northwest Russia, 67.5°N, 33.4°E. Origin time = 10 55 43. Explosion?			
"	13	Um	iP		11 27 31.9
"	13	Up	iP		12 47 57.3
		Ki	iP		12 47 01.7
		Um	iP		12 48 00.7 C
"	13	Sk	eP		13 05 41
		Um	iP		13 06 05.2
"	13	Up	iP		17 08 21.8
		Ki	iP		17 08 04.0
		Sk	eP		17 08 26
		Um	iP		17 08 10.5
			i		17 08 13.8
		Ud	iP		17 08 30.2
		Mindanao (h = 80 km).			
"	13	Up	ipP		21 01 53.3
		Ki	iP		21 01 16.6 C
			ipP		21 01 36.8
					micr sec
			P	Z'	0.1 1.0
		Um	iP		21 01 22.7 C
		Ud	iP		21 01 42.5 C
		De	eP		21 01 49
		Mindanao. h = 70 km (Ki).			
"	13	Up	iP		21 08 20.3
		Um	i(P)		21 09 19.4
"	13	Sk	iSKP		22 54 10.8
		Um	iSKP		22 54 00.8
		Ud	iPKP		22 51 22.4 C
			iSKP		22 54 15.2
		De	iPKP		22 51 33.7
		Tonga-Kermadec Islands (h = 530 km).			
"	14	Up	i(PP)		02 40 30.5
					micr sec
			Mx	E	1.8 19
			Mx	N	4.5 22
			Mx	Z	4.1 21
		(cont.)			

1970 Jan.	14	(cont.)			
		Ki	iP		02 36 39.6
					micr sec
			Mx	E	2.6 20
			Mx	N	3.1 23
			Mx	Z	3.4 19
		Um	iP		02 36 42.9
		De	eP		02 37 03
		Timor (h = N). M = 6.0 (Up,Ki).			
"	14	Up	iP		02 49 45.4
		Ki	e(P)		02 49 58
		Um	e(P)		02 49 37
"	14	Ki	iP		07 24 36.0
"	14	Up	iP		10 25 10.0
			i		10 25 12.9
		Ki	iP		10 24 56.8
					micr sec
			Mx	E	0.7 15
			Mx	N	0.7 16
			Mx	Z	0.7 13
		Sk	iP		10 25 21.7
		Um	iP		10 24 58.6
			i		10 25 10.5
		Ud	iP		10 25 22.3
		De	iP		10 25 30.3
		Yunnan, China (h = 40 km).			
"	14	Ki	iPn		11 32 40.1
			iSn		11 33 38.8
			iLgl		11 33 57.8
			iSg		11 34 02.4
			D = 540 km = 4.9°.		
		Sk	iLgl		11 36 26.9
		Um	iSn		11 34 17.5
			iSg		11 34 54.1
		Ud	iLgl		11 37 25.5
		De	iSg		11 39 09.0
		Northwest Russia, 67.5°N, 33.4°E. Origin time = 11 31 24. Explosion?			
"	14	Up	iSg		12 36 02.2
		Ki	eSg		12 38 29
		Sk	iSg		12 37 50.1
		Um	iSg		12 36 31.8
		Ud	iSg		12 37 11.3
		De	iLgl		12 37 27.6
		Esthonia, 59.7°N, 25.6°E. Origin time = 12 33 50. Explosion?			

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

1970
Jan. 14 Ki iPn 13 04 43.0
iP^x 13 04 51.0
iSn 13 05 29.7
iLgl 13 05 40.7
D = 430 km = 3.9°.
Sk eSn 13 07 36
iLgl 13 08 28.7
Um iSg 13 07 18.0
Ud iLgl 13 09 44.0
Northwest Russia,
69.0°N, 30.7°E.
Origin time = 13 03 40.
Explosion?

" 15 Up iP 01 49 24.1

" 15 Ki iP 08 53 14.6
ipP 08 53 29.6
Sk iP 08 53 49.8
Um iP 08 53 35.1 C
Ud iP 08 54 06.1 C
iPcP 08 54 28.9
Kurile Islands.
h = 55 km (Ki).

" 15 Ki iP 09 02 46.3
Um iP 09 02 24.1
Malawi (h = N).

" 15 Um eP 13 06 40
i 13 07 05.0
Ud iP 13 07 09.2
Aleutian Islands
(h = 70 km).

" 15 Ki iPn 13 10 43.2
iSn 13 11 31.1
iLgl 13 11 47.0
D = 440 km = 4.0°.
Um iSg 13 13 13.6
Northwest Russia.
Origin time = 13 09 40.
Explosion?

" 15 Ki iP 17 05 11.7
Um iP 17 05 21.6 C
Nicaragua (h = 70 km).

" 15 Ki iP 18 06 15.1 C
Mindanao (h = 80 km).

" 16 Up iP 08 15 36.7 D
iScP 08 20 12.9
(cont.)

1970
Jan. 16 (cont.)

Up			micr	sec	
	P	Z'	0.1	0.6	
	ScP	Z'	0.3	1.0	
	Mx	E	1.2	21	
	Mx	N	2.4	28	
	Mx	Z	4.2	30	
Ki	iP		08 14 40.2		D
	iScP		08 19 38.4		
			micr	sec	
	P	Z'	0.2	0.8	
	ScP	Z'	0.2	1.3	
	Mx	E	0.8	14	
	Mx	N	1.3	20	
	Mx	Z	3.9	22	
Sk	iP		08 15 08.2		D
	iScP		08 19 54.7		
Um	iP		08 15 09.1		D
	iScP		08 19 55.1		
	iS		08 22 49		
Ud	iP		08 15 33.1		D
	iScP		08 20 11.3		
De	iP		08 15 57.9		D
	i		08 16 11.0		
	iScP		08 20 27.6		

Alaska (h = 90 km).
m = 6.1, M = 5.3 (Up,Ki).
The phase here interpreted as ScP is very conspicuous on all Z'-records.

" 16 Ki iPn 11 03 55.2
iSn 11 04 54.2
iLgl 11 05 13.3
D = 540 km = 4.9°.
Sk eLgl 11 07 42
Um iSn 11 05 31.4
iSg 11 06 08.2
Northwest Russia,
67.5°N, 33.4°E.
Origin time = 11 02 39.
Explosion?

" 16 Ki iP 12 24 38.0 C
Mindanao (h = 90 km).

" 16 Ud iP 15 05 20.8
De iP 15 06 28.2

" 16 Ki iP 18 49 47.2
Um iP 18 49 59.6

" 16 Sk iP 22 47 51.6
(cont.)

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

1970 Jan.	16	(cont.)			
		Um	iP	22 47 47.2	
		Ud	iP	22 47 20.1	
		De	iP	22 46 49.5	
		Crete (h = 80 km).			
"	17	Up	iP	01 36 11.9	
			i(S)	01 40 57.9	
		Um	eP	01 36 56	
			i	01 41 02.0	
			i	01 42 27.3	
		Ud	eP	01 36 33	
		De	iP	01 35 49.0	
"	17	Sk	iP	06 35 21.5	
		Um	iP	06 35 19.9	
			i	06 35 23.0	
		Ud	iP	06 34 44.2	
"	17	Up	iP	07 59 49.6	
		Ki	iP	07 58 58.8	
		Um	iP	07 59 22.5	
		Ud	iP	07 59 54.1	
		Kurile Islands (h = N).			
"	17	Ki	iPn	10 35 42.3	
			iSn	10 36 19.3	
			iSg	10 36 33.4	
		Um	iSn	10 37 00.3	
			iSg	10 37 31.4	
		Probably north Finland. Explosion?			
"	17	Up	iP	11 21 47.7	
		Ud	iP	11 21 56.1	
"	17	Up	i(P)	12 49 25.9	
"	17	Up	i	13 20 12.8	
			iSn	13 20 24.0	
		Ki	iSg	13 23 16.9	
		Sk	eSg	13 22 32	
		Um	iSg	13 21 13.3	
		Ud	iSn	13 21 13.3	
		Esthonia. Explosion?			
"	17	Ud	iP	15 43 15.1	
		Mindanao (h = 70 km).			
"	17	Ki	iP	18 41 36.5	
		Um	iP	18 41 28.5	
		Ud	iP	18 41 46.8	
		Himalaya.			

1970 Jan.	17	Ud	iP	22 00 07.7	
		Sumatra (h = 30 km).			
"	18	Up	iP	00 31 14.4	
			ipP	00 31 27.1	
				micr sec	
			P Z'	0.2 0.6	
			Mx E	1.9 20	
			Mx N	1.8 18	
			Mx Z	1.6 20	
		Ki	iP	00 30 44.7	D
			ipP	00 30 56.9	
				micr sec	
			P Z'	0.1 1.0	
			Mx E	1.7 19	
			Mx N	1.5 17	
			Mx Z	2.0 16	
		Sk	iP	00 31 10.4	
			iPP	00 34 37.3	
		Um	iP	00 30 57.8	
			ipP	00 31 10.4	
			iPP	00 34 17.8	
		Ud	iP	00 31 20.4	
			ipP	00 31 33.0	
			iPP	00 34 55.4	
		De	iP	00 31 32.4	
		Mariana Islands. h = 45 km (Up,Ki,Um,Ud). m = 6.3, M = 5.7 (Up,Ki).			
"	18	Ki	iPn	05 20 18.5	
			iSn	05 21 16.1	
			iLgl	05 21 36.4	
			D = 530 km = 4.8°.		
		Sk	eLgl	05 24 06	
		Um	iSn	05 21 57.0	
			iSg	05 22 32.7	
		Northwest Russia, 67.6°N, 33.1°E. Origin time = 05 19 04. Explosion?			
"	18	Ud	iP	07 13 17.3	
		De	iP	07 13 28.8	
		These phases are probably PKP instead of P.			
"	18	Sk	i(P)	21 32 43.7	
		Um	iP	21 32 37.9	C
			i	21 32 48.6	
		Ud	iP	21 32 51.5	
			i	21 32 58.1	

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

1970 Jan.	19	Up	iP	00 38 56.5
			i	00 39 01.1
		Ki	iP	00 39 03.2 C
		Um	iP	00 38 53.0 C
			i	00 38 58.0
		Ud	iP	00 39 13.6 C
			i	00 39 18.6
		De	iP	00 39 11.8
			i	00 39 16.4
		Kirghiz SSR (h = 45 km). Double P, in average 4.8 sec apart.		
"	19	Um	iP	11 05 04.1
"	19	Sk	eSn	13 03 59
			eLgl	13 04 28
			iSg	13 04 35.7
		Ud	iSn	13 03 15.0
			i	13 03 27.8
			iSg	13 03 36.2
		De	iSg	13 03 24.1
		Probably southwest coast of Norway.		
"	19	Up	iP	13 07 43.6
			i	13 07 50.1
		Sk	iP	13 07 57.8
		Um	iP	13 07 46.8
		Ud	iP	13 07 57.7
		Burma-India (h = 45 km).		
"	19	Ki	iP	17 26 17.9
		Ud	iP	17 25 53.8
		Iran (h = 25 km).		
"	19	De	iP	20 40 32.4
		Iran (h = N).		
"	19	Ki	iP	23 12 07.8
		Ud	iP	23 12 24.8
		Kirghiz-Sinkiang (h = 45 km).		
"	20	Up	iP	00 49 13.4
		Ki	iP	00 48 18.9
		Sk	iP	00 48 49.8
			ipP	00 49 01.1
		Um	iP	00 48 47.1
			ipP	00 48 57.9
		Ud	iP	00 49 11.7
			ipP	00 49 23.0
		De	iP	00 49 34.3
		Unimak Island. h = 40 km (Sk,Um,Ud).		

1970 Jan.	20	Up	iPKP	02 28 49.7 C
		South Sandwich Islands (h = N).		
"	20	Up	iPKP	03 32 12.2
		Ki	iPKP	03 31 58.2
		Sk	iPKP	03 32 09.2 C
		Um	iPKP	03 32 05.2
		Ud	iPKP	03 32 14.6
		De	iPKP	03 32 20.8
		Santa Cruz Islands (h = 230 km).		
"	20	Ud	iP	06 43 31.3
		Unimak Island (h = N).		
"	20	Up	iPKP	07 39 16.2
			iPP	07 42 35.3
			i	07 50 03.0
				micr sec
			PKP Z'	1.5 0.6
			PP Z'	6.3 2.0
		Ki	iPKP	07 38 52.6
			i	07 38 57.9
			i	07 39 05.8
			iPP	07 41 46.6
			iSKP	07 42 29.6
				micr sec
			PKP Z'	1.1 1.5
			PP Z'	1.4 1.5
			SKP Z'	1.5 1.6
		Sk	iPKP	07 39 08.3
			i	07 39 21.6
			iPP	07 42 17.5
		Um	iPKP	07 39 02.0
			i	07 39 11.9
			iPP	07 42 10.0
		Ud	iPKP	07 39 17.4
		De	iPKP	07 39 24.9
			i	07 39 28.5
		Tonga-Kermadec Islands (h = 80 km). m = 7.3 (Up,Ki).		
"	20	Ud	iPKP	07 58 58.7
		De	iPKP	07 59 09.0
		Tonga-Kermadec Islands. Origin time = 07 39 32. Approximate origin times are given for those aftershocks which have not been reported by the USCGS.		
"	20	Ud	iPKP	08 03 09.0
		(cont.)		

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

1970
Jan. 20 (cont.)

De	iPKP	08 03 20.1	

Tonga-Kermadec Islands.
Origin time = 07 43 43.

" 20	Up	iPKP	08 15 36.4	
	Ki	i(PKP)	08 15 02.4	
	Sk	ePKP	08 15 25	
		i	08 15 39.5	
	Um	iPKP	08 15 17.6	C
		i	08 15 34.9	
	Ud	iPKP	08 15 37.1	

Tonga-Kermadec Islands.
Origin time = 07 56 09.

" 20	Up	iPKP	08 19 40.9	
	Ud	iPKP	08 19 43.5	

Tonga-Kermadec Islands.
Origin time = 08 00 17.

" 20	Ud	iPKP	08 27 34.4	C
	De	iPKP	08 27 45.0	C

Tonga-Kermadec Islands.
Origin time = 08 08 08.

" 20	Up	iP	08 33 24.2	
	Ud	iP	08 33 49.3	
" 20	Up	iPKP	08 36 43.5	D
	Ud	iPKP	08 36 44.2	

Tonga-Kermadec Islands.
Origin time = 08 17 19.

" 20	Up			micr	sec
		Mx	E	22	18
		Mx	N	39	22
		Mx	Z	55	20
	Ki	iP		08 40 23.5	C
				micr	sec
		Mx	E	40	21
		Mx	N	26	23
		Mx	Z	71	23
	Um	iP		08 40 30.6	C
	Ud	iP		08 40 20.9	C

Nicaragua (h = 45 km).
M = 6.9 (Up,Ki).

" 20	Up	iPKP	08 48 54.7	
	Ud	iPKP	08 48 56.7	C

Tonga-Kermadec Islands.
Origin time = 08 29 31.

" 20	Up	iPKP	08 57 00.8	D
			micr	sec
		PKP Z'	0.3	0.9
	Ki	iPKP	08 56 43.7	

(cont.)

1970
Jan. 20 (cont.)

Sk	ePKP	08 56 54		
Um	iPKP	08 56 47.8		
	i	08 56 57.1		
Ud	iPKP	08 57 02.4	D	
	ipPKP	08 57 29.2		
De	iPKP	08 57 12.4		

Tonga-Kermadec Islands.
h = 100 km (Ud).

" 20	Up	iPKP	09 23 42.9	C
			micr	sec
		PKP Z'	0.1	0.7
	Ud	iPKP	09 23 44.7	
	De	iPKP	09 23 54.5	
		i	09 23 57.7	

Tonga-Kermadec Islands
(h = 100 km).

" 20	Up	iPKP	09 24 55.3	
	Ud	iPKP	09 24 56.5	
	De	iPKP	09 25 06.8	

Tonga-Kermadec Islands.
Origin time = 09 05 32.

" 20	Ud	iP	09 35 29.2	
" 20	Up	iPKP	09 55 46.7	C
	Ud	iPKP	09 55 48.7	C
	De	iPKP	09 55 58.6	

Tonga-Kermadec Islands.
Origin time = 09 36 22.

" 20	Ud	iPKP	09 57 37.8	C
	De	iPKP	09 57 47.8	

Tonga-Kermadec Islands.
Origin time = 09 38 11.

" 20	Up	iPKP	10 11 37.9	
	Ud	iPKP	10 11 39.9	

Tonga-Kermadec Islands.
Origin time = 09 52 14.

" 20	Up	iPKP	10 31 08.3	
	Ud	iPKP	10 31 10.3	
	De	iPKP	10 31 20.5	

Tonga-Kermadec Islands
(h = 110 km).

" 20	Ud	iP	10 48 24.9	
" 20	Um	iP	11 07 36.9	
	De	iP	11 07 23.8	

Iran (h = 25 km).

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

1970 Jan.	20	Ki	iPn	11 09 13.3	
			iSn	11 10 13.3	
			iSg	11 10 37.0	
			D = 560 km = 5.0°.		
		Um	iSg	11 11 28.2	
		Northwest Russia.			
		Origin time = 11 07 54.			
		Explosion?			
"	20	Up	iPKP	11 15 28.4	
		Ki	ePKP	11 15 05	
		Ud	iPKP	11 15 30.8	
		De	iPKP	11 15 41.1	
		Tonga-Kermadec Islands.			
		Origin time = 10 56 03.			
"	20	Ud	eP	12 03 31	
"	20	Up	iPKP	12 35 40.9	
				micr sec	
			PKP Z'	0.1 0.7	
		Ud	iPKP	12 35 43.6	
		De	iPKP	12 35 53.5	
		Tonga-Kermadec Islands			
		(h = 80 km).			
"	20	Ud	iP	12 45 53.3	
"	20	Ud	iP	12 52 45.1	
"	20	Ud	iP	12 58 35.8	
"	20	Ki	iP	13 33 31.2	
		De	iP	13 33 49.3	
"	20	Up	iP	13 53 13.9	
"	20	Ud	iP	13 59 44.1	
"	20	Up	iSg	14 03 47.2	
		Sk	eLgl	14 05 33	
		Um	iSg	14 04 22.0	
		Ud	iLgl	14 04 47.2	
		De	eLgl	14 05 16	
		Esthonia. Explosion?			
"	20	Up	iPKP	14 05 30.8	D
				micr sec	
			PKP Z'	0.1 0.7	
		Ud	iPKP	14 05 32.3	D
		De	iPKP	14 05 42.4	
		Tonga-Kermadec Islands			
		(h = 90 km).			

1970 Jan.	20	Ud	iPKP	14 09 34.6	
		De	iPKP	14 09 44.8	
		Tonga-Kermadec Islands.			
		Origin time = 13 50 08.			
"	20	Ud	iP	14 12 36.4	
"	20	Up	iPKP	14 17 49.9	
		Ud	iPKP	14 17 51.3	
		De	iPKP	14 18 05.2	
		Tonga-Kermadec Islands.			
		Origin time = 13 58 26.			
"	20	Up	iP	14 27 11.3	
		Ki	iP	14 26 19.9	
		Ud	iP	14 27 19.4	
"	20	Up	iP	14 49 36.3	
"	20	De	iPKP	15 31 19.1	
		Solomon Islands			
		(h = 200 km).			
"	20	Up	iPKP	15 51 46.9	
		Ud	iPKP	15 51 48.6	
		De	iPKP	15 51 58.7	
		Tonga-Kermadec Islands.			
		Origin time = 15 32 22.			
"	20	Up	iPKP	17 26 52.6	C
				micr sec	
			PKP Z'	0.4 0.7	
		Ki	iPKP	17 26 38.9	
		Sk	iPKP	17 26 45.5	
		Um	iPKP	17 26 42.7	C
			i	17 26 50.6	
		Ud	iPKP	17 26 54.6	
			i	17 26 57.9	
		De	iPKP	17 27 05.4	
		Tonga-Kermadec Islands			
		(h = 110 km).			
"	20	Up	iP	17 44 03.4	
			i	17 44 04.5	
			i	17 44 37.0	
			iS	17 53 01	
			iP'P'	18 12 14.9	
				micr sec	
			P Z'	0.8 0.6	
			Mx E	29 24	
			Mx N	43 27	
			Mx Z	18 26	
		Ki	iP	17 43 19.7	
		(cont.)			

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

1970
Jan. 20 (cont.)

Ki	i		17 43 21.3	
	iS		17 51 37	
	iPS		17 51 53	
	iP'P'		18 12 34.6	
			micr	sec
	P	Z'	1.0	1.0
	Mx	E	32	22
	Mx	N	16	19
	Mx	Z	20	16
Sk	iP		17 43 56.1	C
Um	iP		17 43 38.9	
	i		17 43 40.4	
	ipP		17 43 52.4	
	iS		17 52 16	
	eP'P'		18 12 22	
Ud	iP		17 44 10.3	C
	i		17 44 11.4	
	iS		17 53 14.9	
	iP'P'		18 12 09.8	
De	iP		17 44 27.0	
	i		17 44 28.0	
	iS		17 53 47.3	

Japan. h = 45 km (Um).
m = 7.0, M = 6.7 (Up,Ki).
Double P, small and large,
average interval 1.3 sec.

" 20	Up	iPKP	19 08 27.3	D
	Ud	iPKP	19 08 29.3	
	De	iPKP	19 08 39.2	

Tonga-Kermadec Islands.
Origin time = 18 49 02.

" 21	Up	iPKP	00 45 11.7	D
	Ud	iPKP	00 45 13.9	
	De	iPKP	00 45 24.2	

Tonga-Kermadec Islands
(h = 100 km).

" 21	Up	iPKP	03 18 46.8	C
		i	03 19 20.7	
	Ud	iPKP	03 18 48.6	C
	De	iPKP	03 18 57.8	

Tonga-Kermadec Islands
(h = 110 km).

" 21	Up	iPKP	03 41 20.1	
	Ud	iPKP	03 41 23.7	
	De	iPKP	03 41 33.6	

Tonga-Kermadec Islands.
Origin time = 03 22 01.

1970
Jan. 21

Up	iP		03 45 55.2	C
	ipP		03 46 01.1	
Ki	iP		03 45 57.0	
	ipP		03 46 02.4	
Um	iP		03 45 52.5	C
	ipP		03 45 57.9	
Ud	iP		03 46 07.1	
	ipP		03 46 12.6	
De	iP		03 46 04.9	C
	ipP		03 46 10.0	

Nicobar Islands.
h = 20 km (Up,Ki,Um,Ud,De).

" 21	Ki	iSg	10 41 48.6
		iRg	10 42 04.3
	Sk	iPg	10 40 49.0
		iSg	10 41 26.5
	Um	iPg	10 41 16.4
		iSg	10 42 12.7
		iRg	10 42 42.0

Off west coast of Norway,
66.5°N, 11.9°E.
Origin time = 10 39 50.

" 21	Ki	iPn	11 22 12.7
		iSn	11 23 10.9
		iSg	11 23 35.9

D = 530 km = 4.8°.

	Sk	iLgl	11 25 59.1
	Um	iSn	11 23 51.0
		iSg	11 24 25.7

Northwest Russia,
67.5°N, 33.1°E.
Origin time = 11 20 58.
Explosion?

" 21	Up	iP	13 10 29.9	
	Ki	iP	13 09 47.5	
	Um	iP	13 10 06.7	C
	Ud	iP	13 10 37.9	
	De	eP	13 10 57	

Japan (h = 50 km).

" 21	Up	iP	18 05 19.0	
		i	18 05 22.5	
		iPP	18 09 15.9	
			micr	sec
		PP	Z' 0.1	1.2
		Mx	E 33	22
		Mx	N 29	25
		Mx	Z 50	22
	Ki	iP	18 05 01.3	

(cont.)

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

1970
Jan. 21 (cont.)

Ki	i		18 05 07.4	
	iPP		18 08 54.5	
			micr	sec
	P	Z'	0.5	1.5
	PP	Z'	0.6	2.0
	Mx	E	27	25
	Mx	N	24	23
	Mx	Z	53	25
Sk	iP		18 04 58.5	
Um	iP		18 05 11.4	
	i		18 05 17.9	
	iPP		18 09 10.6	
Ud	iP		18 05 07.7	
	i		18 05 13.8	
De	iP		18 05 15.6	
	i		18 05 23.1	
	iPP		18 09 23.9	

Pacific Ocean, off coast of Central America (h = N).
m = 6.6, M = 6.9 (Up,Ki).
Double P, average interval 6.6 sec, the first of longer period than the second one.

" 21

Up	iP		18 40 31.3
Um	iP		18 41 16.8

" 22

Up	iPKP		00 03 34.2	D
			micr	sec
	PKP	Z'	0.4	0.7
Ki	ePKP		00 03 18	
Sk	ePKP		00 03 30	
Um	iPKP		00 03 22.8	
Ud	iPKP		00 03 35.9	D
De	iPKP		00 03 46.0	D
	ipPKP		00 04 13.7	

Tonga-Kermadec Islands.
h = 90 km (De).

" 22

Ud	iP		01 45 16.8

Japan (h = 55 km).

" 22

Ud	iP		02 15 59.8
	ipP		02 16 10.2

North Atlantic Ocean.
h = 40 km (Ud).

" 22

Up	iPKP		03 46 33.7	C
Um	iPKP		03 46 25.0	
Ud	iPKP		03 46 34.8	

(cont.)

1970
Jan. 22 (cont.)

De	iPKP		03 46 45.9	

Tonga-Kermadec Islands
(h = 80 km).

" 22

Up	iP		04 06 29.2		C
			micr	sec	
	P	Z'	0.2	1.0	
	Mx	E	1.2	16	
	Mx	N	1.4	18	
	Mx	Z	1.5	16	
Ki	iP		04 05 36.3		C
	ipP		04 05 48.1		
			micr	sec	
	P	Z'	0.1	1.0	
	Mx	E	2.5	16	
	Mx	N	2.3	16	
	Mx	Z	3.6	15	
Sk	iP		04 06 09.1		C
Um	iP		04 06 01.9		C
Ud	iP		04 06 30.2		
De	iP		04 06 51.7		

Aleutian Islands.
h = 45 km (Ki).
M = 5.6 (Up,Ki).

" 22

Um	iP		04 22 57.2

" 22

Up	iLgl		06 12 57.0
Ki	iSg		06 15 33.6
Sk	eSg		06 12 34
Um	iLgl		06 14 10.8
Ud	iSg		06 12 05.2
De	eSg		06 12 48

West coast of Norway,
59.6°N, 5.3°E.
Origin time = 06 09 44.

" 22

Up	iP		06 24 57.6

Pacific Ocean, off Central America (h = N).

" 22

Um	iSg		12 20 41.5
De	iLgl		12 21 37.8

Esthonia. Explosion?

" 22

Um	iSg		13 44 54.7
De	iLgl		13 45 49.1

Esthonia. Explosion?

" 22

Up	iP		15 27 11.4	
			micr	sec
	Mx	E	1.5	20

(cont.)

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

1970
Jan. 22 (cont.)

Up			micr	sec
	Mx	N	1.9	23
	Mx	Z	2.3	23
Ki	iP		15 26	59.7
			micr	sec
	Mx	E	2.5	17
	Mx	N	1.5	17
	Mx	Z	3.2	17
Sk	iP		15 26	51.5
Um	iP		15 27	07.8 C
Ud	iP		15 27	00.7

Mexico (h = 60 km).
M = 5.6 (Up,Ki).

" 22	Up	iP	15 28	17.3
		i	15 30	24.2
		iS	15 30	34.4
			micr	sec
		Mx E	2.9	8
		Mx N	2.1	8
		Mx Z	2.2	7
	Ki	iP	15 29	55.1
		iLgl	15 36	00.5
			micr	sec
		Mx E	2.5	13
		Mx N	1.2	11
	Sk	iP	15 29	01.1
		iLg2	15 33	42.1
	Um	iP	15 29	14.4
	Ud	iP	15 28	22.9
	De	iP	15 27	19.8

Germany (h = 15 km).

" 22	Up	iPKP	15 59	50.6
			micr	sec
		PKP Z'	0.1	0.6
	Um	iPKP	15 59	39.9
	Ud	iPKP	15 59	52.8 C
	De	iPKP	16 00	02.6 C

Tonga-Kermadec Islands
(h = 100 km).

" 22	Ud	iP	21 13	59.4
		i	21 14	07.1
" 22	Um	iP	22 30	32.8
	Ud	iP	22 31	05.4

Japan (h = 60 km).

" 23	Up	iPKP	00 37	14.5
	Ud	iPKP	00 37	16.5
	De	iPKP	00 37	25.8

Tonga-Kermadec Islands.
Origin time = 00 17 50.

1970
Jan. 23

Up	iP		03 42	17.7
	ipP		03 42	30.6
			micr	sec
	P	Z'	0.1	1.0
Ki	iP		03 41	24.5
			micr	sec
	P	Z'	0.1	1.0
	Mx	N	0.6	17
Sk	iP		03 41	53.4 C
Um	iP		03 41	51.3
	i		03 42	41.8
Ud	iP		03 42	16.6 C
	ipP		03 42	29.2
De	iP		03 42	38.9
	ipP		03 42	51.5

Unimak Island. h = 45 km
(Up,Ud,De).
m = 5.9 (Up,Ki).

" 23	Up	iP	03 55	06.3
	Ki	eP	03 54	10
	Um	iP	03 54	38.2
	Ud	iP	03 55	03.0
	De	iP	03 55	26.5

Unimak Island (h = N).

" 23	Up	iP	06 02	39.3
	Ki	eP	06 02	45
	Um	iP	06 02	36.3
	Ud	iP	06 02	56.0

Tadzhik SSR (h = 160 km).

" 23	Up	iP	06 05	24.2
	Ki	iP	06 05	10.8
	Sk	iP	06 05	35.0
	Um	iP	06 05	12.7 C
	Ud	iP	06 05	35.8
" 23	Ki	eP	07 05	42
	Um	iP	07 06	10.8
	Ud	iP	07 06	34.7 C
	De	iP	07 06	58.8

Unimak Island (h = 15 km).

" 23	Up	iPKP	09 51	05.8
		ipPKP	09 51	31.8
	Ud	iPKP	09 51	07.8
		ipPKP	09 51	33.0
	De	iPKP	09 51	21.3

Tonga-Kermadec Islands.
h = 90 km (Up,Ud).

" 23	Ki	iPn	11 09	40.7
		iSn	11 10	40.4

(cont.)

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

1970
Jan. 23 (cont.)

Ki	iLgl	11 11 02.9
	D = 560 km = 5.0°.	
Um	iSg	11 11 53.0

Northwest Russia.
Origin time = 11 08 23.
Explosion?

" 23	Ki	e(P)	11 48 33
	De	i(P)	11 48 56.7
" 23	Um	iP	12 06 08.9
	Ud	iP	12 05 59.7
	De	iP	12 05 48.0
" 23	Up	iP	12 11 23.1
		i	12 11 56.1
	Ki	iP	12 11 16.4
	Sk	iP	12 11 40.2
	Um	iP	12 11 14.7 C
	Ud	iP	12 11 37.9 C
	De	iP	12 11 39.5

Tibet (h = N).

" 23	Up	iP	15 01 04.8
" 23	Up	iP	22 33 07.4 C
		ipP	22 33 38.5
			micr sec
		P Z'	0.1 0.7
	Ki	iP	22 32 16.8 C
			micr sec
		P Z'	0.1 1.0
	Sk	iP	22 32 53.0
		ipP	22 33 27.9
	Um	iP	22 32 40.2 C
		isP	22 33 23.1
	Ud	iP	22 33 12.1 C
		ipP	22 33 42.7
	De	iP	22 33 32.2 C

Kurile Islands.
h = 130 km (Up,Sk,Um,Ud).
m = 5.8 (Up,Ki).

" 24	Up	iP	02 44 49.0
	Ki	eP	02 44 32
	Um	iP	02 44 40.0
	Ud	iP	02 44 54.0
		i	02 45 01.7

Mindanao (h = 70 km).

" 24	Up	iP	03 00 00.3 C

(cont.)

1970
Jan. 24 (cont.)

Ki	iP	03 00 07.8 C
Sk	iP	03 00 25.6
Um	iP	02 59 58.2 C
Ud	iP	03 00 17.0 C
De	eP	03 00 16

Hindu Kush (h = 200 km).

" 24	Up	iPKP	05 08 43.1
	Ud	iPKP	05 08 45.1

Tonga-Kermadec Islands.
Origin time = 04 49 19.

" 24	Um	eP	05 23 31
	Ud	iP	05 24 02.2

Japan (h = 5C km).

" 24	Up	iPKP	08 42 47.5
			micr sec
		PKP Z'	0.1 0.7
	Um	iPKP	08 42 36.4
	Ud	iPKP	08 42 48.6
	De	iPKP	08 43 00.3

Tonga-Kermadec Islands
(h = 90 km).

" 24	Up	iP	11 10 00.8
	Ud	i(P)	11 10 16.7

Luzon (h = 40 km).

" 24	Ki	iPn	13 03 46.7
		iSn	13 04 36.2
		iLgl	13 04 51.6
		D = 460 km = 4.1°.	

Probably northwest Russia.
Origin time = 13 02 42.
Explosion?

" 24	Sk	iLgl	13 06 13.0
	Um	iSg	13 05 03.6

Esthonia. Explosion?

" 24	Up	iP	15 48 48.0
	Ud	iP	15 48 55.7

Greece (h = 110 km).

" 24	Ki	iP	18 20 33.8
	Um	iP	18 20 39.3
	Ud	iP	18 20 57.6

Halmahera (h = 50 km).

" 24	Up	iP	19 12 15.5 C

(cont.)

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

1970
Jan. 24 (cont.)

Up	i		19 12 26.8	
			micr	sec
	P	Z'	0.2	0.6
	Mx	E	1.1	19
	Mx	N	3.3	23
	Mx	Z	1.3	16
Ki	iP		19 11 55.2	
	ipP		19 12 12.2	
			micr	sec
	pP	Z'	0.3	1.5
	Mx	E	1.5	18
	Mx	N	1.1	18
	Mx	Z	1.1	15
Sk	iP		19 12 19.5 C	
	ipP		19 12 36.4	
Um	iP		19 12 02.1 C	
	ipP		19 12 18.7	
Ud	iP		19 12 24.7	
	i		19 12 35.6	
	ipP		19 12 41.5	
De	iP		19 12 30.8	

Luzon. h = 60 km
(Ki,Sk,Um,Ud).
m = 6.3, M = 5.7 (Up,Ki).

" 24 Up iP 19 56 41.6
Ud iP 19 56 51.5

" 24 Up iPKP 23 21 54.6
Ud iPKP 23 21 56.0 C
De iPKP 23 22 06.3
Tonga-Kermadec Islands.
Origin time = 23 02 30.

" 25 Long-period microseisms (periods around 18 sec) are recorded on January 25-26, especially clear on LP N at Umeå.

" 25 Up iP 02 46 34.1
Ki eP 02 45 52
Um iP 02 46 11.2
Ud iP 02 46 42.2 C
Japan (h = 60 km).

" 25 Up iPKP 03 32 03.6 C
Ud iPKP 03 32 05.4
Tonga-Kermadec Islands
(h = 100 km).

" 25 Up iSg 03 59 24.1
(cont.)

1970
Jan. 25 (cont.)

Ki	iPn		03 55 06.6	
	iSn		03 56 03.6	
	iLgl		03 56 20.3	
	D = 520 km = 4.7°.			
Sk	iSg		03 58 58.2	
Um	iS^x		03 56 59.2	
	iSg		03 57 19.2	

Northwest Russia,
67.6°N, 32.7°E.
Origin time = 03 53 53.
Explosion?

" 25 Up eP 06 41 36
Um iP 06 41 15.9

" 25 Up eP 10 02 07
Ud iP 10 02 10.9
Greece.

" 26 Up iP 00 48 32.3 C
Ki iP 00 47 38.7
Sk iP 00 48 15.3
Um iP 00 48 03.6
Ud iP 00 48 35.8 C
De iP 00 48 57.2 C
Kamchatka (h = N).

" 26 Up iP 02 10 18.1
i 02 10 25.3
Um iP 02 10 01.0
Ud iP 02 10 34.2

" 26 Up iP 03 20 23.7
Um iP 03 20 12.5
Ud iP 03 20 47.0

" 26 Up iP 04 56 41.8 C
Um iP 04 56 22.6
Ud iP 04 56 49.2 C

" 26

Up			micr	sec
	Mx	E	6.0	22
	Mx	N	11	21
	Mx	Z	11	23
Ki	iPKP		10 20 06.9	
			micr	sec
	Mx	E	6.2	21
	Mx	N	3.6	19
	Mx	Z	8.2	20
Sk	iPKP		10 20 18.4 D	
Um	iPKP		10 20 11.7	
Ud	iPKP		10 20 23.8	

(cont.)

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

1970
Jan. 26 (cont.)

Ud	iPKS	10 23 49.6	
De	iPKP	10 20 28.5	

Santa Cruz Islands
(h = 50 km).
M = 6.6 (Up,Ki).

" 26

Sk	eSg	13 18 10	
Um	iSg	13 16 55.2	
Ud	iSg	13 17 19.6	
De	iSg	13 17 11.7	

Baltic States. Explosion?

" 26

De	iPKP	14 34 18.0	

Fiji Islands (h = 570 km).

" 26

Up	iP	16 45 52.2	
	ipP	16 46 39.0	
	i(sP)	16 47 10.6	
		micr sec	
	pP	Z' 0.1 0.6	
Ki	iP	16 46 01.6	
	ipP	16 46 50.0	
	isP	16 47 10.8	
		micr sec	
	P	Z' 0.1 1.5	
Sk	iP	16 46 19.0	
	ipP	16 47 05.1	
Um	iP	16 45 50.8	
	ipP	16 46 36.6	
Ud	iP	16 46 09.7	
	ipP	16 46 56.7	
De	ipP	16 46 52.8	

Hindu Kush. h = 230 km
(Up,Ki,Sk,Um,Ud).

" 26

Up	iP	18 13 32.3	
Ud	iP	18 13 32.5	

" 26

Um	eP	19 20 59	
Ud	iP	19 21 20.4	

Unimak Island (h = N).

" 26

Ki	iP	22 29 11.7	
Um	iP	22 29 21.8	

Mariana Islands (h = 60 km).

" 26

Ud	ePKP	23 32 08	

Easter Island (h = N).

" 27

Up	iP	00 02 29.3	
Ki	iP	00 01 37.0	

(cont.)

1970
Jan. 27 (cont.)

Sk	iP	00 02 05.7	
Um	iP	00 02 03.4	C
Ud	iP	00 02 28.5	
De	iP	00 02 51.6	

Aleutian Islands (h = 50 km).

" 27

Up	i(PKP)	00 49 16.4	
	iPKP	00 49 26.4	
		micr sec	
	PKP	Z' 0.1 0.8	
Um	iPKP	00 49 22.3	
Ud	iPKP	00 49 27.7	D
De	iPKP	00 49 38.3	D

Tonga-Kermadec Islands.
Origin time = 00 30 01.

" 27

Up		micr sec	
	Mx	N 1.2 20	
Ki	iP	07 17 26.6	
Sk	iP	07 17 59.5	
Um	iP	07 17 31.7	
Ud	iP	07 18 03.6	
De	iP	07 18 14.3	

Mongolia (h = N).

" 27

Up	iPKP	09 21 48.3	
		micr sec	
	Mx	N 1.3 21	
	Mx	Z 1.7 21	
Ki	iPKP	09 21 34.2	
Sk	iPKP	09 21 45.1	
Um	iPKP	09 21 40.1	
Ud	iPKP	09 21 49.8	
De	iPKP	09 21 57.3	

Santa Cruz Islands (h = 50 km).

" 27

Up	iP	09 42 10.0	
	ipP	09 42 15.9	
Ki	iP	09 42 13.9	C
	ipP	09 42 19.7	
		micr sec	
	P	Z' 0.2 1.1	
Sk	iP	09 41 57.5	C
	ipP	09 42 03.1	
Um	iP	09 42 15.1	C
	ipP	09 42 21.1	
Ud	iP	09 41 59.8	C
	ipP	09 42 05.6	
De	iP	09 42 00.9	C
	ipP	09 42 06.9	

Colombia. h = 20 km
(Up,Ki,Sk,Um,Ud,De).

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

1970 Jan.	27	Up	iP	10 59 18.7 C	
				micr sec	
			P	Z' 0.1 0.7	
		Ki	iP	10 58 59.6	
				micr sec	
			P	Z' 0.1 1.0	
		Sk	iP	10 59 28.1	
		Um	iP	10 59 04.1	
		Ud	iP	10 59 31.6 C	
		De	iP	10 59 38.8	
		Tsinghai, China (h = N).			
		m = 5.9 (Up,Ki).			
"	27	Um	iP	11 22 53.4	
		Ud	iP	11 23 25.7	
"	27	Up	iP	11 27 30.9 C	
				micr sec	
			P	Z' 0.1 0.7	
		Ki	iP	11 26 34.8 C	
				micr sec	
			P	Z' 0.1 1.0	
		Sk	iP	11 27 12.1 C	
		Um	iP	11 27 01.2 C	
		Ud	iP	11 27 33.9 C	
		De	iP	11 27 54.5	
		Kamchatka (h = 40 km).			
		m = 5.9 (Up,Ki).			
"	27	Ki	e(P)	11 38 39	
		Um	iP	11 39 01.5	
		Ud	iP	11 39 33.3	
"	27	Up	iP	11 44 29.8	
		Ki	e(P)	11 44 43	
		Um	iP	11 44 23.1	
"	27	Up	i(P)	12 58 43.4	
		Um	iP	13 00 42.2	
		Ud	eP	12 59 29	
		De	iP	12 59 19.0	
"	27	Ki	eP	14 12 55	
		Um	iP	14 12 34.7	
		Ud	iP	14 12 46.8	
		Iran (h = 35 km).			
"	27	Up	iP	14 30 04.8	
		Ki	eP	14 29 44	
		Sk	iP	14 30 16.7	
		Ud	iP	14 30 17.6	

1970 Jan.	27	Up	iP	18 32 27.2
			ipP	18 32 56.9
		Ki	iP	18 32 01.7 C
			ipP	18 32 32.6
		Sk	eP	18 32 29
			ipP	18 33 00.1
		Um	iP	18 32 10.4
			ipP	18 32 41.0
		Ud	iP	18 32 35.7
			ipP	18 33 06.7
		Formosa. h = 120 km		
		(Up,Ki,Sk,Um,Ud).		
"	27	Up	iPKP	18 35 43.1
		Um	iPKP	18 35 31.7
		Ud	iPKP	18 35 44.8
		De	iPKP	18 35 55.0
"	27	Ki	iPn	19 12 54.1
			iP^x	19 13 02.6
			iSn	19 13 40.8
			iLgl	19 13 53.6
			D = 430 km = 3.9°.	
		Sk	eSn	19 15 47
			iLgl	19 16 33.6
		Um	i(Pn)	19 13 34.6
			iSn	19 14 47.4
			iSg	19 15 26.7
		Ud	iSn	19 16 32.6
			iSg	19 17 57.5
		Northwest Russia,		
		68.9°N, 30.5°E.		
		Origin time = 19 11 52.		
		Explosion?		
		This is an unusually strong		
		event in this series.		
"	27	Up	iP	23 23 55.8
			i	23 24 05.3
"	28	Ki	eP	04 59 33
		Sk	iP	04 59 24.7
		Um	iP	04 59 39.1
		Ud	iP	04 59 33.1
		Guatemala (h = 90 km).		
"	28	Up	iP	08 50 52.4
		Um	iP	08 50 28.1
		Ud	iP	08 50 58.8 C
			ipP	08 51 08.5
		Japan. h = 35 km (Ud).		

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

1970 Jan.	28	Ki	iPn	11 05 33.1	
			iSn	11 06 32.2	
			iLgl	11 06 50.9	
			D = 540 km = 4.9°.		
		Sk	iLgl	11 09 18.5	
		Um	iSn	11 07 11.1	
			iSg	11 07 46.2	
		Ud	i(Lgl)	11 10 20.1	
		Northwest Russia, 67.5°N, 33.3°E.			
		Origin time = 11 04 17.			
		Explosion?			
"	28	Um	iP	11 50 31.4	
"	28	Up	iP	20 41 49.5	
"	28	Up	iPKP	23 24 12.0	C
			i	23 24 18.1	
			iPKS	23 27 56.1	
				micr sec	
			PKP Z'	0.5 1.0	
		Ki	iPKP	23 23 53.2	
			i	23 24 05.0	
			iSKP	23 26 37.0	
				micr sec	
			PKP Z'	0.2 1.0	
		Sk	iPKP	23 24 04.6	
			i	23 24 15.8	
			iSKP	23 26 54.4	
		Um	iPKP	23 23 59.5	
			i	23 24 07.0	
			i	23 24 12.4	
			iSKP	23 26 49.1	
			iPKS	23 27 43.4	
		Ud	iPKP	23 24 12.7	
			i	23 24 14.3	
			iSKP	23 27 03.2	
			iSKKP	23 35 38.5	
		De	iPKP	23 24 23.2	
			i	23 24 25.2	
		Fiji Islands (h = 610 km).			
		Of the PKP phases above, the first can be identified with P''_0 and the second with P''_1, in the notation of G. Payo Subiza and M. Båth (Geophys. J., 8:496-513, 1964).			
"	29	Up	iP	02 33 37.5	
		Ki	iP	02 33 19.3	
		Um	iP	02 33 24.7	
		Ud	iP	02 33 46.7	
		Luzon (h = 60 km).			

1970 Jan.	29	Ki	iPKP	03 12 03.5	
		Tonga Islands (h = 30 km).			
"	29	Um	iP	04 58 29.3	
"	29	Up	iP	06 14 48.0	
				micr sec	
			P Z'	0.1 1.0	
		Ki	iP	06 14 09.8	C
				micr sec	
			P Z'	0.1 1.0	
		Sk	iP	06 14 42.8	C
		Um	iP	06 14 26.3	C
		Ud	iP	06 14 55.3	C
			i	06 15 01.6	
			i	06 15 10.5	
		De	iP	06 15 09.7	C
		Japan (h = 70 km).			
		m = 6.0 (Up,Ki).			
"	29	Up	iP	07 09 52.8	C
			iPn	07 10 56.9	
			iPP	07 11 08.2	
				micr sec	
			P Z'	0.1 0.5	
			PP Z'	0.1 0.5	
		Ki	iP	07 09 37.5	C
				micr sec	
			P Z'	0.3 0.7	
		Sk	iP	07 10 08.4	C
			iPn	07 11 23.5	
		Um	iP	07 09 37.8	C
		Ud	iP	07 10 09.4	C
			iPn	07 11 21.6	
		De	iP	07 10 16.1	C
			iPP	07 11 42.0	
		Kazakh SSR.			
		m = 6.2 (Up,Ki).			
		Underground explosion.			
"	29	Um	iP	07 24 13.4	
			i	07 24 23.6	
		Ud	iP	07 24 26.9	C
"	29	Up	iP	11 13 47.2	
				micr sec	
			P Z'	0.1 0.5	
		Ki	iP	11 15 00.3	
		Sk	iP	11 14 20.8	
		Um	iP	11 14 25.0	
			i	11 14 35.5	
		Ud	iP	11 13 49.0	
		De	iP	11 13 12.3	
			i	11 13 16.2	
		Sicily (h = 280 km).			

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

1970 Jan.	29	Up	iP		12 38 39.4
		Sk	iP		12 38 27.4
		Ud	iP		12 38 40.6
			i		12 38 52.1
"	29	Up	eLgl		12 50 17
		Ki	iSg		12 53 01.3
		Sk	iSg		12 52 14.4
			i		12 52 28.5
		Um	iSg		12 50 59.8
		Ud	iLgl		12 51 29.4
		Esthonia. Explosion?			
"	29	Ud	iSKP		13 19 32.5
		De	iPKP		13 16 26.8
		Fiji Islands (h = 290 km).			
"	29	Up	i(P)		14 01 24.7
		Ki	i(P)		14 00 42.1
"	29	Up	i(Sg)		16 00 53.1
			i		16 01 33.3
		Sk	eSg		16 02 53
		Um	iSg		16 01 06.4
"	29	Up	iP		19 36 43.6
		Um	iP		19 36 19.2
		Ud	iP		19 36 50.7
		Kurile Islands (h = 40 km).			
"	30	Up	iPKP		08 47 12.4
			ipPKP		08 47 53.7
			iSKP		08 50 20.0
					micr sec
			PKP	Z'	0.1 0.5
			SKP	Z'	0.2 0.7
			Mx	E	1.0 18
			Mx	N	2.0 20
			Mx	Z	2.0 21
		Ki	iPKP		08 46 57.5
					micr sec
			PKP	Z'	0.2 0.7
			Mx	E	1.7 19
			Mx	N	1.8 21
			Mx	Z	3.2 20
		Sk	iPKP		08 47 08.2 C
		Um	iPKP		08 47 03.4
			ipPKP		08 47 49.7
		Ud	iPKP		08 47 14.5
			iSKP		08 50 25.2
			i(sSKP)		08 51 36.5
		De	i(PKP)		08 47 07.1
		(cont.)			

1970 Jan.	30	(cont.)		
		De	iPKP	08 47 20.3
			ipPKP	08 48 03.7
			iSKP	08 50 35.5
			i(sSKP)	08 51 50.8
		New Hebrides Islands.		
		h = 170 km (Up,Um,De).		
		M = 5.9 (Up,Ki).		
		M uncorrected for focal depth.		
"	30	Up	iP	08 59 38.2
		Um	iP	09 00 20.1
		Ud	iP	08 59 42.2
"	30	Sk	eSg	11 49 10
		Um	iSg	11 47 46.6
		Probably Gulf of Finland.		
		Explosion?		
"	30	Ud	iPg	15 43 52.1
			iSg	15 44 14.2
			iRg	15 44 23.8
		De	eSg	15 45 11
		Probably South Norway.		
		Explosion?		
"	30	Um	iP	17 11 34.9
		Ud	iP	17 11 41.3
		Nevada.		
		Underground explosion.		
"	30	Up	iP	17 21 24.1
		Ki	iP	17 20 39.6
		Sk	eP	17 21 14
		Um	iP	17 20 59.4 C
		Ud	iP	17 21 30.6 C
		De	iP	17 21 47.8
		Kurile Islands (h = 45 km).		
"	30	Up	iSg	17 38 31.0
		Ki	eSg	17 36 25
		Sk	iSg	17 36 32.0
		Um	iSg	17 36 54.2
		Ud	iSx	17 38 06.0
			iSg	17 38 22.3
		Nordland, Norway,		
		66.3°N, 14.6°E.		
		Origin time = 17 34 58.		
		Explosion?		
"	30	Up	iP	20 10 28.8 C
		Aleutian Islands		
		(h = 40 km).		

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

1970 Jan.	30	Ki	iP		23 42 20.6	
		Turkmen SSR (h = N).				
"	31	Up	iP		01 31 39.5	
		Sk	eP		01 32 15	
		Um	iP		01 32 12.1	
		Ud	iP		01 31 43.2	
		Greece (h = N).				
"	31	Up	iP		03 44 58.1	
		Um	iP		03 44 42.4	
		Ud	iP		03 45 04.1	
		Mariana Islands (h = 70 km).				
"	31	Up	iP		04 28 50.5	
		Sk	iP		04 28 25.7	
		Ud	iP		04 28 30.9	
		North Atlantic Ocean (h = N).				
"	31	Up	iP		08 08 51.7	
		Ki	iP		08 08 34.2	C
		Sk	iP		08 08 53.6	
		Um	iP		08 08 40.0	
		Ud	iP		08 08 59.6	
		Mindanao (h = 60 km).				
"	31	De	iP		10 54 46.6	
"	31	Up	iP		11 54 00.8	C
					micr	sec
			P	Z'	0.1	0.5
		Ki	iP		11 54 01.9	C
					micr	sec
			P	Z'	0.1	1.0
		Sk	iP		11 54 16.5	C
		Um	iP		11 53 58.4	
		Ud	iP		11 54 11.8	C
		De	iP		11 54 10.2	
		Sumatra (h = 60 km).				
		m = 6.0 (Up,Ki).				
"	31	Up	iP		14 51 00.8	
		Sk	eP		14 51 44	
"	31	Up	iP		16 41 00.0	
					micr	sec
			Mx	E	2.7	20
			Mx	N	2.8	20
			Mx	Z	3.0	19
		Ki	eP		16 41 06	
		(cont.)				

1970 Jan.	31	(cont.)				
		Ki			micr	sec
			Mx	E	1.5	16
			Mx	N	1.1	16
			Mx	Z	2.0	16
		Sk	iP		16 40 36.2	
		Um	iP		16 41 07.5	
		Ud	iP		16 40 44.4	
			i		16 40 50.1	
		North Atlantic Ocean (h = N).				
		M = 5.0 (Up,Ki).				
"	31	Up	iP		19 06 24.0	
		Um	iP		19 06 48.2	C
		Ud	iP		19 06 19.1	C
		Ascension Island (h = N).				
"	31	Up	iPKP		20 56 38.2	
			i		20 56 42.1	
		Um	iPKP		20 56 24.6	
		Ud	iPKP		20 56 39.2	C
		De	iPKP		20 56 48.7	C
		Kermadec Islands (h = N).				
"	31	Up	iP		21 19 52.5	
		Ki	iP		21 18 58.4	
			i		21 19 05.7	
		Um	iP		21 19 25.8	C
			i		21 19 30.0	
		Ud	iP		21 19 57.1	
			i		21 20 01.9	
			iPcP		21 20 23.7	
		De	iP		21 20 17.0	
		Kurile Islands (h = 40 km).				
"	31	Up	iP		22 36 06.4	C
		Ki	iP		22 36 01.4	C
		Um	iP		22 36 04.6	C
			i		22 36 08.9	
		Ud	iP		22 35 56.5	
		De	iP		22 36 02.4	
		Honduras (h = 45 km).				

Markus Båth
December 23, 1970

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SWEDEN

SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, SKALSTUGAN, UMEÅ, UDDEHOLM and DELARY

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

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1970 Feb.	1	Up	ePKP	01 01 25
		Um	iPKP	01 01 16.1
		Ud	iPKP	01 01 28.2
"	1	Ud	iP	03 10 28.0
		De	iP	03 09 52.9
		Cyprus (h = 30 km).		
"	1	Up	iPKP	05 55 14.6
			i	05 55 40.6
		Ud	iPKP	05 55 16.5
			i	05 55 42.7
		De	iPKP	05 55 27.1
"	1	Ki	iPn	12 18 17.0
			iSn	12 19 03.3
			iSg	12 19 20.5
			D = 420 km = 3.8°.	
		Um	iSg	12 20 50.7
		Northwest Russia.		
		Origin time = 12 17 16.		
		Explosion?		
"	1	Um	e(P)	14 15 19
			i	14 15 34.5
"	1	Um	e	14 18 22
			iSg	14 18 50.3
"	1	Up	iP	20 51 26.4
		Um	iP	20 51 28.8
		Ud	iP	20 51 47.8
		De	iP	20 51 44.6
		Hindu Kush (h = 130 km).		
"	1	Um	iPKP	21 19 35.2
		New Hebrides Islands		
		(h = 140 km).		

1970 Feb.	2	Ud	iP	00 25 32.1
		Mindanao (h = N).		
"	2	Up	iP	02 20 16.1
"	2	Um	iP	10 01 44.1
"	2	Up	iP	15 48 28.6 C
			ipP	15 48 38.9
		Ki	eP	15 47 42
		Um	iP	15 48 03.4
			ipP	15 48 12.9
		Ud	iP	15 48 34.8
			ipP	15 48 45.2
		Kurile Islands. h = 35 km		
		(Up,Um,Ud).		
"	2	Up	iP	17 33 12.1 C
			ipP	17 33 21.1
				micr sec
			P Z'	0.3 0.8
		Ki	iP	17 32 25.8
			ipP	17 32 36.3
				micr sec
			P Z'	0.2 1.0
		Sk	iP	17 33 01.8
		Um	iP	17 32 46.5 C
			ipP	17 32 58.2
		Ud	iP	17 33 17.9 C
		De	iP	17 33 35.3 C
			ipP	17 33 46.9
		Kurile Islands. h = 40 km		
		(Up,Ki,Um,De).		
		m = 6.3 (Up,Ki).		
"	2	Up	iP	17 37 22.8
			ipP	17 37 34.3
		(cont.)		

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

1970
Feb. 2 (cont.)

Up			micr	sec
	P	Z'	0.1	0.7
Ki	iP		17 36 37.3	
	ipP		17 36 48.0	
			micr	sec
	P	Z'	0.1	1.0
Sk	iP		17 37 12.5	
Um	iP		17 36 57.0 C	
	ipP		17 37 08.8	
Ud	iP		17 37 28.5	
De	eP		17 37 47	

Kurile Islands. h = 40 km
(Up,Ki,Um).
m = 6.0 (Up, Ki).

" 2

Up	iP		18 00 55.4 C	
	ipP		18 01 06.9	
			micr	sec
	P	Z'	0.6	1.0
	Mx	E	2.6	17
	Mx	N	3.7	17
	Mx	Z	2.7	17
Ki	iP		18 00 09.9	
	ipP		18 00 21.3	
			micr	sec
	P	Z'	0.3	1.0
	Mx	E	5.0	16
	Mx	N	3.8	17
	Mx	Z	8.2	17
Sk	iP		18 00 45.5 C	
	ipP		18 00 57.7	
Um	iP		18 00 30.8	
	ipP		18 00 42.0	
Ud	iP		18 01 01.7 C	
De	iP		18 01 19.1 C	
	ipP		18 01 31.4	

Kurile Islands. h = 45 km
(Up,Ki,Sk,Um,De).
m = 6.5, M = 5.8 (Up,Ki).

" 2

Up	iP		18 16 54.3 C	
	ipP		18 17 06.0	
			micr	sec
	P	Z'	0.2	0.9
Ki	iP		18 16 09.1 C	
	ipP		18 16 21.4	
			micr	sec
	P	Z'	0.1	1.0
Sk	iP		18 16 44.4	
Um	iP		18 16 28.9	
Ud	iP		18 17 00.1	

Kurile Islands. h = 45 km
(Up,Ki).
m = 6.0 (Up,Ki).

1970
Feb. 2

Ki	iP	19 06 23.6
Um	iP	19 06 12.9
Ud	iP	19 06 31.2

Hindu Kush.

" 3

Up	iP		06 08 51.3	
			micr	sec
	P	Z'	0.1	0.8
Ki	iP		06 08 05.5	
Um	iP		06 08 26.3	
Ud	iP		06 08 56.7	

Kurile Islands (h = N).

" 3

Up	iP	10 12 14.3
Ki	eP	10 11 29
Ud	iP	10 12 20.5 C

Kurile Islands (h = 60 km).

" 3

Ki	iPn	11 02 11.9
	iSn	11 03 10.0
	iSg	11 03 35.1

D = 530 km = 4.8°.

Sk	eLgl	11 06 04
Um	iSg	11 04 36.5

Northwest Russia,
68.1°N, 33.3°E.
Origin time = 11 00 57.
Explosion?

" 3

Up	iPKP		11 26 22.1 C	
			micr	sec
	PKP	Z'	0.1	0.7
Ud	iPKP		11 26 23.7	

Tonga-Kermadec Islands
(h = 110 km).

" 3 Um iP 12 12 17.7

" 3 Um iPKP 13 53 37.4

New Hebrides Islands
(h = 20 km).

" 3 De iP 14 37 50.7

" 3 Um iP 15 11 01.4

" 3 De iP 16 09 14.6

" 3

Ki	iPKP	19 14 11.6
Um	i(PKP)	19 14 09.3
	iPKP	19 14 18.9

New Hebrides Islands
(h = 40 km).

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

1970 Feb.	3	Up	iP		19 28 21.0	C
					micr	sec
			P	Z'	0.2	1.0
		Ki	iP		19 27 34.7	C
					micr	sec
			P	Z'	0.2	1.0
		Sk	iP		19 28 10.8	
		Um	iP		19 27 56.3	C
		Ud	iP		19 28 27.1	C
		De	iP		19 28 44.6	C

Kurile Islands (h = 25 km).
m = 6.2 (Up,Ki).

"	4	Up	iP		05 21 46.5	
			i		05 22 02.6	
			i		05 24 37.9	
			iPP		05 25 23.8	
					micr	sec
			PP	Z'	0.5	1.8
			Mx	E	7.9	19
			Mx	N	12	22
			Mx	Z	14	21
		Ki	iP		05 21 29.4	
			i		05 21 35.3	
			iPP		05 24 58.0	
					micr	sec
			P	Z'	0.2	1.5
			PP	Z'	0.9	2.0
			Mx	E	14	21
			Mx	N	5.8	19
			Mx	Z	17	20
		Sk	iP		05 21 23.0	
			i		05 21 28.8	
		Um	iP		05 21 39.2	C
			iPP		05 25 10.9	
		Ud	iP		05 21 35.9	
			i		05 21 40.6	
		De	iP		05 21 50.4	

Mexico (h = 20 km).
m = 6.5, M = 6.4 (Up,Ki).
Double P (Ki,Sk,Ud).

"	4	Up	iP		10 29 11.2	C
		Ki	iP		10 28 32.9	
		Sk	iP		10 29 05.2	
		Um	iP		10 28 49.7	C
		Ud	iP		10 29 18.6	C
		De	eP		10 29 33	

Japan (h = 60 km).

"	4	Um	iP		12 25 41.2	
"	4	Um	iP		12 33 54.8	
			i		12 34 07.5	
		Ud	iP		12 34 26.6	

Japan (h = 25 km).

1970 Feb.	4	Ki	iPn		12 34 34.8	
			iSn		12 35 22.6	
			iLgl		12 35 38.5	

D = 440 km = 4.0°.
Origin time = 12 33 32.
Explosion?

"	4	Ki	iPn		12 52 09.3	
			iP^x		12 52 17.8	
			iSn		12 52 55.9	
			iLgl		12 53 10.8	

D = 430 km = 3.9°.

		Sk	iLgl		12 55 58.3	
		Um	iSn		12 54 04.9	
			iLgl		12 54 37.2	
			iSg		12 54 48.8	

Northwest Russia,
69.3°N, 30.5°E.
Origin time = 12 51 07.
Explosion?

"	4	Up	iP		13 18 15.5	
			ipP		13 18 27.5	
					micr	sec
			P	Z'	0.1	0.6
			Mx	E	1.3	17
			Mx	N	1.0	16
			Mx	Z	1.3	17
		Ki	iP		13 17 30.3	
			i		13 17 31.4	
					micr	sec
			P	Z'	0.1	1.0
			Mx	E	1.6	15
			Mx	N	1.1	16
			Mx	Z	2.8	16
		Sk	eP		13 18 06	
		Um	iP		13 17 51.1	
		Ud	iP		13 18 22.2	C
		De	iP		13 18 40.4	

Kurile Islands. h = 45 km (Up).
m = 6.0, M = 5.3 (Up,Ki).

"	4	Ki	eP		13 40 27	
			i		13 40 35.3	
		Sk	eP		13 40 39	
			i		13 40 43.8	
		Um	iP		13 40 49.4	
		Ud	e(P)		13 42 29	
			i		13 42 34.9	
"	4	Up	eP		15 17 02	
"	4	Sk	eP		16 20 39	

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

1970 Feb.	4	Up	iP		17 11 48.6 C		
					micr	sec	
			P	Z'	0.2	1.0	
		Ki	iP		17 11 14.5 C		
					micr	sec	
			P	Z'	0.1	1.0	
		Sk	iP		17 11 22.7 C		
		Um	iP		17 11 33.9 C		
			i		17 12 08.6		
		Ud	iP		17 11 40.8 C		
		De	iP		17 11 57.2 C		
		Nevada.					
		m = 6.1 (Up,Ki).					
		Underground explosion.					
"	4	Ud	iP		20 21 52.8		
"	4	Um	iPKP		23 05 09.6		
		De	iPKP		23 05 20.9		
		Loyalty Islands (h = 60 km).					
"	5	Up	iP		03 50 51.5 C		
					micr	sec	
			Mx	E	1.0	14	
			Mx	N	3.7	20	
			Mx	Z	1.6	20	
		Ki	iP		03 50 38.8		
					micr	sec	
			P	Z'	0.1	1.0	
			Mx	E	2.1	15	
			Mx	N	2.5	18	
			Mx	Z	2.4	16	
		Sk	iP		03 51 03.0 C		
		Um	iP		03 50 40.4		
		Ud	iP		03 51 03.5		
		Yunnan, China (h = N).					
		M = 5.7 (Up,Ki).					
"	5	Um	iP		07 45 35.4		
"	5	Um	iP		11 30 21.0		
		Ud	iP		11 30 48.9		
		South of Japan (h = 30 km).					
"	5	Up	iP		12 57 33.1 C		
					micr	sec	
			P	Z'	0.4	0.7	
			Mx	E	4.5	25	
			Mx	N	4.0	18	
			Mx	Z	3.4	18	
		Ki	iP		12 56 44.3 C		
					micr	sec	
			P	Z'	0.1	0.9	
		(cont.)					

1970 Feb.	5	(cont.)					
		Ki				micr	sec
			Mx	E		6.7	18
			Mx	N		3.8	17
			Mx	Z		9.1	19
		Sk	iP			12 57 20.3 C	
		Um	iP			12 57 06.8 C	
		Ud	iP			12 57 38.1 C	
			iS			13 06 40.2	
		De	iP			12 57 57.0	
		Kurile Islands (h = N).					
		m = 6.3, M = 5.8 (Up,Ki).					
		The PZ' amplitudes at Up are consistently larger than those at Ki in this series of Kurile Islands earthquakes.					
"	5	Up	iP			13 50 44.4	
			i			13 50 48.3	
						micr	sec
			P	Z'		0.1	0.7
		Ki	iP			13 49 55.2	
		Sk	iP			13 50 31.4	
		Um	iP			13 50 18.1	
		Ud	iP			13 50 49.5 C	
		De	iP			13 51 08.2	
		Kurile Islands (h = N).					
"	5	Up	iP			14 52 35.6 C	
			ipP			14 52 48.3	
						micr	sec
			P	Z'		0.4	0.7
		Ki	iP			14 51 46.5	
		Sk	iP			14 52 22.2 C	
		Um	iP			14 52 09.4 C	
		Ud	iP			14 52 40.6 C	
		De	iP			14 52 59.3 C	
		Kurile Islands. h = 45 km (Up).					
"	5	Ud	iP			15 11 40.3	
		Nevada.					
		Underground explosion.					
"	5	Up	iP			16 07 59.3	
		Ki	iP			16 07 06.7	
		Um	iP			16 07 33.1	
		Ud	iP			16 07 57.4	
		De	iP			16 08 20.9	
		South of Alaska (h = N).					
"	5	Um	iP			17 27 09.6	
"	5	Up	iP			22 18 40.8	
		(cont.)					

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

1970
Feb. 5 (cont.)

Up	i		22 18 43.9	
	iS		22 29 10	
			micr	sec
	P	Z'	1.0	1.2
	Mx	E	34	20
	Mx	N	74	18
	Mx	Z	37	22
Ki	iP		22 18 24.2	
	i		22 18 27.4	
	iS		22 28 40	
			micr	sec
	P	Z'	2.2	1.2
	Mx	E	61	18
	Mx	N	59	19
	Mx	Z	74	18
Sk	iP		22 18 47.2	
Um	iP		22 18 29.4	
	i		22 18 33.2	
	iS		22 28 50	
Ud	iP		22 18 49.4	
	i		22 18 53.5	
De	iP		22 18 55.4	
	i		22 18 59.1	

Luzon (h = 10 km).
m = 7.0, M = 7.1 (Up,Ki).
Double P, small and large, average interval = 3.6 sec.

" 5

Up	iP		22 58 19.7	
	i		22 58 22.8	
Ki	iP		22 58 02.2	
	i		22 58 05.7	
			micr	sec
	P	Z'	0.2	1.3
Um	iP		22 58 09.0	
	i		22 58 11.8	
Ud	iP		22 58 28.4	
	i		22 58 32.3	
De	iP		22 58 37.2	

Luzon (h = 20 km).
Double P, small and large, average interval = 3.3 sec.
De P corresponds to the second, larger phase.

" 6

Up	iP		00 22 10.5	C
	ipP		00 22 23.4	
			micr	sec
	P	Z'	0.2	1.0
	pP	Z'	0.3	1.0
	Mx	E	5.4	17
	Mx	N	5.9	22
	Mx	Z	5.5	19

(cont.)

1970
Feb. 6 (cont.)

Ki	iP		00 21 15.6	C
	ipP		00 21 28.1	
			micr	sec
	P	Z'	0.1	0.9
	pP	Z'	0.4	1.0
	Mx	E	6.1	18
	Mx	N	6.1	19
	Mx	Z	7.1	21
Sk	iP		00 21 53.1	
Um	iP		00 21 41.7	
	ipP		00 21 54.2	
Ud	iP		00 22 13.5	
	ipP		00 22 26.5	
De	iP		00 22 35.1	
	ipP		00 22 49.5	

Kamchatka. h = 50 km (Up, Ki,Um,Ud,De).
m = 6.3, M = 5.9 (Up,Ki).

" 6

Up	iP		00 34 23.4
Ud	iP		00 34 29.1
De	iP		00 34 48.7

" 6

Up	iP		01 41 46.6
Ud	eP		01 41 51

" 6

Up	eP		02 30 08	
	i		02 30 15.1	
			micr	sec
	Mx	E	1.3	14
	Mx	N	4.2	19
	Mx	Z	2.4	19
Ki	iP		02 29 54.2	D
			micr	sec
	P	Z'	0.3	1.1
	Mx	E	2.3	15
	Mx	N	2.5	18
	Mx	Z	3.2	16
Sk	eP		02 30 20	
Um	iP		02 29 59.3	
Ud	iP		02 30 19.7	
	i		02 30 24.2	
De	iP		02 30 27.9	

Mindoro (h = 20 km).
M = 6.0 (Up,Ki).

" 6

Ud	iP		09 29 04.8

" 6

Ki	e		10 52 07
	i(Sg)		10 52 29.1
Um	i(Sg)		10 53 22.8

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

1970 Feb.	6	Ki	i(P)	11 31 29.7	
		De	eP	11 32 34	
"	6	Um	iP	11 49 59.4	
		De	iP	11 48 03.5	
"	6	Ki	i(P)	13 03 08.5	
		Um	iP	13 02 39.4	
		Ud	i(P)	13 03 52.3	
			i	13 04 06.6	
"	6	Up	iP	14 08 10.7	
		Ki	iP	14 07 26.5	
		Um	iP	14 07 45.8	
		Ud	iP	14 08 17.0	
			ipP	14 08 28.4	
		De	iP	14 08 35.0	
		Kurile Islands. h = 40 km (Ud).			
"	6	Ki	iP	14 15 34.3	
		Ud	i(P)	14 15 20.6	
"	6	Ud	iP	19 10 15.6	
			i	19 10 25.6	
"	6	Up	iP	22 21 31.9	
			i	22 21 51.8	
				micr	sec
			P Z'	0.1	1.0
			Mx E	2.9	19
			Mx N	19	22
			Mx Z	4.0	18
		Ki	iP	22 21 21.3	
			i	22 21 24.2	
				micr	sec
			P Z'	0.2	1.1
			Mx E	8.5	19
			Mx N	7.9	23
			Mx Z	12	18
		Sk	iP	22 21 44.6	C
			iPcP	22 22 11.1	
		Um	iP	22 21 22.6	C
			iS	22 30 09	
		Ud	iP	22 21 44.7	
			i	22 21 47.2	
		Yunnan, China (h = N). m = 6.2, M = 5.9 (Up,Ki). Double P (Ki,Ud).			
"	6	Up	iP	22 43 32.4	
		Ki	eP	22 43 21	
		Sk	iP	22 43 48.2	
		(cont.)			

1970 Feb.	6	(cont.)			
		Um	iP	22 43 22.2	
			ipP	22 43 33.8	
		Ud	iP	22 43 43.0	
			i	22 43 49.7	
		De	iP	22 43 44.3	
		Yunnan, China. h = 45 km (Um). Double P (cf preceding event).			
"	6	Um	iP	22 44 50.3	
		Ud	iP	22 45 09.4	
		De	iP	22 45 06.7	
"	7	Ud	iP	01 12 53.6	
"	7	Up	iP	01 52 45.7	
			i	01 52 51.4	
		Um	iP	01 52 27.3	
		Bonin Islands (h = N).			
"	7	Up	iP	08 09 53.6	C
"	7	De	iP	09 50 21.9	
			i	09 50 32.7	
"	7	Up	iP	10 11 58.7	
			i	10 12 02.4	
			iPP	10 14 28.9	
				micr	sec
			P Z'	0.4	0.9
			Mx E	2.7	18
			Mx N	5.8	18
			Mx Z	5.2	18
		Ki	iP	10 11 11.0	
				micr	sec
			P Z'	0.2	1.5
			Mx E	5.8	17
			Mx N	3.9	18
			Mx Z	8.1	18
		Sk	iP	10 11 46.1	C
			i	10 11 49.6	
		Um	iP	10 11 33.2	
			i	10 11 36.6	
		Ud	iP	10 12 02.9	
			i	10 12 08.1	
			iPP	10 14 34.3	
		De	iP	10 12 23.5	
			i	10 12 27.1	
		Kurile Islands (h = N). m = 6.3, M = 5.9 (Up,Ki). Double P.			
"	7	Up	iP	10 14 47.9	
		(cont.)			

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

1970
Feb. 7 (cont.)

Up			micr	sec
	P	Z'	0.4	1.0
Ki	iP		10 13 59.6	
Sk	iP		10 14 35.4	
Um	iP		10 14 23.2	
Ud	iP		10 14 54.6	
De	iP		10 15 13.5	

Kurile Islands.
Origin time = 10 03 55.

" 7

Up	iP		10 27 37.7 C
Ki	eP		10 26 49
Sk	eP		10 27 24
Um	iP		10 27 12.6
Ud	iP		10 27 43.2
De	eP		10 28 03

Kurile Islands (h = N).

" 7

Ud	iP		11 44 41.0

Mindanao (h = 100 km).

" 7

Ud	iP		11 52 32.5

Mindanao (h = 90 km).

" 7

Up	iP		12 18 09.0	C
			micr	sec
	P	Z'	0.2	0.8
Ki	iP		12 17 20.5	
Sk	iP		12 17 56.1	
Um	iP		12 17 42.9	C
Ud	iP		12 18 14.4	C
De	iP		12 18 33.0	

Kurile Islands (h = N).

" 7

Up	iP		12 18 28.7	
			micr	sec
	P	Z'	1.0	1.0
	Mx	E	2.9	17
	Mx	N	6.9	18
	Mx	Z	6.9	18
Ki	iP		12 17 40.2	C
			micr	sec
	Mx	E	5.3	16
	Mx	N	3.5	17
	Mx	Z	7.1	18
Sk	iP		12 18 16.5	C
Um	iP		12 18 03.1	C
Ud	iP		12 18 34.4	C
De	iP		12 18 53.2	C

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

" 7

Up	iP		12 24 07.8
Ud	iP		12 24 12.8

Kurile Islands.
Origin time = 12 13 14.

1970
Feb. 7

Up	iP		12 26 14.3	
			micr	sec
	P	Z'	0.2	0.7
Ki	iP		12 25 26.6	
Sk	iP		12 26 00.7	
Um	iP		12 25 47.7	
Ud	iP		12 26 19.0	C
De	iP		12 26 38.0	

Kurile Islands (h = N).

" 7

Up	iP		12 30 42.9
Sk	eP		12 30 30
Um	iP		12 30 17.2
	i		12 30 18.1
Ud	iP		12 30 48.2	D
De	eP		12 31 06

Kurile Islands (h = N).

" 7

Up	iLgl		14 59 59.9
Um	iSg		15 00 45.2
De	iLgl		15 01 41.5

Esthonia. Explosion?

" 7

Up	iP		15 04 50.6	
			micr	sec
	P	Z'	0.1	0.8
Ki	iP		15 04 02.9	C
Sk	iP		15 04 38.0	
Um	iP		15 04 24.3	C
Ud	iP		15 04 55.8	
De	iP		15 05 13.4	

Kurile Islands (h = N).

" 7

Up	iP		15 06 53.0	C
	ipP		15 07 04.6	
			micr	sec
	P	Z'	0.1	0.7
	pP	Z'	0.1	0.7
Ki	iP		15 06 04.4	
Sk	eP		15 06 39	
Um	iP		15 06 27.3	
	ipP		15 06 38.4	
Ud	iP		15 06 58.0	
	ipP		15 07 09.8	
De	eP		15 07 17	
	ipP		15 07 28.6	

Kurile Islands. h = 45 km
(Up,Um,Ud,De).

" 7

Up	iPg		18 06 23.3
	iLgl		18 07 37.3
	iRg		18 08 11.5
De	iPn		18 04 58.3
	iSn		18 05 34.1
	iRg		18 05 52.9

Probably explosion in the
southern Baltic area.

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

1970 Feb.	7	Up	iP		18 24 38.8
		Ki	iP		18 23 49.4
		Um	iP		18 24 12.6
		Ud	iP		18 24 44.0
		Kurile Islands (h = N).			
"	7	Up	iP		18 33 41.9
		Ki	iP		18 32 46.5 C
		Um	iP		18 33 11.1
		Ud	iP		18 33 45.2
		Kamchatka (h = N).			
"	7	Up	iP		19 15 00.3
		Um	iP		19 15 23.2
		Atlantic Ocean (h = N).			
"	7	Up	iP		21 26 53.1 C
			i		21 26 59.2
					micr sec
			P	Z'	0.1 0.6
		Ki	iP		21 26 04.1
		Sk	iP		21 26 40.2 C
		Um	iP		21 26 27.1 C
		Ud	iP		21 26 58.3 C
		De	iP		21 27 17.5
		Kurile Islands (h = N).			
"	7	Up	iP		21 35 53.6 C
		Ki	iP		21 35 04.3
		Sk	eP		21 35 41
		Um	iP		21 35 26.8
		Ud	iP		21 35 58.7
		Kurile Islands (h = N).			
"	7	Up	iP		21 36 30.8 C
					micr sec
			P	Z'	0.1 0.7
		Ki	iP		21 35 42.8
		Sk	iP		21 36 17.9
		Um	iP		21 36 04.3 C
		Ud	iP		21 36 35.3
		Kurile Islands.			
		Origin time = 21 25 37.			
"	7	Up	iP		22 08 39.8
		Ud	iP		22 08 53.5 C
"	7	Up	iP		23 47 46.4 C
					micr sec
			P	Z'	0.1 0.8
		Ki	iP		23 46 58.3
		Sk	iP		23 47 33.7
		Um	iP		23 47 20.4
		Ud	iP		23 47 51.7 C
		De	eP		23 48 11
		Kurile Islands (h = N).			

1970 Feb.	8-9	Long-period microseisms (period around 17 sec), particularly clear on Um LP N-component.			
"	8	Up	iP		01 46 56.2
"	8	Up	iP		03 39 47.3
		Ki	iP		03 38 52.6
		Ud	eP		03 39 51
		Kamchatka (h = N).			
"	8	Up	iP		08 07 30.0
		Ki	iP		08 06 44.4
		Um	iP		08 07 03.6 C
		Ud	iP		08 07 34.5 C
		Japan (h = 8 km).			
"	8	Ki	iP		10 20 15.1 C
			ipP		10 20 23.6
		Sk	iP		10 20 36.4
		Um	iP		10 20 07.5 C
			ipP		10 20 15.7
		Ud	iP		10 20 29.5 C
			ipP		10 20 37.3
		De	iP		10 20 28.6
			ipP		10 20 36.3
		Tadzhik-Sinkiang. h = 40 km (Ki,Um,Ud,De).			
"	8	Ki	iP		11 21 07.0
		Um	iP		11 21 16.0
		Iceland (h = N).			
"	8	Up	iP		16 32 00.8
		Sk	iP		16 31 42.8
		Um	iP		16 31 58.6
		Ud	eP		16 31 51
		De	iP		16 31 57.4
		Guatemala (h = 30 km).			
"	8	Up	iP		19 17 13.0
		Ki	iP		19 17 01.6
		Sk	iP		19 17 27.1
		Um	iP		19 17 01.9
		Ud	iP		19 17 25.6
		De	eP		19 17 31
		Tibet (h = N).			
"	8	Up	iP		19 28 20.2
					micr sec
			P	Z'	0.1 1.0
		Ki	iP		19 27 28.1
		Sk	eP		19 28 00
		Um	iP		19 27 54.4
		(cont.)			

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

1970
Feb. 8 (cont.)

Ud	iP	19 28 20.3	
De	iP	19 28 42.2	

Aleutian Islands (h = 15 km).

" 8	Ki	i(pP)	21 24 45.2	
	Ud	iP	21 25 06.4	

Formosa (h = 70 km).

" 8	Up	iP	22 19 58.1	
			micr sec	
		P Z'	0.1 0.8	
	Ki	iP	22 20 00.5	C
	Sk	iP	22 20 15.3	
	Um	iP	22 19 56.0	
	Ud	iP	22 20 09.7	C
	De	iP	22 20 07.2	C

Nicobar Islands (h = N).

" 9	Up	iP	00 06 52.9	
	Um	iP	00 06 53.5	
	Ud	iP	00 06 59.3	
	De	iP	00 06 44.9	
" 9	Ud	iP	00 43 24.8	
" 9	Up	iP	02 08 47.2	
			micr sec	
		P Z'	0.1 0.5	
	Sk	iP	02 09 29.3	
	Um	iP	02 09 29.2	
		i	02 09 35.9	
	Ud	iP	02 08 53.0	C

Greece-Albania (h = 50 km).

" 9	Um	iP	04 14 17.6	
" 9	Sk	eP	11 13 31	
	Um	iP	11 13 00.6	
	Ud	iP	11 13 02.3	
" 9	Up	i(Sg)	12 26 03.1	
" 9	Up	iP	17 09 32.2	
	Um	iP	17 09 06.4	
	Ud	iP	17 09 37.1	
" 10	Up	iP	02 09 44.5	
	Ud	iP	02 09 46.0	
	De	i(P)	02 10 00.0	
" 10	Ki	eSg	02 40 23	
	Sk	iSg	02 40 28.3	

(cont.)

1970
Feb. 10 (cont.)

Um	iSn	02 40 38.3	
	iSg	02 40 52.2	

Nordland, Norway.
Origin time = 02 38 55.

" 10	Up	iSKP	02 50 28.2	
	Ki	iPKP	02 47 02.9	
	Sk	iPKP	02 47 14.1	
	Um	iPKP	02 47 09.0	

New Hebrides Islands
(h = 140 km).

" 10	Um	iP	09 24 32.6	
" 10	De	iPg	10 06 10.5	
		iSg	10 06 27.8	

South Baltic, 55.7°N, 15.6°E.
Origin time = 10 05 45.
Probably underwater explosion.

" 10	Up	iSg	10 09 31.5	
	Ud	eSg	10 09 36	
	De	iPg	10 07 36.0	
		iSg	10 07 53.5	

D = 140 km = 1.3°.
South Baltic, 55.7°N, 15.6°E.
Origin time = 10 07 10.
Probably underwater explosion.

" 10	De	iPg	10 09 01.6	
		iSg	10 09 18.8	

South Baltic, 55.7°N, 15.6°E.
Origin time = 10 08 35.
Probably underwater explosion.

" 10	Up	iP	10 52 01.6	
		ipP	10 52 18.8	
	Sk	iP	10 51 58.4	
	Um	iP	10 51 41.7	
	Ud	iP	10 52 10.8	D

Japan. h = 60 km (Up).

" 10	Up	iP	13 47 31.8	
" 10	Ki	iP	14 19 33.8	
	Um	eP	14 19 43	
	Ud	iP	14 19 59.7	

Mindanao (h = 80 km).

" 10	Sk	i(Sg)	15 24 33.1	
	Ud	i	15 23 14.4	
		i(Sg)	15 23 33.2	

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

1970 Feb.	10	Ki	iP	17 14 37.8
			eT	17 19 45
			i	17 20 13.0
		Sk	iP	17 15 14.4
			iS	17 16 57.5
		Um	iP	17 15 25.5
		Ud	iP	17 16 01.9
		Northeast of Jan Mayen (h = N).		
"	10	Up	iSKP	18 06 37.1
		Um	iSKP	18 06 20.0
		Fiji Islands (h = 550 km).		
"	10	Up	iP	19 48 05.0
			i	19 52 07.7
			iPP	19 52 15.7
		Ki	iP	19 47 49.9
		Sk	ePP	19 52 42
		Um	iP	19 47 54.6
			iPP	19 52 11.7
		Ud	iP	19 48 12.8
			iPP	19 52 46.7
		Banda Sea (h = 140 km).		
"	10	Um	iP	20 03 42.8
"	10	Ki	iPg	20 32 50.7
			i	20 33 07.6
			iSg	20 33 16.4
"	10	Up	eP	21 13 18
		Sk	eP	21 13 32
		Um	eP	21 13 05
			i	21 13 14.4
		Ud	eP	21 13 23
		Sumatra (h = 35 km).		
"	11	Up	iPKP	01 15 51.1 C
		Ud	iPKP	01 15 53.1 C
		De	iPKP	01 16 03.2
"	11	Up	iPKP	02 19 14.7
		Um	iPKP	02 19 04.5
			i	02 19 13.5
		Ud	iPKP	02 19 13.1
		De	iPKP	02 19 24.4 C
		Tonga Islands (h = N).		
"	11	Up	iP	02 36 31.0
		Um	iP	02 36 26.6
		Mexico (h = 60 km).		
"	11	Up	iP	04 41 47.8
		Ud	iP	04 42 03.0
		Hindu Kush.		

1970 Feb.	11	Sk	i(Sg)	09 13 37.0
		Um	i	09 11 35.0
			i(Sg)	09 12 02.2
"	11	Up	iP	09 55 29.9
"	11	Ki	iPn	10 52 27.6
			iSn	10 53 26.4
			i(Lgl)	10 53 48.8
			D = 540 km = 4.9°.	
		Um	eSg	10 54 21
		Probably northwest Russia.		
		Origin time = 10 51 11.		
		Explosion?		
"	11	De	iPg	12 37 36.5
			iSg	12 37 56.1
		Probably underwater explosion in the South Baltic.		
"	11	Up	iSg	13 10 46.7
		Sk	eSg	13 12 47
		Ud	iSg	13 10 56.0
		De	iPg	13 08 47.2
			iSg	13 09 06.0
			D = 170 km = 1.5°.	
		South Baltic, 55.4°N, 15.8°E.		
		Origin time = 13 08 17.		
		Probably underwater explosion.		
"	11	Up	iLgl	14 24 39.9
		Um	iSg	14 25 15.6
			i	14 25 29.6
		Ud	iLgl	14 25 43.2
		De	eLgl	14 26 07
		Esthonia. Explosion?		
"	11	Up	iP	15 14 41.2
		Ud	iP	15 14 45.4
"	11	Up	iP	19 06 11.2 C
			i	19 06 28.2
			iS	19 10 11.4
				micr sec
			P Z'	0.2 0.6
		Ki	iP	19 07 23.2 C
		Sk	iP	19 06 51.5 C
		Um	iP	19 06 47.1
		Ud	iP	19 06 18.1 C
			iS	19 10 26.3
		De	iP	19 05 43.1 C
		Greece (h = 70 km).		
"	11	Up	iP	19 13 33.9 C
		(cont.)		

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

1970
Feb. 11 (cont.)

Um	iP	19 13 44.0 C	
De	iP	19 13 27.5	
" 11 Up	iP	19 26 48.4	
Ud	iP	19 26 41.2	

Nevada.
Underground explosion.

" 11 Up	iP	19 56 13.8	
Ki	iP	19 55 40.4	
Um	iP	19 55 53.1	
De	iP	19 56 38.0	

China (h = N).

" 11 Up	iP	21 12 19.3	
Um	iP	21 12 45.9	
Ud	iP	21 12 39.2	D
De	iP	21 12 06.1	

Turkey.

" 11 Um	iP	21 17 40.4	
" 11 Um	iP	22 29 33.4	
" 11 Um	iP	22 33 08.5	C

Hindu Kush (h = 140 km).

" 11 Up	iP	22 33 35.7	
Ud	iP	22 33 51.6	C
" 12 Up	iP	02 00 58.4	
	i	02 01 08.0	
		micr sec	
	P	Z' 0.1 0.7	
Ki	iP	02 01 00.2	
		micr sec	
	P	Z' 0.1 1.0	
Sk	iP	02 01 19.9	C
Um	iP	02 00 54.3	C
Ud	iP	02 01 13.7	C
De	iP	02 01 12.8	
	i	02 01 20.2	

Nepal (h = 45 km).
m = 5.9 (Up,Ki).

" 12 Um	iP	05 15 35.4	
Ud	iP	05 16 09.9	
De	iP	05 16 45.6	

Greenland Sea (h = N).

" 12 Um	iP	05 56 09.0	
" 12 Up	iPKP	11 04 58.6	
Sk	iPKP	11 04 52.5	

(cont.)

1970
Feb. 12 (cont.)

Sk	i	11 05 08.3	
Um	iPKP	11 04 47.9	
Ud	iPKP	11 05 01.2	
De	iPKP	11 05 10.2	

Kermadec Islands (h = N).

" 12 Um	iP	11 59 36.0	
" 12 Ki	eLgl	13 03 33	
	eSg	13 03 54	
Sk	eLgl	13 03 09	
Um	iSg	13 01 52.6	
Ud	iLgl	13 02 29.4	
De	eSn	13 02 10	
	iLgl	13 02 48.7	

Esthonia. Explosion?

" 12 Ki	iP	14 29 52.0	
Um	iP	14 30 00.5	
Ud	eP	14 30 20	

Mindanao (h = 60 km).

" 13 Up	iP	02 33 36.1	
Um	iP	02 33 15.7	
De	iP	02 33 20.3	
" 13 Up	iP	03 25 01.4	
	i	03 25 03.0	
	iS	03 35 00.9	
		micr sec	
	P	Z' 0.1 0.5	
	Mx	E 0.9 22	
	Mx	N 1.2 20	
	Mx	Z 1.2 19	
Ki	iP	03 24 31.7	
	i	03 24 32.7	
		micr sec	
	Mx	E 1.2 23	
	Mx	N 1.1 23	
Sk	iP	03 24 58.3	
	iPP	03 28 12.1	
Um	iP	03 24 44.3	
	ipP	03 25 33.8	
	iS	03 34 31.9	
Ud	iP	03 25 08.3	C
	eS	03 35 16	
De	iP	03 25 19.8	

Volcano Islands. h = 200 km (Um).
M = 5.3 (Up,Ki).
M uncorrected for focal depth.

" 13 Um	iP	05 10 16.3	
" 13 Up	iPKP	05 17 12.2	

(cont.)

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

1970
Feb. 13 (cont.)

Up	i		05 17 19.1		
			micr	sec	
	PKP	Z'	0.1	0.5	
Ki	iPKP		05 16 58.8		
Sk	iPKP		05 17 07.7		
Um	iPKP		05 17 01.6		
Ud	iPKP		05 17 13.0		
	i		05 17 15.6		
De	iPKP		05 17 23.2		

South of Kermadec Islands (h = 240 km).

" 13 Um iP 07 32 55.1

" 13 Sk iP 09 39 59.7

" 13

Ki	iPn		11 35 56.0	C
	iSn		11 36 55.1	
	iSg		11 37 18.5	
	D = 560 km = 5.0°.			
Sk	iLgl		11 39 42.4	
Um	iSn		11 37 33.6	
	iSg		11 38 10.0	

Northwest Russia, 67.7°N, 33.7°E.
Origin time = 11 34 37.
Explosion?

" 13

Up	iP		12 27 12.9	
Ki	iP		12 26 51.2	
Um	iP		12 26 57.7	
Ud	iP		12 27 22.6	

Formosa (h = 50 km).

" 13

Up	iP		15 55 58.0	
			micr	sec
	P	Z'	0.1	0.5
	Mx	E	1.3	22
	Mx	N	2.4	20
	Mx	Z	1.9	20
Ki	iP		15 55 50.9	
			micr	sec
	P	Z'	0.2	1.0
	Mx	E	2.1	18
	Mx	N	1.0	17
	Mx	Z	2.3	17
Sk	iP		15 56 07.7	
	iPP		16 00 29.8	
	ipPP		16 02 23.5	
Um	iP		15 55 51.7	
	iSKS		16 05 28	
Ud	iP		15 56 07.2	
	ipP		15 58 23.3	
De	iP		15 56 08.8	

(cont.)

1970
Feb. 13 (cont.)

De iPP 16 00 20.4
Java Sea. h = 640 km (Ud).
m = 6.4, M = 5.8 (Up,Ki).
M uncorrected for focal depth.

" 13

Up	iP	15 56 37.8
Ki	iP	15 56 30.5
Sk	iP	15 56 48.0
Um	iP	15 56 30.8
Ud	iP	15 56 46.7

Java Sea.
Aftershock of preceding event, with an origin time 39.7 sec later.

" 13

Up	iP		16 50 38.9
Ki	iP		16 49 43.8 C
Sk	iP		16 50 19.3
Um	iP		16 50 10.0
Ud	iP		16 50 42.1

Kamchatka (h = N).

" 13 Um iP 20 15 45.8
Japan (h = 270 km).

" 14

Up	iP		01 26 11.5
Ki	iP		01 25 48.8
Um	iP		01 25 50.6
	i		01 25 57.0
Ud	iP		01 26 26.0

" 14

Up	iP		05 34 59.2	
	i		05 35 09.7	
Um	iP		05 35 00.9	
Ud	iP		05 35 23.1	

Tibet (h = 15 km).

" 14

Up	iP		11 30 59.2	
	iPP		11 35 02.6	
			micr	sec
	Mx	E	1.1	19
	Mx	N	1.0	20
	Mx	Z	1.6	20
Ki	iP		11 31 05.0	
			micr	sec
	Mx	E	1.8	18
	Mx	N	1.2	19
	Mx	Z	2.0	18
Sk	iP		11 30 49.4	
Um	iP		11 31 05.0	
Ud	iP		11 30 50.4	C
	iPP		11 34 44.1	
De	eP		11 30 51	

Peru (h = 35 km).
M = 5.6 (Up,Ki).

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

1970 Feb.	14	Ki	iPn	12 25 30.8	
			iSn	12 26 19.4	
		Um	iSg	12 28 12.7	
		Northwest Russia. Explosion?			
"	14	Up	iSg	14 14 15.6	
		Ki	e	14 11 44	
			iSg	14 12 10.8	
		Sk	iPg	14 11 38.0	
			iSg	14 12 16.9	
		Um	iPg	14 11 51.5	
			iSg	14 12 39.2	
		Ud	eSn	14 13 33	
			iSg	14 14 06.6	
		Nordland, Norway, 66.5°N, 14.4°E.			
		Origin time = 14 10 39.			
"	15	Up	iP	04 12 56.3	C
			ipP	04 13 11.0	
		Ki	iP	04 12 16.5	
			ipP	04 12 31.7	
		Um	iP	04 12 33.6	
			ipP	04 12 48.8	
		Ud	iP	04 13 02.6	
		Japan. h = 55 km (Up,Ki,Um).			
"	15	Up	iP	09 05 00.4	D
			iPcP	09 05 29.6	
			iS	09 13 01.0	
				micr sec	
			P	Z' 0.1 0.5	
		Ki	iP	09 04 14.2	
		Sk	iP	09 04 49.5	
		Um	iP	09 04 35.4	D
		Ud	iP	09 05 06.1	
			iS	09 13 13.5	
		De	iP	09 05 24.5	
		Okhotsk Sea (h = 440 km).			
"	15	Um	e(Sg)	11 51 00	
"	15	Up	iP	12 49 53.0	C
			iPP	12 53 56.5	
		Ki	iP	12 49 39.9	C
				micr sec	
			P	Z' 0.2 1.0	
		Sk	iP	12 49 59.5	C
		Um	iP	12 49 43.7	C
		Ud	iP	12 50 01.6	C
			i(PP)	12 53 44.0	
		De	iP	12 50 07.0	
			iPP	12 54 13.7	
		Celebes (h = 150 km).			

1970 Feb.	15	Up	iPKP	15 40 02.5	
			i	15 40 06.2	
		Sk	iPKP	15 39 55.3	
		Um	iPKP	15 39 50.8	C
		Ud	iPKP	15 40 04.3	C
			i	15 40 09.2	
		De	iPKP	15 40 13.1	C
			i	15 40 23.0	
"	15	Up	iP	20 03 40.0	
		Um	iP	20 03 16.2	
		Ud	iP	20 03 47.2	
		De	iP	20 04 06.0	
		Japan (h = 110 km).			
"	16	Um	eP	02 34 54	
		Greenland Sea (h = N).			
"	16	Up	iSg	11 55 53.4	
		Um	iSg	11 56 23.7	
		De	iLgl	11 57 19.3	
		Esthonia.			
		Origin time = 11 53 42.			
		Explosion?			
"	16	Um	i	14 25 12.3	
			i(Sg)	14 25 55.4	
"	16	Up	eP	15 53 04	
		Sk	iP	15 53 48.6	
		Um	iP	15 53 51.5	
		Ud	iP	15 53 11.8	
		De	eP	15 52 35	
		Greece-Albania.			
		Origin time = 15 48 28.			
"	16	Up	iP	15 59 57.2	
"	16	Up	epP	16 08 36	
				micr sec	
			Mx	E 0.6 16	
			Mx	N 0.7 17	
			Mx	Z 0.9 18	
		Ki	iP	16 08 14.8	C
			ipP	16 08 22.3	
				micr sec	
			P	Z' 0.1 1.6	
			Mx	E 0.8 16	
			Mx	N 0.6 19	
		Sk	iP	16 08 33.8	
			ipP	16 08 42.8	
		Um	iP	16 08 16.3	
			ipP	16 08 25.9	
		Ud	iP	16 08 35.6	
			ipP	16 08 43.5	

(cont.)

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

1970
Feb. 16 (cont.)

De	iP		16 08 39.1	
	ipP		16 08 48.4	

Celebes. h = 30 km (Ki,Sk, Um,Ud,De).
M = 5.4 (Up,Ki).

" 16

Up	iP		18 03 37.1	
Um	iP		18 03 47.4	

" 16

Up	iP		18 39 00.4	
Um	iP		18 38 35.1	
Ud	iP		18 39 06.4	C
De	iP		18 39 24.2	

Kurile Islands (h = N).

" 16

Up	iPKP		21 54 46.9		D
	iSKKP		22 05 49.0		
			micr	sec	
	PKP	Z'	0.7	0.7	
Ki	ePKP		21 54 26		
	i		21 54 35.9		
			micr	sec	
	PKP	Z'	0.1	1.0	
Sk	ePKP		21 54 40		
	i		21 54 42.2		
Um	iPKP		21 54 34.4		
	iSKP		21 57 25.4		
	iSKKP		22 06 07.7		
Ud	iPKP		21 54 49.9		D
	iSKKP		22 05 45.8		
De	iPKP		21 54 58.3		
	ipPKP		21 57 08.2		

Tonga-Kermadec Islands.
h = 580 km (De).

" 17

Up	iP		00 21 04.0		
			micr	sec	
	P	Z'	0.1	0.5	
Ki	iP		00 22 20.2		C
Sk	iP		00 21 46.3		
Um	iP		00 21 43.8		C
	i		00 22 05.3		
Ud	iP		00 21 10.8		
De	eP		00 20 33		
	iPP		00 20 50.2		

Greece-Albania (h = 25 km).

" 17

Up	iP		03 05 30.8		
			micr	sec	
	Mx	E	0.4	12	
	Mx	N	1.0	19	
Ki	eP		03 06 21		
			micr	sec	
	Mx	E	0.9	15	
	Mx	N	0.6	15	
Ud	iP		03 05 48.0		C
De	iP		03 05 29.0		

Turkey (h = 35 km).
M = 4.6 (Up,Ki).

1970
Feb. 17

Ki	eP		03 32 06		
			micr	sec	
	Mx	E	0.6	17	
	Mx	N	0.5	17	
Um	iP		03 32 10.9		
Ud	iP		03 32 29.4		

Celebes (h = 30 km).

" 17

Up	iP		04 55 53.2		
			micr	sec	
	P	Z'	0.1	0.5	
Ki	iP		04 57 08.5		
Sk	iP		04 56 35.7		
Um	iP		04 56 34.4		
Ud	iP		04 56 02.6		
	i		04 56 04.7		
De	iP		04 55 25.2		

Greece (h = 30 km).

" 17

Up	iP		05 58 56.6		D
			micr	sec	
	P	Z'	0.3	0.9	
Ki	iP		05 58 38.4		D
			micr	sec	
	P	Z'	0.2	1.0	
	Mx	E	0.7	19	
	Mx	N	0.5	17	
Sk	iP		05 59 00.4		D
Um	iP		05 58 45.8		D
Ud	iP		05 59 05.0		D
De	iP		05 59 11.4		D
	ipP		05 59 29.5		

Mindanao. h = 70 km (De).
m = 6.4 (Up,Ki).

" 17

Ki	iP		07 16 52.9	
	i		07 17 05.9	
Um	iP		07 17 07.6	

Mariana Islands (h = N).

" 17

Up	iP		07 36 15.4	
Sk	eP		07 36 52	
	i		07 36 53.7	
Um	iP		07 36 54.9	
Ud	iP		07 36 17.9	
De	iP		07 35 40.5	

Italy (h = 260 km).

" 17

Up	i(Sg)		09 12 30.7	

" 17

Ki	iPn		12 17 32.9	
	iSn		12 18 25.8	
	i(Lgl)		12 18 36.0	

Probably northwest Russia.
Explosion?

" 17

Ki	i(Lgl)		13 06 30.9	

(cont.)

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

1970 Feb.	17	(cont.)			
		Sk	iLgl	13 05 34.4	
		Um	iSg	13 04 26.6	
		De	e	13 05 06	
		Baltic States. Explosion?			
"	17	Up	iP	14 35 40.1	
		De	iP	14 35 05.7	
"	17	Sk	e(P)	14 43 33	
		Ud	iP	14 45 07.5	
		De	iP	14 45 18.1	
"	17	Up	iP	16 22 27.7	
		Ki	eP	16 23 21	
		Sk	eP	16 23 14	
		Ud	iP	16 22 49.0	
		De	iP	16 22 25.6	
		Turkey (h = 9 km).			
"	17	Um	iPKP	17 44 07.9	
			iPKS	17 47 38.9	
		De	iPKP	17 44 22.7	
		Loyalty Islands (h = 45 km).			
"	17	Ki	ePg	17 49 42	
			iSg	17 50 20.8	
		Sk	iPg	17 49 47.2	
			iSg	17 50 27.6	
		Um	iSn	17 50 34.3	
			iSg	17 50 49.1	
		Ud	iSg	17 52 15.3	
		Nordland, Norway, 66.7°N, 13.4°E.			
		Origin time = 17 48 42.			
"	17	Ud	iP	18 07 25.8	
"	17	Ki	iPKP	19 33 30.0	
				micr	sec
			Mx E	0.7	17
			Mx N	0.5	17
		Sk	ePKP	19 33 37	
		Um	iPKP	19 33 31.3	
		Ud	ePKP	19 33 38	
		De	iPKP	19 33 45.4	
		Loyalty Islands (h = 40 km).			
"	17	Um	iP	20 28 21.7	
"	17	Um	iP	21 21 06.4	
"	18	Um	iP	01 06 55.6	
1970 Feb.	18	Um	iPKP	01 32 57.3	
		New Hebrides Islands (h = 160 km).			
"	18	Up	iP	02 18 33.5	
		Ki	eP	02 17 46	
		Sk	iP	02 18 09.1 C	
		Um	iP	02 18 16.3 C	
		Ud	iP	02 18 25.6	
			i	02 18 31.7	
		Vancouver Island (h = 30 km).			
"	18	Um	iP	06 42 14.6	
"	18	Um	ePKP	07 17 55	
		Ud	iPKP	07 17 57.2	
		De	iPKP	07 18 08.4	
		Fiji Islands (h = 600 km).			
"	18	Up	iP	09 33 49.7	
		Ki	eP	09 33 05	
		Sk	eP	09 33 23	
		Ud	eP	09 33 45	
		Queen Charlotte Islands (h = 4 km).			
"	18	Ki	i(P)	12 06 36.6	
		Sk	e(P)	12 07 27	
"	18	Up	iSg	12 10 44.0	
		Ki	eSg	12 13 16	
		Sk	iSg	12 12 34.2	
		Um	iSg	12 11 15.7	
		Ud	eLgl	12 11 44	
		De	eLgl	12 12 10	
		Esthonia.			
		Origin time = 12 08 34.			
		Explosion?			
"	18	Up	iP	13 06 47.4	
			ipP	13 06 58.9	
				micr	sec
			P Z'	0.1	0.9
		Ki	iP	13 05 54.0 C	
				micr	sec
			P Z'	0.1	0.9
		Um	iP	13 06 19.8 C	
			ipP	13 06 31.4	
		Ud	iP	13 06 48.8 C	
			ipP	13 07 00.5	
		De	iP	13 07 10.3	
		Aleutian Islands. h = 45 km (Up,Um,Ud).			
		m = 5.9 (Up,Ki).			

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

1970 Feb.	18	Up	iP		14 10 53.9	
"	18	Um	iSg		14 51 43.8	
		De	eLgl		14 52 41	
		Esthonia. Explosion?				
"	18	Up	iPKP		15 42 21.2	
			iSKP		15 45 44.2	
					micr	sec
			PKP	Z'	0.2	0.6
			SKP	Z'	0.5	1.0
		Ki	iPKP		15 42 01.3	
			i		15 42 16.0	
			iPP		15 44 36.8	
			iSKP		15 45 20.7	
					micr	sec
			PKP	Z'	0.3	1.5
			SKP	Z'	2.7	2.5
		Sk	iPKP		15 42 16.5	
			i		15 42 27.4	
			iSKP		15 45 36.6	
		Um	iPKP		15 42 09.3	
			i		15 42 16.1	
			i		15 42 21.2	
			iSKP		15 45 31.3	
		Ud	iPKP		15 42 23.1	
			iSKP		15 45 44.5	
		De	iPKP		15 42 34.5	
			iSKP		15 45 54.3	
		Fiji Islands (h = 260 km).				
"	18	Up	iPKP		16 42 50.5	C
		Ki	iPKP		16 42 41.5	
		Sk	iPKP		16 42 44.0	
		Um	iPKP		16 42 44.1	
		Ud	iPKP		16 42 51.8	
		De	iPKP		16 43 03.0	C
		Tonga-Kermadec Islands (h = 100 km).				
"	18	Ud	iP		19 51 35.0	
		De	iP		19 51 02.9	
		Dodecanese Islands. Origin time = 19 46 11.				
"	18	Ud	iP		19 54 34.4	
		De	iP		19 54 01.4	
		Dodecanese Islands (h = N).				
"	18	Ud	iP		20 26 00.3	
		De	iP		20 25 30.4	
		Dodecanese Islands.				
"	19	Up	iP		01 57 39.1	C
		(cont.)				

1970 Feb.	19	(cont.)				
		Up			micr	sec
			P	Z'	0.1	0.7
		Ki	iP		01 56 50.1	
		Sk	iP		01 57 25.7	
		Um	iP		01 57 13.0	C
		Ud	iP		01 57 44.2	C
		De	eP		01 58 02	
		Kurile Islands (h = N).				
"	19	Up	iP		05 15 20.2	
		Ki	iP		05 14 50.6	C
		Sk	iP		05 15 18.1	
		Um	iP		05 15 02.3	
		Ud	iP		05 15 26.5	
		De	iP		05 15 39.2	
		Volcano Islands (h = 90 km).				
"	19	Up	iP		07 20 07.5	C
					micr	sec
			P	Z'	0.2	0.5
			Mx	E	5.7	14
			Mx	N	3.8	12
			Mx	Z	7.4	14
		Ki	iP		07 19 59.2	C
					micr	sec
			P	Z'	0.7	2.0
			Mx	E	6.2	14
			Mx	N	2.6	13
		Sk	iP		07 20 23.1	C
		Um	iP		07 19 58.9	C
		Ud	iP		07 20 21.1	C
		De	iP		07 20 23.2	
			i		07 20 25.3	
		India (h = 20 km). m = 6.4, M = 6.0 (Up,Ki).				
"	19	Up	iPKP		11 07 19.9	C
			i		11 07 23.6	
			i		11 07 28.6	
					micr	sec
			PKP	Z'	0.4	0.6
		Ki	iPKP		11 06 55.9	
			i		11 07 05.2	
		Sk	iPKP		11 07 12.9	C
		Um	iPKP		11 07 07.7	C
		Ud	iPKP		11 07 21.4	C
			i		11 07 25.4	
		De	iPKP		11 07 29.6	C
		Kermadec Islands (h = 20 km).				
"	19	Ki	iP		11 21 33.5	
					micr	sec
			P	Z'	0.1	1.2
		(cont.)				

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

1970 Feb. 19 (cont.)

Sk	i(P)	11 22 26.5
Um	i	11 22 36.2
Ud	iP	11 22 49.0
De	iP	11 23 17.8 C
	i	11 23 25.2

Arctic Ocean (h = N).

" 19 Ud iP 12 02 57.3
Leeward Islands (h = 15 km).

" 19 Up iP 14 31 59.4
i 14 32 07.9

" 19 Ud iP 21 29 48.6

" 19 Um iP 23 09 17.7
New Guinea (h = 25 km).

" 20 Ud iP 07 27 54.7
Crete.

" 20 Up i(Sg) 09 31 37.7

" 20 Ud iP 10 11 34.2
De iP 10 11 05.3
Dodecanese Islands (h = N).

" 20 Up i(Lgl) 11 01 28.9
Ki iPn 10 57 15.2
iSn 10 58 13.7
iSg 10 58 38.1
D = 540 km = 4.9°.
Sk iLgl 11 01 02.3
Um iSn 10 58 53.4
iSg 10 59 28.2
Northwest Russia,
67.5°N, 33.4°E.
Origin time = 10 55 58.
Explosion?

" 20 Um i(Sg) 11 00 14.6

" 20 Ki eSg 17 49 35
Sk eSg 17 49 39
Um iSg 17 50 02.2
Nordland, Norway.
Origin time = 17 48 06.
Explosion?

" 20 Up iP 18 06 53.6
Aleutian Islands (h = 80 km).

1970 Feb. 20

Up	iP	20 24 46.8
Ki	iP	20 25 53.4
Sk	iP	20 25 26.9
Ud	iP	20 24 55.6
De	iP	20 24 22.1

Dodecanese Islands (h = 9 km).

" 21 Ki iPKP 01 57 02.1
Um iPKP 01 57 04.6
i 01 57 09.1
New Hebrides Islands
(h = 20 km).

" 21 Up iP 06 26 44.9
Ki iP 06 26 52.2
Um iP 06 26 52.2 D
Ud iP 06 26 32.0
Leeward Islands (h = N).

" 21 Up iP 07 14 03.0 C
iS 07 17 49.7
iLgl 07 20 23.6
Ki iP 07 13 42.3
iS 07 17 02.7
Sk iP 07 14 20.2
iS 07 18 26.3
Um iP 07 13 40.2
Ud iP 07 14 22.8
i(SS) 07 19 03.1
De eP 07 14 34
Ural Mountains (h = 1 km).
Location is near to the
chemical explosion (3.1 kt)
on March 25, 1958.

" 21 Um iP 10 18 20.5

" 21 Um iP 10 27 02.1
Mexico (h = 45 km).

" 21 Ki iPn 12 37 41.6 C
iSn 12 38 29.4
iSg 12 38 45.2
D = 430 km = 3.9°.
Um eSn 12 39 21
Northwest Russia.
Origin time = 12 36 38.
Explosion?

" 21 Ud iPP 17 10 54.4
Timor (h = 80 km).

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

1970 Feb.	21	Ki	iPn	18 22 37.4
			iP^x	18 22 46.1
			iSn	18 23 24.0
			iLgl	18 23 36.9
			D = 430 km = 3.9°.	
		Sk	iSn	18 25 29.8
			iLgl	18 26 25.5
		Um	ePn	18 23 18
			iSn	18 24 30.6
			iSg	18 25 10.6
		Ud	iSn	18 26 28.4
			iLgl	18 27 38.5
		Northwest Russia, 69.1°N, 30.7°E. Origin time = 18 21 35. Explosion? This is one of the strongest events in this series.		
"	21	Ki	iP	20 08 29.1
		Um	iP	20 08 00.8
		Ud	eP	20 07 56
"	21	Um	eP	23 13 07
"	22	Up	iP	07 04 02.1
		Um	iP	07 03 59.7
		Ud	iP	07 04 18.4
		Tadzhik SSR (h = N).		
"	22	Ki	iP	07 21 08.7
		Ud	iP	07 20 32.2
		Atlantic Ocean (h = N).		
"	22	Up	iP	10 52 01.5
		Ud	iP	10 52 16.7
		Iran (h = N).		
"	22	Up	iP	12 25 28.3
		Ud	iP	12 25 37.1
			i	12 25 40.9
		Aegean Sea (h = 50 km).		
"	22	Up	eP	15 53 53
		Ki	eP	15 54 58
		Sk	iP	15 54 31.1
			i	15 54 34.6
		Um	iP	15 54 26.8
		Ud	iP	15 53 57.9
		De	eP	15 53 28
		Crete (h = 40 km).		
"	22	Up	eP	15 57 39
		(cont.)		

1970 Feb.	22	(cont.)		
		Ki	eP	15 58 43
			i	15 58 47.8
		Sk	iP	15 58 17.9
		Um	iP	15 58 12.1
		Ud	iP	15 57 44.4
		De	iP	15 57 17.7
		Crete (h = 35 km).		
"	22	Um	i(P)	18 30 00.1
"	22	Up	iP	20 18 33.7
		Ki	iP	20 17 46.9
		Um	iP	20 18 08.4
		Ud	iP	20 18 37.0
		Kurile Islands (h = 45 km).		
"	22	Up	iP	22 40 56.4 D
				micr sec
			P Z'	0.1 0.5
		Ki	iP	22 40 13.3
			i	22 40 31.2
		Sk	eP	22 40 59
		Um	iP	22 40 40.4 D
		Ud	iP	22 41 06.0
		De	iP	22 41 15.4
		Ryukyu Islands (h = 110 km).		
"	22	Up	iP	23 44 44.5
			i	23 46 21.9
			iS	23 47 27.0
				micr sec
			P Z'	0.3 1.2
			Mx E	4.8 17
			Mx N	4.5 20
			Mx Z	4.9 17
		Ki	iP	23 43 38.2
			i	23 43 44.0
			i(S)	23 45 44.8
				micr sec
			P Z'	0.5 0.8
			Mx E	5.8 16
			Mx N	5.0 16
			Mx Z	5.4 15
		Sk	iP	23 43 43.4
			iS	23 45 40.8
		Um	iP	23 44 11.6
			iS	23 46 31.0
		Ud	iP	23 44 28.0
			i	23 44 31.5
			i(SS)	23 47 35.5
		De	iP	23 45 13.7
		Jan Mayen (h = N). M = 4.8 (Up,Ki). Ki has recorded a clear, but weak T-phase.		

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

1970 Feb.	23	Um	iP		03 30 06.9
"	23	Up	iP		03 54 19.3
			i		03 54 24.1
		Um	iP		03 54 01.0
		Ud	iP		03 54 24.5
		Bonin Islands (h = 35 km).			
"	23	Up	eSKP		09 25 12
		Ki	iPKP		09 22 13.5
		Um	iPKP		09 22 19.5
			iSKP		09 24 59.7
		De	iPKP		09 22 32.2
		Fiji Islands (h = 540 km).			
"	23	Up	iP		11 30 05.8 C
			i		11 30 12.2
					micr sec
			P	Z'	0.1 0.6
			Mx	E	3.0 16
			Mx	N	3.3 15
			Mx	Z	2.4 13
		Ki	iP		11 30 41.5 C
					micr sec
			P	Z'	0.3 1.1
			Mx	E	4.1 15
			Mx	N	3.9 16
			Mx	Z	4.3 13
		Sk	iP		11 30 40.6 C
		Um	iP		11 30 18.6 C
		Ud	iP		11 30 21.4 C
			i		11 34 03.0
		De	iP		11 30 05.4 C
		Iran (h = 20 km).			
		m = 6.0, M = 5.6 (Up,Ki).			
"	23	Up	iP		13 00 09.7
		Ki	iP		12 59 16.0
					micr sec
			P	Z'	0.1 0.9
		Sk	iP		12 59 44.1
		Um	iP		12 59 43.4 C
			i		12 59 51.0
		Ud	iP		13 00 06.8 C
		De	iP		13 00 29.7 C
			i		13 00 40.6
		South of Alaska (h = N).			
"	23	Up	i(Sg)		14 31 00.5
"	23	Up	iSKP		18 02 13.0
		Ki	iSKP		18 01 48.7
		Sk	iSKP		18 02 06.2
		(cont.)			

1970 Feb.	23	(cont.)		
		Um	iSKP	18 02 01.6
		Ud	iPKP	17 59 24.4
			iSKP	18 02 14.8
		De	iPKP	17 59 35.4
			iSKP	18 02 26.1
		Fiji Islands (h = 580 km).		
"	23	Up	iPKP	19 34 05.9
			i	19 34 25.4
		Ud	iPKP	19 34 15.2
		Kermadec Islands (h = N).		
"	23	Up	iP	21 00 23.5
		Ki	iP	21 00 01.9
		Sk	eP	21 00 28
		Um	iP	21 00 10.0
		Ud	iP	21 00 33.5
		Luzon (h = 45 km).		
"	23	Um	iP	22 30 57.9
		Ud	iP	22 31 29.0 D
		Japan (h = 50 km).		
"	23	Up	iP	22 45 08.7 C
			ipP	22 45 42.1
		Ki	iP	22 45 18.6
		Sk	iP	22 45 34.8
		Um	iP	22 45 07.5 C
		Ud	iP	22 45 25.2
		De	iP	22 45 21.6
		Hindu Kush. h = 160 km (Up).		
"	23	Um	iP	23 00 32.4
		Japan (h = 70 km).		
"	24	Ki	iPKP	00 55 35.9
		Ud	iPKP	00 55 46.0
		De	iPKP	00 55 57.7
			i	00 56 11.2
		Tonga Islands (h = 50 km).		
"	24	Ki	iP	01 42 51.4
		Pacific Ocean, off coast of Mexico (h = N).		
"	24	Ki	iP	01 50 54.0
		Ud	iP	01 49 57.8
		De	iP	01 49 27.4
		Dodecanese Islands (h = 100 km).		
"	24	Up	iP	02 17 53.5 C
		(cont.)		

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

1970
Feb. 24 (cont.)

Up			micr	sec
	P	Z'	0.4	0.7
	Mx	E	3.3	16
	Mx	N	4.9	20
	Mx	Z	8.4	20
Ki	iP		02 17 36.0 C	
			micr	sec
	P	Z'	1.0	1.5
	Mx	E	7.8	13
	Mx	N	13	19
	Mx	Z	7.7	12
Sk	iP		02 18 03.3	
	i		02 18 04.5	
Um	iP		02 17 40.2 C	
	i		02 17 41.3	
Ud	iP		02 18 05.8	
De	iP		02 18 12.2	

Szechwan, China (h = N).
m = 6.7, M = 6.0 (Up,Ki).

" 24 Ki iP 04 16 13.6
Java (h = N).

" 24 Ki iP 06 34 21.0
Um iP 06 34 28.0 C
Ud iP 06 34 50.8
Luzon (h = 45 km).

" 24 Up iP 06 52 14.8
Ki iP 06 52 14.7
Um iP 06 52 10.8
Ud iP 06 52 27.1
Andaman Islands (h = 35 km).

" 24 Up iP 08 15 52.9

			micr	sec
	Mx	E	1.7	18
	Mx	N	2.7	19
	Mx	Z	3.2	20
Ki	iP		08 14 59.5	
	i		08 15 15.1	
			micr	sec
	P	Z'	0.2	1.7
	Mx	E	2.3	16
	Mx	N	3.3	20
	Mx	Z	7.8	23
Sk	iP		08 15 17.3	
Um	iP		08 15 21.3	
Ud	iP		08 15 42.4	
De	iP		08 16 07.0	

Gulf of Alaska (h = 15 km).
M = 5.5 (Up,Ki).

1970
Feb. 24 Um iP 12 02 30.7
Ud iP 12 02 00.8

" 24 Up iPKP 15 27 19.2
Ki iPKP 15 27 07.7
Um iPKP 15 27 12.2
Ud iPKP 15 27 21.6
De iPKP 15 27 26.9
Solomon Islands (h = 40 km).

" 24 Ki iP 17 41 51.0
Um iP 17 42 21.1
Ud eP 17 42 43
Unimak Island (h = 25 km).

" 24 Um iPKP 23 37 12.1
Chile (h = 25 km).

" 25 Up iP 05 25 41.3
Um iP 05 25 39.6
Ud iP 05 25 58.8
Karakorum (Pamir).

" 25 Up iP 08 08 10.5
Ki iP 08 07 29.1 C
Sk iP 08 08 03.1
Um iP 08 07 47.4 C
Ud iP 08 08 17.7 C
Japan (h = 60 km).

" 25 Up iP 10 32 44.9 C

	iX		10 33 20.5	
			micr	sec
	P	Z'	0.1	0.8
	Mx	E	6.8	18
	Mx	N	3.4	19
	Mx	Z	8.6	18
Ki	iP		10 32 20.3 C	
	iX		10 32 55.8	
			micr	sec
	P	Z'	0.1	1.0
	Mx	E	2.7	15
	Mx	N	2.5	16
	Mx	Z	3.2	15
Sk	iP		10 32 47.8 C	
Um	iP		10 32 28.9 C	
	i		10 32 44.4	
Ud	iP		10 32 53.8 C	
	iX		10 33 30.0	
De	iP		10 33 04.4	

Formosa (h = 50 km).
m = 6.0, M = 5.9 (Up,Ki).
The phase X may be P of an aftershock, 35.8 sec later.

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

1970 Feb.	25	Um	iP	13 00 17.0
			i	13 00 28.8
"	25	Up	eSg	13 42 31
		Ki	iSg	13 44 58.5
		Sk	iSg	13 44 20.6
		Um	iSg	13 42 59.8
			i	13 43 07.5
		Ud	iLgl	13 43 34.4
		Esthonia.		
		Origin time = 13 40 20.		
		Explosion?		
"	25	Up	iP	14 40 27.1
		Ki	iP	14 39 53.2
		Sk	iP	14 40 01.0
		Um	eP	14 40 12
		Ud	iP	14 40 19.0 C
		Nevada.		
		Underground explosion.		
"	25	Ud	iP	14 56 35.9
"	25	Up	ePP	15 15 23
		Ki	iP	15 14 53.4
		Sk	iP	15 14 58.5
		Um	iP	15 14 32.9
		Ud	iP	15 14 41.8 C
		Iran-USSR (h = 35 km).		
"	25	Um	iP	16 05 23.5
			i	16 05 30.9
		Ud	iP	16 04 56.3
"	25	Up	i(P)	22 14 19.3
		Ud	iP	22 14 06.0
"	26	Up	iP	04 21 16.9
		Ki	iP	04 20 59.8
		Um	iP	04 21 05.0
		Ud	iP	04 21 23.8
		Talaud Islands (h = 80 km).		
"	26	Ki	iP	06 08 30.0
			ipP	06 08 41.3
		Um	epP	06 09 03
		Ud	iP	06 09 22.5
			ipP	06 09 33.2
		De	epP	06 09 57
		Aleutian Islands. h = 40 km (Ki,Ud).		
"	26	Up	iP	09 03 10.4
		(cont.)		

1970 Feb.	26	(cont.)		
		Ki	iP	09 03 20.1 C
		Um	iP	09 03 09.7 C
		Ud	iP	09 03 27.3
		Hindu Kush.		
"	26	Um	i(P)	12 10 42.1
"	26	Up	iSg	12 27 20.5
		Um	iSg	12 27 51.5
		De	iLgl	12 28 48.2
		Esthonia.		
		Origin time = 12 25 10.		
		Explosion?		
"	26	Sk	eP	13 09 53
		Ud	iP	13 09 07.8
"	26	Um	iSg	13 14 40.0
		Ud	iSg	13 15 20.5
		Probably Esthonia.		
		Explosion?		
"	26	Ud	iP	13 55 18.5
"	26	Up	iP	15 41 48.9
		Ki	iP	15 41 14.7
		Sk	iP	15 41 22.9
		Um	iP	15 41 34.1 C
		Ud	iP	15 41 40.9
		Nevada.		
		Underground explosion.		
"	26	Up	iP	16 02 37.3 C
				micr sec
			P Z'	0.3 0.7
			Mx E	1.5 20
			Mx N	1.3 21
			Mx Z	1.8 19
		Ki	iP	16 02 20.1 C
				micr sec
			P Z'	0.1 1.0
			Mx E	3.0 20
			Mx N	0.9 16
			Mx Z	4.4 20
		Sk	iP	16 02 43.0 C
		Um	iP	16 02 25.5 C
		Ud	iP	16 02 46.3 C
		De	iP	16 02 51.7 C
		Mindoro (h = 70 km).		
		m = 6.3, M = 5.6 (Up.Ki).		
"	26	Ki	iSg	16 18 04.9
		(cont.)		

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

1970
Feb. 26 (cont.)

Sk	e		16 17 40		
	iSg		16 18 09.3		
Um	iSg		16 18 31.7		
Ud	iSg		16 19 59.1		

Nordland, Norway,
66.4°N, 14.8°E.
Origin time = 16 16 36.
Explosion?

" 26

Up	iP		19 39 41.8		C
	ipP		19 39 46.4		
			micr	sec	
	P	Z'	0.1	0.5	
Ki	iP		19 39 40.8		C
	ipP		19 39 45.3		
			micr	sec	
	P	Z'	0.1	0.8	
Sk	iP		19 40 00.6		C
	ipP		19 40 06.1		
Um	iP		19 39 36.2		
	ipP		19 39 41.0		
Ud	iP		19 39 56.4		C
De	iP		19 39 55.4		

Nepal. h = 20 km (Up,Ki,Sk, Um).
m = 6.0 (Up,Ki).

" 26

Up	iP		19 57 34.6		
Sk	eP		19 58 15		
Um	iP		19 58 14.8		
Ud	iP		19 57 44.8		

Greece.

" 26

Ki	iP		20 37 21.5		
	i		20 37 52.9		
Ud	iP		20 37 43.3		

" 26

Up	iP		21 29 16.1		
Ud	iP		21 29 05.4		

" 26

Up	iP		21 31 38.0		
Ud	iP		21 31 24.3		

" 26

Up	iP		23 17 03.2		C
	ipP		23 17 09.4		
			micr	sec	
	P	Z'	0.2	1.0	
	pP	Z'	0.4	1.1	
	Mx	E	1.5	16	
	Mx	N	2.6	21	
	Mx	Z	2.0	21	
Ki	iP		23 16 17.1		

(cont.)

1970
Feb. 26 (cont.)

Ki	ipP		23 16 25.8		
	iX		23 16 38.4		
			micr	sec	
	P	Z'	0.1	1.0	
	pP	Z'	0.3	1.0	
	Mx	E	4.4	19	
	Mx	N	3.7	20	
	Mx	Z	6.8	19	
Sk	iP		23 16 52.7		C
	ipP		23 17 00.7		
Um	iP		23 16 37.9		C
	ipP		23 16 44.4		
	iX		23 16 57.4		
Ud	iP		23 17 09.2		C
	ipP		23 17 15.1		
De	iP		23 17 27.0		C
	ipP		23 17 34.6		
	iX		23 17 47.1		

Kurile Islands. h = 25 km (Up,Ki,Sk,Um,Ud,De).
m = 6.2, M = 5.7 (Up,Ki).
An alternative and slightly more likely interpretation is that pP instead is the P of another Kurile Islands shock, 7.2 sec after the first one, and that X is pP to the second shock, giving a focal depth of 45 km.

" 26

Up	iP		23 30 59.1		
Ki	iP		23 30 55.5		
Sk	eP		23 31 17		
Um	iP		23 30 54.0		
Ud	iP		23 31 12.2		
De	eP		23 31 13		

" 26

Up	iP		23 40 08.2		C
			micr	sec	
	P	Z'	0.4	1.0	
	Mx	E	1.8	16	
	Mx	N	3.2	20	
	Mx	Z	3.7	19	
Ki	iP		23 39 22.2		C
	ipP		23 39 31.6		
			micr	sec	
	P	Z'	0.4	1.0	
	Mx	E	7.4	19	
	Mx	N	5.0	20	
	Mx	Z	10	18	
Sk	iP		23 39 58.4		
Um	iP		23 39 42.9		C
	ipP		23 39 50.3		

(cont.)

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

1970
Feb. 26 (cont.)

Ud	iP		23 40 14.4	C
	ipP		23 40 21.4	
De	iP		23 40 32.0	C

Kurile Islands. h = 30 km
(Ki,Um,Ud).
m = 6.5, M = 5.9 (Up,Ki).

" 26

Up	iP		23 40 27.5		C
			micr	sec	
	P	Z'	0.5	1.0	
Ki	iP		23 39 41.4		
			micr	sec	
	P	Z'	0.3	1.0	
Sk	iP		23 40 18.7		
Um	iP		23 40 02.4		
	ipP		23 40 10.9		
Ud	iP		23 40 33.5		C
De	iP		23 40 50.6		C

Kurile Islands. h = 30 km
(Um).
Origin time = 23 29 22.
m = 6.5 (Up,Ki).

" 26

Up	iPKP	23 44 19.5
Um	iPKP	23 44 07.9

Fiji Islands (h = 20 km).

" 26-27

Up	iP	00 00 21.2
Ki	iP	23 59 34.9
Um	iP	23 59 56.3
Ud	iP	00 00 27.2
De	iP	00 00 45.1

Kurile Islands (h = 35 km).

" 27

Up	iP	01 28 03.2
Um	iP	01 27 38.7
Ud	iP	01 28 09.6

Kurile Islands.
Origin time = 01 17 00.

" 27

Up	iP	01 46 13.9
Ki	iP	01 45 28.9
Sk	iP	01 46 03.3
Um	iP	01 45 48.9
Ud	iP	01 46 20.1 C
De	iP	01 46 37.7

Kurile Islands (h = 20 km).

" 27

Up	iP	01 53 56.7
Ki	eP	01 53 10
Um	iP	01 53 31.8
Ud	iP	01 54 03.1

Kurile Islands (h = N).

1970
Feb. 27

Up	iP		01 56 17.8	
	i		01 56 19.6	
			micr	sec
	P	Z'	0.2	1.0
	Mx	E	1.4	15
	Mx	N	1.7	17
	Mx	Z	2.0	16
Ki	iP		01 55 32.5	
			micr	sec
	P	Z'	0.1	1.0
	Mx	E	2.4	18
	Mx	N	1.5	19
	Mx	Z	2.5	18
Sk	iP		01 56 07.4	
Um	iP		01 55 52.4	
Ud	iP		01 56 23.1	
De	eP		01 56 42	

Kurile Islands (h = 15 km).
m = 6.1, M = 5.5 (Up,Ki).

" 27

Up	iP	02 05 45.6
Ki	iP	02 05 00.6
Um	iP	02 05 21.1
Ud	iP	02 05 51.6
	ipP	02 06 03.2

Kurile Islands. h = 45 km
(Ud).

" 27

Up	iP	02 10 50.6	
Ki	iP	02 10 05.9	
Um	iP	02 10 25.7	
Ud	iP	02 10 56.6	C
	i	02 11 12.9	
De	eP	02 11 14	

Kurile Islands (h = 25 km).

" 27

Up	iP		02 11 34.1	
Ki	iP		02 10 48.6	
			micr	sec
	P	Z'	0.1	1.0
Um	iP		02 11 08.8	
Ud	iP		02 11 40.7	
De	eP		02 11 58	

Kurile Islands.
Origin time = 02 00 29.

" 27

Up	iP	02 25 12.9
Um	iP	02 24 47.9
Ud	iP	02 25 18.9

Kurile Islands (h = 30 km).

" 27 Up iP 03 01 59.5 C
(cont.)

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

1970
Feb. 27 (cont.)

Up			micr	sec	
	P	Z'	0.1	0.6	
	Mx	E	1.0	17	
	Mx	N	1.2	15	
	Mx	Z	1.2	15	
Ki	iP		03 01 14.1		
	ipP		03 01 24.7		
			micr	sec	
	P	Z'	0.1	1.0	
	Mx	E	2.0	19	
	Mx	N	1.7	20	
	Mx	Z	2.4	16	
Sk	iP		03 01 49.7		
Um	iP		03 01 35.2	C	
	ipP		03 01 46.2		
Ud	iP		03 02 05.7	C	
	ipP		03 02 19.2		
De	iP		03 02 22.5		

Kurile Islands. h = 45 km (Ki,Um,Ud).
m = 6.0, M = 5.4 (Up,Ki).

" 27	Up	iPKP	03 26 58.5		
	Ki	iSKP	03 29 31.3		
	Um	iPKP	03 26 53.9		
		iSKP	03 29 41.8		
	Ud	iPKP	03 27 01.3	C	
		iSKP	03 29 54.7		
	De	iPKP	03 27 12.0		

Tonga-Kermadec Islands (h = 550 km).

" 27	Up	iP	03 52 19.2		
	Ki	iP	03 51 34.0		
	Um	iP	03 51 53.6		
	Ud	iP	03 52 25.5		
	De	eP	03 52 43		

Kurile Islands (h = 35 km).

" 27	Ud	iP	04 56 41.2		
" 27	Ud	iPKP	05 04 34.0		
	De	iPKP	05 04 46.3	C	

Tonga Islands (h = 40 km).

" 27	Up	iP	06 04 32.7		
	Ki	iP	06 03 48.2		
	Sk	iP	06 04 23.8		
	Um	iP	06 04 08.3		
		ipP	06 04 20.0		
	Ud	iP	06 04 39.6	C	

Kurile Islands. h = 45 km (Um).

1970
Feb. 27

Up	iP		07 17 44.4		
Ki	iP		07 16 59.0		
Um	iP		07 17 20.0		
Ud	iP		07 17 50.3		

Kurile Islands.
Origin time = 07 06 40.

" 27	Up	iP	07 19 05.6		
		i	07 19 19.3		
		iS	07 28 14.9		
		iP'P'	07 47 08.2		
			micr	sec	
		P	Z'	0.6	0.7
		P'P'	Z'	0.1	1.0
		Mx	E	4.6	20
		Mx	N	5.3	20
		Mx	Z	6.8	23
	Ki	iP	07 18 13.6		
		i	07 18 17.6		
		iS	07 26 33		
		eP'P'	07 47 23		
			micr	sec	
		P	Z'	1.7	0.8
		Mx	E	5.1	19
		Mx	N	4.3	20
		Mx	Z	5.1	20
	Sk	iP	07 18 45.6		
		i	07 18 49.6		
		eP'P'	07 47 18		
		i	07 47 22.6		
	Um	iP	07 18 38.4		
		i	07 18 42.8		
		iS	07 27 17		
		eP'P'	07 47 11		
	Ud	iP	07 19 06.6	D	
		iS	07 28 16.8		
		iP'P'	07 47 10.5		
	De	iP	07 19 28.6		
		i	07 19 31.6		

Aleutian Islands (h = 20 km).
m = 7.1, M = 5.9 (Up,Ki).
Double P, small and large, average interval = 3.8 sec.

" 27	Up	iP	07 28 59.0		
		ipP	07 29 08.2		
			micr	sec	
		P	Z'	0.1	0.7
	Ki	iP	07 28 06.8		
			micr	sec	
		P	Z'	0.1	0.8
	Sk	iP	07 28 39.0		
	Um	iP	07 28 32.5	C	

(cont.)

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

1970
Feb. 27 (cont.)

Ud	iP	07 29 00.0	C

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

" 27	Up	iP	08 00 38.8	
	Ki	iP	07 59 47.8	
	Ud	iP	08 00 40.0	

Aleutian Islands (h = 40 km).

" 27	Up	iP	08 01 35.7	
		ipP	08 01 45.4	
	Ki	iP	08 00 43.7	
	Sk	eP	08 01 16	
	Um	iP	08 01 08.9	
	Ud	iP	08 01 35.7	

Aleutian Islands. h = 35 km (Up).

" 27	Up	iP		08 29 10.7	
		i		08 29 14.5	
	Ki	iP		08 28 18.1	
				micr	sec
		P	Z'	0.1	0.9
	Sk	eP		08 28 50	
	Um	iP		08 28 44.1	C
	Ud	iP		08 29 10.9	

Aleutian Islands (h = 20 km).

" 27	Up	iP	08 37 57.5	
	Ud	iP	08 38 08.2	
" 27	Up	iP	09 05 31.6	
	Ki	iP	09 04 39.6	
	Um	iP	09 05 04.9	
	Ud	iP	09 05 32.5	C

Aleutian Islands (h = N).

" 27	Um	iP	09 07 21.8	
	Ud	iP	09 07 52.1	
" 27	Up	iS^x	09 20 28.2	
		i	09 20 42.2	
		iSg	09 20 46.4	
			micr	sec
		Sg	0.1	0.5
	Ki	iRg	09 22 52.0	
	Sk	iPn	09 18 09.8	
		iP^x	09 18 16.3	
		iS^x	09 19 15.5	
		iRg	09 19 48.1	
	Um	iSn	09 20 39.8	

(cont.)

1970
Feb. 27 (cont.)

Um	iSg	09 21 33.4	
Ud	iPg	09 18 37.1	
	i	09 19 25.0	
	iSg	09 19 41.9	
De	eP^x	09 18 57	
	iSn	09 19 55.9	
	iS^x	09 20 30.0	
	iSg	09 20 45.9	

Off west coast of Norway, 61.0°N, 4.0°E.
Origin time = 09 17 01.
Solution checked with Norwegian and Finnish readings.

" 27	Up	iP		09 47 09.6	
		ipP		09 47 22.5	
	Ki	iP		09 46 24.4	
		ipP		09 46 37.9	
				micr	sec
		P	Z'	0.1	1.3
		Mx	E	0.8	17
		Mx	N	0.6	17
		Mx	Z	0.6	14
	Um	iP		09 46 44.5	
		ipP		09 46 57.8	
	Ud	iP		09 47 15.2	C
		ipP		09 47 26.8	
		i(PcP)		09 47 36.7	

Kurile Islands. h = 45 km (Up,Ki,Um,Ud).

" 27	Up	iP		09 50 23.3	
		iPcP		09 50 56.1	
	Ki	iP		09 49 32.7	
		iPcP		09 50 27.0	
				micr	sec
		P	Z'	0.1	1.3
	Sk	iP		09 50 10.1	
		iPcP		09 50 48.0	
	Um	iP		09 49 57.5	
		iPcP		09 50 40.0	
	Ud	iP		09 50 27.6	
		iPcP		09 50 59.4	
	De	iP		09 50 51.0	
		iPcP		09 51 13.3	

Kurile Islands (h = 130 km).

" 27	Up	iP		10 00 26.6	
	Ki	iP		09 59 41.4	
				micr	sec
		P	Z'	0.1	1.0

(cont.)

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

1970
Feb. 27 (cont.)

Sk	eP		10 00 16	
Um	iP		10 00 02.0	
	ipP		10 00 14.3	
Ud	iP		10 00 32.1	C

Kurile Islands. h = 45 km (Um).

" 27	Up	iP		10 02 09.4
	Ki	iP		10 01 23.8
				micr sec
		P	Z'	0.1 1.0
	Sk	eP		10 01 59
	Um	iP		10 01 44.7
	Ud	iP		10 02 15.5
	De	eP		10 02 34

Kurile Islands (h = 35 km).

" 27	Up	iP		10 02 28.5
	Um	iP		10 02 04.8
	Ud	iP		10 02 35.1
	De	iP		10 02 54.6

Kurile Islands.
Origin time = 09 51 25.

" 27	Up	iP		10 16 53.6
	Ki	iP		10 16 01.5
	Um	iP		10 16 27.3
	Ud	iP		10 16 54.8

Aleutian Islands (h = 25 km).

" 27	Ki	iP		10 24 23.4
				micr sec
		Mx	E	0.6 15
		Mx	N	0.5 14
	Sk	eP		10 24 57
	Um	iP		10 24 39.4
	Ud	iP		10 25 09.0

Japan (h = 25 km).

" 27	Up	iP		10 28 50.9
	Ki	iP		10 28 05.6
	Um	iP		10 28 25.9
	Ud	iP		10 28 56.9

Kurile Islands (h = N).

" 27	Up	iP		11 01 31.6
		i		11 05 34.7
		iPP		11 05 47.9
				micr sec
		Mx	E	0.8 21
		Mx	N	1.2 23
	Ki	iP		11 01 22.4

(cont.)

1970
Feb. 27 (cont.)

Ki	iPP		11 05 37.1	
			micr sec	
	PP	Z'	0.1 1.3	
	Mx	E	0.5 13	
	Mx	N	0.8 20	
	Mx	Z	0.9 17	
Sk	e		11 04 52	
	iPP		11 06 03.7	
Um	iP		11 01 23.5	
	i		11 04 44.8	
	i		11 05 31.8	
	iPP		11 05 41.6	
Ud	iP		11 01 40.2	
	e		11 04 49	
	iPP		11 06 05.0	

Flores Sea (h = 170 km).
M = 5.6 (Up,Ki).
M uncorrected for focal depth. Early PP-arrivals precede PP, as reported above.

" 27	Ki	iPn		11 01 42.1
		iSn		11 02 40.6
		iSg		11 03 04.5

D = 540 km = 4.9°.

	Sk	iLgl		11 05 26.1
	Um	iS^{x}		11 03 37.4
		iSg		11 03 54.4

Northwest Russia, 67.4°N, 33.2°E.
Origin time = 11 00 25.
Explosion?

" 27	Up	iP		11 42 14.2
	Um	iP		11 42 41.8

" 27	Um	iPKP		12 02 21.0

New Hebrides Islands (h = 130 km).

" 27	Ud	iP		12 15 17.6

" 27	Up	iP		13 11 54.4
				micr sec
		Mx	E	0.7 12
		Mx	N	0.8 14
		Mx	Z	0.9 15
	Ki	iP		13 11 18.6
		Mx	E	1.3 16
		Mx	N	1.2 15
		Mx	Z	1.4 15

(cont.)

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

1970
Feb. 27 (cont.)

Sk	iP	13 11 54.9
Um	iP	13 11 33.8
	i	13 11 37.3
	iS	13 21 07
Ud	iP	13 12 01.4
	i	13 14 38.8
De	iP	13 12 18.5

South of Japan (h = 15 km).
M = 5.3 (Up,Ki).

" 27

Up	iP	13 40 27.5
	i	13 41 09.0

" 27

Up	eP	15 03 38
	iS	15 06 49.0
Ki	iP	15 04 53.2
Sk	eS	15 08 39
Um	iP	15 04 07.6
	iS	15 07 53.8
Ud	eP	15 03 55
	iS	15 07 29.9
	iLgl	15 09 37.6
De	iP	15 03 28.3
	iS	15 06 31.5

Black Sea, 45°N, 32°E.
Origin time = 14 59 33.

" 27

Up	iSn	16 45 30.7
	i(S^x)	16 45 49.9
	iSg	16 46 18.8
Ki	iLgl	16 47 51.9
Sk	ePn	16 43 52
	iSn	16 44 45.9
	iSg	16 45 16.8
Um	iSn	16 46 04.8
	i	16 46 22.8
	i(Lgl)	16 47 05.8
Ud	iPn	16 43 50.9
	iP^x	16 43 57.4
	iSn	16 44 48.0
	iSg	16 45 18.4
De	eSn	16 45 32
	iSg	16 46 14.7

Off west coast of Norway,
60.6°N, 3.6°E.
Origin time = 16 42 33.

" 27

Up	iP	17 12 55.6
	ipP	17 13 07.4
Ki	iP	17 12 10.4
	ipP	17 12 21.6
Sk	iP	17 12 46.4

(cont.)

1970
Feb. 27 (cont.)

Sk	ipP	17 12 58.0
Um	iP	17 12 31.2
	ipP	17 12 42.8
Ud	iP	17 13 01.8
	ipP	17 13 13.7
De	ipP	17 13 32.5

Kurile Islands. h = 45 km
(Up,Ki,Sk,Um,Ud).

" 27

Up	iP	19 03 13.3
Ki	iP	19 02 21.0
Sk	eP	19 02 51
Um	iP	19 02 47.1
Ud	iP	19 03 14.6

Aleutian Islands (h = 25 km).

" 27

Ki	iP	21 39 40.9
Um	iP	21 40 01.3
Ud	iP	21 40 32.5

Kurile Islands.
Origin time = 21 29 22.

" 28

Up	iP	00 26 40.2
Ki	eP	00 25 55
Um	iP	00 26 16.2 C
Ud	iP	00 26 47.2 C

Japan (h = 60 km).

" 28

Up	iP	00 30 00.6
Ki	iP	00 29 07.5
Um	iP	00 29 32.9
Ud	iP	00 30 00.3

Aleutian Islands (h = 45 km).

" 28

Up	eP	02 00 36
Ki	iP	01 59 46.2
Ud	iP	02 00 39.1

Aleutian Islands (h = 30 km).

" 28

Up	iP	02 57 46.4
Um	iP	02 57 21.8
Ud	iP	02 57 51.9 C

Kurile Islands (h = N).

" 28

Up	iP	04 07 06.2
Ki	iP	04 06 13.9
Ud	iP	04 07 07.0

Aleutian Islands (h = N).

" 28

Up	iP	04 08 15.7
Ud	iP	04 08 21.7

" 28

Ud	iP	06 06 59.2

Aleutian Islands (h = N).

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

1970
Feb. 28 Up iP 11 03 09.8 D
iS 11 11 54.2
iP'P' 11 31 23.2
micr sec
P Z' 1.7 0.6
P'P' Z' 0.2 0.7
Mx E 12 21
Mx N 15 18
Mx Z 18 19
Ki iP 11 02 16.6
i 11 02 21.0
iS 11 10 16
iP'P' 11 31 33.9
micr sec
P Z' 3.3 1.0
P'P' Z' 1.2 2.0
Mx E 15 17
Mx N 15 20
Sk iP 11 02 47.7
i 11 02 52.2
ipP 11 03 32.1
i 11 31 29.8
iP'P' 11 31 42.7
Um iP 11 02 42.8 D
i 11 02 47.3
ipP 11 03 22.2
iS 11 11 01
iP'P' 11 31 30.3
Ud iP 11 03 09.7 D
iS 11 11 55.1
iP'P' 11 31 17.1
i 11 31 28.5
i 11 32 14.8
De iP 11 03 32.0 D
i 11 03 36.6
iP'P' 11 31 20.2
Aleutian Islands. h = 170 km (Sk,Um).
m = 7.1, M = 6.4 (Up,Ki).
M uncorrected for focal depth. Double P, average interval = 4.5 sec.

" 28 Ud iP 11 34 58.7

" 28 Up iP 11 40 00.9
Um eP 11 39 41

" 28 Up eSg 12 54 58
Ki ePg 12 52 14
iSg 12 52 47.8
Um iPg 12 52 26.7
iSn 12 53 01.2
(cont.)

1970
Feb. 28 (cont.)
Um iSg 12 53 16.3
Ud iSg 12 54 43.3
Nordland, Norway,
66.4°N, 14.5°E.
Origin time = 12 51 19.

" 28 Up iP 20 06 32.3 C
i 20 06 36.8
iS 20 12 43.8
micr sec
P Z' 0.2 0.8
Mx N 1.1 18
Ki iP 20 07 04.8
i 20 07 09.4
micr sec
P Z' 0.2 1.0
Mx E 1.9 12
Mx N 1.5 11
Sk iP 20 07 05.7
i 20 07 10.6
Um iP 20 06 43.5 C
i 20 06 48.2
Ud iP 20 06 47.6 C
i 20 06 52.2
iS 20 13 13.0
i 20 13 19.3
De iP 20 06 32.0 C
Iran (h = 35 km).
m = 6.0, M = 5.1 (Up,Ki).
Double P, average interval = 4.7 sec.

Markus Båth
February 1, 1971

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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

M A R C H 1 - 31, 1970

1970 Mar.	1	Up	iP	01 43 41.9
		Um	iP	01 43 29.9
		Ud	eP	01 43 58
		Luzon (h = N).		
"	1	Up	iP	04 31 00.6
		Ud	iP	04 31 06.6
"	1	Up	iPKP	05 40 25.1
			iSKP	05 42 49.7
		Um	iPKP	05 40 17.1
		Ud	iSKP	05 42 53.8
		De	ePKP	05 40 33
		Santa Cruz Islands (h = 620 km).		
"	1	Up	iP	08 16 31.6
			ipP	08 16 43.0
		Ki	eP	08 15 47
		Um	iP	08 16 07.2
		Ud	iP	08 16 38.5
			ipP	08 16 48.7
		Kurile Islands. h = 40 km (Up,Ud).		
"	1	Um	iP	20 18 42.3 D
"	1	Up	iP	20 19 53.6
			i	20 20 11.9
		Ki	iP	20 20 20.1
		Um	iP	20 20 01.3
		Ud	iP	20 20 10.9
		Iran (h = 40 km).		
"	1	Up	iP	21 27 52.1
		Ki	eP	21 28 32
		Um	iP	21 28 23.8
		Atlantic Ocean (h = N).		
1970 Mar.	1	Ki	iP	21 36 33.0
		Um	iP	21 36 37.4
		Talaud Islands (h = 80 km).		
"	2	Up	iPKP	01 16 06.1
		Ki	iPKP	01 15 52.1 C
		Sk	ePKP	01 16 02
		Um	iPKP	01 15 58.2
		Ud	iPKP	01 16 08.6
		De	iPKP	01 16 15.6
		New Hebrides Islands (h = 150 km).		
"	2	Up	iPKP	02 10 21.5
		Ki	ePKP	02 10 12
		Ud	iPKP	02 10 20.7
		De	iPKP	02 10 33.2
		Tonga Islands (h = N).		
"	2	Ki	iP	02 18 59.8
		De	iP	02 18 07.9
"	2	Up	iP	03 14 48.2
		Ki	iP	03 13 56.5
		Aleutian Islands (h = N).		
"	2	Up	iP	03 31 17.6
		Um	iP	03 30 58.3
		South of Japan (h = 40 km).		
"	2	Up	iP	05 08 36.7
		Ki	iP	05 07 45.2
		Um	iP	05 08 10.5 C
		Ud	iP	05 08 35.8
		De	iP	05 08 59.5
		Aleutian Islands (h = N).		

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

1970 Mar.	2	Um	iP		10 28 18.6
		Hindu Kush.			
"	2	Ki	eP		11 18 25
		Um	iP		11 18 01.7
		Ud	iP		11 17 30.2
		North of Ascension Island (h = N).			
"	2	Um	iP		13 57 33.9
		Japan (h = 50 km).			
"	2	Up	iPKP		15 44 43.5
		Ki	iPKP		15 44 37.6
		Um	iPKP		15 44 39.7
			i		15 44 45.5
		Ud	iPKP		15 44 46.6
		De	iPKP		15 44 58.6
		Tonga-Kermadec Islands (h = 620 km).			
"	3	Up	iPKP		04 22 11.3
		Um	iPKP		04 21 58.7
		Ud	iPKP		04 22 13.2
		De	iPKP		04 22 22.4
"	3	Ki	eP		11 54 21
			iS		11 55 36.5
		Sk	iP		11 54 47.2
			iS		11 56 19.9
		Um	eP		11 54 58
			iS		11 56 52.1
			i		11 57 22.2
		Norwegian Sea, 71°1/2N, 5°E. Origin time = 11 52 47.			
"	3	Up	iP		15 02 45.4
		Ki	iP		15 02 09.3
		Um	iP		15 02 25.0
			ipP		15 02 44.4
		Ud	iP		15 02 52.6
		South of Japan. h = 70 km (Um).			
"	3	Up	i(P)		15 18 42.3
		Ki	e(P)		15 18 51
"	3	Up	iP		16 40 33.2
					micr sec
			P	Z'	0.1 0.7
		Sk	iP		16 41 13.5
		Um	iP		16 41 13.3
			i		16 41 23.4
		Ud	iP		16 40 39.9
			i		16 40 49.4
		(cont.)			

1970 Mar.	3	(cont.)			
		De	iP		16 40 03.9
			i		16 40 07.2
		Greece (h = 40 km).			
"	3	Um	iP		16 52 43.8
		Ceram Sea (h = N).			
"	3	Sk	iP		20 36 21.9
		Mexico (h = 110 km).			
"	3	Up	i(P)		21 32 07.6
		Ki	e(P)		21 30 23
		Ud	i(P)		21 30 53.5
"	4	Up	iPKP		01 05 25.8 C
					micr sec
			PKP	Z'	0.1 0.7
		Um	iPKP		01 05 14.9
		Ud	iPKP		01 05 27.2
			ipPKP		01 05 52.0
		De	iPKP		01 05 37.5
		Tonga-Kermadec Islands. h = 90 km (Ud).			
"	4	Up	iP		01 30 12.9 C
			i		01 31 43.3
					micr sec
			P	Z'	0.3 0.6
		Ki	iP		01 29 55.6 C
			i		01 30 32.6
					micr sec
			P	Z'	0.1 0.8
		Sk	iP		01 30 18.5
		Um	iP		01 30 01.1 C
			i		01 30 14.2
		Ud	iP		01 30 22.0 C
			i		01 30 41.2
		De	iP		01 30 27.5
		Mindoro (h = 60 km). m = 6.3 (Up,Ki).			
"	4	Up	iP		01 56 59.8
		Ki	iP		01 58 07.3 D
					micr sec
			Mx	E	1.5 18
			Mx	N	1.1 18
			Mx	Z	1.5 18
		Sk	iP		01 57 39.0
		Um	iP		01 57 31.6
		Ud	iP		01 57 08.0
		De	iP		01 56 36.5
		Crete (h = 40 km).			
"	4	Up	iP		03 44 00.4
		(cont.)			

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

1970
Mar. 4 (cont.)

Up	ipP		03 44 12.1	
			micr	sec
	P	Z'	0.1	0.8
	Mx	E	4.6	20
	Mx	N	4.7	18
	Mx	Z	6.5	20
Ki	iP		03 43 35.1	
	ipP		03 43 46.5	
			micr	sec
	P	Z'	0.3	1.0
	Mx	E	6.9	23
	Mx	N	4.0	22
	Mx	Z	5.1	18
Sk	iP		03 44 00.6	
	ipP		03 44 10.8	
Um	iP		03 43 45.2 D	
	ipP		03 43 56.2	
	iSKS		03 54 15	
Ud	iP		03 44 06.9 D	
	ipP		03 44 18.3	
De	iP		03 44 18.5	

Mariana Islands.
h = 40 km (Up,Ki,Sk,Um,Ud).
m = 6.5, M = 6.1 (Up,Ki).

" 4

Up	iPKP		06 50 02.8	
	iSKP		06 52 49.6	
			micr	sec
	SKP	Z'	0.2	0.8
	Mx	N	2.3	22
Ki	iSKP		06 52 25.5	
			micr	sec
	SKP	Z'	0.6	1.3
Sk	iPKP		06 49 56.4	
	i		06 50 09.6	
	iSKP		06 52 42.8	
Um	iPKP		06 49 50.4	
	i		06 49 56.8	
	i		06 50 05.4	
	iSKP		06 52 37.5	
	i		06 58 36.2	
	e		07 02 24	
Ud	iPKP		06 50 04.1	
	i		06 51 14.1	
	iSKP		06 52 50.9	
	iSKKP		07 01 31.4	
De	iPKP		06 50 15.2	
	iSKP		06 52 59.3	

Fiji Islands (h = 620 km).

" 4

Ki	iPn		11 19 16.9
	iSn		11 20 03.3
	iLgl		11 20 18.4
Sk	e(Lgl)		11 23 08

(cont.)

1970
Mar. 4 (cont.)

Um	iSg		11 21 50.7

Northwest Russia.
Origin time = 11 18 17.
Explosion?

" 4

Ki	iPn		13 55 51.7
	iSn		13 56 40.0
	iLgl		13 56 54.4
Um	iSg		13 58 23.2

Northwest Russia.
Origin time = 13 54 48.
Explosion?

" 4

Up	iP		14 40 56.2	
			micr	sec
	Mx	E	4.0	19
	Mx	N	2.2	18
	Mx	Z	4.6	18
Ki	iP		14 40 39.6 C	
			micr	sec
	Mx	E	3.7	18
	Mx	N	2.5	18
	Mx	Z	4.6	18
Um	iP		14 40 46.8	
Ud	iP		14 41 05.3	

Mindanao (h = 55 km).
M = 6.1 (Up,Ki).

" 4

Ki	e(P)	19 11 35
Ud	iP	19 12 06.5

" 4

Ki	iP	21 23 34.4 C

" 4

Ud	iP	21 26 12.6

Mindanao (h = 80 km).

" 5

Um	iPKP	02 04 20.6
	i	02 04 30.1

Chile (h = N).

" 5

Up	iP	02 26 35.4
Ki	iP	02 26 17.9
Um	iP	02 26 23.7
Ud	iP	02 26 43.6 C

Mindanao (h = 200 km).

" 5

Ud	iP	02 43 03.1

" 5

Up	iP	04 33 47.6
Ki	iP	04 33 30.7
Um	iP	04 33 34.2
Ud	iP	04 34 00.0

Szechwan, China (h = N).

" 5

Up	iP	04 42 16.4

(cont.)

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

1970
Mar. 5 (cont.)

Up	ipP		04 42 29.3	
			micr	sec
	Mx	E	0.9	19
	Mx	N	1.0	20
	Mx	Z	1.2	19
Ki	eP		04 41 58	
	ipP		04 42 09.9	
			micr	sec
	Mx	E	0.9	18
	Mx	N	0.6	15
Sk	eP		04 42 21	
Um	iP		04 42 04.2	
	ipP		04 42 16.9	
Ud	iP		04 42 23.7	
	ipP		04 42 36.8	

Mindanao.
h = 45 km (Up,Ki,Um,Ud).
M = 5.4 (Up,Ki).

" 5	Up	iP		05 01 06.8
		i		05 01 11.0
			micr	sec
		P	Z' 0.1	0.8
		Mx	E 0.8	14
		Mx	N 0.7	18
		Mx	Z 1.0	13
	Ki	iP		05 01 33.3
			micr	sec
		Mx	E 1.1	15
		Mx	N 0.6	15
	Sk	iP		05 00 51.7
	Um	iP		05 01 24.2
	Ud	eP		05 00 46
		i		05 00 52.4
	De	iP		05 00 52.6

North Atlantic Ocean (h = N).
M = 4.4 (Up,Ki).

" 5	Up	iSg	12 02 51.6
	Um	iSg	12 03 22.1
	Ud	iLgl	12 03 44.2

Esthonia. Explosion?

" 5	Ki	iPn	12 51 19.8
		iP^x	12 51 27.8
		iSn	12 52 06.0
		iLgl	12 52 21.1
	Um	eSg	12 53 59
		i	12 54 27.2

Northwest Russia.
Origin time = 12 50 20.
Explosion?

" 5	Ki	i(P)	14 37 24.4
	Ud	iP	14 36 16.1

1970
Mar. 5

Up	i(P)		15 10 45.1
	i		15 10 56.6
" 5 Um	iP		18 16 16.7
" 5 Up	iP		18 42 51.6
Ki	iP		18 42 58.2
Sk	iP		18 43 16.1
Um	iP		18 42 48.7
Ud	iP		18 43 07.1

Kashmir-India (h = N).

" 5 Ud	iP		22 57 13.9
" 6 Ki	iP		05 03 52.8
" 6 Up	iP		05 26 34.2
Um	iP		05 26 09.2
Ud	iP		05 26 40.4

Okhotsk Sea (h = 390 km).

" 6 Ki	iP		07 22 00.0
Sk	iP		07 23 15.4
" 6 Sk	eP		08 30 23
Ud	i(P)		08 29 22.8 D
" 6 Um	iP		10 09 35.9
Ud	eP		10 10 09
" 6 Ki	iPn		10 52 40.1
	iSn		10 53 38.5
	iSg		10 54 02.5
Sk	e		10 55 49
	iLgl		10 56 27.7
Um	iSn		10 54 19.0
	iSg		10 54 53.0
Ud	iLgl		10 57 24.6

Northwest Russia,
67.7°N, 33.4°E.
Origin time = 10 51 23.
Explosion?

" 6 Up	iP		11 49 59.1
" 6 Ki	iP		13 35 04.3
	i		13 35 26.3
" 6 Ki	iPn		14 25 02.1
	iP^x		14 25 10.6
	iSn		14 25 49.1
	iLgl		14 26 01.7
Sk	iSn		14 27 55.1
	iSg		14 28 59.0
Um	iSg		14 27 35.0
	i		14 27 42.1

(cont.)

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

1970 Mar.	6	(cont.)			
		Ud	i(Lgl)	14 30 05.7	
		Northwest Russia, 68.9°N, 30.8°E.			
		Origin time = 14 24 00.			
		Explosion?			
"	6	Ud	iP	14 35 41.2	
		Nevada.			
		Underground explosion.			
"	6	Up	iP	16 54 38.3	
		Ud	iP	16 54 49.6	
"	6	Up	iPKP	19 31 28.5	
		Um	e(PKP)	19 31 24	
		Ud	iPKP	19 31 28.4	
		De	iPKP	19 31 39.7	
		Tonga-Kermadec Islands (h = 70 km).			
"	6	Ki	iP	19 48 19.5	
		Ud	eP	19 48 04	
		De	eP	19 47 50	
		Iran (h = 70 km).			
"	7	Um	iP	01 05 04.8	
		Chagos Islands (h = N).			
"	7	Up	iP	12 08 09.9	
		Sk	iP	12 08 19.1	
		Um	iP	12 08 22.6	
		Ud	iP	12 07 52.2	
		Atlantic Ocean (h = N).			
"	7	Up	iP	13 07 17.8	
		Ki	iP	13 07 26.2	C
			ipP	13 08 11.3	
		Um	iP	13 07 16.0	C
		Ud	iP	13 07 34.2	
		De	iP	13 07 30.8	
		Hindu Kush. h = 220 km (Ki).			
"	7	Up	iP	15 47 48.9	D
		Ki	iP	15 46 59.7	
		Um	iP	15 47 22.6	D
		Ud	iP	15 47 53.9	
		Okhotsk Sea (h = 390 km).			
"	7	Um	iP	16 16 25.8	
			i	16 16 44.7	
"	7	Up	ePKP	17 19 19	
			ipPKP	17 19 32.1	
		Um	iPKP	17 19 18.9	
		(cont.)			

1970 Mar.	7	(cont.)			
		Ud	ePKP	17 19 21	
		De	iPKP	17 19 31.9	C
		Tonga Islands, h = 50 km (Up).			
"	7	Up	iPKP	17 31 16.1	
			ipPKP	17 31 29.5	
		Um	iPKP	17 31 14.6	
		Ud	iPKP	17 31 15.7	C
			ipPKP	17 31 28.3	
		De	iPKP	17 31 27.7	
			ipPKP	17 31 40.0	
		Tonga Islands. h = 45 km (Up,Ud,De).			
"	7	Up	iP	19 03 47.5	D
		Ki	iP	19 03 08.0	
		Sk	iP	19 03 41.5	
		Um	iP	19 03 25.5	
			ipP	19 03 37.2	
		Ud	iP	19 03 54.5	
		De	iP	19 04 09.2	
		Japan. h = 45 km (Um).			
"	7	Ki	iP	20 03 35.7	
"	7	Up	iPKP	20 10 02.4	
		Ud	iPKP	20 10 04.5	
		De	ePKP	20 10 14	
"	7	Up	iLgl	21 04 25.5	
		Sk	eSg	21 06 21	
		Um	iSg	21 05 09.5	
		Ud	iLgl	21 05 30.5	
		De	iLgl	21 05 59.8	
		Esthonia. Explosion?			
"	7	Up	iP	22 43 29.9	
		Ki	iP	22 43 16.2	
		Um	iP	22 43 20.0	
		Ud	iP	22 43 38.2	C
		Celebes (h = 120 km).			
"	8	Up	iP	01 22 47.9	
		Ki	eP	01 21 55	
		Ud	iP	01 22 48.1	
		Aleutian Islands (h = 25 km).			
"	8	Up	iP	01 39 07.0	
"	8	Up	iP	02 10 56.6	
		Um	iP	02 10 31.8	
		Ud	iP	02 11 02.7	C
		Kurile Islands (h = N).			

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

1970 Mar.	8	Up	iLgl		03 28 56.4	
		Ki	ePn		03 24 56	
			iSn		03 25 52.0	
		Sk	iLgl		03 28 33.3	
		Um	i		03 26 46.9	
			iSg		03 27 10.6	
		Ud	iLgl		03 29 35.5	
		Northwest Russia, 67.6°N, 32.8°E.				
		Origin time = 03 23 42.				
		Explosion?				
"	8	Up	iP		12 04 51.9	
			i		12 04 56.9	
		Ki	iP		12 04 36.5	C
			ipP		12 04 47.4	
					micr	sec
			P	Z'	0.1	1.0
		Sk	iP		12 04 57.1	
		Um	iP		12 04 41.6	
		Ud	iP		12 05 00.4	
			i		12 08 08.9	
		Molucca Passage.				
		h = 40 km (Ki).				
"	8	Ki	iP		17 02 08.8	
		Um	iP		17 02 03.0	
			i		17 02 10.5	
"	8	Up	iP		19 02 21.1	
		Ki	iP		19 01 36.0	
		Sk	iP		19 01 49.6	
		Um	iP		19 02 00.4	
		Ud	iP		19 02 13.0	
		Alberta, Canada (h = 9 km).				
"	8	Ki	iP		19 10 35.6	
		Sk	eP		19 11 08	
		Um	iP		19 11 01.9	
		Ud	iP		19 11 28.2	
		Aleutian Islands (h = 30 km).				
"	9	Up	iP		01 01 23.6	
			ipP		01 01 32.7	
					micr	sec
			P	Z'	0.1	0.9
			Mx	E	1.9	20
			Mx	N	2.3	19
			Mx	Z	1.8	19
		Ki	iP		01 00 42.3	
					micr	sec
			P	Z'	0.1	1.0
			Mx	E	7.4	21
			Mx	N	3.6	19
			Mx	Z	4.4	20
		(cont.)				

1970 Mar.	9	(cont.)				
		Sk	eP		01 01 15	
		Um	iP		01 01 00.1	C
			iPP		01 03 32.5	
		Ud	iP		01 01 30.1	C
		De	iP		01 01 46.6	
		Japan.				
		h = 35 km (Up).				
		m = 6.0, M = 5.7 (Up,Ki).				
"	9	Up	ipP		01 34 58.1	
		Ki	ipP		01 34 16.2	
		Um	iP		01 34 25.0	
			ipP		01 34 35.7	
		Ud	iP		01 34 54.8	
			ipP		01 35 05.1	
		Japan. h = 40 km (Um, Ud).				
"	9	Ud	iP		01 40 20.7	
"	9	Um	eP		03 24 41	
		Ud	iP		03 25 11.5	
		Japan (h = N).				
"	9	Um	iP		13 50 45.5	
"	9	Ki	i(P)		15 16 46.0	
		Ud	iP		15 17 46.4	
"	9	Ki	iP		15 24 58.2	
		Um	iP		15 24 38.5	
"	9	Ki	eSg		16 05 29	
		Sk	eSg		16 05 33	
		Um	iSg		16 05 57.4	
		Nordland, Norway.				
		Origin time = 16 04 00.				
		Explosion?				
"	9	Up	i(PKP)		16 20 21.0	
			iPKP		16 20 24.2	
			iPKS		16 23 55.7	
			e		16 32 43	
					micr	sec
			PKP	Z'	0.1	0.6
			Mx	E	11	20
			Mx	N	20	20
			Mx	Z	22	20
		Ki	i(PKP)		16 20 03.3	
			iPKP		16 20 10.3	
			e		16 33 08	
					micr	sec
			PKP	Z'	0.4	1.2
			Mx	E	17	20
			Mx	N	16	22
			Mx	Z	36	21
		(cont.)				

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

1970 Mar.	9	(cont.)			
		Sk	i(PKP)	16 20 14.3	
			iPKP	16 20 24.5	
			e	16 32 47	
		Um	i(PKP)	16 20 04.7	
			i	16 20 10.0	
			iPKP	16 20 17.4	
			iPKS	16 23 42.1	
		Ud	i(PKP)	16 20 09.9	
			i	16 20 18.4	
			iPKP	16 20 28.3	
			i(PP)	16 23 17.2	
			i	16 32 49.0	
		De	i(PKP)	16 20 21.4	
			i	16 20 23.8	
			iPKP	16 20 27.0	
		New Hebrides Islands (h = 40 km). M = 6.9 (Up,Ki).			
"	9	Up	iPKP	16 46 17.7	
		Ki	iPKP	16 46 03.7	C
		Sk	iPKP	16 46 14.2	
		Um	iPKP	16 46 09.6	
			iPKS	16 49 33.6	
		Ud	iPKP	16 46 19.9	
		New Hebrides Islands. Origin time = 16 27 03.			
"	9	Um	iP	17 33 47.4	
		Ud	iP	17 33 23.2	
		Turkey.			
"	9	Ki	eSg	18 04 54	
		Sk	iSg	18 04 58.3	
		Um	eSg	18 05 23	
			i	18 05 27.5	
		Nordland, Norway. Origin time = 18 03 26. Explosion?			
"	9	Ki	iPKP	18 49 56.5	
		Sk	iPKP	18 50 06.9	
		Um	iPKP	18 50 03.3	
			i	18 50 06.5	
		Ud	iPKP	18 50 13.2	
		New Hebrides Islands (h = 30 km).			
"	9	Up	iPKP	20 07 44.2	
		Ud	iPKP	20 07 45.3	
"	9	Up	i(P)	22 59 37.5	
		Ud	iP	22 59 20.0	

1970 Mar.	10	Up	eP	02 24 06	
		Ki	iP	02 23 49.6	
		Sk	iP	02 24 11.1	
		Um	iP	02 23 55.1	
		Ud	iP	02 24 15.6	
		De	eP	02 24 22	
		Mindanao (h = 100 km).			
"	10	Up	iP	05 09 23.7	C
			iX	05 09 43.2	
			iS	05 18 15.0	
			iP'P'	05 37 35.9	
				micr	sec
			P Z'	0.8	0.9
			Mx E	9.3	21
			Mx N	13	23
			Mx Z	12	21
		Ki	iP	05 08 37.1	C
			iX	05 08 55.4	
			i	05 10 14.8	
				micr	sec
			P Z'	0.3	1.0
			i Z'	0.1	1.0
			Mx E	10	20
			Mx N	10	20
			Mx Z	20	22
		Sk	iP	05 09 13.3	
			iPcP	05 09 42.9	
		Um	iP	05 08 58.4	C
			iPcP	05 09 33.5	
			iS	05 17 29	
			iP'P'	05 37 40.1	
		Ud	iP	05 09 29.5	C
			iP'P'	05 37 33.2	
		De	iP	05 09 48.3	
		Kurile Islands (h = 40 km). m = 6.7, M = 6.2 (Up,Ki). X (Up,Ki) may be P of another shock.			
"	10	Um	iP	05 26 33.5	
		Panama (h = 8 km).			
"	10	Up	iP	05 30 28.5	
			iPcP	05 31 08.8	
				micr	sec
			P Z'	0.3	0.8
		Ki	iP	05 30 17.9	C
			i	05 30 23.9	
			iPcP	05 31 02.4	
		Sk	iP	05 30 42.3	C
			iPcP	05 31 17.5	
		Um	iP	05 30 18.7	C
			iPcP	05 31 02.8	
		(cont.)			

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

1970 Mar.	10	(cont.)			
		Ud	iP	05 30 41.9	C
		De	iP	05 30 44.5	
		Burma (h = N).			
"	10	Up	iP	05 46 04.3	
		Um	iP	05 45 55.4	
		Ud	iP	05 46 15.3	
"	10	Up	iPKP	06 19 17.2	
			i	06 19 38.8	
		Ki	iPKP	06 18 57.7	
		Sk	iPKP	06 19 12.3	C
		Um	e(PKP)	06 19 05	
			iPKP	06 19 07.9	
			i	06 19 21.0	
		Ud	iPKP	06 19 19.2	
		De	iPKP	06 19 27.0	
			i	06 19 43.3	
		South of Kermadec Islands (h = 45 km).			
"	10	Up	iP	06 24 36.3	D
				micr sec	
			P Z'	0.2 1.0	
			Mx E	1.2 25	
			Mx N	1.4 18	
			Mx Z	2.0 24	
		Ki	iP	06 24 18.6	
				micr sec	
			P Z'	0.3 1.0	
			Mx E	2.1 21	
			Mx N	0.8 18	
			Mx Z	2.1 21	
		Sk	iP	06 24 42.2	
		Um	iP	06 24 24.4	
		Ud	iP	06 24 45.0	D
		De	iP	06 24 50.8	
		Luzon (h = 30 km).			
		m = 6.4, M = 5.5 (Up,Ki).			
"	10	Up	iP	08 31 26.5	
		Um	eP	08 31 37	
		Ud	iP	08 31 34.4	
		Indian Ocean (h = N).			
"	10	Ki	iPn	11 01 40.3	
			iSn	11 02 38.7	
			iSg	11 03 04.1	
		Sk	e(Lgl)	11 05 28	
			iSg	11 05 35.6	
		Um	iSg	11 03 54.5	
		Northwest Russia, 67.5°N, 33.4°E.			
		Origin time = 11 00 23.			
		Explosion?			

1970 Mar.	10	Sk	iSg	11 30 31.3	
		Um	iSg	11 29 14.9	
		Ud	iLgl	11 29 44.3	
		De	eLgl	11 30 09	
		Esthonia.			
		Origin time = 11 26 32.			
		Explosion?			
"	10	Um	iP	12 17 59.0	
		Ud	e(P)	12 16 19	
"	10	Ki	eSg	13 04 04	
		Sk	iLgl	13 03 08.7	
		Um	iSg	13 02 01.2	
		Esthonia.			
		Origin time = 12 59 19.			
		Explosion?			
"	10	Ud	iP	13 14 06.7	
		De	iP	13 14 03.6	
		Hindu Kush.			
"	10	Up	iP	14 49 32.4	
		Ki	iP	14 49 07.3	
		Um	iP	14 49 16.4	
		Ud	iP	14 49 42.1	C
"	10	Ud	eP	16 11 56	
		Talaud Islands (h = 100 km).			
"	10	De	iPg	17 05 32.7	
			eSg	17 06 15	
		Probably explosion in the South Baltic area.			
"	10	Ki	iPKP	17 34 01.7	
		Um	iPKP	17 34 00.4	
			i	17 34 17.9	
		De	i(PKP)	17 33 53.9	
		Australia (h = 5 km).			
"	10	Ud	iP	22 14 19.6	
		De	iP	22 14 07.3	
		Iran (h = 70 km).			
"	10	Up	iPKP	23 39 34.6	
			ipPKP	23 39 53.0	
		Ud	iPKP	23 39 36.2	C
		De	iPKP	23 39 45.8	
		Tonga-Kermadec Islands.			
		h = 60 km (Up).			
"	11	Up	eP	01 48 15	
		Ki	eP	01 48 01	
		(cont.)			

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

1970 Mar. 11 (cont.)

Ki			micr	sec
	Mx	E	0.3	12
	Mx	N	0.6	17
Um	eP		01 48 00	
Ud	eP		01 48 25	

Yunnan, China (h = 50 km).

" 11

Ki	iP	10 32 56.1
Ud	iP	10 33 51.8

Aleutian Islands (h = 35 km).

" 11

Ki	iPn	14 22 20.4
	iSn	14 23 23.8
	iLgl	14 23 42.4

Probably northwest Russia.
Origin time = 14 20 55.
Explosion?

" 11

Um	iP	15 19 43.8
	i	15 20 02.5

" 11

Up	iP		22 48 58.3	C
	ipP		22 49 10.4	
	iS		22 57 23.9	
	i(P'P')		23 17 52.2	
	iP'P'		23 18 01.2	
			micr	sec
	P	Z'	0.8	1.0
	P'P'	Z'	0.6	2.0
	Mx	E	2.2	19
	Mx	N	5.2	23
	Mx	Z	4.3	22
Ki	iP		22 48 03.6	
	iS		22 55 42	
			micr	sec
	P	Z'	2.3	1.4
	Mx	E	3.7	20
	Mx	N	4.8	22
	Mx	Z	12	22
Um	iP		22 48 31.4	C
	ipP		22 48 42.9	
	iS		22 56 34	
	i(P'P')		23 17 58.2	
	iP'P'		23 18 09.7	
Ud	iP		22 48 55.3	
	ipP		22 49 07.2	
	iP'P'		23 17 59.5	
De	iP		22 49 19.0	C
	ipP		22 49 30.6	
	iP'P'		23 17 53.5	

Kodiak Island.
h = 45 km (Up,Um,Ud,De).
m = 7.0, M = 5.8 (Up,Ki).

1970 Mar. 11

Ki	iP		23 01 58.6
Um	iP		23 02 26.5
Ud	iP		23 02 51.1

Kodiak Island.
Origin time = 22 52 31.

" 12

Up	iP		01 34 05.6	C
			micr	sec
	P	Z'	0.1	0.7
Ud	iP		01 34 06.6	
De	iP		01 34 17.3	

" 12

Ki	iP	09 30 46.8
Um	iP	09 31 01.6
Ud	iP	09 31 29.1

" 12

Um	eP	12 48 09
	i	12 48 15.9
Ud	e(P)	12 48 52

" 12

Up	iPKP2	13 05 31.0	C
Ki	iPKP	13 04 58.5	C
Sk	iPKP	13 05 11.5	C
Um	iPKP	13 05 06.3	C
Ud	iPKP2	13 05 37.2	
De	iPKP2	13 05 47.9	

New Zealand (h = 80 km).

" 12

Up	iSg	14 41 36.7
Sk	eSg	14 43 25
Um	iSg	14 42 08.3

Esthonia.
Origin time = 14 39 26.
Explosion?

" 12

Up	iP	14 44 06.5
Ki	iP	14 44 10.1
Ud	iP	14 44 23.2 C

Kirghiz SSR (h = 40 km).

" 12

Sk	iP	15 24 09.4

" 12

Up	iSn		16 08 03.4	
	iS^{x}		16 08 21.2	
	iLgl		16 08 27.1	
			micr	sec
	Lgl	Z'	0.1	0.5
Ki	iLgl		16 12 25.3	
Sk	iSn		16 09 08.6	
	iSg		16 09 54.9	
Um	i		16 10 07.8	
	iLgl		16 10 28.8	
Ud	iPn		16 06 55.4	
	iSn		16 07 44.7	

(cont.)

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

1970 Mar. 12 (cont.)

Ud	iSg	16 08 05.6	
De	iPg	16 06 14.4	C
	iSg	16 06 32.7	

Denmark, 55.9°N, 11.5°E.
Origin time = 16 05 46.
Solution checked with Danish (COP) and Norwegian (KON) readings.

" 12

Um	ePKP	16 48 40	
	i	16 48 45.0	
De	iPKP	16 49 02.0	D

Fiji Islands (h = 620 km).

" 12

Up	iPKP		17 22 45.3	D
			micr	sec
	PKP	Z'	0.1	0.7
Um	ePKP		17 22 35	
Ud	iPKP		17 22 47.7	D
De	iPKP		17 22 57.9	

" 12

Up	iP		18 12 34.4	
			micr	sec
	Mx	E	1.0	18
	Mx	N	3.3	18
	Mx	Z	1.5	19
Ki			micr	sec
	Mx	E	1.4	11
	Mx	N	1.6	16
	Mx	Z	1.6	14
Um	iP		18 12 16.6	
Ud	iP		18 12 42.5	

Ryukyu Islands (h = 40 km).
M = 5.6 (Up,Ki).

" 12

Ki	iP	18 18 25.7
Um	iP	18 18 14.4

" 12

Ki	iP	18 18 53.4
Ud	iP	18 19 15.9
De	iP	18 19 16.7

Tien-Shan.

" 12

Up	iP	18 20 44.1
Ki	eP	18 20 31
Sk	iP	18 20 56.3
Um	iP	18 20 32.9
	i	18 20 37.2
Ud	iP	18 20 56.7
De	iP	18 21 02.3

Yunnan, China (h = N).

" 12 Up iP 22 17 44.5
(cont.)

1970 Mar. 12 (cont.)

Up	i	22 17 47.0
Um	iP	22 17 27.2 C
Ud	iP	22 17 53.0

Ryukyu Islands (h = N).

" 13

Up	iP	00 16 25.3
Um	eP	00 16 21
Ud	iP	00 16 26.9 D

" 13 Um iP 00 57 45.1

" 13

Up	iPKP	05 12 03.3
Sk	ePKP	05 11 57
Um	iPKP	05 11 52.1
Ud	iPKP	05 12 04.9

Kermadec Islands (h = 60 km).

" 13

Up	iSn	10 54 09.8
	i	10 54 23.7
	iSg	10 55 07.4
Ki	iPn	10 50 53.1
	iSn	10 51 52.1
	iSg	10 52 16.4
Sk	eSn	10 53 50
	iLgl	10 54 40.0
Um	iSn	10 52 31.1
	iSg	10 53 06.2
Ud	iSn	10 54 29.0
	iLgl	10 55 37.6
De	iLgl	10 57 07.8

Northwest Russia,
67.5°N, 33.3°E.
Origin time = 10 49 36.
Explosion? Unusually strong.

" 13

Ud	i(P)	12 50 43.8
	i	12 51 01.9
De	i(P)	12 52 16.5

" 13

Ki	iP	14 23 10.6
Um	iP	14 23 21.2
Ud	iP	14 23 49.8

" 13

Ki	iPn	14 33 54.1
	iSn	14 34 53.3
	iLgl	14 35 13.9

Probably northwest Russia.
Origin time = 14 32 38.
Explosion?

" 13

Ki	ePn	15 16 52
	iSn	15 17 49.5
	iLgl	15 18 07.1

Probably northwest Russia.
Origin time = 15 15 37.
Explosion?

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

1970 Mar.	13	Ud	i(Sg)	15 45 30.3
		De	i(Sg)	15 44 45.4
"	13	Up	iP	15 50 41.9
		Ki	iP	15 50 21.0
		Um	iP	15 50 29.0
		Ud	iP	15 50 51.7
		Luzon (h = 45 km).		
"	13	Up	iP	17 09 14.1
		Um	iP	17 08 50.4
		Ud	iP	17 09 21.2
		De	eP	17 09 40
		Kurile Islands.		
"	13	Up	iP	17 39 14.7
		Ki	iP	17 38 21.0
		Um	iP	17 38 47.4
		Ud	iP	17 39 16.6
		Aleutian Islands (h = 60 km).		
"	13	Ki	iPKP	18 29 34.0
		Sk	iPKP	18 29 47.6
		New Hebrides Islands (h = 15 km).		
"	13	Up	iP	18 35 08.5 C
		Ki	iP	18 35 02.1
		Sk	iP	18 35 24.7
		Um	iP	18 35 00.7 C
		Ud	iP	18 35 22.1
		De	iP	18 35 24.1
		Burma-India (h = 60 km).		
"	13	Up	iLgl	20 36 13.8
			i	20 36 19.7
		Ki	iP^x	20 32 57.4
			iSn	20 33 25.7
			iSg	20 33 31.2
		Sk	iPn	20 33 15.0
			iP^x	20 33 23.4
			iLgl	20 34 13.7
		Um	iPn	20 33 21.2
			iSn	20 34 11.6
			iLgl	20 34 30.2
		Ud	iSn	20 35 21.4
			iLgl	20 36 03.4
		De	eLgl	20 37 50
			i	20 37 59.1
		Off coast of Nordland, Norway, 67.4°N, 14.2°E. Origin time = 20 32 14.		
"	14	Up	iP	01 12 44.9
		Ki	iP	01 12 05.2
		(cont.)		

1970 Mar.	14	(cont.)		
		Um	iP	01 12 26.0
		Ud	iP	01 12 56.8
"	14	Up	iP	01 23 21.3
		Ud	iP	01 23 10.5
		De	iP	01 23 08.8
		Windward Islands (h = 70 km).		
"	14	Up	iP	01 57 28.4
			iPP	01 58 06.8
				micr sec
			Mx E	4.9 23
			Mx N	8.1 22
			Mx Z	5.1 16
		Ki	iP	01 58 11.8 C
				micr sec
			P Z'	0.2 1.2
			Mx E	3.7 15
			Mx N	3.8 13
			Mx Z	6.3 13
		Sk	i	01 58 52.1
		Um	iP	01 57 45.2
		Ud	iP	01 57 44.3 C
		De	iP	01 57 26.4
		Turkey-Iran (h = 25 km). M = 5.4 (Up,Ki).		
"	14	Ki	iP	02 48 49.7
		Um	iP	02 48 54.5
		Ud	iP	02 49 11.7
		De	iP	02 49 17.3
		Celebes (h = 280 km).		
"	14	Up	iP	03 01 02.7
		Ki	iP	03 00 21.7
		Um	iP	03 00 39.7
		Ud	iP	03 01 11.4
		De	iP	03 01 27.1
		Sikhota Alin (h = 330 km).		
"	14	Um	iP	05 31 39.7
		Ud	iP	05 31 57.7
		Hindu Kush.		
"	14	Ud	iP	07 42 39.9
		De	iP	07 42 36.9
		North Atlantic Ocean (h = N).		
"	14	Up	iRg	08 13 03.0
		Ud	iPg	08 12 31.5
			iSg	08 12 59.2
		De	iPg	08 12 24.7
			iSg	08 12 48.0
			iRg	08 12 55.5
		(cont.)		

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

1970 Mar.	14	(cont.)			
		Östergötland, Sweden,			
		58.1°N, 15.6°E.			
		Origin time = 08 11 49.			
		Explosion?			
"	14	Ki	iSg	12 32 40.8	
		Sk	eSg	12 32 44	
		Um	iSg	12 33 07.7	
		Ud	eLgl	12 34 32	
		Nordland, Norway.			
		Origin time = 12 31 12.			
		Explosion?			
"	14	Up	iP	13 02 24.2	
			ipP	13 02 37.0	
		Ki	iP	13 01 38.2	
		Um	iP	13 01 59.2	
		Ud	iP	13 02 29.8	
		De	iP	13 02 48.1	
		Kurile Islands.			
		h = 45 km (Up).			
"	14	Ki	iPn	13 28 51.2	
			iSn	13 29 40.2	
		Um	iSn	13 30 48.0	
			iSg	13 31 25.3	
		Probably northwest Russia.			
		Origin time = 13 27 46.			
		Explosion?			
"	14	Up	iP	13 56 19.8	
		Ki	iP	13 56 28.7	
		Ud	iP	13 56 08.9	
		De	iP	13 56 07.6	
		Venezuela (h = 100 km).			
"	14	Up	iP	14 22 36.0	
		Ud	iP	14 22 35.9	
		Aleutian Islands (h = 100 km).			
"	14	Up	iP	19 29 58.2	
		Ud	eP	19 30 05	
"	14	Um	iP	19 35 05.1	
"	14	Um	eP	21 02 09	
"	14	Up	iPKP	21 07 53.2	
			i	21 07 55.6	
		Ki	iPKP	21 07 45.8	
		Um	ePKP	21 07 47	
		Ud	iPKP	21 07 55.1	
		De	iPKP	21 08 06.4	
		Fiji Islands (h = 610 km).			

1970 Mar.	14	Up	iP	22 16 38.5	
		Ki	iP	22 16 21.7	
		Um	iP	22 16 25.2	
		Ud	iP	22 16 51.5	
		Szechwan, China (h = 40 km).			
"	15	Up	iP	05 41 50.7	
			ipP	05 42 00.9	
		Ki	iP	05 41 21.4	
			ipP	05 41 32.3	
		Sk	iP	05 41 50.1	
		Um	iP	05 41 33.1	C
			ipP	05 41 43.1	
		Ud	iP	05 41 58.6	C
			ipP	05 42 09.7	
		De	iP	05 42 08.8	
			ipP	05 42 20.0	
		Ryukyu Islands.			
		h = 40 km (Up,Ki,Um,Ud,De).			
"	15	Up	iP	06 17 52.3	
		Um	e(P)	06 17 26	
"	15	Um	eP	08 29 39	
		Japan (h = 50 km).			
"	15	Up	iP	09 15 27.5	
		Ki	iP	09 14 43.6	
		Um	iP	09 15 02.8	C
		Ud	iP	09 15 34.3	C
		De	iP	09 15 51.5	C
		Japan (h = 260 km).			
"	15	Ki	iPKP	12 57 49.1	
			ipPKP	12 58 25.7	
		Um	iPKP	12 57 47.1	
		Ud	iPKP	12 57 38.3	C
			ipPKP	12 58 13.1	
			i	12 58 22.7	
		De	ePKP	12 57 38	
		Chile-Argentina.			
		h = 140 km (Ki,Ud).			
"	15	Ki	eP	13 07 05	
		Um	e(pP)	13 07 58	
		Ud	e(pP)	13 08 27	
			i	13 08 36.8	
			i	13 09 09.8	
		Alaska (h = 100 km).			
"	15	Up	iP	15 17 30.2	
		Um	iP	15 17 39.7	
		Ud	iP	15 17 38.6	
		Iran (h = 70 km).			

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

1970 Mar.	15	Up	iP	18 21 12.2	
		Um	i(P)	18 21 14.2	
		Ud	iP	18 21 20.7	
"	15	Up	iP	18 41 31.9	
		Ki	iP	18 41 40.7	C
		Sk	iP	18 41 57.0	
		Um	eP	18 41 30	C
		Ud	iP	18 41 48.5	
		De	iP	18 41 45.0	
		Hindu Kush (h = 220 km).			
"	16	Up	iP	03 56 03.0	
			i	03 56 05.9	
		Um	iP	03 55 54.6	
		Ud	iP	03 56 17.9	
			i	03 56 20.8	
		De	iP	03 56 20.3	
		Tibet (h = 50 km).			
"	16	Up	iP	07 52 43.2	
		Um	iP	07 52 24.2	
			i	07 52 31.6	
		Ud	iP	07 52 50.4	
		De	eP	07 53 05	
		South of Japan (h = 35 km).			
"	16	Ud	iP	11 35 54.4	
		De	iP	11 36 05.6	C
"	16	Up	eLgl	13 24 38	
		Ki	iSg	13 27 15.1	
		Um	eSg	13 25 15	
		Ud	iLgl	13 25 45.1	
		De	eLgl	13 26 07	
		Esthonia.			
		Origin time = 13 22 33.			
		Explosion?			
"	16	Up	iPKS	16 48 13.6	
			i	16 48 23.1	
				micr sec	
			Mx E	0.8 20	
			Mx N	1.1 22	
			Mx Z	1.3 20	
		Ki		micr sec	
			Mx E	1.2 18	
			Mx N	1.2 19	
			Mx Z	2.8 21	
		Um	iPKS	16 48 00.6	
		New Hebrides Islands			
		(h = 8 km).			
		M = 5.7 (Up,Ki).			
"	16	Up	iP	17 44 21.2	
		Um	iP	17 44 03.1	
		Ud	iP	17 44 29.7	C

1970 Mar.	16	Ki	iPg	18 10 30.3	C
			iSg	18 10 35.1	
			iRg	18 10 37.3	
		Sk	eSg	18 13 10	
		Um	iSg	18 12 22.2	
		Swedish Lapland,			
		67.5°N, 20.1°E.			
		Origin time = 18 10 22.			
		Probably explosion.			
"	16	Ki	iP	19 16 29.6	
		Um	iP	19 16 34.2	
"	16	Sk	e(P)	20 30 57	
"	17	Up	iPKP	01 37 12.1	
				micr sec	
			PKP Z'	0.2 0.7	
		Sk	iPKP	01 37 06.7	
		Um	iPKP	01 37 00.9	
			iPP	01 40 06.0	
		Ud	iPKP	01 37 14.8	
		De	iPKP	01 37 24.9	
		Tonga-Kermadec Islands			
		(h = 90 km).			
"	17	Up	iP	03 31 32.9	C
"	17	Sk	eSg	11 01 45	
		Um	eSg	11 00 16	
"	17	Up	i(P)	12 50 54.7	
		De	iP	12 51 30.5	
"	17	Sk	iSg	15 30 00.0	
		Ud	iPg	15 28 27.0	
			iSg	15 28 51.5	
		De	eSg	15 29 57	
		South Norway,			
		59.8°N, 9.9°E.			
		Origin time = 15 27 50.			
"	17	Up	iPP	17 05 36.8	
		Sk	iP	17 05 58.8	
		Um	eP	17 05 53	
		Ud	iP	17 05 19.1	
		De	eP	17 04 46	
		Yugoslavia (h = N).			
"	17	Up	iP	17 18 34.2	C
		Ki	iP	17 18 02.0	C
		Sk	iP	17 18 33.3	
		Um	iP	17 18 15.0	C
		Ud	iP	17 18 42.5	C
		Japan (h = 130 km).			

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

1970 Mar.	17	Ki	iPKP	17 40 26.7
		South Sandwich Islands (h = N).		
"	17	Up	iS^x	18 06 47.2
			iSg	18 07 04.6
		Ki	ePg	18 04 26
			iSg	18 05 02.0
		Sk	ePg	18 04 27
			iSg	18 05 06.0
		Um	iPg	18 04 41.0
			iSn	18 05 14.5
			iSg	18 05 28.5
		Ud	eSg	18 06 55
		Nordland, Norway, 66.3°N, 14.6°E.		
		Origin time = 18 03 33.		
"	17	Up	iP	21 48 00.2
		Aleutian Islands (h = 20 km).		
"	17	Up	ipP	22 10 32.9
		Ki	iP	22 09 35.8
		Sk	eP	22 10 00
		Um	iP	22 09 54.5
			ipP	22 10 08.2
		Ud	iP	22 10 18.5
			ipP	22 10 29.1
		De	ipP	22 10 53.4
		Gulf of Alaska. h = 50 km (Um,Ud). The phase interpreted as pP is much more pronounced than P.		
"	17	Up	iP	23 26 59.2
			iPP	23 28 22.9
		Ki	iP	23 27 21.6
				micr sec
			Mx N	2.0 20
		Sk	eP	23 27 32
		Um	iP	23 27 06.4
			iPP	23 28 33.0
		Ud	iP	23 27 12.6
			i	23 27 16.0
			iPP	23 28 41.3
		De	iP	23 27 06.3
		Iran (h = 20 km).		
"	18	Up	iP	00 21 30.0
		Um	iP	00 21 05.0
		Ud	iP	00 21 36.1
			i	00 21 47.8
"	18	Up	iSg	12 28 07.6
		(cont.)		

1970 Mar.	18	(cont.)		
		Um	iSg	12 28 38.5
		Ud	iLgl	12 29 07.1
		De	eLgl	12 29 36
		Esthonia. Origin time = 12 25 57. Explosion?		
"	18	Ud	iSg	12 45 15.9
		De	iPg	12 44 38.9
			iSg	12 45 04.1
"	18	Up	i(P)	14 40 51.8
				micr sec
			(P) Z'	0.1 0.8
"	18	Up	iP	14 56 40.2
		Ki	e(P)	14 57 05
"	18	Up	iP	17 24 03.5
		Ki	iP	17 25 11.4
		Um	eP	17 24 44
		Ud	eP	17 24 20
		Cyprus (h = 30 km).		
"	18	Ki	eP	21 41 54
		Um	iP	21 40 45.3
"	18	Um	iP	23 30 38.2
		Nicaragua (h = 55 km).		
"	19	Up	iP	03 32 44.1
		Um	iP	03 32 32.1
"	19	Up	iLgl	08 28 23.9
		Ud	iPg	08 26 59.4
			iSg	08 27 33.1
		De	iPg	08 27 07.1
			iS^x	08 27 44.5
			iSg	08 27 50.6
		Off south coast of Norway, 58.5°N, 9.4°E. Origin time = 08 26 07.		
"	19	Up	iLgl	09 05 18.2
		Ud	iSg	09 04 25.6
		De	iS^x	09 04 34.8
			iSg	09 04 43.4
		Off south coast of Norway.		
"	19	Um	e(Sg)	12 04 33
"	19	Up	i(P)	13 29 03.0
"	19	Um	i(P)	14 38 28.2 C
		Ud	i(P)	14 39 57.9

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

1970 Mar.	19	Up	iP		15 32 04.0	D
			ipP		15 32 14.1	
					micr	sec
			P	Z'	0.2	0.8
		Ki	iP		15 31 11.5	D
					micr	sec
			P	Z'	0.3	0.9
		Sk	iP		15 31 43.0	
		Um	iP		15 31 37.2	D
		Ud	iP		15 32 04.7	D
		De	iP		15 32 25.9	
		Aleutian Islands.				
		h = 35 km (Up).				
		m = 6.4 (Up,Ki).				
"	19	Up	iP		16 42 19.1	
		Um	i(P)		16 41 52.4	
		Ud	iP		16 42 30.6	
"	19	Up	ePKP		19 32 55	
		Ud	iPKP		19 32 56.3	
		Kermadec Islands (h = 8 km).				
"	19	Up	iP		23 44 24.8	
			iPcP		23 44 48.9	
			iP'P'		00 12 43.2	
					micr	sec
			P	Z'	0.6	1.0
			P'P'	Z'	0.2	1.4
			Mx	E	9.4	23
			Mx	N	15	23
			Mx	Z	9.5	24
		Ki	iP		23 43 32.2	C
			i		23 43 38.8	
			iP'P'		00 13 00.1	
					micr	sec
			P	Z'	0.4	1.0
			P'P'	Z'	0.5	2.0
			Mx	E	14	22
			Mx	N	12	20
			Mx	Z	21	20
		Sk	iP		23 44 08.1	
		Um	iP		23 43 57.7	C
			iPcP		23 44 39.1	
			iS		23 52 30	
			iP'P'		00 12 48.0	
		Ud	iP		23 44 26.6	C
			i		23 44 30.6	
			iP'P'		00 12 39.9	
		De	iP		23 44 48.8	
			iPcP		23 45 12.2	
		Aleutian Islands (h = 15 km).				
		m = 6.6, M = 6.3 (Up,Ki).				

1970 Mar.	20	Um	ePKP		01 38 17	
		Ud	iPKP		01 38 30.4	
		De	iPKP		01 38 41.8	
"	20	Ki	iP		06 15 34.6	
		Halmahera (h = 100 km).				
"	20	Ki	iPn		06 18 51.3	
			iSn		06 19 50.0	
		Probably northwest Russia.				
		Origin time = 06 17 34.				
		Explosion?				
"	20	Ki	iPn		10 50 35.6	C
			iSn		10 51 33.6	
			iSg		10 51 56.8	
		Sk	eLgl		10 54 23	
		Um	iSn		10 52 13.5	
			iLgl		10 52 43.4	
		Ud	iLgl		10 55 22.5	
		Northwest Russia,				
		67.6°N, 33.2°E.				
		Origin time = 10 49 21.				
		Explosion?				
"	20	Up	iP		11 20 47.2	
			i		11 21 34.6	
		Ki	iP		11 20 31.6	C
					micr	sec
			P	Z'	0.1	1.0
			Mx	E	1.5	20
			Mx	N	0.4	15
			Mx	Z	1.4	19
		Sk	iP		11 20 53.5	
		Um	iP		11 20 37.0	C
			i		11 20 46.6	
		Ud	iP		11 20 56.0	C
			ipP		11 21 11.9	
		De	iP		11 21 02.3	
		Mindanao.				
		h = 60 km (Ud).				
"	20	Um	iPKP		11 37 02.4	
		Ud	iPKP		11 37 05.1	
		New Hebrides Islands				
		(h = 250 km).				
"	20	Up	iP		15 00 20.5	
		Ud	iP		15 00 14.4	
"	20	Up	iPg		15 42 23.7	
			iSg		15 42 55.4	
		Um	iLgl		15 44 52.5	
		(cont.)				

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

1970
Mar. 20 (cont.)

Ud	iPg		15 42 11.4	
	iSg		15 42 33.1	
	i(Rg)		15 42 46.8	
De	iPg		15 42 16.2	
	iSg		15 42 44.5	

Västergötland, Sweden,
58.4°N, 14.0°E.
Origin time = 15 41 36.

" 20 Um iP 18 59 41.6

" 20 Up

		micr	sec
Mx	E	1.1	22
Mx	N	0.9	18
Mx	Z	1.5	19

Ki

		micr	sec
Mx	E	0.8	19
Mx	Z	1.1	17

Um ePKP 22 53 32
Chile (h = N).
M = 5.6 (Up,Ki).

" 21 Ki iP 02 52 02.2

		micr	sec
Mx	E	0.5	14
Mx	N	0.6	16
Mx	Z	1.1	17

Sk	eP	02 51 57
Um	iP	02 52 11.9
Ud	iP	02 52 16.3
De	iP	02 52 27.9

Gulf of California
(h = 5 km).

" 21 Ud iSKP 04 35 01.9
De iPKP 04 31 46.1
Fiji Islands (h = 350 km).

" 21 Ki iP 05 01 31.1

" 21 Up iP 06 04 02.5
Ki iP 06 03 08.0 C
Sk iP 06 03 35.3
Um iP 06 03 36.1 C
De iP 06 04 22.9
Kodiak Island (h = 20 km).

" 21 Um ePKP 06 27 14
i 06 27 22.3
Santa Cruz Islands
(h = 35 km).

" 21 Up iP 10 22 29.5 C
(cont.)

1970
Mar. 21 (cont.)

Up	i		10 22 33.7	
			micr	sec
	Mx	E	0.7	19
	Mx	N	0.8	20
	Mx	Z	1.2	19
Ki	iP		10 21 58.4	
			micr	sec
	Mx	E	0.9	20
	Mx	N	0.8	19
	Mx	Z	1.0	18
Sk	iP		10 22 26.5	
Um	iP		10 22 11.3	
Ud	iP		10 22 36.2 C	
De	iP		10 22 47.7	

Volcano Islands (h = N).
M = 5.2 (Up,Ki).

" 21 Up eSg 11 19 04
Ki e(Sg) 11 22 23
Sk eSg 11 21 25
Um e 11 20 14
iSg 11 20 25.3
Ud iSg 11 19 56.5
De i(Sg) 11 19 23.4
Latvia-Lithuania.
Explosion?

" 21 Up eP 12 10 07
Ki eP 12 09 49
i 12 10 00.9
Um eP 12 09 58
i 12 10 06.2
Ud iP 12 10 18.3
Molucca Passage (h = 15 km).

" 21 Ki iPn 13 02 36.6
iSn 13 03 24.1
iSg 13 03 40.8
Probably northwest Russia.
Origin time = 13 01 33.
Explosion?

" 21 Ki iPn 13 03 03.8
iSn 13 03 52.1
iLgl 13 04 07.2
Probably northwest Russia.
Origin time = 13 02 00.
Explosion?

21 Up eP 13 30 56
Ki iP 13 31 26.6
Sk eP 13 31 26
Um eP 13 31 04
(cont.)

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

1970 Mar.	21	(cont.)		
		Ud	iP	13 31 06.5
			i	13 31 26.1
		De	eP	13 30 53
		Iran (h = 40 km).		
"	21	Up	iP	17 44 55.5
		Ki	iP	17 44 10.2
		Um	iP	17 44 30.3
		Ud	iP	17 45 01.6
		De	iP	17 45 19.4
		Kurile Islands (h = 45 km).		
"	21	Um	e	20 48 32
		Ud	eS	20 45 36
			e(Sg)	20 47 06
		De	iRg	20 45 07.9
		Germany (h = 15 km).		
"	21	Up	iPKP	22 51 44.4
		Um	ePKP	22 51 43
		Ud	iPKP	22 51 43.2
		De	iPKP	22 51 54.7 C
		Tonga Islands (h = N).		
"	22	Up	eSg	00 44 09
		Ki	ePn	00 39 27
			iSn	00 40 13.2
			iSg	00 40 28.5
		Sk	e	00 42 40
			iSg	00 43 23.2
		Um	iSn	00 41 19.9
			iSg	00 41 59.3
		Ud	i(Lgl)	00 44 32.4
		Northwest Russia,		
		69.0°N, 30.3°E.		
		Origin time = 00 38 26.		
		Explosion?		
"	22	Up	iP	03 03 34.8
		Um	iP	03 03 23.4
			i	03 03 25.0
		Ud	iP	03 03 36.5
"	22	Up	iPKP	08 43 55.4
		Ud	iPKP	08 43 55.6
			i	08 43 58.7
		De	iPKP	08 44 05.8
		Fiji Islands (h = 190 km).		
"	22	Ud	iPKP	09 51 57.7
		Easter Island (h = N).		
"	22	Up	iP	10 09 26.5
		(cont.)		

1970 Mar.	22	(cont.)		
		Ki	iP	10 10 30.3
		Um	eP	10 09 57
		Ud	eP	10 09 15
		Morocco.		
"	22	Up	iP	10 52 21.4
		Ki	iP	10 52 02.9
		Sk	iP	10 52 30.5
		Um	iP	10 52 07.0
		Ud	iP	10 52 34.2
		Szechwan, China (h = 15 km).		
"	22	Ki	ePn	13 08 06
			iSn	13 09 07.9
		Sk	iPn	13 09 06.8
		Um	iSn	13 09 37.3
			iSg	13 10 12.6
		Northwest Russia.		
		Origin time = 13 06 45.		
		Explosion?		
"	22	Up	iP	20 27 39.1
		Um	iP	20 27 36.8
		Ud	iP	20 27 55.5 C
		Hindu Kush.		
"	22	Um	iPKP	22 50 09.3
		Santa Cruz Islands (h = 20 km).		
"	22	Up	ePKP	23 21 13
			i	23 21 26.5
		Ki	iPKP	23 21 13.9
		Sk	iPKP	23 21 22.8 C
		Um	iPKP	23 21 12.8
		Ud	ePKP	23 21 27
		West of Macquarie Islands		
		(h = N).		
"	23	Up	iP	00 31 48.8
			iPP	00 34 24.5
				micr sec
			P Z'	0.2 0.9
			PP Z'	0.1 1.0
			Mx E	1.0 17
			Mx N	1.4 22
		Ki	iP	00 31 07.9
			iS	00 39 28.1
				micr sec
			P Z'	0.2 1.0
			Mx E	1.0 16
			Mx N	0.8 17
			Mx Z	1.1 17
		Sk	iP	00 31 42.7
		(cont.)		

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

1970 Mar.	23	(cont.)				
		Sk	iPP		00 34 15.2	
			i		00 35 52.7	
		Um	iP		00 31 26.1	
			iS		00 40 01.9	
		Ud	iP		00 31 56.5	
		De	iP		00 32 12.5	
			iPP		00 34 54.4	
		Japan (h = 150 km).				
		m = 6.0, M = 5.2 (Up,Ki).				
"	23	Up	iP		02 02 28.1	
			i		02 02 33.7	
					micr	sec
			P	Z'	0.1	1.0
			Mx	E	1.0	17
			Mx	N	1.3	21
			Mx	Z	1.6	17
		Ki	iP		02 02 43.3	
			i		02 02 49.2	
					micr	sec
			Mx	E	0.8	14
			Mx	N	0.9	16
			Mx	Z	0.9	15
		Sk	iP		02 02 53.2	
			i		02 02 59.5	
		Um	iP		02 02 30.9	
			i		02 02 36.7	
		Ud	iP		02 02 42.4	C
			i		02 02 48.0	
		De	iP		02 02 35.2	C
			i		02 02 41.3	
		India (h = 3 km).				
		M = 5.1 (Up,Ki).				
		Double P, average interval = 5.9 sec.				
"	23	Up	iP		04 23 39.4	
		Ki	iP		04 22 46.7	
		Um	iP		04 23 11.3	
		Ud	iP		04 23 42.6	
		Kamchatka (h = 60 km).				
"	23	Ki	iP		06 15 30.0	
		Kamchatka (h = N).				
"	23	Um	iP		08 01 33.4	
		Turkey.				
"	23	Ki	iP		09 21 01.1	
		Um	iP		09 21 06.7	
		Ud	iP		09 21 26.6	
		Mindanao (h = 20 km).				
"	23	Um	iP		09 49 26.7	

1970 Mar.	23	Up	iP		12 26 16.7	C
			ipP		12 26 55.5	
					micr	sec
			P	Z'	0.3	0.9
		Ki	iP		12 25 45.8	C
					micr	sec
			P	Z'	0.3	1.3
			Mx	E	0.4	12
			Mx	N	0.4	13
			Mx	Z	1.1	17
		Sk	iP		12 26 16.3	C
		Um	iP		12 25 58.0	C
			ipP		12 26 37.4	
		Ud	iP		12 26 25.1	C
			ipP		12 27 05.4	
		De	iP		12 26 36.9	C
		Ryukyu Islands.				
		h = 160 km (Up,Um,Ud).				
		m = 6.0 (Up,Ki).				
"	23	Up	iP		13 37 17.5	C
"	23	Ki	iP		13 56 47.6	
"	23	Up	iP		21 00 43.8	C
			i		21 00 47.0	
					micr	sec
			P	Z'	0.1	0.5
			Mx	E	1.6	10
			Mx	N	1.4	14
			Mx	Z	1.2	13
		Ki	iP		21 01 59.9	
					micr	sec
			Mx	E	2.7	15
			Mx	N	0.8	12
			Mx	Z	1.3	12
		Sk	iP		21 01 25.8	
		Um	iP		21 01 24.2	
			i		21 01 33.4	
		Ud	iP		21 00 50.1	
			i		21 00 54.3	
		De	iP		21 00 14.0	
			i		21 00 23.9	
		Greece-Albania (h = 10 km).				
		M = 4.9 (Up,Ki).				
"	23	Ki	iP		21 41 50.4	
		Um	iP		21 41 47.0	
			i		21 42 04.1	
		Sumatra (h = 110 km).				
"	23	Sk	iP		22 10 43.2	
		Ud	i(P)		22 10 58.9	
"	23	Up	iP		22 25 45.2	D
		(cont.)				

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

1970 Mar.	23	(cont.)				
		Ki	iP		22 24 51.4	
		Aleutian Islands (h = 45 km).				
"	23	Up	iP		23 16 48.8	C
					micr	sec
			P	Z'	0.1	0.9
		Ki	iP		23 16 14.5	C
					micr	sec
			P	Z'	0.1	1.1
		Sk	iP		23 16 22.8	C
		Um	iP		23 16 34.1	C
		Ud	iP		23 16 40.7	C
		De	iP		23 16 56.7	
		Nevada.				
		m = 5.9 (Up,Ki).				
		Underground explosion.				
"	24	Um	iP		02 28 45.0	
		Ud	iP		02 29 11.5	
		Aleutian Islands (h = 10 km).				
"	24	Ki	iP		04 04 42.7	C
"	24	Um	ePKP		04 38 26	
			i		04 38 34.7	
		New Hebrides Islands				
		(h = 60 km).				
"	24	Up	iPKP		10 54 05.6	
			i(PP)		10 55 06.9	
			iPP		10 55 26.2	
					micr	sec
			Mx	E	0.8	18
			Mx	N	1.2	20
			Mx	Z	2.0	21
		Ki	iPKP		10 54 02.5	C
			iPP		10 55 11.9	
			iPKKP		11 04 38.7	
					micr	sec
			PKP	Z'	0.1	1.0
			Mx	E	2.1	21
			Mx	N	1.5	21
			Mx	Z	2.3	19
		Sk	iPKP		10 54 11.1	C
			ePP		10 55 42	
			i(PKKP)		11 04 28.5	
		Um	iPKP		10 54 03.3	
			i(PP)		10 55 00.3	
			iPP		10 55 16.3	
			iPKKP		11 04 30.3	
			i		11 04 34.3	
		Ud	e(P)		10 50 48	
			iPKP		10 54 10.1	
			i(PP)		10 55 28.1	
		(cont.)				

1970 Mar.	24	(cont.)				
		Ud	iPP		10 55 41.7	
			iPKKP		11 04 19.2	
			i		11 04 23.3	
		De	iPKP		10 54 11.4	
		Australia (h = N).				
		M = 5.7 (Up,Ki).				
		(PP) denotes early arrivals				
		of PP.				
"	24	Up	iSg		11 35 17.6	
		Ud	iPg		11 34 28.8	
			iSg		11 34 50.6	
		De	iPg		11 34 38.8	
			iSg		11 35 07.5	
		Cf March 20, 15 42.				
"	24	Ki	eP		11 36 08	
		Um	iP		11 36 14.8	
		Ud	iP		11 36 35.0	
		Leyte (h = 40 km).				
"	24	Up	iLgl		11 40 13.5	
		Sk	iSg		11 40 06.7	
			i		11 40 16.3	
		Ud	iSn		11 38 55.6	
			iSg		11 39 14.7	
		Southwest Norway,				
		59.0°N, 6.3°E.				
		Origin time = 11 37 08.				
		Solution checked with				
		Kongsberg readings.				
"	24	Sk	iLgl		13 05 51.2	
		Um	iSg		13 04 44.3	
		Ud	iLgl		13 05 09.5	
		Esthonia.				
		Origin time = 13 02 00.				
		Explosion?				
"	24	De	iSg		13 05 27.1	
"	24	Ud	iPKP		13 23 55.7	
		De	iPKP		13 24 07.2	C
		Fiji Islands (h = 610 km).				
"	24	Up	iSg		14 05 43.8	
					micr	sec
			Sg	Z'	0.1	0.5
		Sk	eLgl		14 06 50	
		Ud	iPg		14 04 47.0	
			i		14 04 51.1	
			iSg		14 05 00.8	
		De	iPg		14 05 12.5	
			iSg		14 05 41.4	
		(cont.)				

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

1970
Mar. 24 (cont.)
Lake Vener, Sweden,
58.9°N, 13.5°E.
Origin time = 14 04 24.

" 24 Ud iP 14 39 33.9
Leeward Islands (h = 20 km).

" 24 Up iP 15 53 27.5
Um iP 15 53 30.4 C
Ud iP 15 53 48.2
Hindu Kush (h = 55 km).

" 24 Up iSg 15 59 51.6
Ud iSg 15 59 07.6
De iSg 15 59 48.3
Lake Vener, Sweden,
58.9°N, 13.5°E.
Origin time = 15 58 31.

" 24 Up iP 23 57 50.9
micr sec
P Z' 0.1 0.8
Ki iP 23 57 34.9
Sk iP 23 58 01.9
Um iP 23 57 38.6
Ud iP 23 58 03.5
De eP 23 58 08
China (h = 8 km).

" 25 Um iP 06 57 00.1
Ud i(P) 06 56 41.0

" 25 Ki iPn 10 57 11.2
iSn 10 58 09.7
iLgl 10 58 30.0
Sk i(Lgl) 11 00 57.6
iSg 11 01 05.2
Um iSg 10 59 19.1
Ud i(Lgl) 11 01 55.6
Northwest Russia,
67.2°N, 33.2°E.
Origin time = 10 55 55.
Explosion?

" 25 Up iP 12 31 43.0 C
i 12 31 49.1
Ki iP 12 30 48.9
Sk iP 12 31 15.9
Um iP 12 31 16.9 C
i 12 31 28.7
Ud iP 12 31 40.9
De iP 12 32 03.4
Kodiak Island (h = 10 km).

" 25 Ki eSg 15 17 16
(cont.)

1970
Mar. 25 (cont.)
Sk iSg 15 17 21.2
Um iSn 15 17 31.2
iSg 15 17 44.8
Ud e(Lgl) 15 19 12
Nordland, Norway.
Origin time = 15 15 48.

" 25 Up iP 16 16 59.4
Um iP 16 17 33.8

" 25 Up iP 17 20 17.3
Um iP 17 20 50.9
i 17 21 01.7
Ud iP 17 20 23.7 D
De iP 17 19 50.4
Crete.

" 26 Um iP 05 55 45.0

" 26 Up iP 15 32 03.3
i 15 32 07.5
Ki eP 15 31 11
Sk iP 15 31 40.8
Um iP 15 31 36.8
Ud iP 15 32 03.5
De iP 15 32 25.9
Aleutian Islands (h = 4 km).

" 26 Up iP 19 11 48.1 C
iX 19 12 16.6
iPP 19 14 37.4
micr sec
P Z' 0.7 1.0
PP Z' 0.4 1.7
Mx E 1.7 18
Mx N 2.5 18
Mx Z 2.9 18
Ki iP 19 11 13.8 C
iPP 19 13 45.0
iP'P' 19 39 10.8
micr sec
P Z' 0.8 1.4
PP Z' 0.7 2.0
P'P' Z' 0.5 1.7
Mx E 3.4 19
Mx N 2.3 16
Mx Z 4.5 17
Sk iP 19 11 22.1 C
iPP 19 13 53.7
Um iP 19 11 33.2 C
iX 19 12 03.5
i 19 14 08.7
iPP 19 14 15.7
Ud iP 19 11 40.2 C
(cont.)

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

1970
Mar. 26 (cont.)

Ud	iPP	19 14 16.5
De	iP	19 11 57.0 C

Nevada.
m = 6.7, M = 5.8 (Up,Ki).
Underground explosion.
The PP arrivals are early, by about 6 sec in average.

" 26

Um	iP	21 25 48.6

Japan (h = 40 km).

" 27

Up	iP	00 30 11.9
Ki	eP	00 30 12
Um	iP	00 30 08.7
Ud	iP	00 30 21.9

" 27

Up	iP	03 17 35.5
	iSS	03 20 36.9
Ki	eP	03 16 04
	i	03 16 16.0
	iS	03 17 23.9
Sk	iP	03 16 39.2
	iS	03 18 22.0
Um	eP	03 17 04
	i	03 18 44.3
	iS	03 19 09.3
Ud	eP	03 17 27
	i	03 17 41.5
	iSS	03 20 14.8

Northeast of Jan Mayen, near 72 1/2°N, 4°E.
Origin time = 03 14 24.

" 27

Up	iP		04 39 30.3	C
	i		04 39 34.7	
Ki	iP		04 39 31.4	C
	i		04 39 36.5	
			micr	sec
	P	Z'	0.1	1.0
Sk	iP		04 39 17.2	C
	i		04 39 22.2	
Um	iP		04 39 33.6	
	i		04 39 37.9	
Ud	iP		04 39 20.5	C
De	iP		04 39 23.3	C
	i		04 39 27.7	

Colombia (h = 30 km).
Double P.

" 27

Ki	iPKP	04 53 07.3
Um	iPKP	04 53 13.3

New Hebrides Islands (h = 15 km).

1970
Mar. 27

Up	iP	05 09 52.3
	i	05 09 56.2
Ki	iP	05 09 37.0 C
Sk	iP	05 10 07.8
Um	iP	05 09 37.4
Ud	iP	05 10 08.8 C
De	iP	05 10 15.7

Kazakh SSR.
Underground explosion.

" 27

Um	iPKP	08 36 09.5
	i	08 36 19.9

Fiji Islands (h = 590 km).

" 27

Ki	eP	08 55 14
Ud	eP	08 56 10

Kurile Islands (h = 45 km).

" 27

Up	iP	09 47 52.4
Ki	iP	09 48 00.7
Sk	iP	09 48 17.9
Um	iP	09 47 50.5
Ud	iP	09 48 08.7 C
De	iP	09 48 05.6

Hindu Kush (h = 210 km).

" 27

Up	e	13 03 00
	iSg	13 03 12.9
Ki	eLgl	13 05 26
	iSg	13 05 48.3
Sk	iSg	13 05 05.9
Um	iSg	13 03 45.9
Ud	iLgl	13 04 19.5

Esthonia.
Origin time = 13 01 06.
Explosion?

" 27

Up	iP	13 44 42.5
	i	13 44 56.4
Um	iP	13 45 30.7

" 27

Up	iP		18 50 12.3	
	iPP		18 54 07.7	
			micr	sec
	P	Z'	0.1	1.0
	Mx	E	24	21
	Mx	N	69	23
	Mx	Z	22	24
Ki	iP		18 50 00.5	
	ipP		18 50 10.5	
	iSKS		19 00 32	
			micr	sec
	P	Z'	0.5	1.5
	pP	Z'	0.7	1.5

(cont.)

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

1970 Mar.	27	(cont.)				
		Ki	Mx	E	45	20
			Mx	N	36	18
			Mx	Z	41	19
		Sk	iP		18 50 17.9	
			ipP		18 50 29.0	
			iPP		18 54 15.9	
		Um	iP		18 50 02.6	
			iSKS		19 00 36	
		Ud	iP		18 50 20.4	
			iPP		18 54 14.5	
		De	iP		18 50 24.8	
			iPP		18 54 31.2	
		Celebes.				
		h = 40 km (Ki,Sk).				
		m = 6.4, M = 7.1 (Up,Ki).				
"	27	Up	ipP		18 52 24.2	
			i		18 52 35.3	
		Sk	ipP		18 52 08.9	
		Um	ipP		18 52 21.2	
		Ud	ipP		18 52 27.6	
		Nicaragua (h = 180 km).				
"	27	Sk	e		19 55 40	
		Um	iPg		19 53 58.6	
			iSg		19 54 13.5	
"	28	Ki	iPKP		03 41 32.2	
		New Hebrides Islands (h = 3 km).				
"	28	Up	iP		03 47 35.3	
		Um	iP		03 47 29.8	
		Ud	iP		03 47 09.9	
		North Atlantic Ocean (h = N).				
"	28	Up	iSg		07 04 56.4	
		Ki	eSg		07 08 25	
		Sk	eSg		07 07 14	
		Um	e		07 06 03	
			iSg		07 06 19.1	
		Ud	iSg		07 05 40.5	
		Latvia, near Riga.				
		Origin time = 07 02 24.				
		Explosion?				
"	28	Ki	iPg		07 28 29.9	
			iSg		07 28 46.9	
		Sk	iSg		07 31 15.1	
		Um	iSg		07 30 03.8	
		Sweden-Finland border region, 67.3°N, 23.~~4~~6°E.				
		Origin time = 07 28 ~~04~~09.				

1970 Mar.	28	Up	iP		07 44 57.7	
		Ki	iP		07 44 15.8	
		Sk	eP		07 44 50	
		Um	iP		07 44 34.7	
		Ud	iP		07 45 05.2	
		Japan (h = 70 km).				
"	28	Up	ePKP		08 04 41	
			iPKKP		08 14 59.8	
					micr	sec
			Mx	E	2.3	20
			Mx	N	1.9	23
			Mx	Z	2.6	20
		Ki	iPKKP		08 15 34.5	
					micr	sec
			Mx	E	3.5	23
			Mx	N	0.9	19
			Mx	Z	2.8	19
		Sk	iPKP		08 04 42.5	
		Um	iPKP		08 04 31.1	
			ePKKP		08 15 21	
		Ud	iPKP		08 04 41.3	
		De	iPKP		08 04 52.3	
		Solomon Islands (h = 60 km).				
		M = 6.0 (Up,Ki).				
"	28	Up	iP		09 50 21.5	
		Ki	iP		09 49 48.4 C	
		Ud	iP		09 50 15.4 C	
		Nevada (h = 5 km).				
"	28	Up	iP		09 53 21.6	
			ipP		09 53 31.3	
			i		09 54 25.8	
			iPP		09 55 19.0	
					micr	sec
			Mx	E	3.2	17
			Mx	N	2.9	18
			Mx	Z	5.4	17
		Ki	iP		09 52 45.1	
			iPP		09 54 23.7	
					micr	sec
			Mx	E	2.3	14
			Mx	N	1.8	16
			Mx	Z	3.2	16
		Sk	iP		09 53 22.9	
			ipP		09 53 32.3	
			iPP		09 55 19.8	
		Um	iP		09 52 58.1	
			ipP		09 53 06.9	
		Ud	iP		09 53 32.2	
			iPP		09 55 31.6	
		De	iP		09 53 57.4	
		Lake Baikal.				
		h = 40 km (Up,Sk,Um).				
		M = 5.4 (Up,Ki).				

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

1970 Mar.	28	Up	iPKP	11 36 31.7	
		Ki	iPKP	11 36 43.9	C
		Um	iPKP	11 36 38.3	
		South Sandwich Islands (h = 30 km).			
"	28	Ki	iPn	11 40 33.3	
			iSn	11 41 21.6	
		Um	iSn	11 41 50.9	
			iSg	11 42 18.8	
		Probably northwest Russia. Origin time = 11 39 28. Explosion?			
"	28	Ki	iPn	12 18 15.6	
			iSn	12 19 04.2	
			iSg	12 19 21.1	
		Probably northwest Russia. Origin time = 12 17 12. Explosion?			
"	28	Up	iP	13 13 56.2	
		Ud	iP	13 14 04.7	
		Ionian Islands.			
"	28	Um	iP	16 47 28.0	
"	28	Ki	iSg	17 12 24.7	
		Sk	iSg	17 12 54.4	
		Um	iSg	17 11 03.6	
		Ud	iSg	17 12 33.8	
		Lake Ladoga region. Explosion?			
"	28	Up	iP	18 00 00.5	
		Ki	iP	17 59 06.6	
		Um	iP	17 59 34.0	
		Ud	iP	17 59 59.1	
		Unimak Island (h = 25 km).			
"	28	Up	iP	21 07 16.9	
			iS	21 11 23	
				micr sec	
			P	Z' 2.9 1.0	
			Mx	E 520 11	
			Mx	N 510 11	
		Ki	iP	21 08 24.3	
			i	21 08 30.6	
				micr sec	
			P	Z' 3.2 1.6	
			Mx	E 200 11	
			Mx	N 180 11	
			Mx	Z 280 10	
		Sk	iP	21 08 00.5	D
			i	21 08 10.3	
		Um	iP	21 07 49.3	D
		(cont.)			

1970 Mar.	28	(cont.)			
		Ud	iP	21 07 29.1	D
			i	21 07 31.5	
		De	iP	21 06 57.0	
		Turkey (h = 20 km). m = 6.9, M = 7.4 (Up,Ki). The Up surface-wave amplitudes are measured on Wiechert records in this case instead of LP Benioff.			
"	28	Um	iP	21 35 20.0	
"	28	Um	iP	21 36 02.5	
		Ud	i(P)	21 35 30.6	
"	28	Up	iP	21 37 07.8	
		Um	iP	21 37 41.0	
		Ud	iP	21 37 21.3	
		Turkey. Origin time = 21 32 15. Approximate origin times are given for those aftershocks which have not been reported by the USCGS.			
"	28	Sk	iP	21 40 46.1	
		Um	iP	21 40 51.2	
"	28	Up	iP	21 46 11.9	
		Ki	iP	21 47 21.7	
		Sk	iP	21 46 57.6	
		Um	iP	21 46 44.0	C
		Ud	iP	21 46 24.9	C
		Turkey (h = N).			
"	28	Up	iP	21 50 40.4	
"	28	Um	iP	21 51 46.8	
		Ud	iP	21 51 31.0	
		Turkey. Origin time = 21 46 23.			
"	28	Up	iP	21 57 17.0	
		Um	iP	21 57 46.7	
		Ud	iP	21 57 27.5	
		Turkey. Origin time = 21 52 22.			
"	28	Up	iP	22 04 04.8	
		Ki	iP	22 05 12.6	C
		Sk	iP	22 04 49.9	
		Um	iP	22 04 35.6	
		Ud	eP	22 04 16	C
		De	iP	22 03 42.0	
		Turkey (h = 15 km).			

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

1970
Mar. 28 Up iP 22 10 30.1
Um iP 22 11 00.6
Ud iP 22 10 40.6
Turkey (h = 7 km).

" 28 Up iP 22 12 45.2
Um iP 22 13 13.2
Ud iP 22 12 52.9
Turkey.
Origin time = 22 07 48.

" 28 Up eP 22 41 09
Um iP 22 41 39.3
Turkey.
Origin time = 22 36 14.

" 28 Up iP 22 45 07.5
Ki eP 22 46 15
Um iP 22 45 40.3
Ud iP 22 45 20.8
De iP 22 44 49.3
Turkey (h = N).

" 28 Up iP 22 54 39.3
Um iP 22 55 09.9
Turkey.
Origin time = 22 49 45.

" 28 Up iP 23 04 29.5
Um iP 23 05 02.8
Ud iP 23 04 43.0
Turkey.
Origin time = 22 59 37.

" 28 Um iP 23 06 57.2
Ud eP 23 06 34
Turkey.
Origin time = 23 01 30.

" 28 Up iP 23 16 36.1

		micr	sec
P	Z'	0.3	1.5
Mx	E	3.5	12
Mx	N	6.8	17
Mx	Z	3.5	14

Ki iP 23 17 47.0
iPn 23 18 10.4

		micr	sec
Mx	E	5.1	13
Mx	N	2.5	16
Mx	Z	3.4	13

Sk iP 23 17 20.9
Um iP 23 17 07.7 D
iPn 23 17 20.2
Ud iP 23 16 49.3
(cont.)

1970
Mar. 28 (cont.)
De iP 23 16 14.7
Turkey (h = 35 km).
M = 5.5 (Up,Ki).

" 28 Up iP 23 33 16.9
Ki iP 23 34 24.2
Sk iP 23 34 02.3
Um iP 23 33 48.9
iPP 23 34 17.6
Ud iP 23 33 30.5
i 23 33 47.9
De iP 23 32 56.5
Turkey (h = 40 km).

" 28 Sk iP 23 36 39.4
Um iP 23 36 25.7
Ud iP 23 36 04.2
Turkey.
Origin time = 23 31 00.

" 28 Up iP 23 48 53.1
iPP 23 49 20.8

		micr	sec
P	Z'	0.2	1.5
Mx	E	3.3	12
Mx	N	5.6	14
Mx	Z	3.2	13

Ki iP 23 50 00.3

		micr	sec
Mx	E	4.9	13
Mx	N	2.1	15
Mx	Z	5.3	16

Sk iP 23 49 39.5
Um iP 23 49 24.7
iPn 23 49 36.5
Ud iP 23 49 07.3
De iP 23 48 33.2
Turkey (h = 20 km).
M = 5.5 (Up,Ki).

" 28 Up iP 23 52 21.6
i 23 52 45.6
i 23 53 15.6
Ki iP 23 52 38.8
i 23 53 18.6
Um iP 23 53 16.9
These are probably all P-phases of different shocks, but separation is not possible.

" 28 Ki iP 23 54 44.4
Um eP 23 54 05
Turkey.
Origin time = 23 48 42.

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

1970 Mar.	28	Ud	iP		23 54 13.3
"	28	Up	iP		23 54 53.9
		Ki	iP		23 56 04.9
		Sk	iP		23 55 40.7
		Turkey.			
		Origin time = 23 50 03.			
"	28	Ki	iP		23 58 42.7
"	29	Um	iP		00 48 57.1
			i		00 49 08.2
"	29	Um	iP		00 53 30.7
"	29	Up	iP		01 08 44.6
		Um	eP		01 09 09
		(Turkey).			
"	29	Up	iP		01 18 24.3
		Um	iP		01 18 52.9
		Ud	eP		01 18 32
		Turkey.			
		Origin time = 01 13 28.			
"	29	Um	iP		01 24 51.2
		Ud	iP		01 24 32.9
		Turkey.			
		Origin time = 01 19 26.			
"	29	Um	eP		01 27 37
"	29	Um	iP		01 34 07.5
		Ud	iP		01 33 43.7
		Turkey.			
		Origin time = 01 28 40.			
"	29	Up	eP		01 33 46
		Sk	iP		01 34 32.5
		Um	iP		01 34 20.3
		Ud	iP		01 34 01.7
		Turkey (h = N).			
"	29	Up	iP		01 52 09.9
		Ki	eP		01 53 18
		Um	iP		01 52 44.3
		Ud	eP		01 52 22
		Turkey.			
		Origin time = 01 47 17.			
"	29	Up	iP		01 56 32.7
			i		01 56 38.8
		Um	iP		01 56 52.1
		Ud	iP		01 56 35.4
			i		01 57 11.7

1970 Mar.	29	Up	iP		02 10 16.1
			i		02 10 29.8
					micr sec
			Mx	E	0.6 11
			Mx	N	0.8 14
			Mx	Z	1.1 14
		Ki	eP		02 11 27
			iPP		02 12 19.2
					micr sec
			Mx	E	0.7 12
			Mx	N	0.3 9
		Sk	eP		02 11 02
		Um	eP		02 10 48
			i		02 10 50.6
		Ud	iP		02 10 29.9
		De	iP		02 09 58.8
		Turkey (h = 20 km).			
		M = 4.6 (Up,Ki).			
"	29	Um	iP		02 16 00.1
			i		02 16 10.2
"	29	Up	iP		02 30 21.0 C
					micr sec
			P	Z'	0.1 0.6
		Ki	iP		02 30 03.5 C
					micr sec
			P	Z'	0.1 1.2
		Sk	iP		02 30 26.4
		Um	iP		02 30 09.1 C
		Ud	iP		02 30 29.7 C
		De	iP		02 30 36.7 C
		Mindoro (h = 120 km).			
		m = 5.7 (Up,Ki).			
"	29	Ki	i(P)		02 33 39.0
		Ud	eP		02 33 45
"	29	Up	iP		02 45 29.5
					micr sec
			Mx	N	0.8 16
		Sk	eP		02 46 15
		Um	iP		02 46 02.6
		Ud	eP		02 45 41
		De	eP		02 45 09
		Turkey (h = N).			
"	29	Up	iP		02 50 41.2
		Um	iP		02 51 14.4
		Ud	iP		02 50 54.7
		De	iP		02 50 21.1
		Turkey (h = N).			
"	29	Up	iP		02 59 47.5
		(cont.)			

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

1970
Mar. 29 (cont.)

Ki			micr	sec
	Mx	E	0.5	15
Sk	iP		03 00 31.3	
Um	iP		03 00 16.9	
Ud	iP		02 59 59.8	
De	iP		02 59 27.1	C

Turkey (h = 25 km).

" 29

Up	iP		03 15 38.5
Ki	eP		03 16 45
Um	iP		03 16 11.0
Ud	iP		03 15 52.0

Turkey (h = N).

" 29

Up	iP		03 39 42.4
Um	eP		03 40 10

Turkey.
Origin time = 03 34 46.

" 29

Up	iP		03 56 27.1	
			micr	sec
	Mx	E	1.2	13
	Mx	N	1.7	17
	Mx	Z	2.0	13
Ki	iP		03 56 27.4	C
			micr	sec
	Mx	E	1.7	13
	Mx	N	2.2	13
	Mx	Z	1.8	12
Sk	iP		03 56 49.6	
Um	iP		03 56 20.8	C
	i		03 56 28.1	
Ud	iP		03 56 43.5	C
De	iP		03 56 43.5	C

Sinkiang, China (h = N).
M = 5.3 (Up,Ki).

" 29

Up	iP		04 00 30.2
Um	iP		04 01 02.3
Ud	iP		04 00 43.6
De	iP		04 00 11.4

Turkey.
Origin time = 03 55 37.

" 29

Up	iP		05 10 47.3
Um	e(P)		05 11 08
	iP		05 11 14.8
Ud	iP		05 10 59.3

Turkey.
Origin time = 05 05 52.

" 29

Up	eP		05 19 39
Um	iP		05 20 09.6
Ud	iP		05 19 50.4

Turkey.
Origin time = 05 14 44.

1970
Mar. 29

Up	iP		07 01 17.9	
	i		07 01 22.0	
	i		07 01 30.8	
			micr	sec
	P	Z'	0.1	0.7
	Mx	E	4.2	12
	Mx	N	6.2	12
	Mx	Z	4.8	12
Ki	iP		07 02 25.2	
	i		07 02 30.3	
			micr	sec
	P	Z'	0.1	1.0
	Mx	E	5.7	13
	Mx	N	1.6	12
	Mx	Z	3.6	15
Sk	iP		07 02 02.5	
Um	iP		07 01 49.8	
Ud	eP		07 01 30	C
	i		07 01 40.0	
De	iP		07 00 56.3	
	i		07 01 00.6	

Turkey (h = 15 km).
m = 5.6, M = 5.5 (Up,Ki).
Multiple P.

" 29

Up	iP		07 15 36.2 C
Ki	iP		07 14 50.8
Um	iP		07 15 11.3
Ud	iP		07 15 41.7 C
De	i(P)		07 16 09.2

Kurile Islands.

" 29

Up	iP		08 03 24.1
Sk	eP		08 04 09
Um	iP		08 03 58.0
Ud	iP		08 03 36.8

Turkey (h = 10 km).

" 29

Um	iP		09 02 15.1
	i		09 02 23.6

" 29

Up	iP		09 05 30.8
Ki	eP		09 06 34
Um	iP		09 05 59.1
	iPn		09 06 10.8
Ud	iP		09 05 43.9

Turkey.
Origin time = 09 00 36.

" 29

Up	i(P)		09 25 21.9
	i		09 25 36.1
Ud	iP		09 25 18.9
	i		09 25 31.4

" 29

Ki	iP		09 30 17.8
Um	iP		09 29 40.7
	i		09 29 59.7

(cont.)

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

1970
Mar. 29 (cont.)
Ud eP 09 29 23
Turkey.
Origin time = 09 24 16.

" 29 Um iP 09 37 02.1 C
Ud iP 09 36 46.5
Turkey.
Origin time = 09 31 38.

" 29 Up iP 09 45 08.1
i 09 45 15.0
i 09 45 24.2
Ki eP 09 46 17
Um iP 09 45 44.7
Ud eP 09 45 23
Turkey.
Origin time = 09 40 17.

" 29 Up iP 09 57 08.9
Ki iP 09 58 15.0
Um iP 09 57 40.2
Ud iP 09 57 18.4
Turkey (h = 25 km).

" 29 Up e(PKP) 10 26 51
iPKP 10 27 07.7
iSKP 10 30 12.7
i(SKSP) 10 39 18.9

		micr	sec
PKP	Z'	0.1	0.6
SKP	Z'	1.1	0.8
Mx	E	1.5	20
Mx	N	2.3	22
Mx	Z	2.2	22

Ki iPKP 10 26 53.5 C
iSKP 10 29 49.1

		micr	sec
PKP	Z'	0.3	0.8
SKP	Z'	0.1	1.3
Mx	E	2.2	20
Mx	N	1.3	20
Mx	Z	2.8	21

Sk iPKP 10 27 04.1 C
iSKP 10 30 07.3
Um e(PKP) 10 26 47
iPKP 10 26 59.6
iSKP 10 29 58.5
Ud i(PKP) 10 26 54.5
iPKP 10 27 08.6
iSKP 10 30 16.1
De i(PKP) 10 27 03.3
iPKP 10 27 15.0
iSKP 10 30 25.7
New Hebrides Islands
(h = 230 km).
M = 6.0 (Up,Ki).

1970
Mar. 29 Up iLgl 11 49 25.1
iSg 11 49 33.4
Ki iPn 11 45 16.2
iSn 11 46 13.9
iSg 11 46 37.8
Sk iLgl 11 48 59.7
Um eSn 11 46 54
iSg 11 47 28.2
Ud iLgl 11 49 49.5
Northwest Russia,
67.6°N, 33.1°E.
Origin time = 11 44 00.
Explosion?

" 29 Up iP 12 13 37.5
Ki iP 12 13 27.6 C
Um iP 12 13 29.6
Ud iP 12 13 46.8
Flores Sea (h = 480 km).

" 29 Up iP 13 14 51.9
Um iP 13 14 17.4
Ud i(P) 13 14 57.0

" 29 Ud iP 13 32 19.9

" 29 Ki iP 14 12 53.3
Um iP 14 12 45.7
Ud iP 14 13 06.1
Tadzhik SSR.

" 29 Up iP 14 42 07.6

		micr	sec
Mx	E	2.0	18
Mx	N	1.2	12
Mx	Z	1.1	14

Ki iP 14 43 17.6

		micr	sec
Mx	E	1.1	13
Mx	N	0.6	12
Mx	Z	1.0	16

Sk iP 14 42 52.6
Um iP 14 42 43.3 C
Ud iP 14 42 21.6
i 14 42 24.3
Turkey (h = 25 km).
M = 4.8 (Up,Ki).

" 29 Up iP 14 45 22.1
i 14 45 28.9
Ki iP 14 46 26.5
Um iP 14 45 52.1
Ud iP 14 45 32.8
Turkey.
Origin time = 14 40 27.

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

1970 Mar.	29	Up	iP		15 26 03.4	
		Ki	iP		15 25 44.0	
		Um	iP		15 25 48.9	
		China.				
"	29	Ki	iP		16 29 10.0	
		Sk	iP		16 29 11.1	
		Um	iP		16 28 59.9	
"	29	Up	iPKP		17 27 37.4	
		Sk	iPKP		17 27 29.2	
		Um	ePKP		17 27 26	
		Ud	iPKP		17 27 38.9	
		De	iPKP		17 27 48.2	
		Kermadec Islands (h = 70 km).				
"	29	Up	iP		17 34 04.2	
		Ki	iP		17 33 34.8	
		Sk	eP		17 34 04	
		Um	i		17 33 59.6	
		Ud	iP		17 34 13.0	
		Ryukyu Islands (h = N).				
"	29	Up	iP		18 11 16.1	
		Ki	iP		18 12 34.6	
		Sk	eP		18 11 56	
		Um	iP		18 11 59.1	
		Ud	eP		18 11 22	
			i		18 11 31.4	
		Ionian Sea (h = 40 km).				
"	29	Up	iP		19 16 35.4	
					micr	sec
			P	Z'	0.1	1.1
			Mx	E	1.0	11
			Mx	N	0.7	12
			Mx	Z	1.1	12
		Ki	iP		19 17 44.8	
					micr	sec
			P	Z'	0.1	1.3
			Mx	E	1.0	13
			Mx	N	0.6	11
			Mx	Z	1.1	13
		Sk	iP		19 17 21.0	
		Um	iP		19 17 07.3	
		Ud	eP		19 16 47	
		De	iP		19 16 18.3	
		Turkey (h = 6 km).				
		m = 5.4, M = 4.7 (Up,Ki).				
"	29	Up	iP		19 42 35.9	
					micr	sec
			Mx	E	1.7	15
			Mx	N	1.3	13
			Mx	Z	1.4	15
		(cont.)				

1970 Mar.	29	(cont.)				
		Ki	iP		19 42 04.5	
					micr	sec
			Mx	E	2.0	19
			Mx	N	1.3	20
			Mx	Z	4.1	18
		Sk	iP		19 42 34.9	
		Um	eP		19 42 17	
		Ud	iP		19 42 44.6	
		De	iP		19 42 58.2	
		Ryukyu Islands (h = 25 km).				
		M = 5.6 (Up,Ki).				
"	29	Up	iP		21 54 06.2	
		Um	iP		21 54 39.1	
		Ud	eP		21 54 19	
		Turkey. Origin time = 21 49 13.				
"	29	Up	iP		22 15 40.6	
					micr	sec
			Mx	N	1.4	22
		Ki	iP		22 15 21.4 C	
					micr	sec
			P	Z'	0.2	1.8
		Sk	iP		22 15 46.7	
		Um	iP		22 15 27.6	
		Ud	iP		22 15 46.8	
		Talaud Islands (h = 100 km).				
"	30	Up	iP		00 20 38.0	
		Sk	iP		00 21 23.1	
		Um	eP		00 21 07	
			i		00 21 10.3	
		Ud	eP		00 20 50	
		Turkey.				
		Origin time = 00 15 44.				
"	30	Um	iP		01 29 05.1	
		Ud	eP		01 28 45	
		Turkey.				
		Origin time = 01 23 39.				
"	30	Up	iP		01 29 09.8	
		Ki	iP		01 30 16.7	
		Sk	iP		01 29 56.1	
		Um	iP		01 29 42.8	
		Ud	iP		01 29 23.2 C	
		De	iP		01 28 50.4	
		Turkey.				
		Origin time = 01 24 17.				
"	30	Up	iP		02 27 25.2	
		Um	iP		02 27 57.1	
		Ud	iP		02 27 40.8	
		Turkey.				
		Origin time = 02 22 32.				

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

1970 Mar.	30	Ud	iP		03 35 19.8
"	30	Up	iP		04 45 23.0
		Um	iP		04 45 06.6
"	30	Up	iP		04 54 14.0
		Ki	iP		04 53 58.1
		Sk	iP		04 54 22.2
		Um	iP		04 54 05.1
		Ud	iP		04 54 22.6
			ipP		04 54 45.6
		Talaud Islands.			
		h = 90 km (Ud).			
"	30	Sk	eP		05 08 21
		Um	iP		05 07 59.0
"	30	Up	iP		05 11 20.2
		Um	iP		05 11 47.0
		Ud	eP		05 11 23
"	30	Um	iPP		05 43 10.7
		Chile-Bolivia (h = 120 km).			
"	30	Up	iP		06 12 06.6
		Um	iP		06 12 11.6
"	30	Up	iP		06 51 17.6
			i		06 51 29.0
			i(PP)		06 51 37.8
		Ki	iP		06 52 28.0 C
		Sk	iP		06 52 02.2
		Um	iP		06 51 50.7
		Ud	iP		06 51 32.2
		De	iP		06 50 57.2
		Turkey (h = 25 km).			
"	30	Up	iP		06 53 54.7 C
			i(PP)		06 54 15.0
					micr sec
			Mx	E	1.0 11
			Mx	N	0.9 12
			Mx	Z	1.6 13
		Ki	iP		06 55 01.9
			iPn		06 55 27.4
					micr sec
			Mx	E	1.3 16
			Mx	N	0.4 9
			Mx	Z	0.8 12
		Sk	iP		06 54 38.6 C
		Um	iP		06 54 27.3
		Ud	iP		06 54 04.6
			i		06 54 07.6
		De	iP		06 53 34.0
		Turkey (h = N).			
		M = 4.7 (Up,Ki).			

1970 Mar.	30	Up	iP		07 02 45.9
		Um	iP		07 03 16.6
		Ud	iP		07 02 53.6
		Turkey.			
		Origin time = 06 57 50.			
"	30	Up	iP		08 04 42.8
			i		08 04 46.3
					micr sec
			P	Z'	0.2 1.0
			Mx	E	4.2 11
			Mx	N	5.4 13
			Mx	Z	3.9 14
		Ki	iP		08 05 51.4 C
					micr sec
			P	Z'	0.2 1.4
			Mx	E	5.2 12
			Mx	N	2.6 13
			Mx	Z	4.3 13
		Sk	iP		08 05 29.1 C
		Um	iP		08 05 15.6
			iS		08 09 42
		Ud	iP		08 04 55.8
		De	iP		08 04 22.4
		Turkey (h = 15 km).			
		m = 5.7, M = 5.5 (Up,Ki).			
"	30	Up	iP		08 13 57.3
		Ud	eP		08 14 06
		Turkey.			
"	30	Up	iP		08 33 56.0 C
		Ki	iP		08 33 11.6
		Um	iP		08 33 31.7
		Ud	iP		08 34 02.5 C
		De	iP		08 34 22.2
		Japan (h = 60 km).			
"	30	Up	iP		08 40 07.7
			i(PP)		08 40 28.1
		Ki	iP		08 41 15.9
			iPn		08 41 42.4
		Sk	iP		08 40 56.0 C
		Um	iP		08 40 39.9
			i		08 40 45.3
		Ud	iP		08 40 21.0
		De	iP		08 39 48.3
		Turkey (h = 25 km).			
"	30	Up	eP		09 31 12
		Sk	eP		09 31 54
		Um	iP		09 31 40.3
			iPn		09 31 54.1
		Turkey (h = 20 km).			

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

1970
Mar. 30 Up iP 10 11 19.6
Um iP 10 11 51.6
Turkey.
Origin time = 10 06 26.

" 30 Up iP 11 32 47.5
i 11 32 53.8
Um iP 11 33 22.2 C
iPn 11 33 34.7
Ud iP 11 33 02.2
De iP 11 32 31.6
Turkey (h = N).

" 30 Um iP 13 08 35.5

" 30 Up iP 13 29 18.5
Ud iP 13 29 28.8
Turkey.
Origin time = 13 24 24.

" 30 Up iP 13 52 55.3
Sk eP 13 53 43
Um iP 13 53 28.5 C
Ud eP 13 53 09
De eP 13 52 40
Turkey (h = N).

" 30 Up iPn 14 07 06.2
iSg 14 08 19.8
Ki iSg 14 11 49.6
Um iSg 14 09 41.3
Ud eSn 14 08 42
iSg 14 09 13.7
De iPg 14 07 39.4
iSg 14 08 53.0
Latvia, near Riga.
Origin time = 14 05 50.
Explosion?

" 30 Up iP 16 21 59.3

" 30 Um iP 16 26 56.1
Hindu Kush.

" 30 Up iP 16 37 29.1 D
i 16 37 33.2

		micr	sec
P	Z'	0.1	1.0
Mx	E	5.0	19
Mx	N	5.9	22
Mx	Z	4.8	21

Ki iP 16 38 36.4
iPn 16 39 02.2

		micr	sec
Mx	E	5.0	16
Mx	N	3.5	15
Mx	Z	5.7	16

(cont.)

1970
Mar. 30 (cont.)
Sk iP 16 38 14.2
Um iP 16 38 02.9
Ud iP 16 37 43.1
i 16 37 46.9
De iP 16 37 09.3
i 16 37 12.6
Turkey (h = 10 km).
M = 5.3 (Up,Ki).
In this series of shocks, some clear Pn have been recorded, but only at Ki and Um, these two stations having the most homogeneous paths among our stations. The greater distances to these stations also permit a clear separation of Pn from P.

" 30 Up iP 16 59 54.5
i 16 59 56.5
ipP 17 00 08.8
iPKKP 17 17 04.5

		micr	sec
P	Z'	0.6	0.9
Mx	E	40	28
Mx	N	44	26
Mx	Z	63	30

Ki iP 16 59 35.3
i 16 59 39.8
iSKS 17 10 00
e(PKKP) 17 17 04

		micr	sec
P	Z'	1.0	0.8
Mx	E	28	20
Mx	N	17	22
Mx	Z	43	24

Sk iP 16 59 56.6
i 16 59 59.0
iPKKP 17 16 57.6
Um iP 16 59 41.8
i 16 59 44.8
ipP 16 59 56.4
iPKKP 17 17 14.7
Ud iP 17 00 01.0 C
i 17 00 04.9
iPKKP 17 16 54.8
De iP 17 00 09.6
i 17 00 18.1
Mindanao.
h = 55 km (Up,Um).
m = 7.1, M = 6.9 (Up,Ki).
Double P.

" 30 Ki iP 17 07 50.8
Um iP 17 08 02.5
(cont.)

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

1970
Mar. 30 (cont.)

Ud	iP		17 08 14.7

Mindanao (h = 120 km).

" 30	Up	iP	20 04 46.8
	Sk	eP	20 05 30
	Um	iP	20 05 17.7

Turkey.
Origin time = 19 59 52.

" 30	Up	iP	20 36 30.9
	Ki	iP	20 35 47.7
	Um	iP	20 36 06.5
	Ud	iP	20 36 37.5

Japan (h = 55 km).

" 30	Up	eP		20 43 01
	Ki			micr sec
		Mx	E	0.8 14
		Mx	N	0.6 15
		Mx	Z	1.4 17
	Sk	iP		20 43 41.0
	Um	iP		20 43 30.6
	Ud	eP		20 43 11

Turkey (h = 5 km).

" 30	Up	iPKP		21 01 02.1
	Ki	iPKP		21 00 49.3
				micr sec
		Mx	E	1.2 21
		Mx	N	0.8 19
	Um	ePKP		21 00 59
	Ud	iPKP2		21 01 25.8

Auckland Islands (h = N).

" 30	Up	iP		21 04 19.9 C
		i		21 04 21.5
	Ki	iP		21 05 28.9
		iPn		21 05 53.7
				micr sec
		Mx	E	0.6 13
	Sk	iP		21 05 06.4
	Um	iP		21 04 53.8
	Ud	iP		21 04 32.7
	De	iP		21 03 59.5

Turkey (h = N).

" 30	Um	iP	21 47 57.1
	Ud	iP	21 47 42.0

Turkey.
Origin time = 21 42 34.

" 30	Um	iP	21 48 35.3
	Ud	iP	21 48 16.5
	De	iP	21 47 42.1

Turkey.
Origin time = 21 43 09.

1970
Mar. 31

Up	iP		00 23 19.5
Ki	iP		00 22 55.0
Sk	iP		00 23 22.6
Um	iP		00 23 03.5 C
Ud	iP		00 23 28.7 C
De	iP		00 23 38.3

Ryukyu Islands (h = 70 km).

" 31	Up	iP		00 56 28.2
	Ki	eP		00 57 36
		iPn		00 58 00.0
				micr sec
		Mx	E	0.8 14
	Sk	eP		00 57 14
	Um	iP		00 57 01.3
	Ud	iP		00 56 41.6 C
		i		00 56 56.7
	De	iP		00 56 11.9

Turkey (h = 15 km).

" 31	Um	iP	01 02 34.2

" 31	Up	iP		01 12 44.6 C
	Ki			micr sec
		Mx	E	0.5 13
		Mx	N	0.4 12
		Mx	Z	0.6 12
	Um	iP		01 13 17.3
	Ud	iP		01 12 53.3
	De	eP		01 12 23

Turkey (h = N).

" 31	Up	iP		03 51 44.2
				micr sec
		Mx	E	1.2 13
		Mx	N	1.3 13
	Ki	iP		03 52 51.4
				micr sec
		Mx	E	1.7 14
		Mx	N	0.8 14
		Mx	Z	1.3 14
	Sk	iP		03 52 30.2
	Um	iP		03 52 16.8
	Ud	iP		03 51 58.0
	De	eP		03 51 25
		i		03 51 28.9

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

" 31	Sk	iP	03 57 27.3
	Um	eP	03 57 14
		i	03 57 30.6

Turkey.

" 31	Ud	iP	03 57 33.2

" 31	Ki	i(P)	03 59 06.1
	Um	iP	03 59 02.5

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

1970 Mar.	31	Up	eP		04 15 04	
		Ki			micr	sec
			Mx	E	0.7	12
		Sk	eP		04 15 48	
		Um	iP		04 15 35.4	C
		Ud	iP		04 15 12.9	
		De	iP		04 14 41.6	
		Turkey (h = N).				
"	31	Um	iP		04 51 27.1	
		Turkey.				
"	31	Up	eP		05 45 43	
		Um	eP		05 46 13	
		De	iP		05 45 21.1	
		Turkey.				
		Origin time = 05 40 47.				
"	31	Up	iP		05 53 03.1	
		Ud	iP		05 53 03.2	
		Aleutian Islands (h = 40 km).				
"	31	Um	eP		07 35 54	
"	31	Up	iP		08 35 40.5	
		Sk	iP		08 36 31.3	
		Um	iP		08 36 16.2	
		Ud	eP		08 35 54	
			iPP		08 36 24.5	
		De	eP		08 35 24	
		Turkey (h = 15 km).				
"	31	Up	iP		09 03 44.6	
		Ki	iP		09 03 47.3	
		Sk	iP		09 03 33.1	
		Um	iP		09 03 48.7	
		Ud	iP		09 03 35.5	C
		De	iP		09 03 37.1	C
		Peru (h = 70 km).				
"	31	Up	iP		12 02 56.8	
		Sk	eP		12 03 39	
		Um	iP		12 03 25.3	
		Ud	iP		12 03 06.9	
		De	iP		12 02 33.4	
		Turkey (h = 25 km).				
"	31	Up	iP		13 09 23.2	
		Ki	eP		13 08 31	
		Ud	iP		13 09 22.6	
		De	eP		13 09 47	
		Aleutian Islands (h = 80 km).				
"	31	Um	iP		14 06 48.9	
		Ud	iP		14 07 09.3	

1970 Mar.	31	Up	iPKP		15 45 27.5	
		Ki	iPKP		15 45 20.3	
		Um	i(PKP)		15 45 19.4	
			iPKP		15 45 26.4	
			iSKP		15 48 09.0	
		Ud	iPKP		15 45 28.2	C
		De	iPKP		15 45 39.4	
		Fiji Islands (h = 550 km).				
"	31	Up	i(P)		16 13 29.6	
		Um	iP		16 13 50.2	
		Ud	iP		16 13 28.0	
		Turkey.				
		Origin time = 16 08 23.				
"	31	Sk	iP		18 12 32.0	
		Um	iP		18 11 44.1	
"	31	Up	iP		18 30 05.7	
					micr	sec
			P	Z'	0.1	0.7
			Mx	E	0.8	17
			Mx	N	1.5	19
		Ki	iP		18 30 28.6	D
					micr	sec
			P	Z'	0.1	1.0
			Mx	E	2.0	19
			Mx	N	1.5	19
			Mx	Z	2.5	18
		Sk	iP		18 30 29.6	D
		Um	iP		18 30 13.9	
			iS		18 40 00	
		Ud	iP		18 30 16.8	D
		Chagos Islands (h = N).				
		m = 5.9, M = 5.6 (Up,Ki).				
"	31	Um	iP		21 02 12.0	
			i		21 02 16.9	
"	31	Up	iP		21 25 30.4	
		Um	iP		21 25 59.5	
		Ud	iP		21 25 40.9	
		Turkey (h = N).				

Markus Båth
February 19, 1971

SEISMOLOGISKA INSTITUTIONEN
BOX 517
751 20 UPPSALA 1

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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 P R I L 1 - 30, 1970

1970				
Apr.	1	Um	iP	03 03 24.6
"	1	Up	iP	03 31 03.3
		Ki	iP	03 30 09.5
		Um	iP	03 30 37.7 C
		Alaska (h = N).		
"	1	Up	iPKP	05 44 33.0
		Ki	iPKP	05 44 16.9
		Sk	iPKP	05 44 26.8 C
		Um	iPKP	05 44 22.0 C
			i	05 44 27.1
		Ud	iPKP	05 44 34.9 C
		Kermadec Islands (h = 7 km).		
"	1	Up	iP	07 54 29.7
		Um	i(P)	07 54 12.9
"	1	Up	iSg	10 14 14.5
		Ki	iSg	10 16 49.4
		Sk	eSg	10 16 08
		Um	iSg	10 14 47.4
		Ud	iSg	10 15 24.6
		Esthonia,		
		59.7°N, 25.6°E.		
		Origin time = 10 12 05.		
		Explosion?		
"	1	Ki	iPn	11 50 29.9
			iSn	11 51 28.8
			i(Lgl)	11 51 52.0
		Sk	i(Lgl)	11 54 17.0
			iSg	11 54 24.8
		Um	iSn	11 52 07.0
			iSg	11 52 42.4
		Ud	i(Lgl)	11 55 17.1
		(cont.)		

1970						
Apr.	1	(cont.)				
		Northwest Russia,				
		67.4°N, 33.3°E.				
		Origin time = 11 49 14.				
		Explosion?				
"	1	Up	iP		14 34 32.6	C
			i		14 34 36.8	
					micr	sec
			P	Z'	0.3	1.0
			Mx	E	0.9	16
			Mx	N	1.2	20
			Mx	Z	1.6	20
		Ki	iP		14 33 51.3	C
			i		14 33 55.4	
					micr	sec
			P	Z'	0.3	1.0
			Mx	E	2.3	22
			Mx	N	1.1	16
			Mx	Z	1.8	15
		Sk	iP		14 34 25.4	C
			i		14 34 29.9	
		Um	iP		14 34 09.5	C
			i		14 34 13.5	
		Ud	iP		14 34 39.3	C
			i		14 34 44.3	
		De	iP		14 34 55.2	C
		Japan (h = 80 km).				
		m = 6.5, M = 5.3 (Up,Ki).				
		Double P, the first of slightly				
		longer period than the second				
		on the Z'-records.				
"	1	Up	iP		15 21 53.4	
"	1	Up	iP		16 00 52.9	
		(cont.)				

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

1970 Apr.	1	(cont.)				
		Up			micr	sec
			Mx	E	0.9	10
			Mx	N	0.8	13
			Mx	Z	1.1	12
		Ki	iP		16 02 01.9	
					micr	sec
			Mx	E	1.4	17
			Mx	N	0.5	13
		Sk	eP		16 01 40	
			iPP		16 02 12.8	
		Um	iP		16 01 26.2	
		Ud	iP		16 01 07.8	
		De	iP		16 00 33.5	
		Turkey (h = 15 km).				
		M = 4.6 (Up,Ki).				
"	1	Um	iP		18 00 40.1	
		Ud	iP		18 00 20.6	
		Turkey (h = 25 km).				
"	1	Up	iP		20 10 42.5	
		Um	iP		20 10 00.5	
"	1	Up	iP		20 58 41.0	
		Um	iP		20 58 31.5	
		Ud	i(P)		20 58 08.8	
"	1	Ud	iP		23 13 26.8	
"	1	Ud	iP		23 30 10.6 C	
"	2	Up	iP		00 01 47.1	
		Ki	iP		00 02 19.3	
		Sk	iP		00 02 20.5	
		Um	iP		00 01 58.1	
		Ud	iP		00 02 02.0	
		De	iP		00 01 48.1 C	
		Iran (h = 60 km).				
"	2	Up	iP		00 33 24.9	
		Um	iP		00 33 57.4	
		Ud	iP		00 33 37.7	
		De	iP		00 33 05.6	
			i		00 33 09.6	
		Turkey (h = 30 km).				
"	2	Sk	iP		01 17 52.9	
"	2	Up	iP		02 50 38.6	
		Um	iP		02 51 18.5	
			i		02 51 35.0	
		Ud	iP		02 50 59.5	
			i		02 51 15.9	
		Turkey.				

1970 Apr.	2	Up	iP		04 48 31.0	
		Um	iP		04 48 27.0	
		Ud	iP		04 48 40.2	
"	2	Ki			micr	sec
			Mx	E	0.8	17
			Mx	N	0.7	20
			Mx	Z	1.6	20
		Um	ePKP		11 31 00	
		Ud	iPKP		11 31 04.9	
		Tonga Islands (h = N).				
"	2	Um	iP		13 10 45.5	
		Ud	iP		13 10 23.8	
		Turkey (h = N).				
"	2	Up	i(P)		15 14 42.4	
		Ki	i(P)		15 14 26.1	
		Um	iP		15 14 39.3	
		Ud	iP		15 14 23.2	
"	2	Sk	eP		16 05 42	
		Ud	iP		16 05 29.4	
"	2	Ud	iP		16 14 45.3	
"	2	Up	iP		20 40 02.6	
					micr	sec
			Mx	E	0.9	12
			Mx	N	0.6	13
			Mx	Z	1.2	18
		Ki	eP		20 41 09	
					micr	sec
			Mx	E	1.0	14
			Mx	N	0.6	15
			Mx	Z	0.9	15
		Sk	iP		20 40 48.3	
		Um	iP		20 40 34.7	
		Ud	iP		20 40 16.2 C	
		De	iP		20 39 41.8	
		Turkey (h = 25 km).				
		M = 4.6 (Up,Ki).				
"	2	Up	iP		20 51 09.8	
		Ki	iP		20 50 55.4	
		Sk	iP		20 51 07.1	
		Um	iP		20 51 02.1	
		Ud	iP		20 51 12.2	
		These phases may be PKP				
		instead of P.				
"	2	Up	iP		21 31 11.6	
		Ki	iP		21 32 25.4	
		Sk	iP		21 31 45.7	
		(cont.)				

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

1970
Apr. 2 (cont.

Um	iP		21 31 51.4
	i		21 31 59.9
Ud	iP		21 31 12.6 C
De	iP		21 30 36.7

" 3 Um eP 00 01 45

" 3 Up

			micr	sec
	Mx	E	1.0	18
	Mx	N	0.9	17
	Mx	Z	1.4	18
Ki	ePKP		07 11 43	
	iPKKP		07 21 36.6	
			micr	sec
	Mx	E	1.3	16
	Mx	N	0.6	17
	Mx	Z	1.5	18
Um	i(PKP)		07 11 56.8	
Ud	iPKP		07 11 52.5	
De	iPKP		07 12 01.7	

Tonga Islands (h = 40 km).
M = 5.7 (Up,Ki).

" 3

Um	iP	07 34 39.5
Ud	iP	07 35 11.2

Mongolia (h = N).

" 3

Up	iP	08 37 27.7
Ki	iP	08 37 10.2
Sk	iP	08 37 27.8
Um	iP	08 37 15.6
	iPP	08 41 00.4
Ud	iP	08 37 35.5 C
	i	08 37 39.3
	e(PP)	08 41 18
De	eP	08 37 38
	i	08 37 44.9
	ePP	08 41 45

Talaud Islands (h = 70 km).

" 3

Um	iP	08 49 12.5
	i	08 49 19.8
Ud	iP	08 48 46.4

" 3

Sk	iP	12 22 25.5
Um	iP	12 22 15.3
Ud	iP	12 22 00.4
De	iP	12 21 25.1

Turkey.

" 3

Um	iP	12 24 28.6
	i	12 24 30.1
Ud	iP	12 24 09.5

(cont.)

1970
Apr. 3 (cont.)

De	eP	12 23 42

Turkey.
Origin time = 12 19 05.

" 3 Ki iP 12 36 16.7 C

" 3

Ki	iSn	13 30 45.6
	iLgl	13 31 04.9
Sk	iLgl	13 33 34.4
Um	iSg	13 31 59.1
Ud	iLgl	13 34 34.3

Northwest Russia,
67.4°N, 33.3°E.
Origin time = 13 28 31.
Explosion?

" 3 Up iP 14 09 57.3

			micr	sec
	P	Z'	0.1	0.9

Ki	iP	14 09 04.8
Sk	eP	14 09 36
Um	iP	14 09 30.6
Ud	iP	14 09 56.8
De	iP	14 10 12.9
	i	14 10 16.6

Aleutian Islands (h = 60 km).

" 3

Ud	i(Sg)	14 30 30.6
De	i(Sg)	14 30 37.0
	i(Rg)	14 30 49.1

" 3

Up	iP	15 43 14.9
Ud	iP	15 43 22.0

Greece.

" 3

Ud	iPg	15 57 30.9
	iSg	15 58 04.9
De	iPg	15 57 27.3
	iSg	15 57 52.7

Probably off west coast of
Sweden.
Origin time = 15 56 43.

" 3

Up	iP	17 27 42.6
Um	iP	17 27 25.5
Ud	iP	17 27 51.7
	i	17 28 02.1

Ryukyu Islands (h = 20 km).

" 3

Ud	iPg	17 35 03.0
	iSg	17 35 25.5
	iRg	17 35 33.6
De	iSg	17 36 08.5
	iRg	17 36 21.7

(cont.)

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

1970 Apr.	3	(cont.)				
		Oslo Fjord,				
		59.1°N, 10.7°E.				
		Origin time = 17 34 30.				
		Solution obtained by				
		combination with				
		Kongsberg readings.				
"	3	Up	iP		18 53 10.7	
		Ki	iP		18 52 41.3	
		Um	iP		18 52 54.0	
		Ud	iP		18 53 17.5	
		De	iP		18 53 29.3	
		Volcano Islands (h = 150 km).				
"	3	Up	iP		21 00 24.0	
			i		21 00 31.8	
			i		21 00 58.7	
			iPn		21 01 09.9	
			i		21 06 41.8	
			iSn		21 06 57.1	
					micr sec	
			Mx	E	0.7 15	
			Mx	N	1.0 19	
			Mx	Z	0.9 15	
		Ki	iP		21 00 54.8	
			i		21 01 01.4	
			iPn		21 02 00.8	
					micr sec	
			Mx	E	0.9 12	
			Mx	N	0.8 12	
			Mx	Z	1.0 12	
		Sk	eP		21 00 58	
			i		21 01 05.2	
			iPn		21 02 10.8	
		Um	iP		21 00 33.0	
			i		21 00 39.3	
		Ud	iP		21 00 41.3	
			i		21 00 49.0	
		De	iP		21 00 31.0	
			i		21 00 37.0	
		Iran-USSR (h = 45 km).				
		M = 4.7 (Up,Ki).				
		Double P, small and large,				
		in average 7.0 sec apart.				
		Clear Pn and Sn arrivals.				
"	3	Um	iP		22 42 20.0	
"	3	Um	iP		23 25 08.9	
		Ud	iP		23 24 48.8	
		Turkey (h = 15 km).				
"	4	Um	iP		07 21 42.3	
			i		07 21 45.8	
		Ud	iP		07 21 26.2	

1970 Apr.	4	Um	iP		07 23 46.9	
"	4	Up	iPP		11 06 07.5	
					micr sec	
			Mx	E	0.7 18	
			Mx	N	1.3 16	
		Ki	iP		11 05 26.8	
			iSn		11 13 35.0	
					micr sec	
			Mx	E	1.5 18	
			Mx	N	1.3 17	
			Mx	Z	1.0 16	
		Sk	iP		11 05 38.6	
			iPP		11 06 55.9	
			i		11 13 23.7	
			i(Sn)		11 14 45.8	
		Um	iP		11 05 07.0	
			i		11 05 12.6	
			iPn		11 06 10.1	
		Ud	iP		11 05 20.2	C
			iPP		11 06 49.3	
			i(Sn)		11 14 00.5	
		Iran-USSR (h = 8 km).				
		M = 4.8 (Up,Ki).				
"	4	Um	iP		12 09 43.2	
			i		12 12 13.0	
"	4	Um	iP		13 03 11.4	
			i		13 03 22.0	
		Ud	i(P)		13 04 31.7	
"	4	Up	iP		13 11 17.1	
		Ki	iP		13 11 19.8	
			ipP		13 11 28.1	
		Sk	iP		13 11 32.9	
		Um	iP		13 11 15.0	
			ipP		13 11 24.1	
		Ud	iP		13 11 28.2	C
			ipP		13 11 36.8	
		Sumatra.				
		h = 30 km (Ki,Um,Ud).				
"	4	Ki	iP		13 32 43.8	
		Banda Sea (h = 510 km).				
"	4	Up	i(PKP)		23 05 19.8	
			iPKP		23 05 26.1	
		Ki	iPKP		23 05 10.5	C
		Sk	iPKP		23 05 21.1	C
		Um	i(PKP)		23 05 10.9	
			iPKP		23 05 17.4	
			iSKP		23 08 07.5	
		Ud	i(PKP)		23 05 19.8	
			iPKP		23 05 27.6	
		(cont.)				

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

1970 Apr.	4	(cont.)			
		De	i(PKP)	23 05 24.9	
			iPKP	23 05 32.6	
		Fiji Islands (h = 390 km).			
"	4	Up	iP	23 28 47.2	C
		Ud	iP	23 28 49.8	C
"	5	Um	iP	04 36 18.1	
		Japan (h = 70 km).			
"	5	Up	iP	05 01 03.8	
		Ki	iP	05 02 13.0	
		Sk	eP	05 01 45	
		Um	iP	05 01 42.6	
			i	05 02 09.0	
		Ud	iP	05 01 12.3	
		De	iP	05 00 39.9	
			i	05 01 24.6	
		Crete (h = 55 km).			
"	5	Up	iP	05 52 20.1	
		Um	iP	05 52 55.5	
		Ud	iP	05 52 33.9	
		Turkey (h = 15 km).			
"	5	Up	iLi	06 02 20.2	
		Ki	ePn	05 58 36	
			iSn	05 59 32.3	
			iSg	05 59 54.1	
		Sk	iLgl	06 02 20.3	
		Um	iSn	06 00 12.5	
			iSg	06 00 44.6	
		Ud	iLi	06 02 49.8	
			iLgl	06 03 18.5	
		Northwest Russia, 67.7°N, 32.8°E. Origin time = 05 57 22. Explosion?			
"	5	Ki	iPKP	11 29 30.8	C
			ipPKP	11 29 40.1	
		Sk	iPKP	11 29 42.5	
		Um	iPKP	11 29 37.5	
			ipPKP	11 29 46.9	
		Ud	iPKP	11 29 47.7	
			ipPKP	11 29 55.7	
		De	iPKP	11 29 52.0	
		New Hebrides Islands. h = 35 km (Ki,Um,Ud).			
"	5	Ki	iP	12 25 19.1	C
		Java (h = 130 km).			
"	5	Up	iP	12 34 45.1	
		Um	iP	12 35 13.7	
		Turkey.			

1970 Apr.	5	Ki	iPn	15 39 45.5	
			iSn	15 40 32.2	
			iSg	15 40 47.7	
		Um	eSg	15 42 11	
			i	15 42 20.0	
		Probably northwest Russia. Origin time = 15 38 45. Explosion?			
"	5	Up	i(P)	21 59 21.4	
		Um	iP	22 00 33.5	
"	6	Up	iP	01 06 55.3	C
			i	01 07 00.3	
				micr sec	
			P Z'	0.3 1.0	
		Ki	iP	01 06 38.1	C
				micr sec	
			P Z'	0.2 1.0	
			Mx E	1.1 17	
			Mx N	0.5 20	
			Mx Z	2.0 22	
		Sk	iP	01 07 00.5	C
		Um	iP	01 06 43.6	C
			i	01 06 48.7	
		Ud	iP	01 07 04.4	C
			i	01 07 09.1	
			i	01 07 25.3	
		De	eP	01 07 14	
		Mindoro (h = 80 km). m = 6.3 (Up,Ki).			
"	6	Up	iP	01 57 17.9	
		Sk	iP	01 57 14.4	
		Um	iP	01 57 04.5	C
		Bonin Islands (h = N).			
"	6	Up	iP	05 18 10.4	D
			ipP	05 18 30.6	
		Ki	iP	05 18 00.9	
			ipP	05 18 20.9	
		Sk	iP	05 18 25.0	
			ipP	05 18 45.0	
		Um	iP	05 18 00.9	
			ipP	05 18 21.5	
		Ud	iP	05 18 23.5	
			ipP	05 18 44.1	
		De	iP	05 18 26.8	
		Burma. h = 80 km (Up,Ki,Sk,Um,Ud).			
"	6	Up	iP	06 29 59.1	
		Ki	eP	06 29 38	
		Ud	iP	06 30 11.2	
		Mindanao (h = N).			

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

1970 Apr.	6	Ki	iP	12 09 35.0	
			i	12 09 41.6	
"	6	Up	iP	13 31 15.6	C
		Ki	iP	13 30 29.6	
		Um	iP	13 30 50.4	C
		Ud	iP	13 31 21.4	
		De	iP	13 31 38.8	
		Okhotsk Sea (h = 370 km).			
"	6	Up	iSg	13 35 51.8	
		Ki	iS^{x}	13 37 47.1	
			iSg	13 38 19.2	
		Sk	eLgl	13 37 23	
			iSg	13 37 41.9	
		Um	iSg	13 36 23.3	
		Ud	i	13 36 40.1	
			iLgl	13 36 52.9	
		De	iLgl	13 37 20.1	
		Esthonia, 59.7°N, 25.6°E.			
		Origin time = 13 33 41.			
		Explosion?			
"	6	Up	i(Lgl)	13 52 00.7	
		Ki	eSg	13 54 40	
		Sk	eLgl	13 53 52	
		Um	iSg	13 52 45.0	
		Ud	eLgl	13 53 18	
		Esthonia.			
		Origin time = 13 50 03.			
		Explosion?			
"	6	Up	iP	15 37 00.1	
		Ki	iP	15 37 38.5	
		Ud	iP	15 37 01.9	C
			i	15 37 02.9	
"	6	Up	iP	18 01 36.6	
		Um	iP	18 01 25.6	
		Ud	iP	18 01 54.6	
"	6	Up	iPKP	19 54 38.8	
		Um	ePKP	19 54 36	
		New Hebrides Islands (h = 110 km).			
"	7	Up	iP	04 17 23.9	
		Ki	iP	04 18 35.0	
				micr sec	
			Mx E	0.6 13	
			Mx N	0.3 11	
			Mx Z	0.5 11	
		Sk	iP	04 18 10.6	
		Um	iP	04 17 56.4	
		(cont.)			

1970 Apr.	7	(cont.)			
		Ud	iP	04 17 39.7	
			i	04 17 43.0	
		De	iP	04 17 06.0	
		Turkey (h = N).			
"	7	Up	iSg	05 11 47.4	
		Ki	iPg	05 10 42.8	
			iSg	05 11 44.9	
		Sk	iPg	05 09 19.7	D
			i	05 09 30.8	
			iSg	05 09 32.1	
		Um	i(Pg)	05 10 21.5	
			iSg	05 11 05.1	
		Ud	eSn	05 10 55	
			iSg	05 11 14.8	
			i	05 11 24.9	
		De	iSg	05 13 12.1	
		Central Norway, 64.2°N, 11.9°E.			
		Origin time = 05 09 01.			
"	7	Up	iP	05 46 29.6	C
			i	05 46 33.0	
			iS	05 56 45	
				micr sec	
			P Z'	1.2 0.9	
			Mx E	170 17	
			Mx N	240 17	
			Mx Z	200 17	
		Ki	iP	05 46 10.5	C
			i	05 46 12.4	
			iS	05 56 12	
				micr sec	
			P Z'	2.3 1.3	
			Mx E	190 18	
			Mx N	110 15	
			Mx Z	170 14	
		Sk	iP	05 46 34.6	C
		Um	iP	05 46 16.8	C
			i	05 46 18.8	
		Ud	iP	05 46 39.0	C
		De	iP	05 46 45.2	C
		Luzon (h = 35 km).			
		m = 7.1, M = 7.7 (Up,Ki).			
"	7	Up	iP	05 59 41.0	
"	7	Up	iP	06 02 51.7	
		Um	iP	06 02 37.0	
		Ud	iP	06 02 59.1	
		Luzon.			
		Origin time = 05 50 24.			
		Approximate origin times are given for aftershocks not reported by the USCGS.			

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

1970 Apr.	7	Up	iP		06 03 57.3
		Ki	iP		06 03 34.3
		Um	iP		06 03 38.3
		Ud	iP		06 04 06.7
		Luzon.			
		Origin time = 05 51 29.			
"	7	Um	iP		06 04 56.4
"	7	Up	iP		06 06 04.6
		Ki	iP		06 05 45.3
		Sk	iP		06 06 10.2
		Um	iP		06 05 51.5
		Ud	iP		06 06 13.6
		De	iP		06 06 19.1
		Luzon (h = 35 km).			
"	7	Up	iP		06 06 19.9
					micr sec
			P	Z'	0.2 1.0
		Ki	iP		06 06 00.6
					micr sec
			P	Z'	0.4 1.3
		Sk	iP		06 06 24.6
		Um	iP		06 06 07.0
		Ud	iP		06 06 27.5
		De	iP		06 06 35.1 C
		Luzon.			
		Origin time = 05 53 55.			
		m = 6.3 (Up,Ki).			
"	7	Up	iP		06 09 22.2
"	7	Up	iP		06 12 42.6
		Ud	iP		06 12 50.0
		Luzon.			
		Origin time = 06 00 16.			
"	7	Ud	iP		06 14 42.1
"	7	Um	iP		06 15 08.5
		Ud	iP		06 15 30.0
		Luzon.			
		Origin time = 06 02 56.			
"	7	Ud	iP		06 15 16.9
"	7	Um	iP		06 15 23.7
		Ud	iP		06 15 45.5
		Luzon.			
		Origin time = 06 03 11.			
"	7	Up	iP		06 16 22.5
		Ud	iP		06 16 30.3
		Luzon.			
		Origin time = 06 03 56.			

1970 Apr.	7	Up	iP		06 17 03.1
		Ki	iP		06 16 43.9
		Sk	iP		06 17 08.7
		Um	iP		06 16 51.7 C
		Ud	iP		06 17 12.5 C
		Luzon (h = N).			
"	7	Ki	iP		06 17 45.9
"	7	Ki	eP		06 20 38
		Ud	iP		06 21 05.2
		Luzon.			
		Origin time = 06 08 31.			
"	7	Ki	iP		06 23 07.8
		Um	iP		06 23 15.7
		Ud	iP		06 23 37.7
		Luzon.			
		Origin time = 06 11 02.			
"	7	Ud	iP		06 23 16.8
"	7	Up	iP		06 24 19.3
					micr sec
			P	Z'	0.1 1.0
		Ki	iP		06 24 00.1
					micr sec
			P	Z'	0.3 1.3
		Sk	iP		06 24 23.9 C
		Um	iP		06 24 06.4 C
		Ud	iP		06 24 28.1 C
		De	iP		06 24 34.3
		Luzon (h = 20 km).			
		m = 6.1 (Up,Ki).			
"	7	Ki	iP		06 25 46.6
		Um	iP		06 25 43.5
"	7	Ki	eP		06 36 33
		Ud	i(P)		06 36 50.6
"	7	Ki	eP		06 38 37
		Um	eP		06 38 44
		Ud	iP		06 38 56.3 C
"	7	Ki	iP		06 41 15.8
		Ud	iP		06 41 44.2
		Luzon.			
		Origin time = 06 29 09.			
"	7	Up	iP		06 46 44.2
					micr sec
			P	Z'	0.1 0.8
		Ki	iP		06 46 25.2
			i		06 46 27.4
					micr sec
			P	Z'	0.2 1.3

(cont.)

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

1970 Apr.	7	(cont.)		
		Sk	iP	06 46 49.7
			i	06 46 50.8
		Um	iP	06 46 31.9
			i	06 46 33.6
		Ud	iP	06 46 52.8 C
			i	06 46 55.3
		De	iP	06 47 01.4
		Luzon (h = N).		
		m = 6.1 (Up,Ki).		
"	7	Up	iP	06 49 52.8
		Um	iP	06 49 35.7
		Ud	iP	06 50 03.2
		Luzon.		
		Origin time = 06 37 26.		
"	7	Up	iP	06 52 00.0
		Ki	iP	06 51 35.7
			i	06 51 47.4
		Um	iP	06 51 48.6
			i	06 51 52.4
		Ud	iP	06 52 09.3 C
			i	06 52 15.8
		Luzon.		
		Origin time = 06 39 33.		
"	7	Um	iP	06 54 56.5
		Ud	iP	06 55 14.5
		Luzon.		
		Origin time = 06 42 42.		
"	7	Up	iP	06 55 34.7
		Ki	iP	06 55 19.2
		Sk	eP	06 55 46
		Um	iP	06 55 25.9
		Ud	iP	06 55 45.2
			i	06 55 57.1
		Luzon.		
		Origin time = 06 43 12.		
"	7	Ud	iP	06 57 04.0
"	7	Ud	iP	07 05 40.1
"	7	Ud	iP	07 08 59.9
		De	i(P)	07 08 53.1
"	7	Um	iP	07 10 20.8
		Ud	iP	07 10 27.7
"	7	Ud	iP	07 12 07.9
"	7	Ud	iP	07 21 59.0
"	7	Um	iP	07 29 02.9
		(cont.)		

1970 Apr.	7	(cont.)		
		Ud	iP	07 29 25.3
		Luzon.		
		Origin time = 07 16 50.		
"	7	Ki	eP	07 33 33
		Um	eP	07 33 10
		Ud	iP	07 33 00.0
		De	iP	07 32 47.2
"	7	Ki	iP	07 40 50.8
		Ud	iP	07 41 14.9
"	7	Ki	eP	07 43 53
		Ud	iP	07 44 22.8
			i	07 44 30.4
		Luzon.		
		Origin time = 07 31 47.		
"	7	Ud	iP	07 54 50.5
"	7	Sk	iP	07 57 53.0
		Um	iP	07 57 32.5
		Ud	iP	07 57 52.4
			i	07 57 57.4
		Luzon (h = N).		
"	7	Ud	iP	08 11 28.5
			ipP	08 11 39.8
		Luzon.		
		h = 40 km (Ud).		
"	7	Up	iP	08 12 23.5
		Ki	iP	08 12 04.1
		Sk	iP	08 12 28.0
			ipP	08 12 39.3
		Um	iP	08 12 10.0
		Ud	iP	08 12 31.8
		De	iP	08 12 34.2
		Luzon.		
		h = 40 km (Sk).		
"	7	Sk	eP	08 16 16
		Ud	eP	08 16 07
"	7	Ud	iP	08 16 35.0
"	7	Ud	iP	08 18 20.4
		De	iP	08 18 27.6
		Luzon.		
		Origin time = 08 05 47.		
"	7	Um	i(P)	08 20 03.1
		Ud	e(P)	08 20 13
"	7	Sk	iP	08 24 20.8
		(cont.)		

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

1970
Apr. 7 (cont.)
Um iP 08 24 05.1
Ud iP 08 24 27.3
Luzon.
Origin time = 08 11 51.

" 7 Up iP 08 37 58.1
Ki iP 08 37 38.2
Um iP 08 37 45.6
Ud iP 08 38 06.5
Luzon (h = N).

" 7 Um iP 08 54 58.1
Ud iP 08 55 23.2
Luzon.
Origin time = 08 42 47.

" 7 Ud iP 09 07 35.8

" 7 Um iP 09 22 53.7
i 09 23 01.5
Ud iP 09 22 04.7
Morocco (h = N).

" 7 Up iP 09 24 13.9
i 09 24 21.2
micr sec
P Z' 0.1 0.7
Mx E 1.2 21
Mx N 1.2 19
Mx Z 2.3 23
Ki iP 09 25 20.9
micr sec
P Z' 0.1 1.0
Mx E 1.8 16
Mx N 0.8 15
Mx Z 1.4 11
Sk iP 09 24 52.3 C
Um iP 09 24 45.4
Ud iP 09 24 21.2 C
De iP 09 23 49.6 C
Crete (h = N).
m = 5.7, M = 4.7 (Up,Ki).

" 7 Ki i(P) 09 28 57.9
Ud iP 09 28 12.9
De iP 09 28 04.2

" 7 Up iP 09 36 54.9
Ki eP 09 36 38
Um eP 09 36 42
Ud iP 09 37 03.9
Luzon (h = 20 km).

" 7 Up iP 09 39 37.5
(cont.)

1970
Apr. 7 (cont.)
Ki iP 09 40 16.5
Sk iP 09 39 44.5
Um iP 09 40 00.1
Ud iP 09 39 30.5
Atlantic Ocean (h = N).

" 7 Ki i(P) 09 51 09.3
Um iP 09 51 24.0
Ud iP 09 51 44.2
Luzon (h = N).

" 7 Ki iP 09 58 23.7
Ud iP 09 58 58.4

" 7 Sk e(P) 10 04 22
Ud iP 10 04 18.9
i 10 04 24.0
Luzon.

" 7 Ud iP 10 12 40.9

" 7 Um iP 10 31 12.4
Ud eP 10 31 40
i 10 33 21.2

" 7 Up iSg 10 36 30.7
Sk iSg 10 38 20.2
Um iSg 10 36 59.2
Ud iLgl 10 37 31.3
Esthonia.
Origin time = 10 34 19.
Explosion?

" 7 Up iP 10 44 04.4
Ki iP 10 43 43.7
Sk iP 10 44 06.4
Um iP 10 43 50.3
Ud iP 10 44 11.8
ipP 10 44 19.1
Luzon.
h = 25 km (Ud).

" 7 Up e(P) 10 52 23
Ki e(P) 10 52 50
Ud iP 10 52 30.7

" 7 Ki eP 10 55 37
Um eP 10 55 46
Ud iP 10 56 06.8
Luzon (h = 20 km).

" 7 Um iP 11 00 22.8 C
Ud iP 11 00 08.7
Turkey.

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

1970 Apr.	7	Ki	eP	11 06 37
		Ud	iP	11 07 00.2
		Luzon.		
"	7	Up	eP	11 18 09
		Ud	iP	11 18 20.0
		Luzon.		
		Origin time = 11 05 44.		
"	7	Up	iP	11 20 59.3
		Ud	iP	11 21 11.0
			i	11 21 15.6
		Luzon.		
		Origin time = 11 08 34.		
"	7	Ud	i(Sg)	11 49 41.8
"	7	Um	eP	12 12 13
		Ud	iP	12 12 34.6
		Luzon.		
		Origin time = 12 00 00.		
"	7	Ki	iP	12 31 42.0
		Ud	eP	12 32 33
"	7	Up	iP	12 39 29.4
		Ud	iP	12 39 34.3
		Luzon.		
		Origin time = 12 27 00.		
"	7	Ki	iP	12 54 24.9
"	7	Ki	iP	13 05 01.5
		Ud	iP	13 05 38.0
"	7	Sk	i(Sg)	13 11 01.1
		Ud	i(Sg)	13 10 31.7
		De	e(Sg)	13 10 55
"	7	Up	iP	13 15 57.1
		Ud	iP	13 16 06.7
		Luzon (h = N).		
"	7	Up	eP	13 22 47
		Ki	eP	13 22 25
		Sk	eP	13 22 48
		Um	iP	13 22 29.2
		Ud	iP	13 22 48.2
		Luzon (h = N).		
"	7	Um	iP	13 32 35.3
		Mona Passage (h = 90 km).		
"	7	Ud	iP	13 33 16.3
"	7	Up	iP	13 41 21.2
		(cont.)		

1970 Apr.	7	(cont.)		
		Um	eP	13 41 08
		Ud	iP	13 41 29.8 C
			i	13 41 49.9
		Luzon (h = N).		
"	7	Ud	iP	14 10 15.3
"	7	Ki	i(P)	14 14 35.3
		Ud	iP	14 13 50.0
"	7	Up	i(P)	14 22 52.0
		Ud	iP	14 22 46.3
"	7	Ud	iP	14 41 26.2
"	7	Up	iP	14 57 04.0
				micr sec
			P Z'	0.1 0.5
		Ki	iP	14 56 16.9
		Sk	iP	14 56 53.0
		Um	iP	14 56 38.5
		Ud	iP	14 57 09.9
		Okhotsk Sea (h = 560 km).		
"	7	Ud	iP	15 08 00.3
"	7	Up	i(P)	15 18 24.7
		Ki	iP	15 18 00.2
		Um	eP	15 18 07
		Ud	iP	15 18 28.2 C
		Luzon (h = 20 km).		
"	7	Up	iP	15 47 19.1
			i	15 47 25.5
		Ki	iP	15 47 58.1
			i	15 48 04.8
		Sk	iP	15 47 25.7
			i	15 47 31.7
		Um	iP	15 47 41.6
			i	15 47 48.1
		Ud	iP	15 47 12.1
			i	15 47 17.4
		Atlantic Ocean (h = N).		
		Double P.		
"	7	Up	iP	16 08 52.3
			i	16 08 59.4
		Ki	iP	16 08 30.6
		Um	iP	16 08 38.6
		Ud	iP	16 08 59.3
		Luzon (h = 35 km).		
"	7	Ud	iP	16 12 57.2
"	7	Ud	iP	16 20 47.0

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

1970 Apr.	7	Um	iP		16 22 40.1
		Ud	iP		16 23 02.0
		Luzon.			
		Origin time = 16 10 27.			
"	7	Ki	iP		16 23 02.3
		Sk	eP		16 23 28
		De	iP		16 24 28.8
		Kodiak Island (h = 55 km).			
"	7	Ud	iP		16 24 04.5
"	7	Ud	i(Sg)		16 42 18.3
"	7	Up	iP		17 10 01.5
			i		17 10 07.9
			iS		17 14 00
					micr sec
			P	Z'	0.2 1.0
			Mx	E	5.4 11
			Mx	N	6.4 13
			Mx	Z	4.5 12
		Ki	iP		17 11 09.9
			iPn		17 11 33.6
					micr sec
			Mx	E	6.1 12
			Mx	N	2.4 12
			Mx	Z	4.6 13
		Sk	iP		17 10 45.6
		Um	iP		17 10 33.8
			i		17 10 35.7
			iPn		17 10 47.0
			iS		17 14 58
		Ud	iP		17 10 14.5
			i		17 10 23.2
		De	iP		17 09 42.3
			i		17 09 45.2
			i		17 09 56.5
		Turkey (h = 30 km).			
		M = 5.4 (Up,Ki).			
"	7	Ud	iP		17 23 17.7
"	7	Um	e(P)		18 00 57
		Ud	e(P)		18 03 04
"	7	Sk	e		18 12 41
		Ud	i(Sg)		18 12 20.6
			i		18 13 57.5
		De	i		18 13 30.4
"	7	Um	iP		18 17 07.6
		Ud	iP		18 17 27.8
		Luzon.			
		Origin time = 18 04 54.			

1970 Apr.	7	Up	iP		18 18 48.4
		Ud	iP		18 18 57.6
		Luzon (h = N).			
"	7	De	iP		18 23 37.9
"	7	Up	iP		18 33 00.5
		Ud	iP		18 33 00.1
"	7	Ud	iP		18 34 41.7
"	7	Um	iP		18 43 31.1
		Ud	iP		18 43 43.2
"	7	Up	iP		19 04 59.2
		Ud	iP		19 05 06.9
"	7	Up	iP		19 23 42.6
		Ki	iP		19 23 23.7
		Ud	iP		19 23 51.6 C
		Luzon (h = N).			
"	7	Up	iP		20 10 47.1
		Ud	iP		20 10 55.6
		Luzon (h = N).			
"	7	Um	iP		20 12 17.7
		Ud	i(P)		20 12 19.2
		De	iP		20 12 43.5
"	7	Ud	iP		20 20 55.0
"	7	Ki	iP		21 26 26.0
		Ud	iP		21 27 04.3
"	7	Up	iP		21 31 38.0
		Ud	iP		21 31 46.4
"	7	Up	iP		22 35 26.5
		Ud	iP		22 35 34.5
"	7	Ud	iP		22 40 25.1
		Luzon (h = 30 km).			
"	7	Um	iP		23 04 24.8 C
		Ud	iP		23 04 04.0
		De	iP		23 03 31.7
		Turkey (h = 50 km).			
"	8	Up	iP		00 52 20.3
		Ki	iP		00 51 26.7
		Sk	iP		00 52 03.0
		Um	iP		00 51 52.0 D
		Ud	iP		00 52 24.3
		De	iP		00 52 46.1
		Kamchatka (h = 60 km).			

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

1970 Apr.	8	Ud	iP		00 55 18.2
		De	i(P)		00 55 26.7
"	8	Ud	iP		01 05 13.7
		De	iP		01 05 21.2
"	8	Up	iP		02 04 12.5
			i		02 04 19.7
"	8	Up	iP		02 33 55.3
		Ud	iP		02 34 05.1
"	8	Ud	iP		03 11 50.6 C
"	8	Up	iPKP		03 16 02.4
					micr sec
			PKP	Z'	0.1 0.7
		Sk	iPKP		03 15 55.2 C
		Um	iPKP		03 15 49.5
			i		03 15 52.0
		Ud	iPKP		03 16 04.3
		De	iPKP		03 16 13.9 C
		Kermadec Islands (h = 80 km).			
"	8	Ud	iP		03 43 17.4
"	8	Up	iP		05 26 07.3
		Ki	iP		05 25 48.4
		Sk	iP		05 26 11.9
		Um	iP		05 25 54.5
		Ud	iP		05 26 16.2 C
		Luzon (h = 35 km).			
"	8	Ud	iP		06 48 05.0
"	8	Ud	iP		06 56 58.5
"	8	Sk	i(P)		07 03 58.3
		Ud	iP		07 04 34.3
"	8	Ud	iP		07 35 21.8
		Luzon (h = N).			
"	8	Ki	iP		08 42 16.9
		Um	iP		08 42 22.5
		Ud	iP		08 42 44.1
		Luzon (h = 30 km).			
"	8	Up	iP		09 01 43.1
					micr sec
			Mx	E	0.5 17
			Mx	N	0.9 18
		Ki	iP		09 01 24.3
					micr sec
			Mx	E	0.5 13
			Mx	N	0.5 15
			Mx	Z	0.9 13
		(cont.)			

1970 Apr.	8	(cont.)		
		Sk	iP	09 01 48.0
			ipP	09 02 01.8
		Um	iP	09 01 30.5 C
			ipP	09 01 44.4
		Ud	iP	09 01 52.3 C
			i	09 02 37.6
		De	iP	09 01 58.5
		Luzon.		
		h = 50 km (Sk,Um).		
		M = 5.2 (Up,Ki).		
"	8	Ud	iP	09 39 14.9
"	8	Up	iP	10 05 26.9
		Ki	iP	10 05 08.5
		Sk	iP	10 05 32.0
		Um	iP	10 05 16.5
		Ud	iP	10 05 36.8
			i	10 05 43.0
		Luzon (h = 15 km).		
"	8	Um	iP	10 10 44.0
		Ud	iP	10 11 05.9
		Luzon (h = N).		
"	8	Up	iPKP	10 29 56.6
		Ki	ePKP	10 29 35
		Sk	iPKP	10 29 50.9
		Um	iPKP	10 29 44.9
		Ud	iPKP	10 29 58.5 C
			i	10 30 05.6
		De	iPKP	10 30 06.8
		Kermadec Islands (h = 110 km).		
"	8	Ki	iPn	10 33 29.4
			iSn	10 34 21.4
			iLgl	10 34 34.9
		Probably northwest Russia.		
		Origin time = 10 32 18.		
		Explosion?		
"	8	Ki	i(P)	10 44 29.0
		Ud	iP	10 43 57.9
"	8	Ud	iP	10 52 17.7
"	8	Ud	iP	11 05 01.6
		De	eP	11 04 26
"	8	Ki	iPn	11 07 19.9
			iSn	11 08 07.8
			iSg	11 08 25.5
		Um	i	11 09 00.3
			iSg	11 09 20.9
		Probably northwest Russia.		
		Origin time = 11 06 15.		
		Explosion?		

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

1970 Apr.	8	Up	iP		11 11 04.4	
			ipP		11 11 11.7	
		Ki	iP		11 11 27.0	
			ipP		11 11 35.5	
		Um	iP		11 11 13.6	
			ipP		11 11 21.4	
		Ud	iP		11 11 13.1	
			ipP		11 11 21.0	
		Indian Ocean.				
		h = 30 km (Up,Ki,Um,Ud).				
"	8	Ki	eP		12 58 10	
		Sk	iP		12 57 53.6	
		Colombia (h = 45 km).				
"	8	Ud	i(P)		13 34 54.5	
"	8	Up	iP		13 55 18.3	C
			iS		13 59 17	
					micr	sec
			P	Z'	0.9	0.8
			Mx	E	110	15
			Mx	N	43	11
			Mx	Z	51	11
		Ki	iP		13 56 32.0	
			i		13 56 45.0	
			iS		14 01 30	
					micr	sec
			P	Z'	0.6	1.7
			Mx	E	70	13
			Mx	N	30	14
			Mx	Z	29	10
		Sk	iP		13 55 58.6	
		Um	iP		13 55 55.3	C
		Ud	iP		13 55 25.4	C
		De	iP		13 54 50.2	
		Greece (h = 15 km).				
		m = 6.3, M = 6.4 (Up,Ki).				
"	8	Up	iP		14 02 56.3	
		Sk	iP		14 03 10.0	
"	8	Up	iP		14 50 47.0	
		Ki	iP		14 50 27.9	
		Um	iP		14 50 34.0	
		Ud	iP		14 50 55.8	C
		Luzon (h = N).				
"	8	Um	iP		14 54 05.8	
"	8	Up	iPKP		15 00 08.2	
					micr	sec
			Mx	E	1.0	21
			Mx	N	1.8	22
			Mx	Z	1.9	23
		(cont.)				

1970 Apr.	8	(cont.)				
		Ki	iPKP		14 59 54.8	C
					micr	sec
			Mx	E	0.8	18
			Mx	N	0.8	19
			Mx	Z	1.6	20
		Sk	ePKP		15 00 06	C
		Um	iPKP		15 00 00.8	
		Ud	iPKP		15 00 10.2	
			iPKS		15 03 35.5	
		De	iPKP		15 00 16.9	
			iPKS		15 03 43.2	
		New Hebrides Islands (h = 60 km).				
		M = 5.7 (Up,Ki).				
"	8	Ki	ePKP		15 20 25	
		Auckland Islands (h = 20 km).				
"	8	Ud	iP		16 27 06.9	
		Luzon (h = N).				
"	8	Um	iP		16 40 40.8	
"	8	Up			micr	sec
			Mx	E	1.0	20
			Mx	N	1.0	16
		Ki	eP		16 54 54	
					micr	sec
			Mx	E	1.3	16
			Mx	N	1.3	17
			Mx	Z	1.1	17
		Um	iP		16 55 06.8	
		Ud	eP		16 55 38	
		Japan (h = 8 km).				
		M = 5.3 (Up,Ki).				
"	8	Up	iP		17 11 22.7	C
		Ki	iP		17 11 09.8	
		Ud	iP		17 11 25.3	
"	8	Ki	ePg		18 03 16	
			iSg		18 03 54.7	
		Sk	iSg		18 04 00.6	
		Um	iSn		18 04 08.1	
			iSg		18 04 21.0	
		Ud	iSg		18 05 48.0	
		Nordland, Norway.				
		Origin time = 18 02 26.				
"	8	Up	iP		18 06 57.5	
		Ki	iP		18 06 37.9	
					micr	sec
			P	Z'	0.1	1.4
		Sk	iP		18 07 01.6	
		Um	iP		18 06 44.0	
		(cont.)				

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

1970 Apr.	8	(cont.)					
		Ud	iP		18 07 06.1	D	
			i		18 07 09.4		
		De	iP		18 07 11.9		
		Luzon (h = 20 km).					
"	8	Ki	e(P)		18 23 11		
			i(Sg)		18 23 41.7		
"	8	Ud	iP		18 58 02.3		
"	8	Up	iP		20 02 04.5		
		Ki	iP		20 01 10.4		
		Sk	iP		20 01 39.0		
		Um	iP		20 01 38.1		
		Ud	iP		20 02 02.3		
		De	iP		20 02 25.5	D	
		Alaska (h = 25 km).					
"	8	Um	iP		20 07 11.3		
		Ud	iP		20 07 33.8		
"	8	Ud	iP		20 25 53.7		
			i		20 25 59.9		
		Luzon (h = N).					
"	8	Up	iP		21 36 22.6		
			i		21 36 27.7		
					micr	sec	
			P	Z'	0.2	0.7	
			Mx	E	13	25	
			Mx	N	39	23	
			Mx	Z	17	15	
		Ki	iP		21 36 03.8	C	
			iS		21 46 12		
					micr	sec	
			P	Z'	0.5	1.3	
			Mx	E	21	14	
			Mx	N	15	15	
			Mx	Z	26	14	
		Sk	iP		21 36 27.8	C	
			i		21 36 31.2		
			ipP		21 36 45.2		
		Um	iP		21 36 09.8		
			iS		21 46 18		
		Ud	iP		21 36 31.9		
			ipP		21 36 49.1		
		De	iP		21 36 39.6		
		Luzon.					
		h = 60 km (Sk,Ud).					
		m = 6.5, M = 6.6 (Up,Ki).					
"	8	Up	iP		21 40 06.4		
		Sk	iP		21 40 08.7		
		(cont.)					

1970 Apr.	8	(cont.)				
		Ud	iP		21 40 12.5	
		De	iP		21 40 15.7	
		Luzon.				
		Origin time = 21 27 37.				
"	8	Up	iP		21 43 31.5	
		Ki	iP		21 43 12.6	
		Sk	iP		21 43 36.3	
		Um	iP		21 43 18.9	
		Ud	iP		21 43 40.8	C
		Luzon.				
		Origin time = 21 31 06.				
"	8	Up	iP		21 46 18.3	
			ipP		21 46 26.9	
		Ki	iP		21 46 00.0	
		Um	iP		21 46 06.0	
			ipP		21 46 14.8	
		Ud	iP		21 46 27.4	
		Luzon.				
		h = 30 km (Up,Um).				
"	8	Ki	iP		21 46 40.6	
		Ud	iP		21 46 00.7	
"	8	Um	iP		21 50 01.3	
		Ud	iP		21 50 22.0	C
		Luzon.				
		Origin time = 21 37 48.				
"	8	Up	iP		21 58 51.9	
		Ki	iP		21 58 32.2	
		Ud	iP		21 59 00.1	C
		Luzon.				
		Origin time = 21 46 25.				
"	8	Up	iP		21 59 05.4	
			i		21 59 08.0	
		Ki	iP		21 58 47.4	C
		Sk	iP		21 59 12.4	
		Um	iP		21 58 53.4	
		Ud	iP		21 59 14.7	
		De	iP		21 59 21.7	
		Luzon (h = 35 km).				
"	8	Up	iP		22 01 41.6	
		Um	iP		22 01 28.5	
		Ud	iP		22 01 50.0	
		Luzon.				
		Origin time = 21 49 15.				
"	8	Ud	iP		22 15 32.1	
"	8	Up	iP		22 20 06.5	
		(cont.)				

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

1970 Apr. 8 (cont.)

Um	iP		22 19 54.8
Ud	iP		22 20 14.7
	ipP		22 20 24.7

Luzon.
h = 35 km (Ud).

" 8

Up	iP		22 46 17.1
Ki	iP		22 45 58.0 C
Um	iP		22 46 04.2
Ud	iP		22 46 25.8 C
De	iP		22 46 32.4

Luzon (h = 15 km).

" 8

Up	iP		22 59 35.9
Um	iP		22 59 23.5
Ud	iP		22 59 45.7

Luzon (h = 35 km).

" 8

Ud	eP		23 15 45
	i		23 15 50.6

" 8

Up	iP		23 46 07.4
Ki	iP		23 45 48.7
Ud	iP		23 46 16.2

Luzon.
Origin time = 23 33 41.

" 8

Up	iP		23 46 12.0 C	
	ipP		23 46 24.3	
			micr	sec
	Mx	E	0.9	19
	Mx	N	1.0	20
	Mx	Z	1.3	16
Ki	iP		23 45 53.3 C	
			micr	sec
	Mx	E	0.8	14
	Mx	N	0.6	14
	Mx	Z	0.9	13
Sk	iP		23 46 17.3	
Um	iP		23 45 58.3	
Ud	iP		23 46 21.3 C	
	ipP		23 46 33.8	
De	eP		23 46 28	
	ipP		23 46 42.2	

Luzon.
h = 45 km (Up,Ud).
M = 5.3 (Up,Ki).

" 8

Up	iP		23 50 48.5
Ki	iP		23 50 30.9
Um	iP		23 50 35.4
	ipP		23 50 46.9
Ud	iP		23 50 52.8
	ipP		23 51 03.5

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

1970 Apr. 9

Up	iP		00 11 02.8 C
			micr sec
	P	Z'	0.2 0.8
Ki	iP		00 10 16.3
Sk	iP		00 10 51.8 C
Um	iP		00 10 37.5 C
Ud	iP		00 11 08.9 C
De	iP		00 11 27.1 C

Kurile Islands (h = 100 km).

" 9

Ud	iP		00 14 33.3

" 9

Up	iP		00 37 19.5
Ki	iP		00 37 00.3 C
Sk	eP		00 37 25
Um	iP		00 37 06.5
Ud	iP		00 37 28.6 C
	ipP		00 37 35.3
De	iP		00 37 35.8

Luzon.
h = 25 km (Ud).

" 9

Up	iP		01 04 01.8
Ud	iP		01 04 10.2

Luzon.
Origin time = 00 51 35.

" 9

Ud	iP		01 25 54.1

" 9

Ud	iP		01 28 33.7

" 9

Ud	iP		01 53 04.8

" 9

Um	iP		02 45 14.2

" 9

Up	iP		03 17 31.1
Ki	iP		03 16 39.0
Ud	iP		03 17 31.9

Aleutian Islands (h = 30 km).

" 9

Up	iP		04 50 33.4
	ipP		04 50 43.7
Ki	iP		04 50 14.9
	i		04 50 46.4
Sk	iP		04 50 39.0
	ipP		04 50 48.4
Um	iP		04 50 21.2
Ud	iP		04 50 43.2 C
	ipP		04 50 52.2

Luzon.
h = 35 km (Up,Sk,Ud).

" 9

Um	iPKP		05 37 42.4

Chile-Argentina (h = 120 km).

" 9

Ud	iP		07 38 21.0

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

1970 Apr.	9	Ud	iP		08 00 56.8
"	9	Ud	iP		08 18 21.1
"	9	Up	iP		08 55 54.4
		Ki	iP		08 55 37.1
		Ud	iP		08 56 03.5
		Luzon (h = 25 km).			
"	9	Um	iP		09 28 43.1
		Ud	iP		09 28 18.2
"	9	Ki	iP		09 52 29.8
		Ud	iP		09 52 28.1
"	9	Up	iSg		10 11 44.1
		Sk	eSn		10 10 40
			iSg		10 11 10.9
		Ud	eSn		10 10 14
			iSg		10 10 41.5
		De	eSg		10 11 21
		Southwest coast of Norway,			
		59.6°N, 5.6°E.			
		Origin time = 10 08 24.			
"	9	Up	iP		10 17 23.3
					micr sec
			P	Z'	0.2 1.3
			Mx	E	0.8 11
			Mx	N	0.6 13
			Mx	Z	0.2 9
		Ki	iP		10 18 29.6
					micr sec
			P	Z'	0.1 1.0
			Mx	E	0.6 13
			Mx	N	0.4 11
			Mx	Z	0.6 11
		Sk	eP		10 18 05
		Um	iP		10 17 53.8
		Ud	iP		10 17 35.0
		De	iP		10 17 00.8
			i		10 17 05.9
		Turkey (h = 30 km).			
		m = 5.5, M = 4.5 (Up,Ki).			
"	9	Ud	iP		10 25 47.4
"	9	Up	iP		10 31 15.8
		Um	iP		10 31 03.0
		Ud	iP		10 31 24.5 C
		Luzon (h = N).			
"	9	Ud	iP		11 52 10.2 C
		Luzon (h = N).			
"	9	Ud	i(Sg)		12 05 17.3

1970 Apr.	9	Ki	iP		12 33 08.8
		Sk	iP		12 33 32.8
		Um	iP		12 33 39.9
		Ud	iP		12 34 01.3
		Yukon (h = N).			
"	9	Um	iP		16 29 32.4
		Ud	iP		16 29 52.0
			i		16 29 57.5
		Luzon.			
		Origin time = 16 17 18.			
"	9	Up	iP		16 37 20.4
			i		16 37 28.9
					micr sec
			Mx	E	1.0 21
			Mx	N	0.9 21
			Mx	Z	1.8 22
		Ki	eP		16 37 10
			i		16 37 13.5
					micr sec
			P	Z'	0.4 2.0
			Mx	E	1.5 20
			Mx	N	1.1 21
			Mx	Z	2.5 20
		Sk	iP		16 37 03.2 D
		Um	iP		16 37 17.3
		Ud	iP		16 37 11.7
		De	iP		16 37 20.0
			i		16 37 22.7
		Mexico (h = 40 km).			
		M = 5.4 (Up,Ki).			
"	9	Up	eP		18 12 18
		Ki	iP		18 12 02.1
		Um	iP		18 12 06.9
		Ud	iP		18 12 27.0 C
			ipP		18 12 35.3
		Luzon.			
		h = 30 km (Ud).			
"	9	Um	eP		20 48 47
		Ud	eP		20 48 26
		Turkey (h = 30 km).			
"	10	Up	iP		00 13 39.6
		Ki	iP		00 13 21.0
		Sk	iP		00 13 44.9
		Um	iP		00 13 26.9
			ipP		00 13 38.3
		Ud	iP		00 13 49.0
			ipP		00 13 59.5
		Luzon.			
		h = 40 km (Um,Ud).			
"	10	Sk	i(P)		00 20 31.1
		Ud	iP		00 20 40.0

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

1970 Apr.	10	Ud	iP	00 35 49.8	
		Luzon (h = N).			
"	10	Up	iP	01 19 35.4	
		Sk	iP	01 20 20.5	
		Um	iP	01 20 04.4	
			i	01 20 08.3	
		Ud	iP	01 19 44.1	
			i	01 19 48.8	
		Turkey. The readings at Up,Sk probably correspond to the second, larger-amplitude readings at Um,Ud.			
"	10	Up	iP	08 30 32.7	
		Ki	iP	08 30 41.3	
		Sk	iP	08 30 58.5	
		Um	iP	08 30 31.0	
			i	08 30 32.9	
		Ud	iP	08 30 49.6	
		De	iP	08 30 47.3	
		Hindu Kush (h = 130 km).			
"	10	Ki	iP	09 19 33.3	
		Um	iP	09 19 49.0	C
			ipP	09 20 28.0	
		Ud	iP	09 20 31.4	
		Kurile Islands. h = 150 km (Um).			
"	10	Ud	iPg	09 59 21.8	
			iSg	09 59 45.3	
		De	iPg	09 59 33.5	
			iSg	10 00 02.2	
		Probably southwest Sweden, 58.5°N, 11.8°E. Origin time = 09 58 48.			
"	10	Up	iP	10 32 34.9	
		Ki	iP	10 32 57.3	
				micr sec	
			Mx E	0.6 15	
			Mx N	0.5 15	
			Mx Z	0.7 13	
		Sk	iP	10 33 05.1	
		Um	iP	10 32 40.1	
		Ud	iP	10 32 51.7	
		De	iP	10 32 42.8	
		West Pakistan (h = N).			
"	10	Sk	iP	10 51 55.4	
		Ud	iP	10 51 19.6	
"	10	Ki	iPn	11 12 24.0	
		(cont.)			

1970 Apr.	10	(cont.)			
		Ki	iSn	11 13 23.0	
			iSg	11 13 46.8	
		Sk	iLgl	11 16 11.1	
		Um	iSg	11 14 37.9	
		Northwest Russia, 67.5°N, 33.4°E. Origin time = 11 11 07. Explosion?			
"	10	Sk	iP	11 32 27.5	
		Ud	iP	11 32 27.7	
"	10	Up	iP	13 30 22.1	
		Ki	iP	13 30 02.9	C
		Sk	iP	13 30 27.1	
		Um	iP	13 30 11.2	
		Ud	iP	13 30 31.2	C
		Luzon (h = 30 km).			
"	10	Up	i(P)	13 34 55.7	
		De	iP	13 34 54.8	
"	10	Up	iPKP	14 28 35.2	
				micr sec	
			PKP Z'	0.8 0.8	
		Ki	iPKP	14 28 12.9	
			i	14 28 23.7	
		Sk	iPKP	14 28 28.0	C
		Um	iPKP	14 28 24.0	
			ipPKP	14 29 09.3	
		Ud	iPKP	14 28 36.1	C
			i	14 28 37.6	
		De	iPKP	14 28 46.9	
		Tonga-Kermadec Islands. h = 180 km (Um).			
"	10	Sk	iP	15 09 18.9	
		Ud	eP	15 09 29	
"	10	Ki	ePg	17 49 18	
			iSg	17 49 52.1	
		Sk	ePg	17 49 19	
			iSg	17 49 56.3	
		Um	iSg	17 50 18.8	
		Nordland, Norway, 66.4°N, 14.8°E. Origin time = 17 48 23. Explosion?			
"	10	Ki	iP	22 16 32.9	
		Sk	iP	22 16 57.1	
		Um	iP	22 16 39.2	
		Ud	iP	22 17 00.8	C
		Luzon (h = 35 km).			

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

1970 Apr.	10	Up	iP		22 19 36.5	
"	10	Up	iP		23 18 47.1	
		Um	iP		23 19 20.9	
		Ud	iP		23 19 01.6	
		Turkey.				
"	11	Up	iP		01 07 58.9	
		Ki	iP		01 09 12.5	
		Sk	iP		01 08 40.5	
		Um	iP		01 08 36.4	
		Ud	iP		01 08 06.5	
			i		01 08 11.6	
		De	eP		01 07 29	
		Greece (h = 70 km).				
"	11	Ud	iP		03 31 34.4	
			i		03 31 43.0	
"	11	Up	iP		04 12 32.0	
		Sk	iP		04 13 13.3	
		Um	iP		04 13 08.6	
		Ud	iP		04 12 38.4	
		Greece.				
		Origin time = 04 07 43.				
"	11	Up	iP		04 15 48.3	
			i		04 15 51.1	
					micr	sec
			P	Z'	0.1	1.0
			Mx	E	3.1	18
			Mx	N	7.7	22
			Mx	Z	7.2	22
		Ki	iP		04 14 53.6	
			i		04 14 57.6	
					micr	sec
			P	Z'	0.2	1.1
			Mx	E	7.8	19
			Mx	N	6.0	20
			Mx	Z	11	21
		Sk	iP		04 15 19.3 C	
			i		04 15 22.6	
		Um	iP		04 15 21.5	
			i		04 15 25.7	
		Ud	iP		04 15 43.7	
			i		04 15 46.2	
			iPcP		04 16 35.3	
		De	eP		04 16 07	
			i		04 16 11.5	
		Alaska (h = 7 km).				
		m = 5.9, M = 6.0 (Up,Ki).				
		Double P.				
"	11	Up			micr	sec
			Mx	E	0.9	18
			Mx	N	1.6	20
			Mx	Z	1.4	22
		(cont.)				

1970 Apr.	11	(cont.)				
		Ki	iPKP		06 40 28.1	
					micr	sec
			Mx	E	0.8	18
			Mx	N	0.7	18
			Mx	Z	1.4	19
		Um	ePKP		06 40 33	
		Ud	ePKP		06 40 34	
		Tonga Islands (h = N).				
		M = 5.7 (Up,Ki).				
"	11	Up	iPKP		07 38 23.8 C	
			i		07 38 29.1	
		Ki	ePKP		07 38 02	
		Sk	iPKP		07 38 17.9 C	
		Um	iPKP		07 38 11.8	
			i		07 38 12.9	
		Ud	iPKP		07 38 24.2	
			i		07 38 31.8	
		De	iPKP		07 38 33.2	
			i		07 38 46.2	
		Tonga-Kermadec Islands.				
		Origin time = 07 19 04.				
		Probably same hypocenter as for April 10, 14 28.				
"	11	Up	iP		10 09 52.1	
		Ki	iP		10 08 58.0	
		Sk	iP		10 09 22.6	
		Um	iP		10 09 25.8	
		Ud	iP		10 09 47.7	
		Alaska (h = N).				
"	11	Ud	iP		10 56 06.5	
		Aleutian Islands (h = 45 km).				
"	11	Um	iP		11 04 04.6	
"	11	Up	iP		13 05 41.1	
		Ki	iP		13 04 46.5	
		Sk	iP		13 05 11.6	
		Um	iP		13 05 15.0	
		Ud	iP		13 05 37.3	
		Alaska (h = N).				
"	11	Um	iP		14 02 19.5	
"	11	Up	iP		14 28 20.6	
"	11	Up	iP		16 31 30.0	
		Ud	iP		16 31 39.2	
		Luzon (h = 15 km).				
"	11	Up	iP		17 29 20.3	
		Sk	eP		17 30 02	
		Um	iP		17 29 52.7	
			i		17 30 03.3	
		Ud	iP		17 29 34.1	
		(cont.)				

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

1970
Apr. 11 (cont.)

De	iP		17 29 01.5

Turkey.
Origin time = 17 24 27.

" 11 Ki	iP		17 52 51.3
Um	iP		17 52 24.3
" 11 Up	iP		19 52 35.5
Sk	eP		19 53 16
Ud	iP		19 52 45.7

Turkey.
Origin time = 19 47 40.

" 11 Up	eP		23 29 34
Um	iP		23 29 18.8
Ud	iP		23 29 39.9

Luzon.
Origin time = 23 17 06.

" 11 Up	iP		23 45 22.3
Ki	iP		23 45 03.4
Sk	iP		23 45 27.3
Um	iP		23 45 09.6
	i		23 45 16.3
Ud	iP		23 45 31.5 C

Luzon (h = N).

" 12 Um	iP		00 05 33.3
" 12 Up	iP		00 30 32.1
Ki	iP		00 30 13.5
Ud	iP		00 30 41.3

Luzon.
Origin time = 00 18 06.

" 12 Up	iP		02 21 32.3	
			micr	sec
	P	Z'	0.1	0.5
Ki	iP		02 20 39.4	
	iPcP		02 21 25.0	
Sk	eP		02 21 13	
	iPcP		02 21 44.8	
Um	iP		02 21 05.7	
	i		02 21 18.3	
	iPcP		02 21 40.4	
Ud	iP		02 21 32.6	
De	iP		02 21 55.3	

Aleutian Islands (h = 45 km).

" 12 Up	iP		04 14 13.1	
	iPP		04 17 32.1	
	iS		04 24 37	
			micr	sec
	P	Z'	0.9	0.8
	Mx	E	58	17
	Mx	N	210	26

(cont.)

1970
Apr. 12 (cont.)

Up	Mx	Z	76	17
Ki	iP		04 13 54.3 C	
	iS		04 24 02	
			micr	sec
	P	Z'	0.6	1.0
	Mx	E	87	15
	Mx	N	68	17
	Mx	Z	69	13
Sk	iP		04 14 18.5 C	
	iX		04 14 24.0	
	iY		04 14 34.2	
Um	iP		04 14 00.6 C	
	iX		04 14 05.8	
	iY		04 14 16.2	
Ud	iP		04 14 22.2 C	
De	iP		04 14 28.8	
	iY		04 14 43.6	

Luzon (h = 25 km).
m = 6.8, M = 7.2 (Up,Ki).
Multiple P (X and Y).

" 12 Ud	iP		04 20 58.0
" 12 Up	iP		04 23 05.3
Ki	eP		04 22 47
Sk	e(P)		04 23 05
Ud	iP		04 23 13.6

Luzon.
Origin time = 04 10 36.

" 12 Up	iP		04 24 40.3
Ud	iP		04 24 49.1

Luzon.
Origin time = 04 12 11.

" 12 Up	iP		04 27 28.2
Um	iP		04 27 17.2
Ud	iP		04 27 37.4
	ipP		04 27 45.9

Luzon.
h = 30 km (Ud).
Origin time = 04 14 59.

" 12 Up	iP		04 28 02.1
	ipP		04 28 10.5
Ki	iP		04 27 42.8
	ipP		04 27 49.5
Sk	iP		04 28 07.6
	ipP		04 28 14.4
Um	iP		04 27 48.8
	ipP		04 27 55.5
Ud	iP		04 28 10.6 C
	ipP		04 28 17.6

Luzon.
h = 25 km (Up,Ki,Sk,Um,Ud).

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

1970 Apr.	12	Up	iP		04 29 24.9
			i		04 29 26.0
					micr sec
			P	Z'	0.2 0.7
		Ki	iP		04 29 06.5
					micr sec
			P	Z'	0.2 1.0
		Sk	iP		04 29 30.0 C
		Um	iP		04 29 12.3
			ipP		04 29 18.5
		Ud	iP		04 29 34.3 C
			ipP		04 29 40.8
		De	iP		04 29 40.8
		Luzon.			
		h = 25 km (Um,Ud).			
		m = 6.3 (Up,Ki).			
"	12	Up	iP		04 31 59.2
			ipP		04 32 05.2
		Ki	ipP		04 31 46.9
		Sk	ipP		04 32 11.7
		Um	iP		04 31 46.9
			ipP		04 31 53.9
		Ud	iP		04 32 07.6
			i		04 32 09.0
			ipP		04 32 15.1
		Luzon.			
		h = 25 km (Up,Um,Ud).			
		Origin time = 04 19 30.			
"	12	Up	iP		04 33 54.9
		Um	iP		04 33 39.1
		Ud	iP		04 34 02.0
		Luzon.			
		Origin time = 04 21 24.			
"	12	Up	iP		04 36 01.4
		Ki	iP		04 35 43.9
		Sk	eP		04 36 07
		Um	iP		04 35 49.0
		Ud	i(P)		04 36 07.3
			iP		04 36 10.2
		Luzon.			
		Origin time = 04 23 32.			
"	12	Up	iP		04 36 40.3
			i		04 36 45.7
		Um	iP		04 36 28.0
		Ud	iP		04 36 49.9
			i		04 36 53.6
		Luzon.			
		Origin time = 04 24 11.			
"	12	Up	iP		04 38 00.1
		Sk	eP		04 38 06
		(cont.)			

1970 Apr.	12	(cont.)			
		Um	iP		04 37 47.9
			ipP		04 37 54.7
		Ud	iP		04 38 09.3
			ipP		04 38 16.3
		Luzon.			
		h = 25 km (Um,Ud).			
		Origin time = 04 25 31.			
"	12	Up	iP		04 39 08.3
			ipP		04 39 14.8
					micr sec
			pP	Z'	0.1 0.8
		Ki	iP		04 38 48.5
		Sk	iP		04 39 13.0
		Um	iP		04 38 55.7
			ipP		04 39 01.2
			i		04 39 44.8
		Ud	iP		04 39 16.1
			ipP		04 39 22.2
		De	iP		04 39 27.4
		Luzon.			
		h = 20 km (Up,Um,Ud).			
"	12	Up	iP		04 52 44.7
		Ud	iP		04 52 59.3
"	12	Up	iP		04 53 38.5
		Ki	eP		04 53 17
		Um	iP		04 53 26.8
			i		04 53 29.6
		Ud	iP		04 53 43.0
		Luzon.			
		Origin time = 04 41 08.			
"	12	Up	iP		04 55 56.8
		Um	eP		04 55 59
		Ud	iP		04 56 13.7
"	12	Up	iP		05 03 32.0
		Ud	iP		05 03 34.1
			i		05 03 40.9
"	12	Up	iP		05 06 05.7
		Um	iP		05 06 02.8
			i		05 06 09.8
		Ud	iP		05 06 14.8
"	12	Up	i(P)		05 07 04.5
		Um	i(P)		05 07 27.3
		Ud	iP		05 07 04.6
			i		05 07 13.1
"	12	Up	iP		05 10 08.5
		Ud	iP		05 10 10.6

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

1970 Apr.	12	Up	iP	05 17 04.3
			i	05 17 25.4
		Ud	iP	05 17 10.9
"	12	Up	iP	05 20 58.8
		Ud	iP	05 21 07.0
			i	05 21 28.3
		Luzon.		
		Origin time = 05 08 30.		
"	12	Up	iP	05 23 05.1
			ipP	05 23 11.6
		Ki	epP	05 22 51
		Um	ipP	05 22 59.4
		Ud	iP	05 23 16.3
			ipP	05 23 21.4
		Luzon.		
		h = 20 km (Up,Ud).		
"	12	Up	iP	05 24 51.7
		Ki	eP	05 24 33
		Ud	iP	05 25 01.0
		Luzon.		
		Origin time = 05 12 23.		
"	12	Up	iP	05 30 12.3
		Ud	iP	05 30 20.6
		Luzon.		
		Origin time = 05 17 43.		
"	12	Up	iP1	05 30 35.7
			iP2	05 30 38.3
				micr sec
			P2	Z' 0.2 0.7
		Ki	iP1	05 30 16.5
			iP2	05 30 19.3
			iP3	05 30 28.2
				micr sec
			P2	Z' 0.2 1.0
		Sk	iP1	05 30 41.3
			iP2	05 30 44.3
			iP3	05 30 51.7
		Um	iP1	05 30 23.1
			iP2	05 30 26.1
			iP3	05 30 33.6
		Ud	iP1	05 30 45.2
			iP2	05 30 47.9
			iP3	05 30 55.8
		De	iP2	05 30 54.7
			iP3	05 31 02.1
		Luzon (h = N).		
		m = 6.3 (Up,Ki).		
		Three phases (P1,P2,P3) are recorded, of which P1 is the smallest. P3 could be pP to P2, corresponding to a focal depth of 30 km.		

1970 Apr.	12	Up	iP	05 33 47.1
		Um	iP	05 33 32.7
		Ud	iP	05 33 55.3
		Luzon.		
		Origin time = 05 21 17.		
"	12	Up	iP	05 36 19.2
		Ud	iP	05 36 18.7
			i	05 36 27.9
"	12	Up	iP	05 37 10.0
		Ud	iP	05 37 18.3
		Luzon.		
		Origin time = 05 24 40.		
"	12	Um	iP	05 38 26.1
		Ud	iP	05 38 43.0
"	12	Up	iP	05 40 20.2
		Ki	iP	05 40 01.9
		Sk	iP	05 40 28.0
		Um	iP	05 40 07.2
		Ud	iP	05 40 29.4
		Luzon (h = N).		
"	12	Up	iP	05 44 59.6
		Ud	iP	05 45 08.2
		Luzon.		
		Origin time = 05 32 30.		
"	12	Up	iP	05 47 22.6
		Ki	ipP	05 47 12.2
		Um	ipP	05 47 20.3
		Ud	iP	05 47 31.1
			ipP	05 47 41.9
		Luzon.		
		h = 40 km (Ud).		
		In many of the Luzon aftershocks, pP is larger than P. This may cause confusion between P and pP, especially for the smaller shocks.		
"	12	Up	iP	05 49 28.8
		Um	iP	05 49 17.5
		Ud	iP	05 49 37.9
		Luzon.		
		Origin time = 05 37 00.		
"	12	Up	iP	05 59 30.2
		Um	iP	05 59 18.2
		Ud	iP	05 59 38.6
		Luzon.		
		Origin time = 05 47 01.		
"	12	Up	iP	06 12 10.5
		Ki	i(P)	06 11 22.0

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

1970 Apr.	12	Up	iP		06 16 17.2
		Ki	iP		06 16 00.0
			ipP		06 16 08.2
		Um	iP		06 16 05.2
		Ud	iP		06 16 26.6 D
			ipP		06 16 35.1
		Luzon.			
		h = 30 km (Ki,Ud).			
"	12	Up	iP		06 35 59.6
		Ki	iP		06 35 41.6
		Sk	iP		06 36 06.3
		Um	iP		06 35 47.8
		Ud	iP		06 36 09.3
		Luzon (h = N).			
"	12	Up	iP		06 42 25.1
			i		06 42 44.5
					micr sec
			Mx	E	1.0 17
			Mx	N	2.3 22
			Mx	Z	1.6 20
		Ki	iP		06 42 05.8
					micr sec
			P	Z'	0.1 1.0
			Mx	E	0.8 13
			Mx	N	1.3 17
			Mx	Z	0.9 13
		Sk	iP		06 42 31.3 C
		Um	iP		06 42 13.7
			ipP		06 42 24.8
		Ud	iP		06 42 33.7
			i		06 42 35.4
		Luzon.			
		h = 40 km (Um).			
		M = 5.6 (Up,Ki).			
"	12	Up	eP		06 46 48
		Ki	eP		06 46 27
		Ud	iP		06 46 57.5
		Luzon.			
		Origin time = 06 34 19.			
"	12	Up	iP		06 49 21.2
		Ki	iP		06 49 02.5
		Sk	epP		06 49 35
		Um	iP		06 49 08.5
		Ud	iP		06 49 30.3 C
			ipP		06 49 37.2
		Luzon.			
		h = 25 km (Ud).			
"	12	Ki	iP		06 51 26.3
		Um	iP		06 51 34.0
		Ud	iP		06 51 54.4 C
		Luzon.			
		Origin time = 06 39 16.			

1970 Apr.	12	Up	iP	07 00 48.2
		Ud	iP	07 00 57.3
		Luzon.		
		Origin time = 06 48 19.		
"	12	Up	iP	07 01 39.0
		Ud	iP	07 01 48.0 C
		Luzon.		
		Origin time = 06 49 10.		
"	12	Up	iP	07 03 31.3
		Sk	eP	07 03 32
		Um	iP	07 03 19.3
		Ud	iP	07 03 40.4
			ipP	07 03 47.5
		Luzon.		
		h = 25 km (Ud).		
"	12	Up	iP	07 10 54.0
			i	07 10 58.4
		Ki	iP	07 10 36.8
		Um	iP	07 10 42.9
			ipP	07 10 49.7
		Ud	iP	07 11 03.1
			ipP	07 11 10.2
		Luzon.		
		h = 25 km (Um,Ud).		
"	12	Ud	eP	07 14 47
			i	07 14 54.1
"	12	Up	iP	07 16 15.9
		Um	eP	07 16 03
		Ud	iP	07 16 24.4
			i	07 16 27.1
		Luzon (h = N).		
"	12	Up	iP	07 28 32.8
			ipP	07 28 39.9
		Ki	iP	07 28 14.1
		Sk	eP	07 28 37
		Um	iP	07 28 19.9
			ipP	07 28 27.1
		Ud	iP	07 28 42.0 C
			ipP	07 28 49.1
		Luzon.		
		h = 25 km (Up,Um,Ud).		
"	12	Up	i(Sn)	07 39 30.6
			iSg	07 39 45.7
		Sk	iSg	07 40 31.4
		Ud	iPg	07 38 23.1
			iSg	07 38 52.5
		De	eSg	07 39 06
			iRg	07 39 11.8
		Off west coast of Sweden, 58.5°N, 10.4°E.		
		Origin time = 07 37 37.		
		Explosion?		

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

1970 Apr.	12	Up	iP	07 41 58.3
			ipP	07 42 05.0
		Ud	iP	07 42 05.8
			ipP	07 42 13.3
		Luzon.		
		h = 25 km (Up,Ud).		
		Origin time = 07 29 28.		
"	12	Up	eP	07 47 17
		Ud	iP	07 47 26.9
			ipP	07 47 34.1
		Luzon.		
		h = 25 km (Ud).		
		Origin time = 07 34 49.		
"	12	Up	i(Sn)	07 51 29.7
			iSg	07 51 44.8
		Ud	iPg	07 50 23.9
			iSg	07 50 53.4
		De	eSg	07 51 07
			iRg	07 51 13.3
		Off west coast of Sweden,		
		58.5°, 10.4°E.		
		Origin time = 07 49 38.		
		Explosion?		
"	12	Up	iP	07 58 12.6
			ipP	07 58 19.3
		Um	iP	07 58 00.2
		Ud	iP	07 58 21.5
			ipP	07 58 28.3
		Luzon.		
		h = 25 km (Up,Ud).		
		Origin time = 07 45 44.		
"	12	Up	iP	07 59 06.8
			ipP	07 59 14.7
		Um	iP	07 58 58.4
		Ud	iP	07 59 15.6 C
		Luzon.		
		h = 30 km (Up).		
		Origin time = 07 46 38.		
"	12	Um	iP	08 00 11.2
		Ud	iP	08 00 04.7
"	12	Up	iP	08 21 26.7
		Ud	iP	08 21 34.4
		Luzon.		
		Origin time = 08 08 57.		
"	12	Up	i	08 26 15.4
			iSg	08 26 54.3
		Ud	iPg	08 25 32.4
			iSg	08 26 02.3
		De	iSg	08 26 16.4
			iRg	08 26 23.0
		(cont.)		

1970 Apr.	12	(cont.)		
		Off west coast of Sweden,		
		58.5°N, 10.4°E.		
		Origin time = 08 24 46.		
		Explosion?		
"	12	Up	iP	08 27 49.5
		Um	eP	08 27 37
		Ud	iP	08 27 58.2
		Luzon.		
		Origin time = 08 15 20.		
"	12	Up	iP	08 38 05.7
		Um	eP	08 37 55
		Ud	iP	08 38 14.8
			ipP	08 38 25.6
		Luzon.		
		h = 40 km (Ud).		
		Origin time = 08 25 37.		
"	12	Up	iP	08 45 47.2
			ipP	08 45 54.4
		Ki	iP	08 45 28.4
		Um	iP	08 45 34.3
			ipP	08 45 41.8
		Ud	iP	08 45 56.3 C
			ipP	08 46 03.5
		Luzon.		
		h = 25 km (Up,Um,Ud).		
"	12	Up	iP	08 52 49.2
		Ud	iP	08 52 57.7
		Luzon.		
		Origin time = 08 40 20.		
"	12	Up	iP	09 05 21.0
		Sk	iP	09 05 15.3
		Um	iP	09 04 58.7
		Ud	iP	09 05 28.9
		De	iP	09 05 43.9
		Japan (h = 130 km).		
"	12	Up	iP	09 14 14.7
		Ki	iP	09 13 55.0
		Sk	iP	09 14 20.2
		Um	iP	09 14 01.7
			i	09 14 13.9
		Ud	iP	09 14 23.7
		Luzon (h = 40 km).		
"	12	Up	eP	09 18 25
		Um	iP	09 18 12.2
		Ud	iP	09 18 33.9 D
		Luzon.		
		Origin time = 09 05 56.		

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

1970 Apr.	12	Up	iP	09 21 50.0	
		Ud	iP	09 22 01.0	C
"	12	Ud	iP	09 25 14.3	
"	12	Up	iP	09 52 39.7	
			ipP	09 52 51.3	
		Ki	iP	09 52 19.1	
		Ud	iP	09 52 49.3	C
		Luzon.			
		h = 45 km (Up).			
		Origin time = 09 40 11.			
"	12	Up	iP	10 14 11.6	
		Ud	iP	10 14 21.6	
		Luzon.			
		Origin time = 10 01 44.			
"	12	Ud	iP	10 19 30.0	
			i	10 19 36.9	
"	12	Ud	iP	10 20 55.1	
"	12	Ud	iP	10 24 42.5	
"	12	Ud	iP	10 51 37.4	
"	12	Up	iP	10 52 06.6	
		Um	iP	10 51 54.3	
		Ud	iP	10 52 16.0	D
		Luzon.			
		Origin time = 10 39 38.			
"	12	Up	eP	10 53 28	
		Um	iP	10 53 13.8	
		Ud	iP	10 53 37.7	D
			ipP	10 53 48.5	
		Luzon.			
		h = 40 km (Ud).			
		Origin time = 10 40 59.			
"	12	Ud	eP	10 55 14	
"	12	Up	iP	11 01 12.3	
				micr	sec
			P	Z' 0.1	0.7
		Ki	iP	11 00 53.9	
				micr	sec
			Mx	E 0.4	14
			Mx	N 0.4	15
			Mx	Z 0.5	14
		Sk	iP	11 01 18.1	
		Um	iP	11 00 59.7	
			ipP	11 01 06.5	
		Ud	iP	11 01 22.0	D
		De	eP	11 01 28	
		Luzon.			
		h = 25 km (Um).			

1970 Apr.	12	Up	iP	11 11 39.5	
		Ki	eP	11 11 17	
		Um	eP	11 11 24	
		Ud	iP	11 11 46.5	
		Luzon.			
		Origin time = 10 59 09.			
"	12	Up	iP	11 18 40.2	
		Ki	eP	11 18 15	
		Um	iP	11 18 25.4	
		Ud	iP	11 18 47.1	
		Luzon.			
		Origin time = 11 06 09.			
"	12	Ud	iP	12 13 17.1	
			i	12 13 23.6	
"	12	Up	iP	12 24 06.0	
		Ud	iP	12 24 15.2	C
		Luzon (h = N).			
"	12	Up	eP	12 38 43	
		Ud	iP	12 38 52.0	C
		Luzon.			
		Origin time = 12 26 14.			
"	12	Ud	iP	12 40 24.8	
"	12	Um	iP	12 46 17.1	
"	12	Up	iP	12 47 21.3	
		Ud	iP	12 47 30.2	C
			ipP	12 47 38.4	
		Luzon.			
		h = 30 km (Ud).			
"	12	Up	iP	13 19 36.1	
"	12	Up	iP	13 28 25.3	
		Um	iP	13 28 11.7	
		Ud	iP	13 28 34.3	D
		Luzon.			
		Origin time = 13 15 56.			
"	12	Up	iP	13 46 20.7	
			ipP	13 46 28.5	
		Ud	iP	13 46 29.2	
			ipP	13 46 37.0	
		Luzon.			
		h = 30 km (Up,Ud).			
		Origin time = 13 33 51.			
"	12	Up	iP	14 08 10.0	
			ipP	14 08 19.6	
		Ki	iP	14 07 52.4	
		Sk	iP	14 08 16.3	
		Um	iP	14 07 58.2	
		(cont.)			

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

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Apr. 12 (cont.)

	Um	ipP		14 08 06.7	
	Ud	iP		14 08 20.1	D
		ipP		14 08 28.8	
	De	eP		14 08 25	

Luzon.
h = 35 km (Up,Um,Ud).

" 12	Up	iP		14 35 08.3		
		ipP		14 35 16.7		
				micr	sec	
		P	Z'	0.2	0.5	
		Mx	E	1.0	17	
		Mx	N	1.5	18	
		Mx	Z	1.4	17	
	Ki	iP		14 34 49.4		
				micr	sec	
		Mx	E	0.7	17	
		Mx	N	0.7	16	
		Mx	Z	1.0	16	
	Sk	iP		14 35 13.6		
	Um	iP		14 34 56.2		
	Ud	iP		14 35 17.8	D	
		i		14 35 21.7		
		iPP		14 38 38.4		
	De	iP		14 35 24.6		

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

" 12	Ud	iP		14 40 51.1	
" 12	Um	iP		15 06 16.7	
	Ud	iP		15 06 38.4	D
		ipP		15 06 43.1	

Luzon.
h = 15 km (Ud).
Origin time = 14 54 00.

" 12	Up	iP		15 18 17.3	
	Ud	iP		15 18 29.2	
" 12	Um	iP		15 20 08.2	
	Ud	iP		15 20 31.0	

Luzon.
Origin time = 15 07 52.

" 12	Up	iP		15 46 16.4	
		ipP		15 46 24.0	
	Um	eP		15 46 05	
	Ud	iP		15 46 25.5	C
		ipP		15 46 33.9	

Luzon.
h = 30 km (Up,Ud).

" 12	Ki	eP		16 13 39	
	Ud	iP		16 13 14.1	

1970
Apr. 12

	Ki	e(P)		16 40 34	
	Ud	iP		16 40 11.1	
" 12	Ki	eP		16 48 25	
	Ud	iP		16 48 35.7	C
" 12	Up	iP		17 00 31.2	
	Um	iP		17 00 18.5	
	Ud	iP		17 00 40.1	D

Luzon.
Origin time = 16 48 02.

" 12	Up	iP		17 04 59.5	
		ipP		17 05 06.7	
	Um	iP		17 04 46.7	
	Ud	iP		17 05 08.3	
		ipP		17 05 15.7	

Luzon.
h = 25 km (Up,Ud).
Origin time = 16 52 30.

" 12	Up	iP		17 14 29.9	
	Ki	iP		17 14 10.7	
	Um	iP		17 14 17.6	
	Ud	iP		17 14 39.4	

Luzon (h = N).

" 12	Up	iP		17 35 08.5	
		ipP		17 35 15.7	
	Ud	iP		17 35 16.8	C
		ipP		17 35 24.2	

Luzon.
h = 25 km (Up,Ud).
Origin time = 17 22 39.

" 12	Up	iP		18 20 30.4	
	Ud	iP		18 20 39.2	
		ipP		18 20 46.3	

Luzon.
h = 25 km (Ud).
Origin time = 18 08 01.

" 12	Up	eP		18 54 35	
	Ud	iP		18 54 46.2	
" 12	Ki	iP		19 17 35.2	
	Ud	iP		19 18 01.6	

Luzon.
Origin time = 19 05 24.

" 12	Ud	iP		19 18 47.5	
		i		19 18 55.7	
" 12	Up	eP		20 00 20	
	Um	iP		20 00 57.6	
	Ud	iP		20 00 34.5	

Turkey (h = 15 km).

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

1970 Apr.	12	Ud	iP	20 28 31.4	
"	12	Up	iP	20 29 37.1	C
		Ki	eP	20 29 34	
"	12	Up	eP	20 41 41	
			ipP	20 41 49.6	
		Um	iP	20 41 28.8	
		Ud	iP	20 41 50.1	C
			ipP	20 41 57.9	
		Luzon.			
		h = 30 km (Up,Ud).			
		Origin time = 20 29 12.			
"	12	Up	iP	21 17 34.0	
			i	21 17 43.9	
		Um	eP	21 17 18	
"	12	Up	iP	22 50 21.2	
		Um	iP	22 50 08.2	
		Ud	iP	22 50 30.0	
		Luzon (h = N).			
"	12	Up	iP	23 01 51.7	
		Um	iP	23 01 39.5	
		Ud	iP	23 02 01.1	C
			ipP	23 02 10.1	
		Luzon.			
		h = 35 km (Ud).			
		Origin time = 22 49 23.			
"	12	Um	eP	23 07 12	
		Ud	iP	23 07 34.6	
		Luzon.			
		Origin time = 22 54 56.			
"	12	Up	iP	23 09 26.0	
		Ki	iP	23 09 47.6	
			i	23 09 53.7	
		Um	iP	23 09 44.2	C
		Ud	iP	23 09 10.9	
		Azores Islands (h = N).			
"	12	Ud	iP	23 16 11.6	
"	13	Up	iP	00 04 36.8	
				micr	sec
			Mx	E 0.6	20
			Mx	N 1.1	18
		Ki	iP	00 04 18.3	
			ipP	00 04 23.3	
				micr	sec
			Mx	E 0.5	16
			Mx	N 0.8	19
			Mx	Z 0.6	13
		(cont.)			

1970 Apr.	13	(cont.)			
		Sk	iP	00 04 42.6	
			ipP	00 04 47.3	
		Um	iP	00 04 24.7	
			ipP	00 04 30.3	
		Ud	iP	00 04 46.1	C
			ipP	00 04 51.8	
		De	iP	00 04 52.9	
			ipP	00 04 57.7	
		Luzon.			
		h = 20 km (Ki,Sk,Um,Ud,De).			
		M = 5.3 (Up,Ki).			
"	13	Ud	iP	00 08 11.5	
"	13	Ud	iP	00 32 54.1	
"	13	Ud	iP	01 19 30.5	
"	13	Ki	e(P)	01 20 09	
		Ud	iP	01 20 33.7	
"	13	Ud	iP	01 27 42.2	
		Hindu Kush.			
"	13	Up	iP	01 33 17.7	
		Ud	iP	01 33 26.8	
		Luzon.			
		Origin time = 01 20 49.			
"	13	Ud	iP	01 37 46.1	
"	13	Ud	iP	01 40 20.8	
			i	01 40 26.3	
"	13	Ud	iP	01 44 56.2	
"	13	Ud	iP	02 18 48.5	
"	13	Ud	eP	02 19 45	
"	13	Up	iP	02 30 03.1	
		Ud	iP	02 30 33.5	
"	13	Ud	iP	02 39 25.5	
"	13	Ud	iP	03 13 03.4	
"	13	Up	iP	03 38 11.0	
		Ud	iP	03 38 20.2	
		Luzon.			
		Origin time = 03 25 42.			
"	13	Sk	i(P)	03 59 19.5	
		Ud	iP	03 59 51.4	

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

1970 Apr.	13	Ud	iP		04 10 50.4	
"	13	Ud	iP		04 30 30.0	
"	13	Ud	iP		04 45 24.1	
"	13	Ud	iP		04 59 28.9	
"	13	Ud	iP		05 19 41.3	
			i		05 19 47.9	
"	13	Up	iP		05 20 51.6	
			i		05 20 55.8	
					micr	sec
			Mx	E	0.6	11
			Mx	N	0.7	12
			Mx	Z	0.9	11
		Ki	iP		05 21 59.9	
					micr	sec
			Mx	E	0.8	11
			Mx	N	0.4	11
			Mx	Z	0.6	11
		Sk	eP		05 21 36	
		Um	iP		05 21 24.7	
		Ud	iP		05 21 04.2	
			i		05 21 11.5	
		De	iP		05 20 29.5	
			i		05 20 34.0	
		Turkey (h = 8 km).				
		M = 4.5 (Up,Ki).				
"	13	Ud	eP		05 26 17	
"	13	Um	iP		05 29 19.7	
		Ud	iP		05 29 40.7	
			ipP		05 29 47.9	
		Luzon.				
		h = 25 km (Ud).				
		Origin time = 05 17 03.				
"	13	Ud	iP		05 30 25.6	
"	13	Up	iP		08 40 53.8	
					micr	sec
			Mx	E	1.0	20
			Mx	N	1.8	22
			Mx	Z	1.4	18
		Ki	iP		08 40 35.9	
			ipP		08 40 43.0	
					micr	sec
			pP	Z'	0.1	1.0
			Mx	E	1.4	19
			Mx	N	1.0	17
			Mx	Z	1.4	17
		Sk	iP		08 40 59.4 C	
			ipP		08 41 06.7	
		(cont.)				

1970 Apr.	13	(cont.)		
		Um	iP	08 40 41.2
			ipP	08 40 49.6
		Ud	iP	08 41 03.3
			ipP	08 41 11.4
		De	ipP	08 41 17.5
		Luzon.		
		h = 30 km (Ki,Sk,Um,Ud).		
		M = 5.5 (Up,Ki).		
"	13	Ud	iP	08 59 10.5
"	13	Ud	ePg	10 37 21
			iSg	10 37 51.9
"	13	Ud	ePg	10 43 22
			iSg	10 43 53.0
"	13	Ud	iP	11 24 58.0
"	13	Up	iP	12 00 14.6
		Ud	iP	12 00 22.8
		Luzon.		
		Origin time = 11 47 45.		
"	13	Up	eP	13 04 25
		Sk	eP	13 04 32
		Um	iP	13 04 14.8
		Ud	iP	13 04 34.2
			ipP	13 04 40.8
		Luzon.		
		h = 25 km (Ud).		
"	13	Ki	ePn	13 32 45
			iSn	13 33 40.8
		Sk	ePg	13 32 49
			iSg	13 33 35.2
		Um	iSn	13 34 08.7
			iSg	13 34 42.4
		Norwegian Sea,		
		67.0°N, 8.6°E.		
		Origin time = 13 31 31.		
"	13	Ud	iP	13 46 04.9
"	13	Up	iP	13 50 34.4
		Ud	iP	13 50 43.9 C
		Luzon.		
		Origin time = 13 38 06.		
"	13	Ki	iP	13 50 58.4
		Ud	iP	13 51 39.8
"	13	Um	iP	14 09 32.4
"	13	Ud	iP	14 36 24.6
			i	14 36 31.3

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

1970 Apr.	13	De	iP	14 56 09.2
"	13	Ud	iP	15 57 24.6
"	13	Ud	iP	16 09 15.8
"	13	Ki	eP	18 34 23
"	13	Up	eP	18 48 23
		Um	iP	18 48 32.9
		Ud	iP	18 48 34.8
"	13	Ud	iP	18 54 31.6 C
			i	18 54 41.0
"	13	Ud	iP	19 24 47.3
"	13	Um	iP	19 37 20.6
			i	19 37 26.6
		Ud	iP	19 37 28.7
"	13	Ud	iP	19 47 27.5 C
"	13	Ud	iP	21 11 37.3
"	13	Ud	i(P)	21 19 57.1
"	13	Ud	iP	21 40 25.4
			i	21 40 39.2
"	13	Ud	iP	23 45 35.7
"	14	Um	iP	01 09 57.7
		Ud	iP	01 10 11.2
			i	01 10 19.1
"	14	Ud	iP	03 32 04.4
"	14	Up	iP	04 24 51.2
		Ud	iP	04 25 00.1
		De	iP	04 25 19.8
"	14	Up	iP	05 31 16.8
		Ud	iP	05 31 25.2
			ipP	05 31 33.7
		Luzon.		
		h = 30 km (Ud).		
		Origin time = 05 18 47.		
"	14	Up	iP	06 40 05.9
		Ki	eP	06 39 26
		Um	iP	06 39 42.3 C
			i	06 39 50.9
		Ud	iP	06 40 13.0 C
			i	06 40 19.5
		De	eP	06 40 28
		Japan (h = 60 km).		

1970 Apr.	14	Ud	iP	07 31 08.3
"	14	Up	iP	08 00 49.5
		Ud	iP	08 00 59.6
		Sunda Strait (h = 50 km).		
"	14	Up	iP	08 41 07.7
		Ud	iP	08 41 15.1
		Sunda Strait (h = 60 km).		
"	14	Ud	iP	08 45 13.7
"	14	Ud	iP	09 52 08.6
			i	09 52 13.7
"	14	Um	iPKP	14 05 47.3
		Ud	iPKP	14 05 49.2
		De	iPKP	14 06 01.1
		Tonga Islands (h = 70 km).		
"	14	Ud	iP	14 26 59.9
"	14	Ud	eP	15 08 07
"	14	Ud	eP	15 24 47
		De	i(P)	15 24 26.9
"	14	Um	iP	17 48 43.8
		Ud	iP	17 48 55.3
"	14	Up	iP	19 18 33.0
		Um	iP	19 18 33.4
"	14	Up	iP	19 21 31.9
				micr sec
			Mx E	1.0 18
			Mx N	1.7 17
			Mx Z	1.6 20
		Ki		micr sec
			Mx E	2.6 20
			Mx N	1.1 18
			Mx Z	1.2 16
		Ud	iP	19 21 40.4
		De	eP	19 21 16
		South Africa (h = N).		
		M = 5.8 (Up,Ki).		
"	14	Ki	iP_n	20 47 57.6
			iP^x	20 48 06.2
			iSn	20 48 44.2
			iLgl	20 48 57.1
		Sk	i	20 51 41.9
			iLgl	20 51 47.1
		Um	iSn	20 49 56.6
			iLgl	20 50 28.4
			iSg	20 50 37.6
		(cont.)		

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

1970 Apr.	14	(cont.)			
		Northwest Russia-Norway border region, 69.5°N, 30.0°E. Origin time = 20 46 57. Explosion?			
"	14	Up	iP	23 41 40.5	
			i	23 41 47.8	
		Ud	iP	23 41 57.0	
		Tadzhik SSR.			
"	15	Up	iP	00 01 47.9	
				micr	sec
			P	Z' 0.1	0.6
		Ki	iP	00 01 22.0	
		Sk	iP	00 01 50.3	
		Um	iP	00 01 31.4	
		Ud	iP	00 01 56.9	C
		De	iP	00 02 06.2	
		Ryukyu Islands (h = 80 km).			
"	15	Up	iP	00 40 56.0	
		Um	iP	00 41 29.4	
			i	00 41 38.4	
		Ud	iP	00 41 10.2	
		De	iP	00 40 36.0	
		Turkey (h = N).			
"	15	Ud	iP	01 29 21.0	
"	15	Up	iP	02 47 32.0	
		Ud	eP	02 47 44	
"	15	Up	iP	03 15 52.2	
		Ud	iP	03 15 53.7	
"	15	Ud	iP	03 20 49.8	
"	15	Ud	iP	03 31 49.9	
"	15	Up	iP	04 02 39.7	
		Ud	iP	04 02 44.6	
		Greece.			
"	15	Up	iP	05 52 44.3	
		Um	iP	05 52 39.8	
		Ud	iP	05 53 00.6	C
		Tadzhik SSR (h = N).			
"	15	Ud	iP	07 01 25.5	
"	15	Up	i(P)	07 52 47.9	
			i	07 52 54.6	
"	15	Ud	iPg	10 55 44.4	
		(cont.)			

1970 Apr.	15	(cont.)			
		Ud	iSg	10 56 12.8	
		De	iPg	10 55 36.9	
			iSg	10 56 00.1	
			iRg	10 56 07.7	
		Origin time = 10 55 00. Probably explosion.			
"	15	Ki	iPn	11 20 46.7	
			iSn	11 21 46.8	
			iSg	11 22 12.0	
		Sk	e(Lgl)	11 24 34	
			iSg	11 24 41.9	
		Um	iSg	11 22 59.1	
		Ud	i(Lgl)	11 25 33.7	
		De	iSg	11 27 08.7	
		Northwest Russia, 67.3°N, 33.5°E. Origin time = 11 19 29. Explosion?			
"	15	Up	iP	12 14 53.7	
		Ud	iP	12 15 03.3	
		Luzon (h = 80 km).			
"	15	Ki	iSn	12 41 38.4	
			iLgl	12 41 52.1	
		Um	iSn	12 42 19.6	
			iSg	12 42 50.2	
		Probably northwest Russia. Explosion?			
"	15	Ki	iPn	13 22 10.7	
			iSn	13 22 58.9	
			iLgl	13 23 12.1	
		Probably northwest Russia. Origin time = 13 21 07. Explosion?			
"	15	Up	iP	13 26 54.6	
			ipP	13 27 03.7	
				micr	sec
			P	Z' 0.4	0.5
			Mx	E 6.1	21
			Mx	N 17	24
			Mx	Z 9.0	20
		Ki	iP	13 26 35.1	
				micr	sec
			P	Z' 0.6	1.5
			Mx	E 9.3	20
			Mx	N 12	23
			Mx	Z 14	23
		Sk	iP	13 26 59.0	C
		Um	iP	13 26 41.7	
			iS	13 36 52	
		Ud	iP	13 27 03.3	
		(cont.)			

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

1970 Apr.	15	(cont.)			
		Ud	ipP	13 27 12.8	
		De	iP	13 27 09.9	C
		Luzon.			
		h = 35 km (Up,Ud).			
		m = 6.7, M = 6.2 (Up,Ki).			
"	15	Up	iP	13 37 01.0	
			ipP	13 37 07.1	
		Ki	ipP	13 36 47.7	
		Sk	eP	13 37 06	
		Um	eP	13 36 48	
			ipP	13 36 54.2	
		Ud	iP	13 37 09.0	C
			ipP	13 37 16.4	
		Luzon.			
		h = 25 km (Up,Um,Ud).			
"	15	Up	iP	13 43 23.3	D
		Ki	iP	13 43 03.9	
		Um	iP	13 43 10.2	
		Ud	iP	13 43 32.1	
			i	13 44 05.9	
		Luzon (h = N).			
"	15	Sk	iP	14 14 14.6	C
		Mexico (h = 70 km).			
"	15	Ud	iP	14 29 20.5	C
"	15	Um	iP	16 33 16.7	
		Ud	iP	16 32 53.2	
		Turkey (h = N).			
"	15	Up	iP	16 34 47.2	
			i	16 34 50.9	
				micr sec	
			Mx E	1.5 10	
			Mx N	2.1 13	
			Mx Z	2.0 13	
		Ki		micr sec	
			Mx E	1.1 11	
			Mx N	1.4 12	
			Mx Z	1.8 12	
		Sk	iP	16 35 35.7	C
		Um	iP	16 35 20.6	
		Ud	iP	16 35 01.3	
		De	iP	16 34 27.1	
		Turkey (h = 20 km).			
		M = 4.9 (Up,Ki).			
"	15	Ki	iP	16 36 21.5	
			i	16 36 44.3	
"	15	Up	iP	16 39 10.7	
		Sk	i(P)	16 39 17.0	

1970 Apr.	15	Up	eSg	17 20 34	
		Ki	eSg	17 23 05	
		Sk	eSg	17 22 24	
		Um	iSg	17 21 08.2	
		Ud	iSn	17 21 09.7	
			iLgl	17 21 37.2	
		De	iLgl	17 22 04.7	
		Esthonia,			
		59.7°N, 25.6°E.			
		Origin time = 17 18 25.			
		Explosion?			
"	15	Up	iP	17 22 27.9	
		Um	iP	17 22 13.3	
		Ud	iP	17 22 26.3	
			i	17 22 35.9	
"	15	Up	iP	17 33 38.1	
		Um	ipP	17 33 32.3	
		Ud	iP	17 33 46.7	C
			ipP	17 33 53.8	
		Luzon.			
		h = 25 km (Ud).			
"	15	Up	iP	17 46 16.9	
			ipP	17 46 24.2	
				micr sec	
			pP Z'	0.1 0.6	
		Ki	eP	17 46 01	
		Um	iP	17 46 04.6	
			ipP	17 46 11.1	
		Ud	iP	17 46 26.1	C
			ipP	17 46 33.4	
		Luzon.			
		h = 25 km (Up,Um,Ud).			
"	15	Ud	i(Sg)	17 57 23.7	
		De	i(Sg)	17 55 26.9	
"	15	Up	iP	18 27 32.3	
		Ud	iP	18 27 41.3	
		Luzon.			
		Origin time = 18 15 03.			
"	16	Up	iP	01 11 57.3	
		Um	iP	01 12 27.9	
		Ud	iP	01 12 07.2	
		De	iP	01 11 36.4	
		Turkey (h = 15 km).			
"	16	Um	iP	01 33 08.6	
		Ud	iP	01 32 59.5	
			i	01 33 11.8	
		De	iP	01 32 45.4	
			i	01 32 57.7	
		Iran-USSR (h = 80 km).			
		(cont.)			

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

1970
Apr. 16 (cont.)
The second phases at Ud, De may be the correct P, and the first P may belong to another shock in the same place 12.3 sec earlier.

" 16	Up	iP		02 07 36.9	
		ipP		02 07 49.8	
				micr	sec
		Mx	E	1.7	18
		Mx	N	1.8	18
		Mx	Z	2.2	17
	Ki	iP		02 06 59.1	
				micr	sec
		Mx	E	3.3	17
		Mx	N	2.5	17
		Mx	Z	5.3	16
	Sk	iP		02 07 29.9	
	Um	iP		02 07 15.2	C
		ipP		02 07 28.7	
	Ud	iP		02 07 43.7	C
	De	iP		02 08 05.9	

Japan.
h = 50 km (Up,Um).
M = 5.7 (Up,Ki).

" 16	Ud	i(P)		04 01 46.0	
		i		04 01 57.3	
" 16	Um	iP		04 16 27.2	
	Ud	eP		04 15 30	
		i		04 15 36.6	
" 16	Up	iPKP		04 33 01.7	
	Sk	ePKP		04 33 01	
	Um	iPKP		04 32 52.2	
	Ud	iPKP		04 33 05.7	
		i		04 33 17.8	
" 16	Up	iP		05 43 21.7	
		i		05 43 23.6	
				micr	sec
		P	Z'	0.1	1.0
		Mx	E	22	19
		Mx	N	36	19
		Mx	Z	39	18
	Ki	iP		05 42 29.4	
		iX		05 42 47.4	
				micr	sec
		P	Z'	0.2	1.0
		Mx	E	36	16
		Mx	N	28	16
		Mx	Z	34	16

(cont.)

1970
Apr. 16 (cont.)

Sk	iP	05 42 54.2	C
	iX	05 43 13.5	
Um	iP	05 42 57.1	
	iX	05 43 17.6	
Ud	iP	05 43 19.0	
	iX	05 43 38.5	
De	iP	05 43 42.7	
	i	05 43 44.8	

Alaska (h = 7 km).
m = 5.9, M = 6.7 (Up,Ki).
The phase X appearing in average 19.3 sec after P, may be P of another shock in the same place.

" 16	Ki	iP	06 16 57.9	
	Sk	iP	06 17 25.4	
	Um	iP	06 17 26.0	

Alaska.
Origin time = 06 07 48.

" 16	Up	iPKP	08 08 24.0	C
	Sk	iPKP	08 08 19.3	C
	Um	iPKP	08 08 13.5	
	Ud	iPKP	08 08 25.5	
		i	08 08 36.1	

South of Kermadec Islands (h = 80 km).

" 16	Up	iP	10 47 16.2	
		i	10 47 17.2	
		iS	10 51 19	
			micr	sec
		P	Z' 0.5	1.3
		Mx	E 4.2	11
		Mx	N 6.4	12
		Mx	Z 6.1	13
	Ki	iP	10 48 23.8	
		iPP	10 49 02.1	
			micr	sec
		P	Z' 0.1	1.2
		PP	Z' 0.2	1.3
		Mx	E 6.9	15
		Mx	N 4.4	18
		Mx	Z 6.8	17
	Sk	iP	10 48 00.1	C
	Um	iP	10 47 47.9	
		i	10 47 48.7	
		iS	10 52 21	
	Ud	iP	10 47 28.9	C
		i	10 47 30.5	
	De	iP	10 46 57.2	

Turkey (h = 9 km).
m = 5.6, M = 5.4 (Up,Ki).
Double P.

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

1970 Apr.	16	Up	iP		11 48 15.1
					micr sec
			Mx	E	1.0 13
			Mx	N	0.9 11
		Ki	iP		11 49 22.3
					micr sec
			Mx	E	1.0 14
			Mx	N	1.0 15
			Mx	Z	0.9 13
		Sk	iP		11 49 00.2
		Um	iP		11 48 47.3
			i		11 49 01.7
		Ud	iP		11 48 29.2
			i		11 48 36.0
		De	iP		11 47 55.6
		Turkey (h = 20 km).			
		M = 4.6 (Up,Ki).			
"	16	Up	eP		13 04 09
		Um	iP		13 04 41.5
		Ud	iP		13 04 20.0
		De	iP		13 03 48.9
		Turkey.			
"	16	Um	iP		15 15 04.5
		Ud	iP		15 15 07.9
			i		15 15 10.9
			i		15 15 33.6
"	16	Ki	iP		15 29 53.3
		Um	iP		15 30 10.7
		Ud	iP		15 30 40.7
		Japan (h = 70 km).			
"	16	Um	iP		16 01 49.8
			i		16 01 59.1
"	16	Um	i(P)		16 19 49.1
"	16	Um	iP		17 02 10.1
"	16	Up	i(P)		18 29 44.3
		Gulf of Alaska (h = 15 km).			
"	16	Up	iP		22 43 57.4
			i		22 44 11.3
					micr sec
			Mx	E	2.4 10
			Mx	N	3.0 10
			Mx	Z	3.7 12
		Ki	iP		22 45 14.3 C
					micr sec
			Mx	E	2.9 11
			Mx	N	3.6 9
			Mx	Z	5.4 9
		(cont.)			

1970 Apr.	16	(cont.)		
		Sk	iP	22 44 43.9
		Um	iP	22 44 36.5
		Ud	iP	22 44 06.8
		De	iP	22 43 30.1
		Greece (h = 4 km).		
		M = 5.3 (Up,Ki).		
"	16	Sk	iP	23 16 59.4
		Um	iP	23 16 58.1
		Ud	eP	23 16 28
		Greece (h = N).		
"	17	Ki	eP	01 37 55
		Um	iP	01 37 14.3
		Ud	iP	01 36 55.9
		De	iP	01 36 22.2
		Turkey (h = N).		
"	17	Ud	iP	06 44 27.7
"	17	Sk	e(Sg)	08 13 21
		Um	i(Sg)	08 13 01.6
"	17	Up	iP	08 43 35.1
		Ki	iP	08 43 15.8
		Um	iP	08 43 22.1
		Ud	iP	08 43 44.0 C
		Luzon (h = 50 km).		
"	17	Up	iSn	10 57 34.3
			iSg	10 57 52.3
		Um	iSg	10 58 20.8
			i	10 58 26.1
		Ud	iLgl	10 58 53.1
		De	iLgl	10 59 17.0
		Esthonia.		
		Origin time = 10 55 40.		
		Explosion?		
"	17	De	i(Sg)	11 09 21.0
"	17	Um	iP	11 16 03.7
		De	eP	11 16 35
"	17	Ki	iPg	11 22 28.8 D
			iSg	11 22 51.8
		Sk	iSg	11 24 34.8
		Um	iSg	11 24 29.8
		West coast of Norway, near Lofoten,		
		68.3°N, 15.9°E.		
		Origin time = 11 21 53.		
"	17	Up	iP	11 52 51.5
			i	11 52 56.1
		(cont.)		

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

1970 Apr.	17	(cont.)			
		Ki	iP	11 52 27.2	
		Um	iP	11 52 35.1	
		Ud	iP	11 52 57.9	
"	17	Up	iP	12 25 02.7	
		Um	iP	12 24 59.2	
		Ud	iP	12 25 16.7	
		De	iP	12 25 27.6	
"	17	Ud	iP	12 49 57.0	
		Luzon (h = 45 km).			
"	17	Up	iP	13 27 24.4	
			ipP	13 27 32.1	
		Ki	iP	13 27 05.1	
		Sk	iP	13 27 33.4	
		Um	iP	13 27 11.0	
		Ud	iP	13 27 33.6	D
			ipP	13 27 41.0	
		Luzon.			
		h = 30 km (Up,Ud).			
"	17	Ud	iSg	14 35 11.8	
			iRg	14 35 19.4	
		De	iPg	14 34 23.0	
			iSg	14 34 48.1	
		Probably off west coast of Sweden.			
		Origin time = 14 33 45.			
		Probably explosion.			
"	17	Up	eP	14 46 30	
		Ki	iP	14 46 10.8	
		Um	iP	14 46 19.2	
		Ud	iP	14 46 37.3	
		Luzon (h = N).			
"	17	De	iP	15 42 13.8	
		Gulf of Alaska (h = 15 km).			
"	17	Sk	iP	16 32 33.7	
		Um	iP	16 32 50.3	
		Ud	iP	16 32 42.6	
		Mexico (h = N).			
"	17	Ud	i(P)	16 39 41.7	
"	17	Up	iP	17 46 59.7	
		Um	iP	17 47 30.2	
"	17	Ki	iPKP	20 16 50.7	
		Um	iPKP	20 16 57.2	
		Ud	iPKP	20 17 02.3	
		New Hebrides Islands (h = 130 km).			

1970 Apr.	17	Up	iP	20 32 13.4	
		Um	iP	20 32 47.2	
		Ud	iP	20 32 27.3	
			i	20 32 36.7	
		De	iP	20 31 53.3	
		Turkey (h = N).			
"	17	Sk	eP	21 59 59	
		Um	iP	21 59 55.6	
		Ud	iP	22 00 09.8	
		De	iP	22 00 18.6	
"	18	Ud	iP	00 05 34.1	
"	18	Up	iP	05 42 17.1	
			iPP	05 42 43.1	
		Sk	iP	05 43 04.9	
		Um	iP	05 42 51.4	
		Ud	iP	05 42 30.9	
		De	iP	05 41 57.0	
		Turkey (h = N).			
"	18	Up	iP	05 57 49.7	
			i	05 57 59.3	
		Sk	iP	05 58 32.2	
		Um	iP	05 58 23.7	
		Ud	iP	05 58 03.9	C
		De	iP	05 57 27.5	
		Turkey.			
		Origin time = 05 52 56.			
"	18	Up	iP	07 43 47.9	
		Ki	iP	07 43 46.8	
		Sk	iP	07 44 00.8	
		Um	iP	07 43 44.5	
		Ud	iP	07 43 56.4	
		Sumatra (h = 90 km).			
"	18	Up	iP	09 00 39.8	
			ipP	09 01 03.7	
			iPcS	09 05 15.8	
				micr sec	
			P Z'	0.1 0.6	
		Ki	iP	08 59 44.4	C
				micr sec	
			P Z'	0.1 1.2	
		Sk	iP	09 00 12.8	C
		Um	iP	09 00 13.3	
			ipP	09 00 35.6	
		Ud	iP	09 00 36.7	
			isP	09 01 11.9	
			iPcS	09 05 13.3	
		De	iP	09 01 01.6	
			i	09 01 02.2	
			ipP	09 01 24.2	
		(cont.)			

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

1970
Apr. 18 (cont.)

De	isP	09 01 36.8	

Alaska.
h = 90 km (Up,Um,De).
m = 5.8 (Up,Ki).

"	18	Up	eP	09 30 05
		Um	i(P)	09 30 16.2
		Ud	e(P)	09 30 23
"	18	Up	iP	12 36 03.0
			i	12 36 20.5
		Sk	eP	12 36 50
		Um	iP	12 36 40.4
		Ud	iP	12 36 18.0
		De	iP	12 35 44.5

Turkey (h = N).

"	18	Ki	iPn	12 43 07.2
			iSn	12 43 56.1
			iLgl	12 44 11.7
		Sk	eLgl	12 46 55
		Um	iSn	12 45 03.4
			iS^x	12 45 18.5
			iSg	12 45 39.4

Northwest Russia,
68.8°N, 31.3°E.
Origin time = 12 42 02.
Explosion?

"	18	Ki	iPn	12 49 30.8
			iSn	12 50 16.6
			iLgl	12 50 31.8

Probably northwest Russia.
Origin time = 12 48 30.
Explosion?

"	18	Um	iP	16 59 41.6

Mariana Islands (h = N).

"	18	Up	iP	19 33 49.1
		Ki	iP	19 32 55.3
		Sk	iP	19 33 25.3
		Um	iP	19 33 22.4
		Ud	iP	19 33 47.5 D
			i	19 33 52.2
		De	iP	19 34 10.1

Aleutian Islands (h = 50 km).

"	18	Up	iP	20 32 10.1
			ipP	20 32 21.3
		Ki	iP	20 31 25.2 C
		Sk	iP	20 32 00.6
		Um	iP	20 31 45.6 C
			ipP	20 31 56.9
		Ud	iP	20 32 16.4 C

(cont.)

1970
Apr. 18 (cont.)

Ud	ipP	20 32 28.1	
De	iP	20 32 35.0	

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

"	18	Up	iP	23 11 26.8
		Um	eP	23 11 57
			i	23 12 00.0
		Ud	iP	23 11 44.3

Turkey (h = N).

"	18	Up	iP		23 36 38.9
			ipP		23 36 50.9
				micr	sec
			P	Z' 0.1	0.5
			pP	Z' 0.1	0.6
			Mx	E 2.4	16
			Mx	N 5.1	17
			Mx	Z 5.2	18
		Ki	iP		23 35 53.7
			ipP		23 36 05.9
				micr	sec
			pP	Z' 0.1	1.3
			Mx	E 9.5	17
			Mx	N 6.1	16
			Mx	Z 14	16
		Sk	iP		23 36 30.6
		Um	iP		23 36 13.8
			ipP		23 36 25.6
		Ud	iP		23 36 45.2
		De	iP		23 37 04.2

Kurile Islands.
h = 45 km (Up,Ki,Um).
m = 6.1, M = 6.0 (Up,Ki).

"	18	Up	iP	23 46 34.4
			ipP	23 46 46.0
		Ki	eP	23 45 50
		Um	iP	23 46 10.0
			ipP	23 46 20.3
		Ud	iP	23 46 40.8
			ipP	23 46 52.2

Kurile Islands.
h = 40 km (Up,Um,Ud).

"	19	Up	iP		01 25 51.7
				micr	sec
			P	Z' 0.1	1.0
			Mx	E 1.5	16
			Mx	N 2.7	19
			Mx	Z 3.7	19
		Ki	iP		01 24 57.5 D
				micr	sec
			P	Z' 0.4	1.5
			Mx	E 4.6	18
			Mx	N 3.2	16
			Mx	Z 6.1	16

(cont.)

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

1970 Apr.	19	(cont.)			
		Sk	iP	01 25 22.8	D
		Um	iP	01 25 26.0	
			i	01 25 27.9	
			iS	01 33 17	
		Ud	iP	01 25 46.9	
			i	01 25 49.5	
		De	iP	01 26 12.0	
		Gulf of Alaska (h = 20 km).			
		m = 6.0, M = 5.7 (Up,Ki).			
"	19	Up	i(P)	01 55 07.2	
			i	01 55 25.1	
		Um	i(P)	01 55 33.5	
"	19	Up	iP	02 45 52.2	
		Ki	iP	02 45 07.8	
		Um	iP	02 45 27.6	
			ipP	02 45 38.6	
		Ud	iP	02 45 58.3	C
			ipP	02 46 09.7	
		Kurile Islands.			
		h = 40 km (Um,Ud).			
"	19	Ki	iPn	04 36 56.4	
			iSn	04 37 54.3	
			iLgl	04 38 14.6	
		Sk	iLgl	04 40 39.7	
		Um	iSn	04 38 35.4	
			iSg	04 39 12.7	
		Northwest Russia,			
		67.6°N, 33.1°E.			
		Origin time = 04 35 41.			
		Explosion?			
"	19	Up	iP	04 51 59.8	
			iPcP	04 52 34.2	
				micr sec	
			P Z'	0.1 0.5	
		Ki	iP	04 51 08.7	
		Sk	iP	04 51 46.7	
			iPcP	04 52 24.7	
		Um	iP	04 51 33.6	
			i	04 51 44.4	
			iPcP	04 52 17.9	
		Ud	iP	04 52 04.6	
			i	04 52 16.3	
			iPcP	04 52 37.4	
		De	iP	04 52 25.7	C
			iPcP	04 52 51.1	
		Kamchatka (h = 110 km).			
"	19	Up	iP	05 41 12.7	
			iPP	05 42 41.7	
		Um	iP	05 41 06.7	
		Ud	iP	05 41 26.9	
		Tadzhik SSR (h = N).			

1970 Apr.	19	Up	iP	08 57 21.9	
		Ki	iP	08 57 23.0	
		Ud	iP	08 57 38.4	
		De	iP	08 57 37.8	
		Sinkiang (h = N).			
"	19	Up	iP	10 22 28.0	
		Ki	iP	10 21 42.5	
		Sk	iP	10 22 17.9	
		Um	iP	10 22 02.7	
		Ud	iP	10 22 34.1	
		De	iP	10 22 51.9	
		Kurile Islands (h = 40 km).			
"	19	Up	iP	11 08 26.2	
"	19	Ki	iP	11 39 51.9	
		Ud	iP	11 39 15.6	C
		Atlantic Ocean (h = N).			
"	19	Up	iP	13 34 31.9	C
			i	13 34 38.8	
			iS	13 38 35	
				micr sec	
			P Z'	3.8 2.0	
			Mx E	14 13	
			Mx N	22 13	
			Mx Z	13 14	
		Ki	iP	13 35 38.9	
			i(PP)	13 36 11.5	
				micr sec	
			P Z'	0.3 1.5	
			(PP) Z'	0.7 1.5	
			Mx E	17 13	
			Mx N	10 14	
			Mx Z	15 14	
		Sk	iP	13 35 16.8	
			i	13 35 22.3	
		Um	iP	13 35 03.7	
			iS	13 39 32	
		Ud	iP	13 34 43.6	C
			i	13 34 51.9	
			i(S)	13 39 10.0	
		De	iP	13 34 12.2	C
			i	13 34 18.6	
		Turkey (h = 20 km).			
		m = 6.3, M = 5.7 (Up,Ki).			
		Double P.			
"	19	Ki	eSn	13 51 34	
			iLgl	13 51 59.5	
		Um	iSg	13 52 47.7	
		Probably northwest Russia.			
		Explosion?			
"	19	Up	iP	13 52 29.6	
		(cont.)			

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

1970
Apr. 19 (cont.)

Up	iS		13 56 31		
			micr	sec	
	P	Z'	0.7	1.3	
	Mx	E	9.2	12	
	Mx	N	20	13	
	Mx	Z	16	13	
Ki	iP		13 53 37.7		C
			micr	sec	
	P	Z'	0.2	1.3	
	Mx	E	32	18	
	Mx	N	8.0	17	
	Mx	Z	11	14	
Sk	iP		13 53 14.3		C
	i		13 53 23.6		
Um	iP		13 53 01.8		
Ud	iP		13 52 42.7		C
De	iP		13 52 10.9		

Turkey (h = 25 km).
m = 5.9, M = 5.9 (Up,Ki).

" 19	Up	iPKP		17 21 07.8	
		i		17 21 10.3	
		iSKP		17 23 58.9	
	Ki	iPKP		17 21 02.5	
		iSKP		17 23 33.0	
	Sk	iPKP		17 21 06.4	
		i		17 21 12.7	
		iSKP		17 23 56.3	
	Um	iPKP		17 20 59.5	
		i		17 21 08.3	
		iSKP		17 23 46.0	
	Ud	iPKP		17 21 08.8	
		iSKP		17 24 00.3	
	De	iPKP		17 21 20.2	
		iSKP		17 24 08.8	

Fiji Islands (h = 610 km).

" 19	Ki	iP		18 02 27.5	
	Ud	eP		18 02 10	
	De	iP		18 01 58.2	
" 19	Sk	iP		18 20 44.6	
	Um	iP		18 21 00.8	
	Ud	iP		18 20 05.3	

Italy.

" 19	Up	iP		22 10 51.5	
	Sk	eP		22 11 38	
	Um	iP		22 11 24.6	
	Ud	iP		22 11 04.6	
	De	iP		22 10 29.1	

Turkey (h = N).

" 19	Up	iP		22 14 34.3	
	Um	iP		22 14 51.6	
	Ud	iP		22 14 30.0	

1970
Apr. 20

Up	iPKP		02 28 03.9		
	i		02 28 06.5		
			micr	sec	
	PKP	Z'	0.1	0.5	
Ki	iPKP		02 27 46.7		
Sk	iPKP		02 27 58.7		
	i		02 28 03.6		
Um	iPKP		02 27 53.8		
	ipPKP		02 28 36.7		
Ud	iPKP		02 28 04.5		
	i		02 28 07.7		
De	iPKP		02 28 07.7		
	i		02 28 16.6		

South of Kermadec Islands.
h = 160 km (Um).

" 20	Up			micr	sec
		Mx	E	0.7	15
		Mx	N	0.8	20
	Ki			micr	sec
		Mx	E	0.7	15
		Mx	N	0.4	13
		Mx	Z	0.8	16
	De	iP		02 28 01.2	

Turkey (h = N).
M = 4.4 (Up,Ki).

" 20	Up	iP		02 38 36.1	
	Ud	eP		02 38 10	
" 20	Up	iP		03 52 32.6	
	Sk	eP		03 53 21	
	Um	iP		03 53 09.0	
	Ud	i(P)		03 52 58.8	C

Turkey.

" 20	Ki	e(P)		06 22 11	
	Um	i(P)		06 22 17.2	
" 20	Sk	eP		07 24 42	
	Um	iP		07 24 31.0	C
	Ud	iP		07 24 11.2	
	De	iP		07 23 38.0	

Turkey (h = N).

" 20	Ki	eP		10 05 37	
	Um	iP		10 05 30.7	
	Ud	iP		10 06 22.1	
" 20	Up	iPKP		10 57 49.6	
		i		10 58 01.8	
		iSKP		11 01 08.2	
		eSKKP		11 10 24	
				micr	sec
		PKP	Z'	0.1	0.8
		SKP	Z'	0.2	1.0

(cont.)

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

1970 Apr.	20	(cont.)			micr	sec
		Up	Mx	E	1.4	18
			Mx	N	3.1	19
			Mx	Z	1.9	20
		Ki	iPKP		10 57	40.4
			i		10 57	46.8
			i		10 59	04.2
			iSKKP		11 10	41.6
					micr	sec
			PKP	Z'	0.3	1.0
			Mx	E	2.4	18
			Mx	N	2.8	22
			Mx	Z	3.1	22
		Sk	iPKP		10 57	45.7
			i		10 57	56.6
			iSKP		11 01	01.3
			iSKKP		11 10	39.7
		Um	iPKP		10 57	44.0
			i		10 57	53.3
			iSKP		11 00	54.4
		Ud	ePKP		10 57	50
			i		10 57	55.6
			i		10 58	02.6
			iPP		11 00	38.0
			iSKP		11 01	10.2
		De	iPKP		10 57	59.3
			iPP		11 01	04.6
			iSKP		11 01	19.9
			iSKKP		11 10	07.8
		New Hebrides Islands (h = 250 km). M = 6.2 (Up,Ki).				
"	20	Um	iP		11 26	25.8
"	20	Ki	eP		12 19	27
"	20	Ki	iPg		12 27	33.8
			iSg		12 28	00.1
		Sk	eSg		12 30	36
		Um	iSg		12 30	03.7
		Northwest coast of Norway, 69.8°N, 20.0°E. Origin time = 12 26 54.				
"	20	Ud	iPg		12 31	29.8
			iSg		12 31	49.4
		De	iPg		12 31	40.8
			iSg		12 32	09.6
		Origin time = 12 30 59.				
"	20	Ud	iP		13 01	50.4
"	20	Up	iP		13 34	16.9
		Um	iP		13 34	11.8
		Ud	eP		13 34	26
		De	eP		13 34	25

1970 Apr.	20	Ki	iLgl		14 13	42.0
		Um	iSg		14 11	48.7
		De	iLgl		14 12	46.6
		Esthonia. Origin time = 14 09 07. Explosion?				
"	20	Sk	eSn		15 20	08
			iSg		15 20	32.5
		Ud	iSg		15 20	16.3
		De	iLgl		15 21	08.0
		West coast of Norway, 60.4°N, 5.9°E. Origin time = 15 18 08.				
"	20	Up	iP		15 44	19.6
			iS		15 48	21.6
					micr	sec
			P	Z'	0.2	0.5
			Mx	E	7.0	14
			Mx	N	2.8	13
			Mx	Z	4.1	13
		Ki	iP		15 45	32.9
					micr	sec
			Mx	E	4.9	13
			Mx	N	3.4	11
			Mx	Z	4.8	11
		Sk	iP		15 45	00.9
			i		15 45	06.0
		Um	iP		15 44	58.2
			iS		15 49	26
		Ud	iP		15 44	26.6
			i		15 44	31.4
			iS		15 48	34.8
		De	iP		15 43	51.2
			i		15 43	52.6
		Greece (h = 20 km). M = 5.5 (Up,Ki).				
"	20	Up	eP		15 51	56
"	20	Ud	iP		16 05	29.0
"	20	Up	iP		17 19	50.0
		Ki	iP		17 19	18.6
		Sk	iP		17 19	46.1
		Um	iP		17 19	32.4
		Ud	iP		17 19	57.2 D
		De	iP		17 20	09.2
		Bonin Islands (h = 480 km).				
"	20	Up	eP		18 05	30
		Um	iP		18 06	02.2 C
		Ud	eP		18 05	41
		De	eP		18 05	10
		Turkey (h = N).				

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

1970 Apr.	20	Up	iP		18 38 10.1	
		Ki	iP		18 39 12.7	
		Sk	e(P)		18 38 58	
		Um	iP		18 38 42.0	
			i		18 38 46.3	
		Ud	iP		18 38 22.7	
			i		18 38 26.3	
		De	iP		18 37 51.3	
		Turkey (h = N).				
		Double P.				
"	20	Um	iP		18 41 29.9	
		Turkey.				
"	20	Up	iP		21 34 41.4	
		Ki	iP		21 34 26.0	
		Um	iP		21 34 34.1	
		Ud	iP		21 34 56.0	D
"	20	Up	iP		21 57 06.7	
			iPP		22 01 30.8	
					micr	sec
			Mx	E	0.9	19
			Mx	N	0.7	18
			Mx	Z	1.5	19
		Ki	iP		21 56 53.4	
			e(PP)		22 00 50	
					micr	sec
			P	Z'	0.1	1.5
			Mx	E	1.2	21
			Mx	N	0.7	18
			Mx	Z	1.8	21
		Sk	iP		21 57 12.2	
			i(PP)		22 01 10.7	
		Um	iP		21 56 55.9	
			i(PP)		22 00 57.9	
		Ud	iP		21 57 11.2	
			i(PP)		22 01 31.7	
		De	i(PP)		22 01 24.5	
		Sumba Island (h = N).				
		M = 5.4 (Up,Ki).				
		(PP) denotes early arrivals of PP.				
"	20	Up	iP		23 12 52.8	
		Um	iP		23 13 25.1	
"	21	De	iP		00 08 49.5	
"	21	Up	iP		01 37 58.5	
		Um	iP		01 38 31.9	
		Ud	iP		01 38 15.2	
		De	iP		01 37 39.1	
		Turkey (h = N).				
"	21	Up	iP		01 58 09.0	
		(cont.)				

1970 Apr.	21	(cont.)				
		Um	iP		01 58 40.2	
		Turkey.				
"	21	Up	iPKP		03 38 52.6	
		Um	iPKP		03 38 47.4	
		Ud	iPKP		03 38 54.2	
		De	iPKP		03 39 06.3	
		Fiji Islands (h = 550 km).				
"	21	Up	iP		04 54 42.1	
			ipP		04 54 54.4	
					micr	sec
			P	Z'	0.1	0.7
		Ki	iP		04 53 56.5	
					micr	sec
			P	Z'	0.1	1.0
			Mx	E	0.6	15
			Mx	N	0.7	18
			Mx	Z	1.0	16
		Sk	iP		04 54 31.9	
		Um	iP		04 54 16.7	
		Ud	iP		04 54 47.8	C
		De	iP		04 55 05.6	C
		Kurile Islands.				
		h = 45 km (Up).				
		m = 6.1 (Up,Ki).				
"	21	Ki	e(P)		05 33 37	
		Um	iP		05 33 45.7	
			ipP		05 33 57.3	
		Ud	iP		05 34 14.4	
		Japan.				
		h = 45 km (Um).				
"	21	Ki	iP		06 53 38.4	
		Sk	eP		06 54 04	
		Um	iP		06 54 06.5	
		Gulf of Alaska (h = 1 km).				
"	21	Up	iPKP		07 23 19.6	
			i		07 24 03.6	
					micr	sec
			PKP	Z'	0.1	0.7
		Ki	ePKP		07 23 04	
		Um	iPKP		07 23 08.0	
		Ud	iPKP		07 23 20.8	
		Tonga-Kermadec Islands (h = 90 km).				
"	21	Up	iP		07 41 52.7	
					micr	sec
			Mx	E	0.6	13
			Mx	N	0.6	13
		Ki	iP		07 42 59.6	
		(cont.)				

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

1970
Apr. 21 (cont.)

Ki			micr	sec	
	Mx	E	0.8	14	
	Mx	N	0.6	16	
	Mx	Z	1.0	16	
Sk	iP		07 42 38.6		C
Um	iP		07 42 26.1		
Ud	iP		07 42 06.5		
De	iP		07 41 33.8		

Turkey (h = 25 km).
M = 4.4 (Up,Ki).

" 21 Um iP 07 49 00.0

" 21 Um iP 08 35 19.8

" 21 Ud iP 11 14 54.2

" 21 Ud iP 12 10 10.3
Unimak Island (h = 25 km).

" 21 Ki iSg 13 03 52.1
Sk iSg 13 02 56.7
Um iSg 13 01 48.5
De eSg 13 02 26
Esthonia,
59.3°N, 24.2°E.
Origin time = 12 59 03.
Explosion?

" 21 Up iP 14 25 51.5
Ki iP 14 26 36.1

			micr	sec
	P	Z'	0.1	1.5

Sk eP 14 26 01
Um iP 14 26 13.1
i 14 26 20.6
Ud iP 14 25 44.1
i 14 25 49.7
De iP 14 25 26.6
North of Ascension Island
(h = N).

" 21 Ki iP 14 41 15.0
Um iP 14 41 34.3
Nevada.
Underground explosion.

" 21 Ki iPg 14 44 34.5
iSg 14 45 09.1
Sk eSg 14 47 46
Um iLgl 14 47 16.0
Off north coast of Norway,
70.6°N, 19.3°E.
Origin time = 14 43 45.

1970
Apr. 21 Ki iPg 14 48 02.4
iSg 14 48 34.6
Sk iSg 14 51 16.6
Um iSg 14 50 42.6
Off north coast of Norway,
70.4°N, 21.1°E.
Origin time = 14 47 14.

" 21 Up iP 14 57 21.0
Ki iP 14 58 06.7
i 14 58 12.7
Um iP 14 57 43.8
Turkey.

" 21 Um iP 15 11 34.3
Ud iP 15 11 40.5
Nevada.
Underground explosion.

" 21 Up iP 15 37 59.9
Um iP 15 38 36.4

" 21 Um eP 17 18 02
Turkey.

" 21 Ki iSg 17 30 59.9
Sk iSg 17 31 03.9
Um iSn 17 31 14.3
iSg 17 31 28.3
Nordland, Norway,
66.4°N, 14.8°E.
Origin time = 17 29 31.
Explosion?

" 21 Up iP 18 09 08.7
Sk eP 18 09 51
Um iP 18 09 37.5
i 18 11 59.7
Ud iP 18 09 20.5
Turkey (h = N).

" 21 Ki iPKP 21 30 05.0
Ud iPKP 21 30 26.7
Solomon Islands (h = 90 km).

" 21 Up iP 22 34 12.1
i 22 34 21.1
Um eP 22 33 58
Ud iP 22 34 20.9 C

" 22 Um iP 04 56 28.2
Turkey.

" 22 Up iP 05 28 59.2

			micr	sec
	P	Z'	0.1	1.0

(cont.)

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

1970
Apr. 22 (cont.)

Up			micr	sec
	Mx	E	1.1	12
	Mx	N	1.7	12
	Mx	Z	1.9	15
Ki	iP		05 30 06.0	
	i		05 30 44.3	
			micr	sec
	Mx	E	1.5	13
	Mx	N	0.9	13
	Mx	Z	1.4	13
Sk	iP		05 29 44.8	
Um	iP		05 29 31.0	C
	i		05 29 46.2	
Ud	iP		05 29 11.3	
	i		05 29 21.8	
De	iP		05 28 39.3	
	i		05 28 44.8	

Turkey (h = N).
M = 4.8 (Up,Ki).

" 22

Sk	iLgl	10 04 01.9
Ud	iSg	10 03 55.2
De	iLgl	10 04 43.0

West coast of Norway,
60.4°N, 5.9°E.
Origin time = 10 01 41.

" 22

Up	iPKP	10 10 14.0
Um	iPKP	10 10 00.9

New Hebrides Islands
(h = 190 km).

" 22

Ki	iPn	11 22 45.7
	iSn	11 23 44.6
	iLgl	11 24 03.5
Sk	iLgl	11 26 10.5
	i	11 26 40.7
Um	iSg	11 24 41.2

Northwest Russia,
66.6°N, 32.7°E.
Origin time = 11 21 30.
Explosion?

" 22

Ki	iP	11 52 04.3
Um	iPP	11 56 23.7

Sumba Island (h = N).

" 22

Up	iSg	11 58 37.9
Sk	eSg	11 58 37
Um	iSg	12 00 04.7
Ud	iPg	11 56 43.6
	iSg	11 57 38.0

Southwest Norway,
58.5°N, 6.7°E.
Origin time = 11 55 30.

1970
Apr. 22

Um	iP	12 20 00.0

Banda Sea (h = 300 km).

" 22

Up	iPKP	12 29 44.0
Ud	iPKP	12 29 46.1 C
De	iPKP	12 29 56.6 C

" 22

Ki	iPg	13 06 07.9
	iSg	13 06 53.3
Sk	iSg	13 09 33.7
Um	iSn	13 07 35.5
	iSg	13 08 01.6

Northwest Russia,
68.2°N, 29.8°E.
Origin time = 13 04 58.
Explosion?
The Ki record does not have exactly the same appearance as for explosions in this area, which might suggest that this is a natural event.

" 22

Up	iP	14 01 22.8
Ki	iP	14 01 02.2
		micr sec
	Mx E	0.7 15
	Mx N	0.5 14
Sk	eP	14 01 25
Um	iP	14 01 07.9
Ud	iP	14 01 30.2

Luzon (h = 30 km).

" 22

Up	iP	18 43 45.0
		micr sec
	P Z'	0.1 1.0
Ki	iP	18 44 47.8
Sk	iP	18 44 26.1
Um	iP	18 44 12.5
	i	18 44 18.5
Ud	iP	18 43 53.9
De	eP	18 43 23

Turkey (h = 40 km).

" 22

Ud	iP	20 13 31.8

Negros (h = 15 km).

" 23

Up	iP	01 02 26.9
	i	01 02 35.0
		micr sec
	Mx E	1.1 15
	Mx N	1.3 16
	Mx Z	1.2 15
Ki	iP	01 01 15.9
	i	01 01 24.2

(cont.)

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

1970 Apr.	23	(cont.)				
		Ki			micr	sec
			P	Z'	0.2	1.0
			Mx	E	1.3	14
			Mx	N	0.8	12
			Mx	Z	1.1	13
		Sk	iP		01 02 02.4	
			i		01 02 10.1	
		Um	iP		01 01 50.2	
			i		01 01 58.4	
		Ud	iP		01 02 29.8	
			i		01 02 37.3	
		De	iP		01 02 58.9 D	
			i		01 03 07.7	
		Arctic Ocean (h = N).				
		M = 4.7 (Up,Ki).				
"	23	Ud	iP		02 09 53.5	
		Leeward Islands (h = 45 km).				
"	23	Up	iP		04 34 41.3	
			i		04 34 45.6	
			iS		04 38 41.1	
					micr	sec
			P	Z'	0.1	0.6
		Ki	iP		04 35 54.2	
			i		04 36 23.5	
		Sk	iP		04 35 21.3	
		Um	iP		04 35 17.8	
		Ud	iP		04 34 49.3	
			i		04 34 54.0	
			iS		04 38 56.8	
		De	iP		04 34 13.6	
		Greece (h = 90 km).				
"	23	Ud	iP		05 43 39.3	
"	23	Up	iP		07 23 28.4 C	
					micr	sec
			Mx	E	1.1	12
			Mx	N	1.7	14
			Mx	Z	1.5	16
		Ki	iP		07 24 34.7	
					micr	sec
			Mx	E	1.3	16
			Mx	N	0.8	15
			Mx	Z	2.0	18
		Sk	iP		07 24 12.7	
		Um	iP		07 23 58.5	
		Ud	iP		07 23 40.2	
		De	iP		07 23 07.1	
		Turkey (h = 15 km).				
		M = 4.8 (Up,Ki).				
"	23	Ki	iP		07 26 09.0	
		New Guinea (h = 120 km).				

1970 Apr.	23	Up	iP		09 06 18.6	
			i		09 06 20.8	
					micr	sec
			P	Z'	0.3	1.3
			Mx	E	19	17
			Mx	N	12	17
			Mx	Z	8.6	12
		Ki	iP		09 07 27.7	
					micr	sec
			P	Z'	0.1	1.0
			Mx	E	12	11
			Mx	N	6.2	13
			Mx	Z	10	12
		Sk	iP		09 07 01.7	
			i		09 07 19.4	
		Um	iP		09 06 51.0	
			iS		09 11 18	
		Ud	iP		09 06 29.1	
			i		09 06 32.4	
		De	iP		09 05 56.6	
			i		09 05 58.8	
		Turkey (h = 20 km).				
		m = 5.6, M = 5.8 (Up,Ki).				
"	23	Ki	iP		09 59 18.5	
"	23	Um	iP		11 11 32.1	
		Ud	i(P)		11 12 03.8	
"	23	Up	iP		11 54 28.6	
		Ki	i(P)		11 54 50.6	
		Ud	iP		11 54 17.7	
			i		11 54 21.8	
		Leeward Islands (h = N).				
"	23	Up	iP		13 36 51.2	
		Um	iP		13 36 39.3	
		Ud	iP		13 37 00.2	
		Luzon (h = 60 km).				
"	23	Sk	eP		15 48 58	
		Ud	iP		15 49 11.6	
		North Atlantic Ocean (h = N).				
"	23	Up	iP		18 09 59.6 C	
					micr	sec
			Mx	N	0.8	15
		Ki	iP		18 10 04.6	
			i(PP)		18 11 50.7	
					micr	sec
			P	Z'	0.1	0.8
		Sk	iP		18 10 23.9	
			iPP		18 12 02.4	
		Um	iP		18 09 56.0	
		Ud	iP		18 10 15.6	
		De	iP		18 10 13.4	
		Tadzhik SSR (h = 45 km).				

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

1970 Apr.	24	Up	iP		00 29 58.4	D
		Ki	iP		00 29 40.5	
		Sk	iP		00 30 02.2	
		Um	iP		00 29 46.4	D
			ipP		00 30 09.4	
		Ud	iP		00 30 06.4	D
			ipP		00 30 32.2	
		De	iP		00 30 12.8	
		Leyte.				
		h = 90 km (Um,Ud).				
"	24	Up	iP		00 44 56.0	C
			i		00 44 59.1	
					micr	sec
			P	Z'	0.2	1.2
			Mx	E	1.1	12
			Mx	N	2.2	14
			Mx	Z	1.1	14
		Ki	iP		00 46 04.9	
			iPP		00 46 40.6	
					micr	sec
			Mx	E	1.3	14
			Mx	N	0.7	13
			Mx	Z	1.4	13
		Sk	iP		00 45 42.6	
		Um	iP		00 45 28.0	C
		Ud	iP		00 45 09.0	
			i		00 45 19.0	
		De	iP		00 44 36.6	
			i		00 44 41.8	
		Turkey (h = 40 km).				
		M = 4.8 (Up,Ki).				
"	24	Sk	iP		01 26 39.0	
		Um	iP		01 27 09.0	
		Ud	iP		01 26 47.7	
		North Atlantic Ocean				
		(h = N).				
"	24	Up	iP		01 29 03.2	
					micr	sec
			P	Z'	0.2	1.5
			Mx	E	3.4	20
			Mx	N	1.8	18
			Mx	Z	3.9	20
		Ki	iP		01 29 02.9	
					micr	sec
			P	Z'	0.2	1.5
			Mx	E	2.1	13
			Mx	N	1.7	15
			Mx	Z	4.6	18
		Sk	iP		01 28 34.7	C
		Um	iP		01 29 05.0	C
		Ud	iP		01 28 44.5	
		(cont.)				

1970 Apr.	24	(cont.)		
		De	iP	01 28 54.9
		North Atlantic Ocean (h = 10 km		
		m = 5.8, M = 5.2 (Up,Ki).		
"	24	Sk	iP	01 30 08.0
		Um	iP	01 30 40.7
		Ud	iP	01 30 17.5
		North Atlantic Ocean.		
		Origin time = 01 24 46.		
"	24	Up	iP	01 53 05.2
		Sk	iP	01 52 34.3
		Um	iP	01 53 05.0
			i	01 53 25.0
		Ud	iP	01 52 44.4
		De	iP	01 52 58.5
		North Atlantic Ocean (h = N).		
"	24	Sk	iP	01 56 41.1
		Um	iP	01 57 13.1
		Ud	iP	01 56 47.8
		North Atlantic Ocean (h = N).		
"	24	Up	iP	02 45 08.7
			iPP	02 45 29.9
		Ki	iP	02 46 13.8
		Sk	iP	02 45 50.7
		Um	iP	02 45 40.3
		Ud	iP	02 45 18.0
		De	iP	02 44 47.6
		Turkey (h = 5 km).		
"	24	Um	iP	03 00 07.4
			i	03 00 18.7
		Ud	eP	03 00 27
		Negros (h = 90 km).		
"	24	Ki	eP	03 36 43
		Um	eP	03 36 36
		Ud	iP	03 36 54.5
			iPP	03 38 31.8
		Tadzhik SSR (h = 30 km).		
"	24	Um	iP	03 39 05.5
		Turkey.		
"	24	Sk	iP	05 34 25.1
		North Atlantic Ocean (h = N).		
"	24	Um	iP	05 57 27.2
		Turkey.		
"	24	Ki	iP	06 13 53.1
		Um	eP	06 14 07
		Banda Sea (h = 35 km).		

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

1970 Apr.	24	Ki	iP	08 54 34.7
		Ud	iP	08 55 00.3 C
"	24	Ki	iPn	11 03 41.9
			iSn	11 04 41.0
			iSg	11 05 04.0
		Sk	iS	11 07 13.8
			iSg	11 07 36.7
		Um	iSn	11 05 19.6
			iLgl	11 05 53.4
			iSg	11 05 59.4
		Northwest Russia, 67.7°N, 33.3°E. Origin time = 11 02 25. Explosion?		
"	24	Up	iP	11 21 43.5
			iPP	11 22 08.5
		Ki	iP	11 22 53.8
		Sk	iP	11 22 26.0
		Um	iP	11 22 30.3
		Ud	iP	11 21 49.9
		De	iP	11 21 11.4
		Greece-Albania (h = 25 km).		
"	24	Ki	iP	14 43 39.1 C
		Um	iP	14 43 03.4
		Ud	eP	14 42 47
		Dodecanese Islands (h = 30 km).		
"	24	Ki	iPn	16 39 19.4
			iSn	16 40 06.0
			iSg	16 40 23.6
		Sk	e(Lgl)	16 43 12
			iSg	16 43 16.5
		Um	iSg	16 41 59.3
		Northwest Russia, 69.5°N, 30.4°E. Origin time = 16 38 16. Explosion?		
"	24	Um	iP	16 59 23.5
			i	16 59 35.9
		Ud	iP	16 59 02.2
		Turkey.		
"	24	Ki	iSg	17 35 15.5
		Sk	iSg	17 35 18.9
		Um	iSg	17 35 40.6
		Nordland, Norway, 66.4°N, 14.8°E. Origin time = 17 33 46. Explosion?		
"	24	Um	iP	17 57 43.0
		(cont.)		
1970 Apr.	24	(cont.)		
		Ud	iP	17 58 25.2
			i	17 58 31.7
"	24	Sk	iPKP	22 23 15.8
		Um	iPKP	22 23 11.0 D
		Ud	iPKP	22 23 23.8
		Kermadec Islands (h = 35 km).		
"	25	Up	iP	03 55 24.7
			ipP	03 55 34.0
		Ki	iP	03 55 46.7
			ipP	03 55 56.0
				micr sec
			P Z'	0.1 1.0
		Sk	iP	03 55 47.5
		Um	iP	03 55 32.7
			ipP	03 55 41.7
		Ud	iP	03 55 34.5
		De	iP	03 55 23.3
			ipP	03 55 32.3
		Chagos Islands. h = 35 km (Up,Ki,Um,De).		
"	25	Up	iPg	05 26 52.2
			iSn	05 27 16.7
			iSg	05 27 26.4
				micr sec
			Sg Z'	0.1 0.5
		Ki	iSg	05 31 01.4
		Sk	iSg	05 29 42.5
		Um	iSg	05 28 46.7
		Ud	i(Sn)	05 28 10.1
			iSg	05 28 28.9
		De	iSg	05 28 40.3
		Baltic Sea, off coast of Esthonia, 58.7°N, 22.0°E. Origin time = 05 26 00. Explosion?		
"	25	Up	iPg	05 28 59.0
			iSg	05 29 33.1
				micr sec
			Sg Z'	0.1 0.5
		Ki	eSg	05 33 08
		Sk	iSg	05 31 48.4
		Um	iSg	05 30 58.9
		Ud	e(Sn)	05 30 16
			iSg	05 30 34.2
		De	iSg	05 30 44.9
		Baltic Sea, off coast of Esthonia, 58.7°N, 22.0°E. Origin time = 05 28 07. Explosion?		

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

1970 Apr.	25	Um	iP	12 11 33.8		
		Ud	iP	12 11 59.6		
		Japan (h = 80 km).				
"	25	Up	iP	12 38 52.2		
		Sk	eP	12 38 32		
		Um	iP	12 38 29.2		
		Ud	iP	12 38 43.2		
"	25	Up	iP	18 05 55.1		
		Ud	iP	18 06 04.1		
			ipP	18 06 13.2		
		Luzon.				
		h = 35 km (Ud).				
"	25	Up	iPKP	20 49 04.6		
		Um	iPKP	20 49 03.0		
		Ud	iPKP	20 49 04.9		
		De	iPKP	20 49 16.2		
		Fiji Islands (h = 600 km).				
"	26	Up	e(P)	06 45 37		
			iP	06 45 43.0		
				micr	sec	
			Mx	E	1.5	20
			Mx	N	1.3	21
			Mx	Z	1.6	20
		Ki			micr	sec
			Mx	E	1.0	14
			Mx	N	0.6	14
			Mx	Z	1.6	16
		Sk	e(P)		06 45 08	
			iP		06 45 15.6	
		Um	iP		06 45 43.5	
		North Atlantic Ocean (h = N).				
		M = 4.8 (Up,Ki).				
		(P) denotes a small-amplitude precursor.				
"	26	Up	iLgl	07 23 35.6		
			iSg	07 23 41.0		
		Ki	iPn	07 19 28.1		
			iSn	07 20 28.1		
			iSg	07 20 53.4		
		Sk	iLgl	07 23 15.6		
		Um	iSn	07 21 05.0		
			iSg	07 21 41.6		
		Ud	iLgl	07 24 12.6		
		Northwest Russia,				
		67.4°N, 33.5°E.				
		Origin time = 07 18 10.				
		Explosion?				
"	26	Ud	iP	08 12 41.8		
		De	iP	08 12 52.8 C		
1970 Apr.	26	Ki	iPn	10 07 51.5		
			iSn	10 08 44.0		
			iLgl	10 08 58.4		
		Um	iSg	10 10 29.8		
		Probably northwest Russia.				
		Origin time = 10 06 42.				
		Explosion?				
"	26	Up	iP	14 31 11.0 C		
				micr	sec	
			P	Z'	0.5	1.0
			Mx	E	2.2	17
			Mx	N	3.1	19
			Mx	Z	3.1	19
		Ki	iP	14 30 17.0 C		
				micr	sec	
			P	Z'	0.4	1.2
			Mx	E	2.9	21
			Mx	N	2.3	17
			Mx	Z	3.6	17
		Sk	iP	14 30 51.7 C		
			ipP	14 30 59.8		
		Um	iP	14 30 43.2 C		
		Ud	iP	14 31 13.0 C		
		De	iP	14 31 35.1 C		
		Aleutian Islands.				
		h = 30 km (Sk).				
		m = 6.6, M = 5.6 (Up,Ki).				
"	26	Up	iPKP	15 59 13.1		
		Ki	iPKP	15 59 06.5		
		Um	iPKP	15 59 12.9		
			iPKS	16 02 35.0		
		Ud	iPKP	15 59 14.0		
		De	iPKP	15 59 26.6		
		Tonga Islands (h = 130 km).				
"	26	Up	iPKP	17 39 51.2		
		Ki	iPKP	17 39 37.5		
		Sk	iPKP	17 39 48.1		
		Um	iPKP	17 39 43.2		
		Ud	iPKP	17 39 53.4 C		
		De	iPKP	17 39 59.4		
		Santa Cruz Islands (h = 290 km)				
"	26	Up	iP	21 27 22.1 C		
		Ki	eP	21 27 03		
			ipP	21 27 10.7		
		Sk	epP	21 27 35		
		Um	iP	21 27 08.8		
		Ud	iP	21 27 31.1 C		
			ipP	21 27 38.5		
		Luzon.				
		h = 30 km (Ki,Ud).				

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

1970 Apr.	26	Up	iP	21 54 42.0	
		Ud	iP	21 54 51.0	
"	26	Up	iP	23 20 00.1	
		Um	iP	23 20 30.9	
		Ud	iP	23 20 13.5	
			i	23 20 34.5	
		De	iP	23 19 38.3	
		Turkey (h = N).			
"	27	Up	iP	01 59 06.4	
		Ki	iP	02 00 12.4	
		Sk	iP	01 59 51.8	
		Um	iP	01 59 39.7	
		Ud	iP	01 59 19.4	
		De	iP	01 58 46.7	
		Turkey (h = 25 km).			
"	27	Up	iP	04 07 16.6	
				micr sec	
			P Z'	0.1 1.0	
		Ki	iP	04 06 22.9	
		Sk	iP	04 06 59.5	
			iPcP	04 07 46.2	
		Um	iP	04 06 48.6	
		Ud	iP	04 07 20.5	C
		De	iP	04 07 42.6	C
		Kamchatka (h = 50 km).			
"	27	Ud	iP	05 35 33.7	
			ipP	05 35 39.9	
		Luzon.			
		h = 25 km (Ud).			
		Origin time = 05 22 56.			
"	27	Ud	iP	05 41 34.3	
			i	05 41 41.3	
"	27	Up	iP	08 15 54.8	
		Ki	eP	08 15 07	
			i	08 15 10.1	
		Um	iP	08 15 30.2	
		Ud	iP	08 16 01.2	
		De	iP	08 16 18.8	
		Kurile Islands (h = 50 km).			
"	27	Up	iP	09 39 29.1	
		Ki	iP	09 40 37.6	
		Um	iP	09 40 02.1	C
		Ud	iP	09 39 42.6	
		De	iP	09 39 08.6	
		Turkey (h = N).			
"	27	Up	iP	09 40 05.7	
		(cont.)			

1970 Apr.	27	(cont.)			
		Up		micr	sec
			Mx E	0.5	10
			Mx N	0.9	9
			Mx Z	1.2	10
		Ki	iP	09 41 13.9	
				micr	sec
			Mx E	1.1	15
			Mx N	0.7	9
			Mx Z	0.9	9
		Sk	iP	09 40 51.6	
			i	09 41 04.2	
		Um	iP	09 40 39.9	
		Ud	iP	09 40 20.1	
		De	iP	09 39 46.0	
		Turkey (h = N).			
		M = 4.6 (Up,Ki).			
"	27	Up	iP	09 55 38.7	
		Ki	iP	09 55 18.4	
		Ud	iP	09 55 46.9	
			ipP	09 55 53.5	
		Luzon.			
		h = 25 km (Ud).			
"	27	Um	iP	10 44 40.1	
		Ud	iP	10 44 20.0	
		De	iP	10 43 46.3	
		Turkey.			
		Origin time = 10 39 13.			
"	27	Um	iP	13 50 44.5	
		Ud	iP	13 51 19.7	
		Greenland Sea (h = 4 km).			
"	27	Ud	iP	17 36 18.7	
"	27	De	iP	18 34 38.4	
"	27	Up	iP	22 29 38.9	
				micr	sec
			Mx E	0.5	10
			Mx N	0.6	10
			Mx Z	0.8	10
		Ki	iP	22 30 48.5	
				micr	sec
			Mx E	0.8	7
			Mx N	0.4	11
			Mx Z	0.6	13
		Sk	iP	22 30 23.6	
			i	22 30 37.3	
		Um	iP	22 30 12.5	
		Ud	iP	22 29 50.0	
			i	22 29 52.3	
			i	22 29 55.9	
		(cont.)			

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

1970
Apr. 27 (cont.)

De	iP	22 29 18.4	C

Turkey (h = N).
M = 4.6 (Up,Ki).

" 28

Up	iPKP		00 48 13.5	
			micr	sec
	Mx	E	0.6	15
	Mx	N	0.7	18
	Mx	Z	1.2	19
Ki	iPKP		00 48 01.1	
			micr	sec
	Mx	E	0.6	14
	Mx	N	0.6	17
	Mx	Z	1.1	17
Sk	iPKP		00 48 11.9	
Um	iPKP		00 48 06.8	
	iPP		00 49 11.2	
Ud	iPKP		00 48 14.5	
De	iPKP		00 48 20.1	
	i		00 48 22.0	

Solomon Islands (h = 3 km).
M = 5.5 (Up,Ki).

" 28

Up	iPKP	01 31 06.1	
Ki	iPKP	01 30 54.9	
Sk	iPKP	01 31 04.7	
Um	iPKP	01 30 59.4	
Ud	iPKP	01 31 09.1	
De	iPKP	01 31 14.1	C

Solomon Islands (h = 5 km).

" 28

Up	iP	02 35 46.0	
Ud	iP	02 35 50.5	
De	iP	02 35 15.7	

Greece.

" 28

Up	iP	03 27 20.5	
Ki	iP	03 28 18.8	C
Sk	iP	03 27 58.8	C
Um	iP	03 27 47.4	C
Ud	iP	03 27 31.0	C
De	iP	03 27 03.8	

Red Sea (h = 5 km).

" 28

Up	iP	04 24 59.8	
Ud	iP	04 25 04.0	

Luzon (h = 60 km).

" 28

Um	iP	08 40 27.6	
	i	08 40 37.9	
Ud	iP	08 40 39.4	C

" 28

Um	e(P)	12 56 27	
Ud	iP	12 56 31.3	

1970
Apr. 28

Sk	iSg	14 16 55.5	
Um	iSg	14 15 43.0	

Probably Esthonia.
Explosion?

" 28

Up	iP	14 41 38.2	
	ipP	14 41 46.4	
Ki	eP	14 41 21	
Um	iP	14 41 26.1	
Ud	iP	14 41 47.0	
	ipP	14 41 55.1	

Luzon.
h = 30 km (Up,Ud).

" 28

Um	iP	18 50 36.0	
Ud	iP	18 50 56.5	

Afghanistan-USSR (h = 40 km).

" 28

Ud	iP	20 24 53.9	

Halmahera (h = 45 km).

" 28

Um	iP	20 58 57.3	
De	i(P)	20 58 46.5	

" 29

Up	iP		06 06 02.3	
			micr	sec
	P	Z'	0.1	0.5
	Mx	N	1.1	18
	Mx	Z	1.7	18
Ki	iP		06 05 16.9	
			micr	sec
	P	Z'	0.1	1.0
	Mx	E	1.4	17
	Mx	N	1.4	18
	Mx	Z	2.6	18
Sk	eP		06 05 53	
	iPcP		06 06 19.1	
Um	iP		06 05 37.4	
Ud	iP		06 06 08.7	D
De	iP		06 06 25.7	

Kurile Islands (h = 50 km).
m = 6.1, M = 5.3 (Up,Ki).

" 29

Up	iP		11 35 21.3	
	i		11 35 58.9	
			micr	sec
	Mx	E	17	21
	Mx	N	8.9	20
	Mx	Z	27	21
Ki	iP		11 35 09.3	
			micr	sec
	Mx	E	27	20
	Mx	N	12	21
	Mx	Z	34	21

(cont).

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

1970
Apr. 29 (cont.)

Sk	iP		11 35 02.1
Um	iP		11 35 17.1
	i		11 35 32.8
Ud	iP		11 35 10.2
	i		11 35 15.2
De	iP		11 35 21.0

Mexico (h = 40 km).
M = 6.6 (Up,Ki).

" 29

Sk	iP		11 55 05.0
Um	iP		11 55 21.7
Ud	iP		11 55 14.3

Mexico (h = N).

" 29

Up	iP		12 11 30.8	C
			micr	sec
	P	Z'	0.1	1.0
Ki	iP		12 10 37.8	C
Sk	iP		12 11 26.5	
	i		12 11 34.5	
Um	iP		12 11 03.6	C
	i		12 11 17.4	
Ud	iP		12 11 32.2	

Aleutian Islands (h = 50 km).

" 29

Sk	iP		12 19 59.4
Um	iP		12 20 14.3

Mexico (h = N).

" 29

Ki	iPn		12 54 23.8
	iSn		12 55 11.5
	iSg		12 55 30.2
Sk	iLgl		12 58 06.7
Um	iSg		12 56 58.0

Northwest Russia,
69.1°N, 31.0°E.
Origin time = 12 53 20.
Explosion?

" 29

Up	iP		14 14 04.0
Sk	iP		14 13 45.6 C
Um	iP		14 14 01.2
Ud	iP		14 13 54.0

Mexico (h = N).

" 29

Up	iP		14 14 18.2	
	i		14 14 35.2	
			micr	sec
	P	Z'	0.1	0.8
	Mx	E	90	20
	Mx	N	63	20
	Mx	Z	130	20
Ki	iP		14 14 07.3	C
	i		14 14 24.4	

(cont.)

1970
Apr. 29 (cont.)

Ki			micr	sec
	Mx	E	160	19
	Mx	N	64	17
	Mx	Z	230	20
Sk	iP		14 13 59.0	
	i		14 14 16.8	
Um	iP		14 14 13.4	
	i		14 14 30.9	
Ud	iP		14 14 09.1	
	i		14 14 25.6	
De	iP		14 14 14.2	
	i		14 14 33.7	

Mexico (h = N).
M = 7.4 (Up,Ki).
The phase appearing in average 17.6 sec after P may be the P of another shock in the same place.
These Mexican shocks are characterized by exceptionally long periods of P on our Z' records.

" 29

Ud	iP		14 53 30.6
De	iP		14 53 07.4

Dodecanese Islands.

" 29

Sk	iP		15 00 49.0
Um	iP		15 01 04.5

Mexico.
Origin time = 14 48 24.

" 29

Sk	iP		15 04 25.3

Mexico (h = N).

" 29

Up	iP		15 12 49.7

" 29

Up	iP		16 21 01.5
Sk	eP		16 20 43
Um	iP		16 20 58.4
Ud	iP		16 20 51.4

Mexico.
Origin time = 16 08 17.

" 29

Up	iP		16 48 59.0
Ki	iP		16 48 42.8
Sk	iP		16 49 03.6
Um	iP		16 48 47.8
Ud	iP		16 49 07.1

Mindanao (h = 650 km).

" 29

Sk	iP		17 08 52.5
Um	iP		17 09 09.9

Mexico (h = N).

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

1970 Apr.	29	Sk	iP		17 29 40.1	
		Um	iP		17 29 55.6	
		Mexico (h = 55 km).				
"	29	Up			micr	sec
			Mx	E	1.5	20
			Mx	N	1.0	16
			Mx	Z	2.7	21
		Ki	iPKP2		18 22 02.1	
					micr	sec
			PKP2	Z'	0.1	1.6
			Mx	E	2.7	19
			Mx	N	1.5	21
			Mx	Z	4.9	21
		Um	iPKP		18 21 23.8	C
			iPKP2		18 22 06.5	
		Ud	iPKP		18 21 22.0	
		De	iPKP		18 21 21.5	
			iPKP2		18 21 52.6	
		South Pacific Ocean (h = N).				
		M = 6.1 (Up,Ki).				
"	29	Up	iPKP		18 30 14.1	
		Sk	iPKP		18 30 04.1	
		Um	iPKP		18 29 58.3	
		Ud	iPKP		18 30 11.7	
		De	iPKP		18 30 20.8	
"	29	Ki	iP		18 54 01.5	
		Sk	iP		18 53 56.8	
		Um	iP		18 54 13.2	
		Ud	iP		18 54 07.6	
		Mexico (h = N).				
"	29	Up	iP		19 42 39.5	
					micr	sec
			Mx	E	0.9	19
			Mx	N	1.0	20
			Mx	Z	1.5	19
		Ki	iP		19 42 27.1	
					micr	sec
			P	Z'	0.3	2.0
			Mx	E	1.5	20
			Mx	N	1.3	20
			Mx	Z	2.8	21
		Sk	iP		19 42 21.3	
		Um	iP		19 42 35.4	
		Ud	iP		19 42 30.1	D
		Mexico (h = 30 km).				
		M = 5.4 (Up,Ki).				
"	29	Sk	iP		19 51 01.7	
		Um	iP		19 51 17.4	
		Mexico (h = N).				

1970 Apr.	29	Up			micr	sec
			Mx	E	1.0	21
			Mx	N	1.0	20
			Mx	Z	1.6	20
		Ki			micr	sec
			Mx	E	0.7	17
			Mx	N	0.7	16
		Sk	iP		20 46 08.7	
		Um	iP		20 46 23.2	
		Mexico (h = N).				
		M = 5.3 (Up,Ki).				
"	29	Up			micr	sec
			Mx	E	1.8	19
			Mx	N	1.6	20
			Mx	Z	3.2	20
		Ki	iP		21 32 58.5	
					micr	sec
			P	Z'	0.4	2.0
			Mx	E	3.0	19
			Mx	N	1.5	19
			Mx	Z	5.1	20
		Sk	iP		21 32 52.8	C
		Um	iP		21 33 07.3	
		Ud	iP		21 33 00.9	
		Mexico (h = 35 km).				
		M = 5.7 (Up,Ki).				
"	29	Up			micr	sec
			Mx	E	1.5	20
			Mx	N	1.1	22
			Mx	Z	1.9	20
		Ki	iP		22 01 37.0	
					micr	sec
			Mx	E	3.0	20
			Mx	N	1.2	19
			Mx	Z	4.9	21
		Sk	iP		22 01 32.1	
		Um	iP		22 01 45.8	
			i		22 02 43.0	
		Ud	iP		22 01 39.3	
		Mexico (h = N).				
		M = 5.7 (Up,Ki).				
"	30	Up	iP		00 03 52.6	
"	30	Up	iP		00 42 39.9	
		Ud	iP		00 42 41.8	
		Kurile Islands (h = N).				
"	30	Um	iP		01 06 57.2	
		Mexico (h = 55 km).				
"	30	Up	iP		03 33 05.0	
		(cont.)				

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

1970
Apr. 30 (cont.)

Ki	iP		03 33 13.6 C
Sk	iP		03 33 31.8
Um	iP		03 33 03.8
	i		03 33 06.8
Ud	iP		03 33 17.8

West Pakistan (h = 40 km).

" 30

Ki			micr sec
	Mx	E	1.1 20
Um	iP		04 12 32.9

Mexico (h = N).

" 30

Ki			micr sec
	Mx	E	0.9 20
Sk	iP		05 58 51.4
	i		05 58 59.9
Um	iP		05 59 06.5
Ud	iP		05 59 01.1
De	iP		05 59 07.7

Mexico (h = N).

" 30

Um	iP		07 08 12.4

" 30

Up	eP		08 45 46
	i		08 45 55.8
	iS		08 56 18
			micr sec
	Mx	E	17 21
	Mx	N	12 20
	Mx	Z	34 21
Ki	iP		08 45 35.4 C
			micr sec
	P	Z'	2.4 3.0
	Mx	E	43 20
	Mx	N	16 20
	Mx	Z	58 20
Sk	iP		08 45 29.1 C
Um	iP		08 45 44.0
	iS		08 56 15
Ud	iP		08 45 36.9
De	iP		08 45 44.8

Mexico (h = 20 km).
M = 6.7 (Up,Ki).
Remarkably long period, around 3.0 sec, of P Z' at all our stations.

" 30

Sk	iP		09 11 36.5
	i		09 11 45.0
Um	iP		09 11 51.5
Ud	iP		09 11 45.4

Mexico (h = N).

" 30

Ki	iPKP		09 43 42.6

Solomon Islands (h = 90 km).

1970
Apr. 30

Up	iP		13 04 25.3
			micr sec
	Mx	E	2.3 20
	Mx	N	1.7 21
	Mx	Z	3.2 20
Ki	iP		13 04 13.9
			micr sec
	P	Z'	0.4 2.0
	Mx	E	4.1 20
	Mx	N	2.3 20
	Mx	Z	5.7 21
Sk	iP		13 04 07.4
Um	iP		13 04 22.2
Ud	iP		13 04 16.1
De	iP		13 04 25.0

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

" 30

Up	i(P)		13 33 46.6
	iP		13 33 51.8
			micr sec
	Mx	E	1.6 21
	Mx	N	1.7 21
	Mx	Z	1.9 20
Ki	iP		13 33 40.4
			micr sec
	P	Z'	0.3 2.0
	Mx	E	2.6 20
	Mx	N	1.2 19
	Mx	Z	4.0 19
Sk	iP		13 33 34.0
	ipP		13 33 43.9
Um	iP		13 33 48.8
Ud	iP		13 33 43.2
De	iP		13 33 49.4

Mexico.
h = 35 km (Sk).
M = 5.7 (Up,Ki).

" 30

Up	iP		14 51 52.6 D
	ipP		14 52 49.8
			micr sec
	P	Z'	0.2 0.7
Ki	iP		14 51 25.0 D
			micr sec
	P	Z'	0.1 1.0
Sk	iP		14 51 54.2
Um	iP		14 51 35.4 D
	i		14 51 51.0
Ud	iP		14 52 01.3 D
De	iP		14 52 11.3 D
	i		14 52 23.9

East Chinese Sea.
h = 240 km (Up).
m = 5.8 (Up,Ki).

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

1970 Apr.	30	Up	eP		15 01 51	
"	30	Up	iP		15 03 14.6	
					micr	sec
			Mx	E	0.7	10
			Mx	N	0.8	13
			Mx	Z	0.9	15
		Ki	eP		15 04 22	
			iPn		15 04 45.4	
					micr	sec
			Mx	E	0.6	14
		Sk	iP		15 03 59.2	
		Um	iP		15 03 45.5	C
		Ud	iP		15 03 27.3	
			i		15 03 29.6	
		De	iP		15 02 52.4	
		Turkey (h = 25 km).				
		M = 4.4 (Up,Ki).				
"	30	Sk	iP		15 57 44.0	
		Mexico (h = N).				
"	30	Up	iP		16 49 36.6	
					micr	sec
			Mx	E	1.2	11
			Mx	N	1.3	13
			Mx	Z	1.2	13
		Ki	iP		16 50 42.6	
			iPn		16 51 05.8	
					micr	sec
			Mx	E	1.3	16
			Mx	N	0.8	14
			Mx	Z	1.3	14
		Sk	iP		16 50 23.0	
		Um	iP		16 50 09.1	
		Ud	iP		16 49 49.3	
			i		16 49 54.4	
		De	iP		16 49 17.4	
		Turkey (h = 25 km).				
		M = 4.7 (Up,Ki).				
"	30	Up	eP		18 21 50	
			ipP		18 22 10.6	
		Ki	eP		18 21 27	
		Um	eP		18 21 34	
			ipP		18 21 53.8	
		Ud	iP		18 22 00.8	
			i(pP)		18 22 17.0	
		De	e(pP)		18 22 28	
		Formosa.				
		h = 80 km (Up,Um).				

1970 Apr.	30	Up	iP		18 34 33.5	
		Ki			micr	sec
			Mx	E	0.8	18
			Mx	N	0.5	16
			Mx	Z	1.0	18
		Sk	iP		18 34 15.5	
		Um	iP		18 34 31.0	C
		Ud	iP		18 34 23.6	
		Mexico (h = 20 km).				
"	30	Ki	iP		19 43 06.1	
		Sk	eP		19 42 57	
		Ud	iP		19 43 08.4	
		Mexico (h = 25 km).				
"	30	Sk	iP		21 24 37.8	C
		Um	iP		21 24 54.1	
		Ud	iP		21 24 47.5	
		Mexico (h = 20 km).				
"	30	Up	iP		22 05 58.0	
		Ki	iP		22 05 49.4	
					micr	sec
			Mx	E	0.9	19
		Sk	iP		22 05 38.8	C
		Um	iP		22 05 55.3	
			i		22 06 03.5	
		Ud	iP		22 05 47.8	
		Mexico (h = 40 km).				
"	30	Up	iP		22 09 14.9	
		Ki	iP		22 09 01.5	
		Sk	iP		22 08 56.6	
		Um	iP		22 09 12.4	C
		Ud	iP		22 09 04.3	
		Mexico (h = N).				

Markus Båth
March 19, 1971

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BOX 517
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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

M A Y 1 - 31, 1970

1970 May	1	Up	iP		00 04 02.9
		Ki	iP		00 05 09.7
			iPn		00 05 34.0
		Sk	iP		00 04 47.5
		Um	iP		00 04 34.8 C
			i		00 04 36.1
		Ud	iP		00 04 14.2 C
			i		00 04 16.2
		De	iP		00 03 42.2
		Turkey (h = N).			
"	1	Up	iP		01 12 14.6
		Ki	iP		01 12 01.2
		Um	iP		01 12 03.9
		Ud	iP		01 12 26.7 C
"	1	Ud	iP		02 10 42.2
		Venezuela (h = 25 km).			
"	1	Up	iP		03 34 38.8
			ipP		03 34 49.4
					micr sec
			P	Z'	0.1 0.9
			Mx	E	2.1 22
			Mx	N	2.2 18
			Mx	Z	2.9 18
		Ki	iP		03 34 19.7
					micr sec
			P	Z'	0.1 1.2
			Mx	E	1.9 14
			Mx	N	1.0 15
			Mx	Z	1.9 14
		Sk	iP		03 34 44.4
		Um	iP		03 34 25.6
			iS		03 44 30
		Ud	iP		03 34 47.6 C
			ipP		03 34 55.6
		(cont.)			

1970 May	1	(cont.)		
		De	iP	03 34 56.4
		Luzon.		
		h = 35 km (Up,Ud).		
		m = 5.9, M = 5.7 (Up,Ki).		
"	1	Up	iP	03 54 37.6 C
		Ki	iP	03 54 21.1
			i	03 54 25.8
		Sk	iP	03 54 51.8
		Um	iP	03 54 22.4 C
			i	03 54 39.8
		Ud	iP	03 54 53.4 C
		De	iP	03 55 01.3
		Kazakh-Sinkiang (h = N).		
"	1	Up	iP	04 20 54.3
		Ki	iP	04 20 43.6
		Sk	iP	04 20 36.3 C
		Um	iP	04 20 51.2
		Ud	iP	04 20 43.0
		De	iP	04 20 52.0
		Mexico (h = 35 km).		
"	1	Up	eP	04 59 47
		Um	iP	04 59 46.4
			i	04 59 54.1
		Ud	iP	04 59 39.2
			i	04 59 48.3
		Mexico.		
		Origin time = 04 47 05.		
"	1	Up	iP	06 02 38.2
			i	06 02 47.4
"	1	Up	iP	06 46 38.6
		Ki	iP	06 46 27.4
		(cont.)		

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

1970
May 1 (cont.)
Sk iP 06 46 20.8
Um iP 06 46 36.4
Ud iP 06 46 29.0
Mexico (h = 70 km).

" 1 Ki iPn 07 54 14.3
iSn 07 54 59.3
iSg 07 55 13.8
Um iSn 07 55 40.9
iSg 07 56 12.6
Probably northwest Russia-Finland border region.
Origin time = 07 53 14.
Explosion?

" 1 Up iP 08 35 48.5
Ki iP 08 35 37.4
Sk iP 08 35 30.7 C
Um iP 08 35 46.9
Ud iP 08 35 39.6
De eP 08 35 46
Mexico (h = 50 km).

" 1 Up iP 08 48 09.1
micr sec
Mx E 1.0 17
Mx N 0.9 18
Mx Z 1.4 18
Ki iP 08 47 57.1
micr sec
P Z' 0.2 1.7
Mx E 2.4 18
Mx N 1.1 18
Mx Z 3.8 20
Sk iP 08 47 51.6
Um iP 08 48 05.8
iS 08 58 36
Ud iP 08 47 59.9
De eP 08 48 08
Mexico (h = 45 km).
M = 5.6 (Up,Ki).

" 1 Um i(P) 09 11 32.9

" 1 Ki iPKP 09 56 36.5 C
Um iPKP 09 56 42.8
New Hebrides Islands
(h = 45 km).

" 1 Ud iP 10 41 28.5

" 1 Up iP 11 02 17.8
Um iP 11 02 06.1
Ud iP 11 02 21.7

1970
May 1 Up iP 11 15 15.6
Sk iP 11 14 54.9
Um iP 11 15 10.3
Ud iP 11 15 03.3
Mexico (h = N).

" 1 Um iP 11 44 17.2
Mexico (h = 70 km).

" 1 Ud iP 12 28 49.0
Mindanao (h = 90 km).

" 1 Ud iP 14 24 41.1
Nevada.
Underground explosion.

" 1 Up iP 17 37 05.5
Sk iP 17 36 47.0
Um iP 17 37 02.2
Ud iP 17 36 55.8
Mexico (h = 45 km).

" 1 Up iP 20 16 15.7
micr sec
Mx E 1.1 20
Mx N 1.2 20
Mx Z 1.9 20
Ki eP 20 16 02
micr sec
Mx E 2.2 20
Mx N 1.3 20
Mx Z 2.8 19
Sk iP 20 15 56.0
Um iP 20 16 12.8
iS 20 26 45
Ud iP 20 16 06.7
De iP 20 16 13.5
Mexico (h = 40 km).
M = 5.5 (Up,Ki).

" 1 Up iP 20 46 47.5 C
ipP 20 46 58.4
micr sec
P Z' 0.1 0.8
Ki iP 20 46 02.1
ipP 20 46 13.8
micr sec
P Z' 0.1 1.2
Sk iP 20 46 37.8
ipP 20 46 48.6
Um iP 20 46 22.9 C
ipP 20 46 34.3
Ud iP 20 46 53.2 C
ipP 20 47 04.4
De iP 20 47 10.9
(cont.)

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

1970 May	1	(cont.)			
		De	ipP	20 47 22.1	
		Japan.			
		h = 40 km (Up,Ki,Sk,Um,Ud,De).			
		m = 6.0 (Up,Ki).			
"	1	Ki	iP	21 06 55.5	
		Alaska (h = 30 km).			
"	1	Up	iP	21 11 34.2	
			i	21 11 45.0	
"	1	Um	iP	21 37 52.4	
		Ud	iP	21 37 54.1	
		Indian Ocean (h = N).			
"	1	Up	iP	21 41 10.8	
"	1	Up	iP	22 07 49.4	
		Um	iP	22 07 28.3	
		Ud	iP	22 08 03.2	C
		De	iP	22 08 15.5	C
		USSR-Mongolia.			
"	1	Up	iP	22 53 51.1	
		Sk	eP	22 53 32	
		Um	iP	22 53 48.1	
		Mexico (h = 30 km).			
"	1	Ki	iPKP	23 51 11.0	
		Um	iPKP	23 51 17.1	
		De	iPKP	23 51 32.0	
		Solomon Islands (h = 70 km).			
"	2	Up	iP	00 16 46.8	
		Um	eP	00 16 40	
			i	00 16 43.2	
		Mexico (h = N).			
"	2	Up	iP	02 19 44.4	
				micr	sec
			Mx	1.1	19
			Mx	1.1	19
			Mx	2.0	21
		Ki	iP	02 19 30.5	C
				micr	sec
			Mx	2.1	18
			Mx	1.3	17
			Mx	3.1	18
		Sk	iP	02 19 24.8	C
		Um	iP	02 19 41.3	
			iS	02 30 11	
		Ud	iP	02 19 33.7	
		De	iP	02 19 41.9	
		Mexico (h = 30 km).			
		M = 5.5 (Up,Ki).			

1970 May	2	Um	iP	05 21 59.8	
		Ud	iP	05 22 30.0	
"	2	Up	iP	05 28 29.0	
		Ki	eP	05 28 17	
			i	05 28 32.9	
				micr	sec
			Mx	E 0.8	19
			Mx	Z 1.8	21
		Sk	iP	05 28 10.9	
		Um	iP	05 28 26.1	
		Ud	iP	05 28 16.9	
		De	iP	05 28 27.1	
		Mexico (h = N).			
"	2	Up	iP	05 36 42.7	
		Um	iP	05 36 35.8	
		Mexico (h = N).			
"	2	Um	iP	06 19 04.9	
"	2	Ud	iP	06 55 45.6	
"	2	Um	i(P)	11 59 05.2	
"	2	Up	iP	18 01 33.3	
			ipP	18 01 41.8	
				micr	sec
			P	Z' 0.1	0.6
		Ki	iP	18 01 13.9	C
		Um	iP	18 01 20.7	
			ipP	18 01 29.5	
		Ud	iP	18 01 42.6	C
			ipP	18 01 50.8	
		Luzon.			
		h = 30 km (Up,Um,Ud).			
"	2	Up	iP	20 05 02.7	
		Um	iP	20 04 40.4	
		Sea of Japan (h = 280 km).			
"	2	Um	iPKP	23 36 33.8	
		South Sandwich Islands			
		(h = 80 km).			
"	3	De	iPKP	01 45 33.0	
		Tonga-Kermadec Islands			
		(h = 160 km).			
"	3	Up	iP	04 21 22.8	
		Sk	iP	04 21 58.5	C
		Um	iP	04 22 09.7	
		Ud	iP	04 21 20.0	
		Italy.			

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

1970 May	3	Up	iP	04 30 39.2	
			iPcP	04 31 03.9	
		Ki	iP	04 29 54.4	
		Sk	iP	04 30 29.1	
		Um	iP	04 30 14.6	
		Ud	iP	04 30 45.8	
			iPcP	04 31 10.4	
		De	iP	04 31 02.9	
		Kurile Islands (h = 60 km).			
"	3	Up	iP	04 47 50.6	
		Um	iP	04 48 22.6	
		Ud	iP	04 48 08.3	
"	3	Um	iP	05 27 36.2	
		Banda Sea (h = 530 km).			
"	3	Up	iPKP	06 49 44.3	C
			ipPKP	06 50 11.6	
				micr sec	
			PKP	Z' 0.1 0.5	
		Um	iPKP	06 49 32.9	
		Ud	iPKP	06 49 45.8	C
			ipPKP	06 50 12.2	
		De	iPKP	06 49 55.8	
		Tonga-Kermadec Islands.			
		h = 100 km (Up,Ud).			
"	3	Up	iP	07 22 01.0	
		Ki	iP	07 21 51.8	
		Sk	iP	07 21 43.2	
		Um	iP	07 21 58.7	
		Mexico (h = N).			
"	3	Ki	iP	07 51 58.3	
		Mexico (h = N).			
"	3	Up	iP	09 07 45.2	
		Ki	iP	09 07 10.8	
			i	09 07 13.8	
		Sk	iP	09 07 40.7	
		Um	iP	09 07 25.6	
		Ud	iP	09 07 52.2	
			ipP	09 08 17.8	
		South of Japan.			
		h = 90 km (Ud).			
"	3	Ki	iP	09 16 44.8	
		Sk	iP	09 16 37.1	
		Um	iP	09 16 53.7	
		Mexico (h = 60 km).			
"	3	Up	iP	09 19 55.3	
		Ki	eP	09 19 42	
		(cont.)			

1970 May	3	(cont.)			
		Sk	iP	09 19 36.9	
		Um	iP	09 19 52.0	
		Mexico (h = N).			
"	3	Ki	iP	11 01 05.6	
		Sk	iP	11 01 56.3	
		Um	iP	11 01 58.7	
			i	11 02 07.3	
		Ud	iP	11 02 44.6	
		Greenland Sea (h = N).			
"	3	Up	iPKP	14 35 43.7	
		Ki	iPKP	14 35 27.2	
		Sk	iPKP	14 35 38.3	
		Um	iPKP	14 35 33.9	
		Ud	iPKP	14 35 45.5	
"	3	Sk	eP	19 04 28	
		Um	iP	19 04 22.2	
"	4	Up	iSg	04 43 59.0	
		Sk	iPg	04 42 49.8	
			e	04 43 14	
			iSg	04 43 15.8	
		Um	iSg	04 44 33.9	
		Ud	i(Pg)	04 42 47.8	
			iSg	04 43 06.2	
		De	eSg	04 44 52	
		Norway,			
		61.6°N, 11.6°E.			
		Origin time = 04 42 07.			
"	4	Um	iP	05 57 24.4	
		Ud	iP	05 57 54.1	
		Japan (h = 50 km).			
"	4	Sk	iP	07 11 59.4	
			i	07 12 07.7	
		Um	iP	07 12 14.9	
			i	07 12 22.7	
		Mexico (h = N).			
"	4	Up	iP	07 18 05.4	
				micr sec	
			P	Z' 0.1 1.3	
		Ki	iP	07 17 12.7	
			ipP	07 17 26.4	
		Um	iP	07 17 38.3	
		Ud	iP	07 18 06.0	
		De	iP	07 18 27.8	
		Aleutian Islands.			
		h = 50 km (Ki).			

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

1970 May	4	Up	Mx		08 56	
					micr	sec
			Mx	E	1.0	21
			Mx	N	1.3	21
			Mx	Z	1.4	18
		Ki	Mx		08 52	
					micr	sec
			Mx	E	1.0	21
			Mx	N	0.7	20
			Mx	Z	1.8	21
		New Hebrides Islands				
		(h = 15 km).				
		M = 5.7 (Up,Ki).				
"	4	Up	iPKP		11 43 50.9	
		Ki	iPKP		11 43 36.7	
			iSKP		11 46 46.9	
					micr	sec
			SKP	Z'	0.1	1.3
		Sk	e(PKP)		11 43 39	
			iPKP		11 43 46.6	
		Um	iPKP		11 43 42.3	
			iSKP		11 46 58.6	
		Ud	i(PKP)		11 43 42.9	
			iPKP		11 43 51.6	
			iSKP		11 47 13.6	
		De	iPKP		11 43 52.9	
			iSKP		11 47 22.3	
		Loyalty Islands (h = 140 km).				
"	4	Up	iP		12 21 33.1	
					micr	sec
			P	Z'	0.1	1.0
		Ki	iP		12 21 13.7 C	
			ipP		12 21 19.7	
					micr	sec
			P	Z'	0.1	1.2
		Sk	eP		12 21 38	
		Um	iP		12 21 20.2 C	
			ipP		12 21 27.2	
		Ud	iP		12 21 41.5	
			ipP		12 21 48.9	
		De	iP		12 21 48.3 C	
			ipP		12 21 54.8	
		Luzon.				
		h = 25 km (Ki,Um,Ud,De).				
		m = 5.9 (Up,Ki).				
"	4	Um	iP		12 33 48.6	
		South of Japan.				
"	4	Ki	iP		13 53 15.6	
		Um	iP		13 52 42.2	
		Ud	iP		13 52 28.2	
			i		13 52 57.1	
		De	iP		13 52 01.5	

1970 May	4	Up	iP		14 38 11.7	
"	4	Up	ePP		19 12 53	
					micr	sec
			Mx	E	1.3	17
			Mx	N	2.9	18
			Mx	Z	2.3	18
		Ki	ePKP		19 12 06	
			i		19 12 15.2	
					micr	sec
			Mx	E	3.1	18
			Mx	N	2.5	17
			Mx	Z	4.1	18
		Um	iPKP		19 12 01.0	
			i		19 12 10.1	
			iPKKP		19 22 36	
		Indian Ocean (h = N).				
		M = 6.0 (Up,Ki).				
"	4	Up	iPKP		20 40 04.7	
		Um	iPKP		20 39 56.5	
			i		20 40 04.6	
		Ud	iPKP		20 40 04.6	
		De	ePKP		20 40 13	
			i		20 40 15.5	
		Fiji Islands (h = 440 km).				
"	4	Ki	iPg		21 27 34.3	
			iSg		21 27 38.2	
		Sk	e		21 30 26	
"	4	Up	iP		21 29 30.6	
		Ki	i(P)		21 29 21.7	
			i		21 29 35.5	
"	4	Up	iP		22 21 30.0	
		Ki	iP		22 20 47.1	
		Um	iP		22 21 05.1	
			ipP		22 21 16.7	
		Ud	iP		22 21 35.7 C	
		Japan.				
		h = 45 km (Um).				
"	4	Up	iP		22 40 24.9	
			i		22 40 31.8	
		Ud	iP		22 40 14.8	
		De	i(P)		22 41 29.5	
"	5	Up	iP		01 33 52.4	
		Ki	iP		01 33 15.7	
			i		01 33 36.4	
		Um	iP		01 33 31.6	
		Ud	iP		01 33 59.1 C	
			i		01 34 12.1	
		De	eP		01 34 13	
		South of Japan (h = N).				

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

1970 May	5	Ki	eP	02 48 24
		Um	iP	02 48 42.0
			ipP	02 48 55.8
		Ud	iP	02 49 12.2
		Japan.		
		h = 50 km (Um).		
"	5	Ki	iP	09 42 37.8
		Um	iP	09 43 22.0
"	5	Up	i	12 38 18.9
			iSg	12 38 23.7
		Sk	e	12 39 39
			iSg	12 39 45.0
		Um	iSg	12 40 27.1
		Ud	eSn	12 37 26
			iSg	12 37 54.9
			i	12 37 59.6
		De	ePg	12 35 51
			iSn	12 36 15.5
			iSg	12 36 22.2
		Denmark,		
		55.0°N, 10.6°E.		
		Origin time = 12 35 03.		
"	5	Up	iP	15 41 48.6
		Ki	iP	15 41 14.9
		Sk	iP	15 41 22.3
		Um	iP	15 41 33.7
		Ud	iP	15 41 40.6
		De	iP	15 41 57.8
		Nevada.		
		Underground explosion.		
"	5	Up	iSg	17 36 49.8
		Ki	ePg	17 34 07
			iSg	17 34 43.0
		Sk	ePg	17 34 10
			iSg	17 34 47.2
		Um	iPg	17 34 21.5
			iSg	17 35 09.5
		Ud	iSg	17 36 39.4
		Nordland, Norway,		
		66.3°N, 14.6°E.		
		Origin time = 17 33 14.		
		Explosion?		
"	5	Up	iP	18 34 52.1
		Ki	iP	18 34 42.0
		Um	iP	18 34 50.7
		Mexico (h = 90 km).		
"	5	Ki	iPKP	20 25 12.0
		Sk	iPKP	20 25 22.6
		Um	iPKP	20 25 18.6
		Ud	iPKP	20 25 28.3
		(cont.)		

1970 May	5	(cont.)			
		New Hebrides Islands			
		(h = 35 km).			
"	6	Up	iP	02 47 41.5	C
		Ki	iP	02 47 22.8	C
				micr	sec
			P	Z' 0.1	1.2
			Mx	E 0.5	14
			Mx	N 0.4	14
			Mx	Z 0.8	14
		Sk	iP	02 47 46.4	C
		Um	iP	02 47 28.8	C
			ipP	02 47 40.0	
		Ud	iP	02 47 50.7	C
		De	iP	02 47 56.2	
		Luzon.			
		h = 40 km (Um).			
"	6	Up	i(P)	06 03 20.6	
"	6	Ki	eP	07 12 28	
			iS	07 13 54.8	
		Sk	eP	07 13 37	
		Um	iP	07 13 24.7	
			iLi	07 16 20.5	
		Arctic Ocean, near			
		75°N, 26°E.			
		Origin time = 07 10 36.			
"	6	Up		micr	sec
			Mx	E 0.8	18
			Mx	Z 1.2	15
		Ki	iP	12 34 19.1	
		Sk	eP	12 33 52	
		Ud	iP	12 33 53.4	
		North Atlantic Ocean (h = N).			
"	6	Ki	iPn	13 02 05.6	
			iSn	13 03 04.6	
			iLgl	13 03 24.2	
		Sk	e	13 05 29	
		Um	iSn	13 03 43.8	
			iSg	13 04 18.2	
		Northwest Russia.			
		Origin time = 13 00 50.			
		Explosion?			
"	6	Ki	iPn	13 12 58.6	
			iSn	13 13 46.6	
			iLgl	13 14 01.0	
		Sk	e	13 16 49	
		Probably northwest Russia.			
		Origin time = 13 11 55.			
		Explosion?			

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

1970 May	6	Ki	iPn	13 14 21.8	
			iSn	13 15 09.1	
			iLgl	13 15 23.3	
		Probably northwest Russia.			
		Origin time = 13 13 20.			
		Explosion?			
"	6	Ki	iPn	13 49 37.3	
			iP^{x}	13 49 45.2	
			iSn	13 50 22.4	
			iSg	13 50 36.7	
		Sk	iLgl	13 53 03.7	
		Um	iSn	13 51 04.7	
			iSg	13 51 34.7	
		Northwest Russia-Finland			
		border region,			
		67.5°N, 30.1°E.			
		Origin time = 13 48 37.			
		Explosion?			
"	6	Up	iP	15 33 29.3	
			i	15 33 38.1	
				micr	sec
			P	Z' 0.2	0.9
			Mx	E 0.8	20
			Mx	N 1.5	24
			Mx	Z 1.4	21
		Ki	iP	15 33 31.1	
			i	15 33 39.5	
				micr	sec
			Mx	E 0.6	15
			Mx	N 1.2	19
			Mx	Z 1.1	17
		Sk	iP	15 33 46.9	
			i	15 33 55.5	
		Um	iP	15 33 26.4	
			i	15 33 35.0	
		Ud	iP	15 33 40.5	
			i	15 33 49.5	
		De	iP	15 33 38.7	C
			i	15 33 47.8	
		Nicobar Islands (h = N).			
		M = 5.3 (Up,Ki).			
		The second phase exhibits			
		much higher frequency than			
		the first one and is			
		probably P of another shock			
		in nearly the same place.			
"	6	Up	iP	19 59 31.3	
		Sk	i(P)	19 59 30.0	
"	6	Um	iP	21 07 34.7	
		De	iP	21 06 42.0	
		Turkey (h = 40 km).			

1970 May	7	Ki	iP	04 44 05.7	
		Um	eP	04 44 18	
			i	04 44 28.5	
		Volcano Islands (h = N).			
"	7	Up	ePP	10 30 28	
		Ecuador (h = 80 km).			
"	7	Um	iP	10 53 35.8	
"	7	Sk	iP	15 57 59.2	
			i	15 58 09.4	
		Mexico (h = N).			
"	7	Ki	iP	18 56 49.4	
		Sk	iP	18 56 43.5	
		Um	iP	18 56 58.6	
		Ud	iP	18 56 52.1	
		Mexico (h = 50 km).			
"	7	Up	iP	19 30 32.4	
			i	19 30 50.2	
		Ki	iP	19 30 09.6	
		Sk	eP	19 30 31	
		Um	iP	19 30 14.7	
		Halmahera (h = 110 km).			
"	7	Up	iP	20 42 25.5	C
		Sk	eP	20 43 08	
		Um	iP	20 43 04.9	
		Ud	iP	20 42 35.7	C
		Ionian Islands.			
"	8	Up	iP	01 49 16.8	
"	8	Up	iP	02 16 25.6	
		Um	iP	02 16 00.4	
		Ud	iP	02 16 31.6	C
		Kurile Islands (h = 60 km).			
"	8	Up	iP	02 54 11.3	
				micr	sec
			Mx	E 0.5	10
			Mx	N 0.7	12
			Mx	Z 0.7	12
		Ki	iP	02 55 17.7	
				micr	sec
			Mx	E 0.5	13
			Mx	N 0.3	10
		Sk	iP	02 54 54.3	
		Um	iP	02 54 42.6	
		Ud	iP	02 54 25.5	
		De	iP	02 53 52.6	
		Turkey (h = 30 km).			
		M = 4.5 (Up,Ki).			

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

1970 May	8	Um	i(P)	05 26 32.1
"	8	Up	iP	07 03 58.0
		Ki	iP	07 05 01.0
		Sk	iP	07 04 42.1
		Um	iP	07 04 27.4
		Ud	iP	07 04 10.3
		De	iP	07 03 34.7
		Turkey (h = 35 km).		
"	8	Um	iP	10 11 42.6
			i	10 11 47.5
		Turkey.		
"	8	Up	iP	10 15 22.8
		Um	iP	10 15 55.7
		Turkey.		
"	8	Up	iP	11 17 48.5
		Sk	iP	11 18 01.7
		Tibet (h = 35 km).		
"	8	Ki	iPg	11 22 21.2
			iSg	11 22 44.4
		Um	iSg	11 24 20.4
		Northwest coast of Norway, near Lofoten, 68.1°N, 15.4°E.		
		Origin time = 11 21 44.		
"	8	Ki	iPg	11 22 33.3
			iSg	11 22 56.2
		Sk	iSg	11 24 28.9
		Um	iSg	11 24 31.6
		Northwest coast of Norway, near Lofoten, 68.1°N, 15.4°E.		
		Origin time = 11 21 56.		
"	8	Ki	iPn	11 38 47.9
			iSn	11 39 47.1
			iLgl	11 40 05.7
		Sk	i	11 42 01.8
			iLgl	11 42 34.9
		Um	iSn	11 40 26.9
			iSg	11 41 01.8
		Ud	iLgl	11 43 29.9
		Northwest Russia, 67.5°N, 33.6°E.		
		Origin time = 11 37 29.		
		Explosion?		
"	8	Ki	iP	12 20 48.2
			i	12 21 02.1
		Sunda Strait (h = N).		
1970 May	8	Up	iSg	12 34 56.7
		Ki	eSg	12 37 19
		Sk	iSg	12 36 39.4
		Um	iSg	12 35 21.8
		Esthonia.		
		Origin time = 12 32 41.		
		Explosion?		
"	8	Up	i(PP)	13 32 46.1
		Ki	iPKP	13 31 44.8
		Um	i(PP)	13 32 25.6
		D'Entrecasteaux Islands (h = 5 km).		
		(PP) denotes early arrivals of PP.		
"	8	Sk	iP	14 06 21.5
		Um	iP	14 06 08.9
		Turkey (h = 25 km).		
"	8	Um	iP	15 53 50.8
		Ud	iP	15 54 21.4
		Kurile Islands (h = 100 km).		
"	8	Ki	iP	17 52 42.3
		Um	iP	17 52 42.4
		Virgin Islands (h = N).		
"	8	Up	iP	18 35 24.6
		Ki	eP	18 36 44
			i	18 36 52.0
		Sk	iP	18 36 06.1
		Um	iP	18 36 04.6 C
		Ud	iP	18 35 34.6 C
		Greece (h = 45 km).		
"	8	Up	iP	19 33 40.3
		Ki	iP	19 32 55.2 C
		Sk	iP	19 33 30.5
		Um	iP	19 33 15.6 C
		Ud	iP	19 33 46.6 C
		Kurile Islands (h = 15 km).		
"	8	Ki	iPn	20 55 12.6
			iSn	20 55 58.8
			iSg	20 56 15.6
		Sk	iSg	20 59 02.4
		Um	i	20 56 46.6
			iSg	20 57 33.5
		Northwest Russia, 68.6°N, 30.5°E.		
		Origin time = 20 54 11.		
		Explosion?		
"	8	Um	iP	23 22 28.6
		Celebes (h = 80 km).		

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

1970 May	9	Up	iP	00 16 26.2
		Sk	e(P)	00 16 21
		Um	iP	00 16 15.1
"	9	Ki	iP	00 30 07.3 C
		Um	iP	00 30 08.8
"	9	Up	iP	01 20 51.1
		Ki	iP	01 20 39.1
		Sk	iP	01 21 09.7
		Um	iP	01 20 44.2
		Ud	iP	01 21 04.2
		Burma.		
"	9	Up	iP	01 29 38.8
		Ki	iP	01 29 15.6
		Um	iP	01 29 24.5
		Ud	iP	01 29 43.6
		Luzon (h = N).		
"	9	Um	iP	02 29 28.1
"	9	Up	iP	05 18 02.5
"	9	Up	iPKP	06 03 24.2
		Ki	iPKP	06 03 39.6
		Sk	ePKP	06 03 28
		Um	iPKP	06 03 32.2
			i	06 03 53.5
		Ud	iPKP	06 03 22.5
		South Sandwich Islands		
		(h = 110 km).		
"	9	Ki	iPKP	08 00 03.5 C
			i	08 00 13.8
		South Sandwich Islands		
		(h = 60 km).		
"	9	Um	eP	10 09 31
		Ud	iP	10 09 43.5
		Pamir.		
"	9	Sk	iP	11 08 53.3
"	9	Up	iP	11 15 55.0
		Ki	iP	11 15 02.9
		Um	eP	11 15 29
		Ud	iP	11 15 55.2
		Aleutian Islands (h = 10 km).		
"	9	Um	iP	11 55 58.2
"	9	Sk	eSn	13 20 42
			iSg	13 21 38.7
		Um	iSg	13 20 24.3
		Probably Esthonia.		
		Explosion?		

1970 May	9	Ud	iP	13 26 23.2
"	9	Ki	eP	13 30 19
		Um	iP	13 30 22.6
		Ud	iP	13 30 40.9
			i	13 30 44.3
		New Guinea-Halmahera (h = N).		
"	9	Up	iPKP	18 19 06.6
			ipPKP	18 20 08.3
			iPKKP	18 29 45.8
		Ki	iP	18 14 49.9
			i(PP)	18 18 29.9
			i	18 18 55.3
			iPKKP	18 30 05.1
		Sk	iPKP	18 19 06.1
			i(PP)	18 19 35.3
			ipPKP	18 20 04.0
			iPKKP	18 29 47.6
		Um	iP	18 15 01.5
			iPKP	18 18 53.5
			i(PP)	18 19 00.6
			iPP	18 19 44.8
			iS	18 26 53
			isS	18 28 21
			iPKKP	18 29 57.1
			i	18 30 07.5
		Ud	eP	18 15 24
			iPKP	18 19 09.7
			ipPKP	18 20 08.4
			iPKKP	18 29 46.3
		De	iPKP	18 19 15.1
			iPKKP	18 29 38.0
		New Britain.		
		h = 250 km (Up,Sk,Ud).		
		(PP) denotes early arrivals		
		of PP.		
"	9	Up	iPKP	18 22 22.5
		Ki	iPKP	18 22 11.6
		Sk	iPKP	18 22 22.5
		Um	iPKP	18 22 16.6 C
		Ud	iPKP	18 22 25.7
		De	iPKP	18 22 30.9 C
		New Britain.		
		Origin time = 18 04 06.		
"	10	Up	iP	04 07 38.7
		Ki	eP	04 09 03
		Sk	iP	04 08 18.4
		Um	iP	04 08 19.1
		Ud	iP	04 07 45.2
			i	04 07 51.6
		De	iP	04 07 09.6
			i	04 07 15.9
		Ionian Sea (h = 50 km).		

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

1970 May	10	Up	i	04 13 40.8	
		Ki	e	04 11 39	
		Sk	i	04 13 39.8	
		Um	i	04 12 12.4	
		Probably Kola Peninsula.			
"	10	Up	i	04 14 40.7	
		Ki	iSg	04 12 39.4	
		Sk	iSg	04 14 59.9	
		Um	iSg	04 13 12.9	
		Ud	iLgl	04 15 33.1	
		Kola Peninsula.			
"	10	Um	iPKP	04 20 17.9	
		New Hebrides Islands			
		(h = 20 km).			
"	10	Ki	iP	04 43 30.7	
		Sk	iP	04 43 55.5	
		Um	iP	04 43 40.9	C
		Mariana Islands (h = N).			
"	10	Up	iP	05 57 42.8	
		Ki	iP	05 56 10.6	
		Sk	eP	05 56 55	
		Um	iP	05 56 58.8	
		Ud	iP	05 57 36.3	
		Greenland Sea (h = N).			
"	10	Um	i(P)	08 43 07.5	
"	10	Up	iSKP	11 00 34.0	
		Ud	iPKP	10 57 38.8	
			iSKP	11 00 35.4	
		De	iPKP	10 57 50.2	C
		Fiji Islands (h = 520 km).			
"	10	Up	iP	12 40 07.8	
				micr sec	
			P Z'	0.1 0.5	
		Ki	iP	12 40 16.7	C
		Sk	iP	12 40 33.9	
			iPP	12 42 17.9	
		Um	iP	12 40 06.2	C
			ipP	12 40 30.8	
		Ud	iP	12 40 24.3	C
			ipP	12 40 50.9	
		De	iP	12 40 21.4	
		Hindu Kush.			
		h = 120 km (Um,Ud).			
"	10	Ki	iSn	13 44 03.2	
			iLgl	13 44 28.2	
		Sk	eSg	13 46 47	
		Um	i	13 44 51.1	
		(cont.)			

1970 May	10	(cont.)			
		Um	iSg	13 45 19.2	
		Probably northwest Russia.			
		Explosion?			
"	10	Up	iP	14 57 10.7	
		Ud	iP	14 57 13.3	C
		De	iP	14 57 23.6	
"	10	Um	iP	16 13 24.8	
		Ud	iP	16 13 07.4	
"	10	Ki	iP	17 19 39.6	C
"	10	Up	iP	20 17 15.8	D
			iPP	20 21 02.7	
				micr sec	
			P Z'	0.2 0.7	
		Ki	iP	20 16 48.7	D
			iPP	20 20 19.6	
				micr sec	
			P Z'	0.4 1.2	
			PP Z'	0.1 1.5	
		Sk	iP	20 17 13.4	
			iPP	20 20 59.4	
		Um	iP	20 17 00.4	D
			iPP	20 20 36.1	
		Ud	iP	20 17 22.3	D
			iPP	20 21 13.9	
		De	iP	20 17 33.9	D
		Mariana Islands (h = 600 km).			
		m = 6.0 (Up,Ki).			
"	10	Um	iP	20 52 39.1	
"	10	Up	iP	21 58 04.0	
		Sk	eP	21 58 00	
		Um	iP	21 57 43.1	
		Ud	iP	21 58 11.4	
		Japan (h = 45 km).			
"	11	Up	iP	03 19 45.9	C
				micr sec	
			P Z'	0.1 0.5	
			Mx E	0.8 20	
			Mx N	1.1 22	
			Mx Z	0.9 15	
		Ki	iP	03 20 24.1	C
				micr sec	
			P Z'	0.1 0.7	
		Sk	iP	03 20 21.8	C
		Um	iP	03 20 00.0	
		Ud	iP	03 20 01.5	C
		De	iP	03 19 45.3	
		Iran (h = 20 km).			
		m = 5.7 (Up,Ki).			

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

1970				
May	11	Ki	eP	03 54 44
		Um	eP	03 54 52
		Ud	iP	03 54 39.8
		Mexico.		
"	11	Sk	iP	03 58 33.7
		Um	iP	03 58 28.0
		Ud	iP	03 58 42.1
"	11	Ki	eP	05 57 08
		Sk	eP	05 56 24
		Um	iP	05 56 25.0
		Yugoslavia.		
"	11	Ki	iP	06 13 12.9
		Sk	eP	06 13 49
		Um	iP	06 13 36.5
		Ud	iP	06 14 08.6
"	11	Ki	iP	09 21 21.5
			iPn	09 21 44.8
		Sk	iP	09 20 58.2
		Um	iP	09 20 44.1
			i	09 20 47.4
			iS	09 25 18
		Ud	iP	09 20 24.3
			i	09 20 31.5
		De	iP	09 19 54.4
		Turkey.		
		Origin time = 09 15 19.		
"	11	Um	iP	10 04 13.8
		Ud	iP	10 03 59.7
		De	iP	10 03 24.6
		Turkey.		
"	11	Up	iP	10 20 44.3
		Ki	iP	10 19 50.5 C
		Sk	iP	10 20 24.9
		Um	iP	10 20 16.5 C
		Ud	iP	10 20 46.1 C
		Aleutian Islands (h = 60 km).		
"	11	Sk	iP	13 37 34.0
		Um	iP	13 37 46.0
		Mexico (h = 60 km).		
"	11	Up	ePKP	15 24 36
			iSKP	15 27 33.5
		Ki	iSKP	15 27 08.2
				micr sec
			SKP Z'	0.1 1.2
		Sk	ePKP	15 24 34
			iSKP	15 27 25.4
		Um	iPKP	15 24 34.0
		(cont.)		

1970				
May	11	(cont.)		
		Um	iSKP	15 27 20.7
		Ud	ePKP	15 24 37
			iSKP	15 27 34.9
		De	iPKP	15 24 47.1
		Fiji Islands (h = 480 km).		
"	11	Up	eP	16 01 16
		Ki	iP	15 59 58.9
		Sk	iP	16 00 27.8
		Um	eP	16 00 31
		Ud	iP	16 01 11.2
		Arctic Ocean (h = N).		
"	11	Up	iP	16 33 21.0
		Ki	eP	16 34 34
				micr sec
			Mx E	0.3 12
		Um	iP	16 33 59.6
		Ud	iP	16 33 41.3
		De	iP	16 33 07.3
		Turkey (h = N).		
"	11	Up	iP	20 40 29.0
			i	20 40 36.2
		Sk	i(P)	20 40 35.9
		Um	iP	20 40 06.6
		Ud	iP	20 40 31.9
		Bonin Islands (h = 50 km).		
"	11	Sk	iP	21 29 57.2
		Ud	eP	21 29 25
"	12	Up	iPKP	01 21 07.1
		Ki	iPKP	01 20 56.8
			iSKP	01 23 38.2
		Sk	ePKP	01 21 05
		Um	iPKP	01 21 01.4
			i	01 21 05.9
			iSKP	01 23 49.0
		Ud	iPKP	01 21 09.6 C
			iSKP	01 24 00.9
		De	iPKP	01 21 20.4 C
		Tonga-Kermadec Islands (h = 550 km).		
"	12	Ki	eP	03 25 05
		Um	iP	03 25 10.5
		Molucca Passage (h = 70 km).		
"	12	Ki	iPKP	04 26 54.6
		Sk	ePKP	04 27 05
		Um	iPKP	04 27 00.2
		De	iPKP	04 27 16.7
		Santa Cruz Islands (h = 30 km).		

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

1970 May	12	Up	i(P)	06 01 45.9	
			i	06 02 30.2	
		Ki	e(P)	06 01 34	
		Um	iP	06 01 45.9	
			i	06 02 51.7	
"	12	Up	iP	07 55 38.5	
			i(Sg)	07 56 48.0	
"	12	Up	iP	13 56 22.2	
			ipP	13 56 35.8	
		Ki	iP	13 56 01.5	
		Sk	ipP	13 56 41.2	
		Um	iP	13 56 09.3	
			ipP	13 56 22.0	
		Ud	iP	13 56 32.7	
			ipP	13 56 46.0	
		Luzon.			
		h = 50 km (Up,Um,Ud).			
"	12	Um	iP	14 02 39.6	
"	12	Up	iPg	14 14 58.8	
			iSg	14 15 ~~29.9~~ 31.5	
				micr sec	
			Sg	Z' 0.1 0.5	
		Ki	iSg	14 18 13.8	
		Sk	iPg	14 14 58.3	
			iSg	14 15 32.5	
		Um	iSg	14 16 28.6	
		Ud	iPg	14 14 28.5	
			i	14 14 32.2	
			iSg	14 14 41.0	
		De	iSg	14 16 30.4	
		Sweden-Norway border region,			
		61.1°N, 12.7°E.			
		Origin time = 14 14 ~~05~~ 13.			
"	12	Ud	iP	14 38 13.7	
			i	14 38 32.2	
		De	iP	14 37 34.0	
"	12	De	i(P)	16 35 29.9	
"	12	Up	ipPKP	17 17 40.6	
		Ki	iPKP	17 17 06.0	
		Um	iPKP	17 17 12.6	
		Ud	iPKP	17 17 09.7	
			i	17 17 13.8	
		De	iPKP	17 17 24.3	
		Tonga Islands (h = 100 km).			
"	12	Um	iP	18 14 56.5	
			i	18 16 40.3	
"	12	Um	i(P)	20 58 02.6	

1970 May	12	Up	iP	22 16 07.5	D
		Sk	iP	22 16 39.0	
		Um	iP	22 16 11.5	
		Ud	iP	22 16 22.8	
		West Pakistan (h = 25 km).			
"	12	Sk	iP	22 48 45.6	
		Mexico (h = N).			
"	12	Up	iP	22 53 51.7	
		Ki	iP	22 55 05.4	
				micr sec	
			Mx E	1.0 16	
			Mx N	0.3 10	
			Mx Z	0.5 10	
		Sk	iP	22 54 33.3	
		Um	iP	22 54 30.6	
			iS	22 59 08	
		Ud	iP	22 53 59.7	
		De	iP	22 53 24.7	
			i	22 53 36.5	
		Greece (h = 35 km).			
"	13	Um	iP	00 07 13.6	
		Ud	iP	00 07 16.7	
			i	00 07 27.4	
		De	iP	00 07 09.6	
		Iran.			
"	13	Up	iP	00 52 21.2	
		Ud	iP	00 52 24.4	
"	13	Um	eP	02 34 34	
			i	02 36 03.0	
"	13	Ki	iP	10 09 23.2	C
			i	10 09 30.3	
		Um	i(P)	10 09 49.7	
"	13	Ki	i	12 14 37.2	
		Um	i	12 12 44.9	
			i(Sg)	12 13 42.4	
"	13	Sk	eP	15 50 46	
			i	15 50 50.3	
		Um	iP	15 49 46.0	
"	13	Up	iP	15 57 34.7	
		Ki	i(P)	15 57 50.2	
			i	15 59 21.1	
		Ud	iP	15 57 25.7	
"	13	Up	iPKP	16 03 08.8	
		Ki	ePKP	16 02 55	
		Sk	iPKP	16 03 02.7	C
		(cont.)			

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

1970 May	13	(cont.)			
		Um	iPKP	16 02 58.4	
			i	16 03 52.0	
		Ud	iPKP	16 03 09.7	C
		South of Kermadec Islands			
		(h = 60 km).			
"	13	Up	iP	16 52 50.3	
		Um	iP	16 53 29.6	
		Ud	i(P)	16 53 50.0	
"	13	Um	iP	17 22 06.1	
"	13	Um	i(Sg)	18 14 39.3	
		De	iPg	18 09 39.5	
			i	18 09 45.5	
			iSg	18 10 13.8	
"	13	Um	iP	18 16 04.6	
"	13	Ki	iP	19 32 10.3	
		Um	iP	19 32 05.7	
		Ud	iP	19 32 17.3	
"	13	Ki	iSg	19 49 48.0	
		Sk	iSg	19 49 56.3	
		Um	iSg	19 50 16.4	
		Nordland, Norway.			
		Origin time = 19 48 21.			
"	13	Ud	iP	20 38 13.3	
		Molucca Passage (h = 130 km).			
"	13	Ki	iP	21 25 24.0	
		Sk	e(P)	21 25 32	
"	14	Up	iP	01 33 31.1	
		Sk	iP	01 33 49.0	
"	14	Ki	iPKP	01 59 34.1	
		Um	iPKP	01 59 40.5	
		Ud	ePKP	01 59 48	
			i	01 59 59.7	
		De	iPKP	01 59 56.9	
		New Hebrides Islands			
		(h = 200 km).			
"	14	Ud	iP	02 53 10.7	
"	14	Up	iP	03 47 25.6	
			ipP	03 47 32.0	
		Ki	iP	03 46 43.8	
		Ud	iP	03 47 19.6	C
			ipP	03 47 25.6	
		Oregon.			
		h = 25 km (Up,Ud).			

1970 May	14	De	e		08 20 40	
			i(Sg)		08 20 53.9	
"	14	Up	ePP		08 51 56	
					micr	sec
			Mx	E	2.2	23
			Mx	N	4.5	24
		Ki	iPP		08 51 18.2	
					micr	sec
			Mx	E	6.1	18
			Mx	N	3.0	20
			Mx	Z	7.7	24
		Um	ePP		08 51 26	
			i		08 51 35.9	
		Ud	iPP		08 52 09.2	
		New Guinea (h = 30 km).				
		M = 6.2 (Up,Ki).				
"	14	De	e		09 13 36	
			i(Sg)		09 13 41.2	
"	14	Up	iP		09 25 41.4	
			iS		09 30 02	
					micr	sec
			P	Z'	0.8	1.0
			Mx	E	8.8	8
			Mx	N	21	10
			Mx	Z	9.3	12
		Ki	iP		09 26 18.2	C
			iSn		09 31 45.2	
			iLgl		09 35 25	
					micr	sec
			P	Z'	0.4	1.3
			Mx	E	8.7	12
			Mx	N	7.1	9
			Mx	Z	11	10
		Sk	iP		09 26 18.0	
			i		09 26 40.1	
			iSn		09 31 40.3	
		Um	iP		09 25 53.0	
			iSn		09 30 40.5	
		Ud	iP		09 25 58.7	C
			iSn		09 30 44.8	
		De	iP		09 25 45.8	C
		Caucasus (h = 15 km).				
		m = 6.3, M = 5.9 (Up,Ki).				
"	14	Ud	i(P)		10 27 00.1	
"	14	Um	iPg		10 40 42.5	
			iSg		10 41 46.0	
"	14	Ki	iPg		11 41 34.1	
			iSg		11 41 57.3	
					micr	sec
			Sg	Z'	0.2	0.5
		(cont.)				

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

1970
May 14 (cont.)

Sk	e	11 42 42	
	iSg	11 43 34.7	
Um	iSg	11 43 32.1	
De	eSg	11 47 20	

Northwest coast of Norway, near Lofoten, 68.2°N, 15.8°E.
Origin time = 11 40 58.

" 14	Up	iP	12 18 58.7	
	Ki	iP	12 18 36.7	C
	Um	iP	12 18 41.5	
	Ud	iP	12 19 13.1	
	De	iP	12 19 22.2	

Sinkiang (h = N).

" 14	Um	iPg	12 37 42.8	
		iSg	12 38 47.9	
		i	12 39 01.8	
	Ud	i	12 38 09.5	

Probably same origin as for May 14, 10 40.

" 14	Up	iP	13 51 19.1	
" 14	Up	iP	14 16 43.0	
	Um	iP	14 16 26.9	
" 14	Ki	iP	14 26 29.6	
		i	14 26 37.7	
	Um	iP	14 26 11.4	
" 14	Up	iP	15 15 38.2	
" 14	Up	iP	15 35 11.6	
	Ki	iP	15 34 43.3	
	Um	iP	15 34 55.3	
		ipP	15 35 04.6	
	Ud	iP	15 35 19.7	
	De	iP	15 35 29.1	

Mariana Islands.
h = 35 km (Um).

" 14	Um	iP	17 11 01.7	
	Ud	iP	17 11 04.7	

Caucasus.

" 14	Um	iP	17 24 42.8	
	Ud	iP	17 24 49.3	
" 14	Up	iP	18 17 44.2	C
		iS	18 22 01	
		i	18 22 09	
			micr sec	
		P	Z' 3.4 1.0	

(cont.)

1970
May 14 (cont.)

Up	Mx	E	220 12	
	Mx	N	250 12	
	Mx	Z	82 12	
Ki	iP		18 18 20.6	
	i		18 18 26.4	
	i		18 18 47.5	
	iS		18 23 12	
			micr sec	
	P	Z'	1.8 1.5	
	Mx	E	89 11	
	Mx	N	91 12	
	Mx	Z	120 13	
Sk	iP		18 18 20.4	C
	i		18 18 25.2	
	i		18 18 55.1	
Um	iP		18 17 54.9	
	i		18 17 58.0	
	i		18 18 03.9	
	iS		18 22 23	
Ud	iP		18 18 01.7	C
De	iP		18 17 48.0	C
	i		18 17 53.1	
	i		18 17 57.1	

Caucasus (h = 45 km).
m = 6.9, M = 6.9 (Up,Ki).
Multiple P.

" 14	Up	iP	18 39 51.6	
	Ki	iP	18 40 31.7	
		iPn	18 41 07.9	
		iSn	18 45 57.2	
	Sk	iPn	18 41 00.2	
	Um	iP	18 40 02.9	
	Ud	iP	18 40 08.7	

Caucasus (h = N).

" 14	Up	iP	18 52 22.9	
	Ki	iPn	18 53 34.3	
	Um	iP	18 52 33.5	
	Ud	iP	18 52 41.6	
	De	iP	18 52 28.3	
		i	18 52 34.7	

Caucasus (h = N).

" 14	Up	iP	18 54 26.2	
		i(Pn)	18 54 52.3	
	Ki	i	18 55 21.8	
		i(Pn)	18 55 46.0	
	Um	iP	18 54 37.3	
		iPn	18 55 00.9	
	Ud	iP	18 54 42.0	

Caucasus.
Origin time = 18 49 06.

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

1970							
May	14	Ki	iP		19 01 06.4		
		Nevada (h = 5 km)					
"	14	Ki	eP		19 21 30		
		Ud	iP		19 21 08.5		
		De	eP		19 20 57		
		Caucasus.					
		Origin time = 19 15 33.					
"	14	Ud	iP		19 25 11.0		
"	14	Up	iP		19 25 45.8		
			iPn		19 26 00.1		
		Ki	iP		19 26 22.6		
		Um	iP		19 25 56.3		
			i		19 25 59.6		
		Ud	iP		19 26 00.9		
			i		19 26 05.9		
		De	iP		19 25 48.0		
		Caucasus (h = N).					
"	14	Up	iP		19 36 57.8		
		Ki	eP		19 37 33		
			i		19 37 50.2		
			iSn		19 43 05.5		
		Um	iP		19 37 07.6		
			iPn		19 37 29.0		
		Ud	iP		19 37 14.6		
			i(Sn)		19 43 00.3		
		De	eP		19 37 09		
		Caucasus (h = N).					
"	14	Um	iP		20 31 00.3		
		Ud	iP		20 31 05.4		
		Caucasus (h = N).					
"	14	Up	iP		20 52 48.2		
		Ki	iP		20 53 23.4		
		Um	iP		20 52 59.3		
		Ud	iP		20 53 04.5		
		De	eP		20 52 53		
		Caucasus (h = N).					
"	14	Ki	iP		21 16 00.4		
		Ud	iP		21 15 36.4		
		Caucasus.					
"	14	Up	iP		21 21 08.9		
					micr	sec	
			Mx	E	0.6	12	
			Mx	N	0.8	10	
			Mx	Z	0.8	10	
		Ki	iP		21 21 45.5		
					micr	sec	
			Mx	E	0.6	10	
		(cont.)					

1970							
May	14	(cont.)					
		Ki	Mx	N	0.4	8	
			Mx	Z	0.6	9	
		Sk	iPn			21 22 06.5	
		Um	iP			21 21 20.7	
		Ud	iP			21 21 26.2	
		De	iP			21 21 13.5	
		Caucasus (h = N).					
		M = 4.6 (Up,Ki).					
"	14	Up	iP			21 25 36.9	
		Ki	iP			21 26 11.9	
		Caucasus.					
		Origin time = 21 20 17.					
"	14	Ki	iP			21 29 33.5	
		Um	iP			21 29 07.3	
		Caucasus.					
		Origin time = 21 23 37.					
"	14	Ki	iP			21 51 26.0	
		Um	iP			21 51 00.8	
		Ud	iP			21 51 04.9	
		Caucasus.					
		Origin time = 21 45 30.					
"	14	Ud	iP			23 15 36.8	
		De	iPn			23 15 38.2	
		Caucasus (h = N).					
"	15	Up	iP			00 05 01.2	
		Ki	iSn			00 11 09.3	
		Sk	e(Sn)			00 11 31	
		Um	iP			00 05 12.3	
			iSn			00 09 56.9	
			i			00 10 26.9	
		Ud	eP			00 05 19	
			i			00 05 29.1	
			eSn			00 10 09	
		De	eP			00 05 04	
		Caucasus (h = N).					
"	15	Ud	iP			00 51 31.2	
		De	eP			00 51 16	
		Caucasus.					
		Origin time = 00 45 53.					
"	15	Up	eP			02 02 08	
		Ki	iPn			02 03 02.8	
		Sk	iPn			02 03 13.3	
		Um	iP			02 02 18.4	
			iSn			02 07 29.3	
		Ud	iP			02 02 25.0	
		De	iP			02 02 13.7	
		Caucasus (h = N).					

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

1970 May	15	Up	iP	02 13 22.3
		Ki	iP	02 13 58.5
			iSn	02 19 31.1
		Sk	ePn	02 14 22
		Um	eP	02 13 33
			i	02 13 35.3
			iSn	02 18 43.4
		Ud	iP	02 13 39.1 C
			iSn	02 18 39.2
		De	iP	02 13 26.5
		Caucasus (h = N).		
"	15	Um	iP	02 32 43.5
"	15	Up	iPn	04 03 17.0
		Ki	ePn	04 04 03
		Um	iP	04 03 12.4
		Ud	eP	04 03 21
			iPn	04 03 36.6
		Caucasus.		
		Origin time = 03 57 43.		
		In these Caucasus earthquakes, Pn and also Sn have often larger amplitudes and sharper onsets than P on short-period Z, which may cause complications.		
"	15	Up	eP	04 17 55
		Ki	iP	04 18 27.8
		Sk	iP	04 18 27.5
		Um	iP	04 18 05.3
			iSn	04 23 15.2
		Ud	iP	04 18 13.2
			i	04 18 23.8
			iSn	04 23 23.1
		De	iP	04 17 59.6
		Caucasus (h = N).		
"	15	De	e(P)	05 41 45
"	15	Up	eP	06 24 36
		Ki	iP	06 25 10.9
		Sk	ePn	06 25 30
			i	06 26 07.6
		Um	iP	06 24 47.3
			iSn	06 29 34.6
		Ud	iP	06 24 52.0
			iSn	06 30 12.9
		De	iP	06 24 40.2
		Caucasus (h = N).		
"	15	Sk	iP	07 56 42.3
		Ud	iP	07 56 52.6
		Mexico (h = 60 km).		

1970 May	15	Ud	iSg	09 50 32.0
		De	eSg	09 49 45
"	15	Up	iP	09 57 31.3
				micr sec
			Mx E	1.1 22
			Mx N	0.8 16
			Mx Z	1.7 21
		Ki	iP	09 57 19.5
				micr sec
			Mx E	1.9 20
			Mx N	0.7 16
			Mx Z	1.9 20
		Sk	iP	09 57 12.6 C
		Um	iP	09 57 27.9
			iS	10 07 59
		Ud	iP	09 57 22.4
		Mexico (h = N).		
		M = 5.4 (Up,Ki).		
"	15	Up	iPKP	10 59 05.8
		Ki	iPKP	10 58 59.1
		Sk	ePKP	10 58 56
		Um	iPKP	10 58 59.2
			i	10 59 04.6
		Ud	iPKP	10 59 07.4
			i	10 59 13.5
		De	iPKP	10 59 17.8
			i	10 59 18.6
		Fiji Islands (h = 250 km).		
"	15	Up	iP	12 19 02.7
		Um	iP	12 19 27.8
		Ud	iP	12 19 32.7
			i	12 19 43.9
"	15	Um	i(Sg)	12 21 08.8
		Ud	iSg	12 21 50.0
		Probably Esthonia.		
		Explosion?		
"	15	Up	iSg	12 50 25.9
		Sk	iSg	12 52 46
		Um	iS^{x}	12 52 19.3
			iSg	12 52 32.0
		Ud	iSg	12 51 06.9
		De	iSg	12 50 57.1
		Baltic Sea, just north of Gotland,		
		58.0°N, 18.5°E.		
		Origin time = 12 49 20.		
		Probably underwater explosion.		
"	15	Ki	iPn	13 10 10.9
			iSn	13 11 09.9
			iSg	13 11 34.2
		(cont.)		

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

1970 May 15 (cont.)

Sk	eS^x	13 13 39	
	iSg	13 14 03.0	
Um	iS^x	13 11 59.2	
	iSg	13 12 18.9	

Northwest Russia,
67.2°N, 33.2°E.
Origin time = 13 08 54.
Explosion?

" 15

Up	iP	13 41 48.9	
Ki	iP	13 41 14.2	
Sk	eP	13 41 23	
Um	iP	13 41 33.8	C
Ud	iP	13 41 40.4	C

Nevada.
Underground explosion.

" 15

Um	iP	14 23 07.7	
Ud	iP	14 22 43.9	
De	iP	14 22 27.5	

South Atlantic Ocean (h = N).

" 15

Up	i(P)	14 57 04.0	
De	e(P)	14 57 13	

" 15

De	i(P)	16 03 32.7	

" 15

Up	iP		17 20 57.0	
			micr	sec
	P	Z'	0.5	0.8
	Mx	E	39	10
	Mx	N	160	15
	Mx	Z	47	10
Ki	iP		17 20 30.6	C
	iS		17 26 24	
			micr	sec
	P	Z'	0.7	1.0
	Mx	E	160	14
	Mx	N	240	16
	Mx	Z	190	15
Sk	iP		17 21 05.7	C
Um	iP		17 20 36.8	C
	iS		17 26 31	
Ud	iP		17 21 11.4	C
De	iP		17 21 21.7	C

USSR-Mongolia (h = N).
m = 6.3, M = 7.2 (Up,Ki).

" 15

Up	iP	17 34 46.1	
	i	17 34 50.4	
Um	iP	17 34 27.9	

USSR-Mongolia.
Origin time = 17 27 05.

" 15

Up	iP	17 35 46.6	

(cont.)

1970 May 15 (cont.)

Um	iP	17 35 28.6	

USSR-Mongolia.
Origin time = 17 28 06.

" 15

Up	iP	17 37 21.1	
Um	iP	17 37 00.7	

USSR-Mongolia.
Origin time = 17 29 39.

" 15

Up	iP	17 56 54.9	
Um	iP	17 56 35.5	
Ud	iP	17 57 09.8	

USSR-Mongolia.
Origin time = 17 49 14.

" 15

Up	iP	17 59 06.8	
Um	iP	17 58 47.6	
Ud	iP	17 59 21.5	

USSR-Mongolia.
Origin time = 17 51 26.

" 15

Um	iP	18 04 13.5	

" 15

Up	iP		18 06 10.7	
	i		18 06 26.2	
			micr	sec
	P	Z'	0.1	0.6
Ki	iP		18 05 44.5	C
			micr	sec
	P	Z'	0.1	1.0
Sk	iP		18 06 20.4	
Um	iP		18 05 51.5	
Ud	iP		18 06 25.7	C
De	iP		18 06 36.6	C
	i		18 06 39.5	

USSR-Mongolia (h = N).
m = 5.6 (Up,Ki).

" 15

Up	iP	18 43 46.7	
	i	18 43 49.2	
Ki	iP	18 43 21.7	
Um	iP	18 43 26.9	C
Ud	iP	18 44 01.3	
De	iP	18 44 12.3	
	i	18 44 14.8	

USSR-Mongolia (h = N).

" 15

Ki	iP	18 49 03.7	
Um	iP	18 48 59.1	
	i	18 49 01.7	

" 15

Um	iP	18 55 54.4	
Ud	iP	18 56 28.6	C
De	iP	18 56 39.5	

USSR-Mongolia.
Origin time = 18 48 33.

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

1970 May	15	Up	iP		18 57 49.7
		Ki	eP		18 57 25
			i		18 57 27.8
		Um	iP		18 57 30.0
		Ud	iP		18 58 03.9 C
		De	iP		18 58 14.9 C
		USSR-Mongolia (h = N).			
"	15	Up	iP		18 58 03.5
		Sk	iP		18 58 04.4
		Um	iP		18 58 26.8
"	15	Up	iPKP		19 52 36.9
		Sk	iPKP		19 52 30.6
		Um	iPKP		19 52 25.8 C
		Ud	iPKP		19 52 38.7
"	15	Up	iP		20 19 59.2 C
					micr sec
			P	Z'	0.1 0.5
			Mx	E	0.8 11
			Mx	N	1.1 18
			Mx	Z	0.9 12
		Ki	iP		20 19 32.5 C
					micr sec
			P	Z'	0.1 1.0
			Mx	E	0.9 10
			Mx	N	1.4 15
			Mx	Z	1.1 9
		Sk	iP		20 20 08.8 C
		Um	iP		20 19 39.3
			i		20 19 42.8
		Ud	iP		20 20 13.5
			i		20 20 17.0
		De	iP		20 20 24.8
			i		20 20 27.9
		USSR-Mongolia (h = N).			
		m = 5.7, M = 4.9 (Up,Ki).			
		Most of these shocks exhibit a double P, average interval about 3 sec.			
"	15	Ki	iP		20 21 46.7
		Sk	iP		20 22 01.3
		Um	iP		20 21 49.4
		De	iP		20 22 08.2
"	15	Um	iP		20 41 32.3 C
"	15	Up	iP		20 58 46.7
					micr sec
			P	Z'	0.2 1.0
			Mx	E	1.4 15
			Mx	N	2.2 14
			Mx	Z	3.3 15
		(cont.)			

1970 May	15	(cont.)			
		Ki	iP		20 57 58.8
			i		20 58 03.8
			iPP		20 59 36.0
					micr sec
			P	Z'	0.1 1.3
			PP	Z'	0.3 1.8
			Mx	E	4.6 18
			Mx	N	2.5 15
			Mx	Z	4.3 15
		Sk	iP		20 58 40.6
			i		20 58 46.3
			i		21 00 44.3
		Um	iP		20 58 19.1
			i		20 58 24.3
			iPP		21 00 08.8
		Ud	iP		20 58 56.2
		De	iP		20 59 15.9 C
		Lake Baikal (h = N).			
		m = 5.8, M = 5.4 (Up,Ki).			
"	15	Ki	iP		21 26 17.9
"	15	Ki	eP		21 27 37
			i		21 27 40.3
"	15	Um	iP		21 57 53.3
			iSn		22 02 35.8
		Ud	iP		21 58 00.3
			i		21 58 08.4
			iSn		22 03 10.8
		Caucasus (h = N).			
"	15	Ki	eP		22 56 11
		Um	iP		22 56 17.6 C
		Ud	iP		22 56 51.8
		De	iP		22 57 02.8
		USSR-Mongolia.			
		Origin time = 22 48 56.			
"	15	Up	iP		23 39 23.7
		Ki	iP		23 39 40.1
		Ud	iP		23 39 35.8 C
"	16	Sk	iP		01 14 16.7
		Um	iP		01 13 48.6
		Ud	iP		01 14 23.6
		USSR-Mongolia.			
		Origin time = 01 06 27.			
"	16	Um	iP		01 22 11.7
"	16	Ki	i(P)		02 05 49.2
		Sk	eP		02 05 32
			i		02 05 42.3
		Mexico (h = 90 km).			

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

1970 May	16	Up	iP	03 12 05.8
		Um	iP	03 11 46.7
		USSR-Mongolia.		
		Origin time = 03 04 25.		
"	16	Um	iP	03 19 00.7
"	16	Up	iP	03 29 33.2
			ipP	03 29 41.6
		Ki	iP	03 29 15.7
			ipP	03 29 25.2
		Um	iP	03 29 20.9
		Ud	iP	03 29 42.5
		Luzon.		
		h = 35 km (Up,Ki).		
"	16	Up	iP	04 46 17.4
		Ki	iP	04 45 53.7
		Um	iP	04 45 57.2
		Ud	iP	04 46 32.1
		De	iP	04 46 43.3
		USSR-Mongolia.		
		Origin time = 04 38 36.		
"	16	Up	iP	05 16 00.0
			i	05 16 07.9
			iPn	05 16 18.4
			i(Sn)	05 21 02.0
		Ki	iP	05 16 36.1
			iSn	05 22 22.0
		Um	iP	05 16 10.3
			iSn	05 21 02.4
		Ud	iP	05 16 16.9
			i(Sn)	05 21 48.7
		Caucasus (h = N).		
"	16	Ud	iP	05 47 45.5
"	16	Up	i(P)	06 00 52.0
		Um	e(P)	05 59 21
"	16	Um	iP	06 26 26.4
"	16	Um	iP	06 31 18.9
"	16	Up	iP	06 58 39.6
		Um	iP	06 58 20.3
		Ud	iP	06 58 54.5
		De	iP	06 59 05.4
		USSR-Mongolia.		
		Origin time = 06 50 58.		
"	16	Um	iP	07 31 12.4
"	16	Ki	i(P)	07 36 48.2
		Um	iP	07 36 35.8

1970 May	16	Sk	iP	08 12 47.8
		Um	iP	08 12 04.1
"	16	Up	iP	10 48 42.9
			iPn	10 48 51.1
				micr sec
			Mx N	0.4 9
		Ki	iP	10 49 18.6
		Um	iP	10 48 54.5
		Ud	iP	10 48 58.7
		De	iP	10 48 46.2
		Caucasus (h = N).		
"	16	Ud	eP	12 05 07
"	16	Um	iP	12 45 25.3
"	16	Up	iSg	13 27 27.8
		Ki	iPn	13 21 20.4
			iSn	13 22 46.7
			iSg	13 23 36.2
			iRg	13 24 05.3
		Sk	ePg	13 23 44
			iSg	13 26 35.8
		Um	iLgl	13 24 57.7
			iSg	13 25 18.5
		Ud	i	13 26 24.7
			iSg	13 27 46.4
		De	iSg	13 29 34.7
		Barent Sea,		
		71°N, 40°E.		
		Origin time = 13 19 25.		
"	16	Ki	i(Pg)	13 28 21.8
			iSg	13 28 58.8
		Sk	iSg	13 31 39.1
		Um	iSn	13 29 39.3
			iSg	13 30 10.5
		Northwest Russia,		
		68.1°N, 29.6°E.		
		Origin time = 13 27 06.		
		Explosion?		
"	16	Ud	i(P)	14 24 34.3
"	16	Um	iP	14 29 59.5
		Ud	eP	14 30 29
"	16	Um	iP	15 26 43.4
		Ud	iP	15 27 18.2
		De	iP	15 27 29.1
"	16	Um	iP	15 35 46.5
		Ud	iP	15 36 21.2
		De	iP	15 36 31.4
			i	15 36 36.1

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

1970 May	16	Ki	iPKP		16 55 51.1
		Um	iPKP		16 55 56.8
		Ud	iPKP		16 56 07.3
		De	iPKP		16 56 15.4
		New Hebrides Islands (h = 50 km).			
"	16	Up	iPP		18 05 35.1
		Ud	iPP		18 05 43.2
		Solomon Islands (h = 60 km).			
"	16	Um	iP		19 15 31.9
		Ud	iP		19 16 05.8
		De	iP		19 16 17.4
"	16	Um	iP		20 00 21.8
"	16	Up	iP		21 32 10.7
					micr sec
			Mx	E	0.5 11
			Mx	N	0.6 12
			Mx	Z	0.9 14
		Ki	iP		21 32 49.0
			iSn		21 38 43.2
					micr sec
			Mx	E	0.6 10
			Mx	N	0.3 10
			Mx	Z	0.5 9
		Sk	ePn		21 33 20
			i		21 35 22.6
		Um	iP		21 32 24.3
		Ud	iP		21 32 30.0
		De	iP		21 32 18.9
		Caucasus (h = N).			
		M = 4.5 (Up,Ki).			
"	16	Um	iP		22 33 04.2
		Ud	iP		22 32 50.1
"	17	Um	iP		00 50 46.8
		Ud	i(P)		00 51 28.2
"	17	Up	iP		01 04 30.2
		Ki	iP		01 04 03.7
					micr sec
			Mx	N	0.8 14
		Sk	iP		01 04 43.1
		Um	iP		01 04 11.0 C
		Ud	iP		01 04 45.1
		De	iP		01 04 56.1 C
		USSR-Mongolia (h = N).			
"	17	Up	iP		02 23 03.2
		Um	iP		02 22 43.6
		(cont.)			

1970 May	17	(cont.)			
		Ud	iP		02 23 17.7
		De	eP		02 23 29
		USSR-Mongolia.			
		Origin time = 02 15 22.			
"	17	Um	iPKP		03 53 28.1
		Ud	ePKP		03 53 28
		De	iPKP		03 53 37.6
		Fiji Islands (h = 610 km).			
"	17	Up	iP		04 21 52.3
		Ki	iP		04 21 32.5
		Um	iP		04 21 39.1
		Ud	iP		04 22 01.2
		Luzon (h = 45 km).			
"	17	Up	iP		05 07 35.0
			i		05 07 37.0
					micr sec
			Mx	E	0.4 9
			Mx	N	0.7 14
			Mx	Z	0.7 12
		Ki	iP		05 08 11.7
			iPn		05 08 35.3
			eSn		05 13 39
					micr sec
			Mx	E	0.4 10
			Mx	N	0.4 12
			Mx	Z	0.5 10
		Sk	e(P)		05 08 22
		Um	iP		05 07 45.9
			i		05 07 47.9
			iSn		05 12 30.7
		Ud	iP		05 07 52.6
			iSn		05 12 46.2
		De	iP		05 07 38.9
			iLg2		05 15 57.4
		Caucasus (h = N).			
		M = 4.4 (Up,Ki).			
"	17	Ki	iPn		06 35 50.8
			iSn		06 36 49.4
			iSg		06 37 14.3
		Sk	eSg		06 39 42
		Um	iSg		06 38 03.9
		Ud	iLg1		06 40 33.0
		Northwest Russia, 67.4°N, 33.3°E.			
		Origin time = 06 34 34.			
		Explosion?			
"	17	Up	iP		06 54 23.1
			i		06 54 24.2
		(cont.)			

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

1970
May 17 (cont.)

Up	iSn		06 58 45.6		
			micr	sec	
	P	Z'	0.3	1.0	
	Mx	E	2.9	12	
	Mx	N	6.1	14	
	Mx	Z	4.4	14	
Ki	iP		06 54 59.9		
	i		06 55 01.3		
	iSn		07 00 23.3		
			micr	sec	
	P	Z'	0.1	1.0	
	Mx	E	2.0	9	
	Mx	N	2.5	10	
	Mx	Z	2.5	10	
Sk	iP		06 55 00.0		
	i		06 55 05.7		
	iPn		06 55 22.8		
	iSn		07 00 25.0		
Um	iP		06 54 34.6		
	i		06 54 38.4		
	iS		06 59 01		
Ud	iP		06 54 40.0		
	i		06 54 44.5		
	iSn		06 59 37.2		
De	iP		06 54 27.7		

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

" 17	Up	iLgl	07 12 19.1		
	Ki	iPn	07 08 12.2		
		iSn	07 09 10.7		
		iSg	07 09 34.9		
	Sk	i(Lgl)	07 11 59.4		
		iSg	07 12 06.6		
	Um	iSg	07 10 26.3		

Northwest Russia,
67.5°N, 33.3°E.
Origin time = 07 06 55.
Explosion?

" 17	Ki	iP	07 48 58.2	
	Sk	iP	07 49 20.8	
	Um	iP	07 49 05.6	
	Ud	iP	07 49 23.3	C

Mindanao (h = 80 km).

" 17	Um	iP	08 51 40.6	
	Ud	eP	08 51 45	
" 17	Um	iP	09 18 45.5	
	Ud	iP	09 19 02.3	
" 17	Ki	iPKP	09 31 31.2	
	Um	iPKP	09 31 28.1	
		iPKKP	09 41 43.0	

(cont.)

1970
May 17 (cont.)

Ud	iPKP		09 31 20.1	
	iPKKP		09 42 02.6	
	i		09 42 07.4	

Argentina (h = 15 km).

" 17	Sk	eP	10 41 42	

Mexico (h = 25 km).

" 17	Um	iP	11 56 01.7	
" 17	Up	iP	12 25 26.3	
	Um	iP	12 25 02.2	
	Ud	iP	12 25 36.1	
	De	iP	12 25 47.5	
" 17	Up	iP	15 03 27.9	
	Ki	iP	15 02 50.5	C
	Sk	eP	15 03 21	
	Um	iP	15 03 06.9	C
		i	15 03 13.2	
	Ud	iP	15 03 35.7	C
	De	iP	15 03 49.8	

Japan (h = 70 km).

" 17	Up	iP	16 47 01.6	
" 17	Um	eP	18 35 28	
	Ud	eP	18 35 16	
" 17	Sk	iP	19 22 00.7	
	Um	iP	19 22 14.7	

Mexico (h = N).

" 17	Um	iP	22 39 38.6	
	Ud	iP	22 39 42.4	
" 17	Up	iP	23 06 02.7	C
			micr	sec
	P	Z'	0.1	0.5
	Ki	iP	23 05 08.7	C
	Sk	iP	23 05 43.7	C
	Um	iP	23 05 34.5	C
	Ud	iP	23 06 04.7	C
	De	iP	23 06 26.7	

Aleutian Islands (h = 40 km).

" 17	Um	iP	23 26 04.3	
	Ud	iP	23 26 38.7	
	De	eP	23 26 50	
" 18	Um	iP	00 33 09.7	
" 18	Up	iP	01 07 10.0	
	Ud	iP	01 07 12.5	C

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

1970 May	18	Up	iP		01 35 48.1 C		
					micr	sec	
			Mx	E	0.7	12	
			Mx	N	0.7	14	
			Mx	Z	1.3	20	
		Ki	iP		01 35 56.1		
					micr	sec	
			Mx	E	0.8	13	
			Mx	N	0.5	13	
			Mx	Z	0.8	14	
		Sk	iP		01 35 26.3 C		
		Um	iP		01 35 59.3		
			i		01 36 06.3		
		Ud	iP		01 35 29.4 C		
		De	iP		01 35 34.4 C		
		North Atlantic Ocean (h = N).					
		M = 4.6 (Up,Ki).					
"	18	Up	eP		03 17 45		
		Um	eP		03 17 57		
			i		03 18 00.1		
		Ud	eP		03 18 03		
		Caucasus (h = N).					
"	18	Up	iPKP		03 26 11.9		
		Sk	ipPKP		03 26 27.6		
		Um	iPKP		03 26 03.7		
			ipPKP		03 26 22.8		
		Ud	iPKP		03 26 15.1		
		Santa Cruz Islands.					
		h = 70 km (Um).					
"	18	Up	eP		05 42 05		
		Ki	i(Pn)		05 43 17.5		
		Um	iP		05 42 17.0		
			i(Pn)		05 42 48.4		
		Ud	iP		05 42 20.3		
			i		05 42 24.8		
		Caucasus (h = N).					
"	18	Up	iP		07 02 58.9		
		Ki	iP		07 03 35.9		
		Um	iP		07 03 12.3		
		Ud	iP		07 03 13.8		
		De	iP		07 02 59.5		
		Iran (h = 40 km).					
"	18	Up	iP		07 39 58.1 C		
		Ki	iP		07 39 31.5 C		
					micr	sec	
			Mx	E	0.4	9	
			Mx	N	0.5	15	
			Mx	Z	0.6	9	
		Sk	iP		07 40 08.1		
		Um	iP		07 39 38.8		
		(cont.)					

1970 May	18	(cont.)		
		Um	i	07 39 41.8
		Ud	iP	07 40 12.8 C
		De	iP	07 40 23.8 C
			i	07 40 27.0
		USSR-Mongolia (h = N).		
"	18	Up	iP	08 43 04.6
		Ki	iP	08 44 02.2
		Ud	iP	08 43 15.4
		De	iP	08 42 49.2
"	18	Up	iP	09 03 22.2
		Um	iP	09 03 03.1
		Ud	iP	09 03 37.0
		De	iP	09 03 48.3
		USSR-Mongolia.		
		Origin time = 08 55 41.		
"	18	Um	i(P)	10 47 45.8
		Ud	i(P)	10 48 24.5
"	18	Up	iP	11 54 32.7
		Sk	iP	11 54 24.0
		Um	iP	11 54 16.2
		Ud	iP	11 54 35.6 C
		De	iP	11 54 49.2
		Kamchatka (h = 130 km).		
"	18	Up	iSn	12 37 05.2
			iLgl	12 37 19.7
			iSg	12 37 22.3
		Ki	iLgl	12 39 27.2
			iSg	12 39 56.3
		Sk	e(Sg)	12 39 07
		Um	iSg	12 37 52.5
		Ud	iSn	12 37 53.5
			iLgl	12 38 24.6
		De	iLgl	12 38 48.1
		Esthonia,		
		59.7°N, 25.6°E.		
		Origin time = 12 35 12.		
		Explosion?		
"	18	Ud	i(P)	14 00 57.1
			i	14 01 09.2
"	18	Um	iP	14 38 23.1
		Ud	iP	14 38 56.5
		USSR-Mongolia.		
		Origin time = 14 31 01.		
"	18	Up	iP1	14 45 15.0
			iP2	14 45 20.5
		Ki	iP1	14 44 27.8
		(cont.)		

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

1970 May	18	(cont.)		
		Sk	iP2	14 45 14.6 C
			i	14 47 16.5
		Um	iP1	14 44 47.4
			iP2	14 44 52.7
		Ud	iP1	14 45 24.9
		De	iP2	14 45 49.6
		Lake Baikal (h = N).		
		Double P (P1 and P2).		
"	18	Up	iP	15 17 06.4
		Sk	iP	15 17 13.6
		Um	iP	15 16 42.9
		Ud	iP	15 17 13.7
"	18	Up	iP	15 19 58.0
		Ud	iP	15 19 51.0
		California (h = 10 km).		
"	18	Up	iP	15 25 01.3
		Ud	iP	15 24 49.6
"	18	Um	iP	15 36 22.2
"	18	Up	iP	16 49 57.2
			i	16 50 01.3
		Ud	iP	16 49 45.8
"	18	Um	iP	19 21 40.9
		Ud	iP	19 21 55.8
			ipP	19 22 08.3
		Aleutian Islands.		
		h = 45 km (Ud).		
"	18	Up	eP	20 14 11
		Ki	iP	20 13 45.3
		Um	iP	20 13 52.3
		Ud	iP	20 14 26.5
		De	iP	20 14 41.2
		USSR-Mongolia.		
		Origin time = 20 06 30.		
"	18	Up	iP	20 50 28.3
		Um	iP	20 50 12.8
			i	20 50 25.9
		South of Japan (h = N).		
"	19	Um	iP	01 40 10.0
			i	01 40 25.1
		Nicobar Islands (h = 70 km).		
"	19	Up	iP	02 12 11.7
		Ki	iP	02 10 38.1
				micr sec
			P	Z' 0.1 1.0
		(cont.)		

1970 May	19	(cont.)		
		Sk	iP	02 11 26.1 C
		Um	iP	02 11 31.3
			i	02 11 39.8
		Ud	iP	02 12 07.2 C
			i	02 12 17.0
		De	iP	02 12 50.6 C
		Greenland Sea (h = N).		
"	19	Up	iP	08 19 01.8
		Ki	iP	08 18 34.6
		Um	iP	08 18 42.4
			i	08 18 45.9
		Ud	iP	08 19 17.3 C
		De	iP	08 19 30.9
		USSR-Mongolia.		
		Origin time = 08 11 20.		
"	19	Ki	iP	10 35 06.7
		Sk	iP	10 34 52.4
		Um	iP	10 35 08.0
		Ud	iP	10 34 51.8
		De	iP	10 34 52.1
		Venezuela (h = 15 km).		
"	19	Up	iP	16 19 21.7
		Ud	iP	16 19 12.6
"	19	Up	iPKP	20 37 54.0
			i	20 37 59.4
		Ki	iPKP	20 37 41.9
		Sk	iPKP	20 37 48.2
		Um	iPKP	20 37 43.0
		Ud	iPKP	20 37 55.7
		Kermadec Islands (h = 40 km).		
"	19	Up	iP	22 33 18.3
"	19	Ki	iP	23 38 02.0
		Um	eP	23 38 10
		Ud	iP	23 38 26.4 C
		Luzon.		
"	19	Ud	iP	23 47 08.3 C
"	20	Up	iPKP	00 38 38.0
			i	00 38 44.2
		Sk	iPKP	00 38 35.4
		Um	iPKP	00 38 27.0
		Ud	iPKP	00 38 39.5
			i	00 38 39.6
		Kermadec Islands (h = 400 km).		
"	20	Um	iP	02 37 20.8
			i	02 37 25.7

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

1970					
May	20	Ki	iPn	11 17 44.5	
			iSn	11 18 43.6	
			iLgl	11 19 02.6	
		Um	iSg	11 19 56.7	
		Probably northwest Russia.			
		Origin time = 11 16 29.			
		Explosion?			
"	20	Ki	iP	11 48 14.8	
		Ud	iP	11 47 05.7	
"	20	Ud	iP	14 16 07.3	
"	20	Up	i(P)	16 04 42.3	
		De	iP	16 04 49.1	
			i	16 04 52.1	
"	20	Um	iP	16 16 08.5	
		De	i(P)	16 16 11.2	
			i	16 16 12.6	
"	20	Um	iP	16 59 45.9	
		Indian Ocean (h = N).			
"	20	Ud	iP	17 55 05.4	
"	20	Ki	iP	19 50 10.8	C
		Um	iP	19 50 32.4	
		Ud	iP	19 51 07.3	
			i	19 51 19.8	
"	20	Up	iPKP	20 22 24.6	
			ipPKP	20 22 48.3	
			iPKKP	20 32 30.6	
				micr sec	
			PKP	Z' 0.1 0.8	
			Mx	E 2.0 18	
			Mx	N 2.6 21	
			Mx	Z 4.1 21	
		Ki	iPKP	20 22 40.0	
			i	20 22 41.1	
			iPKS	20 25 51.4	
			iPKKS	20 35 29.4	
				micr sec	
			PKP	Z' 0.9 1.4	
			PKS	Z' 0.4 1.5	
			Mx	E 3.1 18	
			Mx	N 2.4 19	
			Mx	Z 4.1 18	
		Sk	iPKP	20 22 30.3	
			i(PP)	20 24 32.7	
			iPKKP	20 32 20.7	
		Um	iPKP	20 22 33.5	
			i(PP)	20 24 53.2	
			iPKS	20 25 58.6	
		(cont.)			

1970					
May	20	(cont.)			
		Um	iPKKS	20 35 36.2	
		Ud	iPKP	20 22 23.1	C
			i	20 23 47.3	
			iPP	20 24 12.3	
			iPKKP	20 32 32.0	
		De	iPKP	20 22 19.9	
			iPKKP	20 32 43.0	
		South Sandwich Islands.			
		h = 80 km (Up).			
		M = 6.1 (Up,Ki).			
"	20	Up	iP	20 41 51.0	C
			i	20 41 52.0	
			iPcP	20 42 16.4	
				micr sec	
			P	Z' 0.2 0.6	
		Ki	iP	20 40 58.0	C
			iPcP	20 41 43.4	
				micr sec	
			P	Z' 0.1 0.7	
		Sk	iP	20 41 30.5	
			iPcP	20 42 03.2	
		Um	iP	20 41 23.9	C
			iPcP	20 41 58.9	
		Ud	iP	20 41 51.6	C
			iPcP	20 42 17.3	
		De	iP	20 42 13.7	C
			iPcP	20 42 32.1	
		Aleutian Islands (h = 50 km).			
		m = 6.3 (Up,Ki).			
"	20	Um	i(P)	21 01 22.3	
"	20	Up	iP	21 18 38.2	
		Sk	eP	21 18 59	
"	20	Ud	iP	22 07 09.8	
"	20	Up	iP	22 14 55.6	C
		Ki	iP	22 14 56.7	C
				micr sec	
			P	Z' 0.1 1.0	
		Sk	iP	22 14 42.6	C
		Um	iP	22 14 59.0	C
		Ud	iP	22 14 45.8	
		De	iP	22 14 48.7	
		Colombia (h = N).			
"	20	Um	iP	23 58 18.9	
		Kodiak Island (h = N).			
"	21	Up	iPKP	00 54 58.8	
			iSKP	00 57 52.5	
		Ki	iPKP	00 54 53.3	
		(cont.)			

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

1970 May 21 (cont.)

Ki	iSKP	00 57 28.5	
Um	iPKP	00 54 53.1	
	i	00 55 00.8	
	iSKP	00 57 40.5	
Ud	iPKP	00 55 03.0	
	iSKP	00 57 54.2	
De	iPKP	00 55 12.3	C
	i	00 55 24.9	
	iSKP	00 58 03.3	

Fiji Islands (h = 550 km).

" 21	Um	iP	02 03 05.9	
		i	02 03 10.0	
" 21	Up	iP	04 48 06.6	
	Ud	iP	04 48 20.7	
" 21	Up	iP	05 04 10.3	
	Um	iP	05 03 53.7	
	Ud	iP	05 04 23.3	C
" 21	Um	iP	08 20 19.7	
		i	08 20 28.9	
	Ud	iP	08 20 58.4	

Japan (h = 25 km).

" 21	Ki	iP	09 57 40.8		
			micr	sec	
		P	Z' 0.1	1.0	
	Ud	iP	09 57 52.1		

Java (h = 90 km).

" 21	Up	iP	10 19 13.9	
	Ki	iP	10 18 14.8	
	Um	iP	10 18 37.2	
	Ud	iP	10 19 08.5	
		i	10 19 20.0	
" 21	Ki	eP	10 20 41	
	Um	iP	10 20 12.7	
	Ud	iP	10 20 13.5	C

Caucasus.

" 21	Up	iSg	12 48 42.3	
	Sk	iSg	12 50 26.3	
	Um	iSg	12 49 06.5	
	Ud	iLgl	12 49 30.9	
		iSg	12 49 50.7	

Esthonia.
Origin time = 12 46 28.
Explosion?

" 21	Up	iP	14 26 48.9	
	Ki	iP	14 26 14.8	
	Um	iP	14 26 34.2	

(cont.)

1970 May 21 (cont.)

	Ud	iP	14 26 40.9	C

Nevada.
Underground explosion.

" 21	Ki	iPKP	15 51 55.4	

New Hebrides Islands (h = 20 km

" 21	Sk	iP	15 58 53.5	
	Um	iP	15 59 08.5	

Mexico (h = 60 km).

" 21	Sk	iP	20 15 03.4	C
" 21	Up	iP	20 28 59.1	

Uzbek SSR (h = N).

" 22	Up	iP	01 58 12.2	
		i	01 58 15.1	
	Sk	i(P)	01 57 17.0	
" 22	Up	iP	07 12 12.8	
	Sk	iP	07 12 56.8	
	Um	e(P)	07 13 01	
	Ud	iP	07 12 22.5	
	De	iP	07 11 42.5	
		i	07 11 50.4	

Greece.

" 22	Ki	iPn	10 45 41.8	
		iSn	10 46 39.9	
		iSg	10 47 04.2	
	Sk	iLgl	10 49 29.0	
	Um	iSn	10 47 19.7	
		iSg	10 47 57.6	

Northwest Russia,
67.6°N, 33.2°E.
Origin time = 10 44 27.
Explosion?

" 22	Um	i(P)	12 07 33.3	
" 22	Ki	iPn	13 01 53.1	
		iSn	13 02 39.5	
		iSg	13 02 56.8	
	Sk	iLgl	13 05 43.1	
	Um	iSg	13 04 29.2	
	Ud	i(Lgl)	13 07 02.6	

Northwest Russia,
69.2°N, 30.6°E.
Origin time = 13 00 50.
Explosion?

" 22	De	i(P)	13 07 22.9	
		i	13 07 33.7	
" 22	Up	iP	20 37 42.6	

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

1970					
May	22	Sk	iP	20 48 12.1	
"	22	Ud	iP	23 50 32.0	
		De	iP	23 50 34.6	C
			i	23 50 44.5	
"	23	Sk	i(P)	02 33 18.4	
		Um	i(P)	02 33 00.4	
"	23	Up	iP	04 13 38.9	
		Ud	iP	04 13 46.4	
"	23	Ki	e(Sg)	08 02 25	
		Sk	e(Sg)	08 02 56	
		Um	i(Sg)	08 01 06.6	
"	23	Up	iP	08 05 08.7	
		Ud	iP	08 05 11.1	
"	23	Up	i	12 32 30.4	
			iSg	12 32 45.8	
		Ki	iSg	12 35 18.3	
		Sk	iLgl	12 34 18.9	
		Um	iSg	12 33 16.6	
		Ud	iSn	12 33 18.7	
			iLgl	12 33 48.4	
		De	iLgl	12 34 13.2	
		Esthonia,			
		59.7°N, 25.6°E.			
		Origin time = 12 30 35.			
		Explosion?			
"	23	Up	iP	14 59 18.7	
		Ki	iP	14 58 51.8	
				micr	sec
			Mx N	0.7	16
		Sk	iP	14 59 27.5	
		Um	iP	14 58 56.6	
			i	14 58 58.6	
		Ud	iP	14 59 32.7	
		De	iP	14 59 44.2	
		USSR-Mongolia (h = 45 km).			
"	23	Um	iP	16 13 06.1	
"	23	Ki	iP	16 29 05.8	
		Um	iP	16 29 13.7	
		Ud	iP	16 29 08.5	
		Mexico (h = 110 km).			
"	23	Up	iP	21 33 24.4	
"	23	Up	iP	23 20 56.4	
			ipP	23 21 07.7	
		(cont.)			

1970						
May	23	(cont.)				
		Up			micr	sec
			P	Z'	0.1	0.7
			Mx	E	0.8	17
			Mx	N	0.8	16
			Mx	Z	1.1	18
		Ki	iP		23 20 11.0	
			ipP		23 20 22.4	
					micr	sec
			P	Z'	0.1	1.0
			Mx	E	2.0	19
			Mx	N	1.2	19
			Mx	Z	2.0	18
		Sk	eP		23 20 45.8	
			i		23 20 47.9	
		Um	iP		23 20 31.6	
			ipP		23 20 42.7	
		Ud	iP		23 21 02.3	C
			iPcP		23 21 27.9	
		De	iP		23 21 20.9	
		Kurile Islands.				
		h = 40 km (Up,Ki,Um).				
		m = 6.1, M = 5.3 (Up,Ki).				
"	23	Sk	iP		23 23 23.9	
		Um	iP		23 23 39.1	
		Mexico (h = 55 km).				
"	24	Up	iPg		00 22 38.0	
			iSg		00 23 04.9	
					micr	sec
			Sg	Z'	0.1	0.5
		Ki	eLgl		00 26 32	
		Sk	iLgl		00 23 58.2	
		Um	iLgl		00 24 40.3	
		Ud	iPg		00 22 07.1	C
			iSg		00 22 11.2	
		De	eSg		00 23 45	
		Värmland, Sweden,				
		59.8°N, 13.5°E.				
		Origin time = 00 21 59.				
"	24	Up	iP		00 26 08.9	
		Ud	iP		00 26 14.6	
"	24	Up	iP		00 52 22.0	C
		Ki	iP		00 51 36.9	
		Um	iP		00 51 58.1	
			i		00 52 19.2	
		Ud	iP		00 52 27.9	C
			i		00 52 41.3	
		Kurile Islands (h = N).				
"	24	Up	iPKS		02 40 49.3	
		(cont.)				

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

1970 May	24	(cont.)		
		Um	iPKP	02 37 37.1
		Ud	iPKS	02 40 55.5
		New Hebrides Islands (h = 180 km).		
"	24	Up	iP	09 29 17.3
		Ki	iP	09 28 33.3
		Ud	iP	09 29 24.3 C
		Kurile Islands (h = 45 km).		
"	24	Sk	i(P)	11 09 02.3
		Um	i(P)	11 08 58.3
		Ud	iP	11 08 23.3
			i	11 08 44.5
		De	iP	11 07 51.4
		Dodecanese Islands (h = 15 km).		
"	24	Ki	iP	16 42 46.5
		Ud	iP	16 43 44.6
		Kamchatka (h = N).		
"	24	Um	iP	16 43 49.3 C
"	24	Um	iP	19 53 58.1
		Ud	iP	19 53 42.6
"	24	Up	iP	20 23 58.4
"	24	Up	eP	22 01 25
		Um	iP	22 01 23.8
		Nicobar Islands (h = N).		
"	24	Um	iP	23 57 30.3
		Banda Sea (h = 45 km).		
"	25	Um	iP	04 15 08.7
			i	04 15 16.7
		Ud	eP	04 15 11
			i	04 15 15.7
"	25	Ud	iP	07 13 30.9
			i	07 13 37.9
"	25	De	iPg	13 46 34.8
			i	13 46 49.0
			iSg	13 46 51.6
			iRg	13 46 58.6
		Origin time = 13 46 09. Probably explosion.		
"	25	Ki	iP	15 12 07.2
		Ud	iP	15 12 07.0

1970 May	25	Ki	iP	16 26 16.0
		Um	iP	16 26 34.8
		Japan (h = 50 km).		
"	25	Up	i(PKP)	17 07 10.0
			iPKP	17 07 13.3 C
			i	17 07 16.8
				micr sec
			PKP Z'	0.4 0.7
		Ki	iPKP	17 06 54.8
		Sk	iPKP	17 07 05.9 C
		Um	iPKP	17 07 00.6
			i	17 07 02.6
			i	17 07 04.6
		Ud	i(PKP)	17 07 11.1 C
			iPKP	17 07 15.0 C
			i	17 07 17.7
		De	i(PKP)	17 07 17.3
			iPKP	17 07 24.0 C
			i	17 07 27.4
		Kermadec Islands (h = 60 km). (PKP) is a small-amplitude precursor.		
"	25	De	iP	17 41 01.1
"	25	Ud	iP	18 18 31.5
		De	iP	18 18 03.9
			i	18 18 06.7
		Dodecanese Islands (h = 30 km).		
"	25	Ki	iP	18 21 11.8
		Sk	iP	18 20 43.7
"	25	Up	iP	21 05 20.9
			i	21 05 32.5
		Ki	iP	21 05 03.7
		Ud	iP	21 05 21.8
			i	21 05 33.8
"	25	Ki	iP	21 28 08.7
		Um	eP	21 27 28
"	25	Up	iP	22 07 34.1
		Ki	iP	22 08 08.5
		Um	iP	22 07 45.1
		Ud	iP	22 07 51.5 C
		De	eP	22 07 39
		Caucasus. Origin time = 22 02 14.		
"	25	Up	iPKP	23 04 21.9
			ipPKP	23 04 40.0
			iPKKP	23 14 20.2
		(cont.)		

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

1970
May 25 (cont.)

Ki	iPKP		23 04 36.9	
	ipPKP		23 04 52.0	
			micr sec	
	PKP	Z'	0.2 1.5	
Sk	iPKP		23 04 26.7	
	iPKKP		23 14 10.7	
Um	iPKP		23 04 29.8	C
	iPKKP		23 14 05.1	
Ud	iPKP		23 04 20.0	C
	iPKKP		23 14 22.4	
De	iPKKP		23 14 35.1	

South Sandwich Islands.
h = 60 km (Up,Ki).

" 26

Up	i		01 01 06.0	
	iLgl		01 03 11.0	
Ki	ePn		00 56 58	
	i		00 57 09.2	
	iLgl		01 05 08.2	
	iSg		01 06 04.0	
Sk	eLgl		01 05 16	
Um	iP		00 55 59.8	
	eSn		01 01 08	
	iLgl		01 04 08.6	
Ud	iP		00 56 03.5	
	iSn		01 01 13.2	
	i		01 01 45.1	
	iLgl		01 04 18.0	
De	iPn		00 56 06.1	
	i(Lgl)		01 03 03.1	

Caucasus.
Origin time = 00 50 28.

" 26

Up	iP		02 59 29.8	
Sk	iP		02 59 16.8	
Um	iP		02 59 05.0	
Ud	iP		02 59 36.5	C

" 26

Up	iP		03 10 46.1	
Ki	iP		03 11 44.8	
Ud	iP		03 11 02.0	C

" 26

Up	i(P)		05 56 53.2	
Um	iP		05 57 15.3	
Ud	iP		05 56 50.7	
	i		05 57 08.9	

Turkey.

" 26

Up	iP		10 04 16.3	C
	iPcP		10 04 46.3	
			micr sec	
	P	Z'	0.1 0.6	
Ki	iP		10 03 22.5	C
	iPcP		10 04 12.9	

(cont.)

1970
May 26 (cont.)

Ki			micr sec	
	P	Z'	0.2 1.0	
Sk	iP		10 03 52.1	
	iPcP		10 04 30.9	
Um	iP		10 03 49.8	C
	iPcP		10 04 29.6	
Ud	iP		10 04 14.8	C
De	iP		10 04 38.0	C

Unimak Island (h = 35 km).
m = 6.2 (Up,Ki).
This earthquake as well as the one on May 20, 20 41, provide exceptionally reliable readings of PcP. For these two cases it proves that the observed time difference PcP-P is consistently about 1 sec less than according to Jeffreys-Bullen tables.

" 26

Um	iP		10 10 15.5
Ud	i(P)		10 09 30.9

" 26

Ki	ePg		11 35 51
	iSg		11 36 28.8
Sk	ePg		11 35 55
	iSg		11 36 35.4
Um	iSn		11 36 42.2
	iSg		11 36 56.5

Nordland, Norway,
66.4°N, 14.8°E.
Origin time = 11 35 01.
Explosion?

" 26

Ud	iP		14 40 41.8	C

" 26

Up	iP		14 43 48.8
Ud	i(P)		14 44 02.0

" 26

Up	iP		15 11 48.8	C
			micr sec	
	P	Z'	0.1 1.0	
Ki	iP		15 11 14.6	C
			micr sec	
	P	Z'	0.2 1.5	
Sk	iP		15 11 22.8	C
Um	iP		15 11 33.9	C
Ud	iP		15 11 40.9	C
De	iP		15 11 57.2	C

Nevada.
m = 6.0 (Up,Ki).
Underground explosion.

" 26

Up	i		16 36 46.1

(cont.)

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

1970 May 26 (cont.)

Ki	iP		16 36 22.3	
Um	iP		16 36 26.1	C
Ud	iP		16 36 59.8	
De	iP		16 37 11.0	
	i		16 37 16.3	

USSR-Mongolia.
Origin time = 16 29 04.

" 27

Up	iPg		10 13 00.3	
	iSg		10 13 16.7	
	iRg		10 13 24.6	
			micr	sec
	Pg	Z'	0.1	0.5
Sk	eS^x		10 15 23	
	iSg		10 15 39.0	
Um	iSg		10 15 18.6	
Ud	iPg		10 13 25.4	
	iSg		10 14 01.5	
De	eSn		10 14 07	
	iS^x		10 14 15.3	
	iSg		10 14 22.6	

Baltic Sea, off Swedish coast,
58.8°N, 18.3°E.
Origin time = 10 12 34.
Probably explosion.

" 27

Up	iPg		10 19 54.6	
Ud	iSg		10 20 57.7	
De	iSg		10 21 18.0	

Repetition of previous event.
Origin time = 10 19 29.

" 27

Up	iPg		10 26 57.7	
Ud	iSg		10 27 57.9	
De	iSg		10 28 16.7	

Repetition of the same event.
Origin time = 10 26 30.

" 27

De	i(Sg)		11 17 35.9	

" 27

Up	iP		12 16 40.3	D
	iS		12 26 14	
	iPKKP		12 35 11.2	
	iP'P'		12 43 19.3	
	eSKPP'		12 45 52	
			micr	sec
	P	Z'	1.2	0.5
	SKPP'	Z'	0.2	1.4
	Mx	E	22	16
	Mx	N	27	16
	Mx	Z	24	17

(cont.)

1970 May 27 (cont.)

Ki	iP		12 16 08.6	D
	iS		12 25 15	
	isS		12 27 48	
	iP'P'		12 43 32.7	
	iSKPP'		12 46 19.7	
			micr	sec
	P	Z'	3.5	0.6
	SKPP'	Z'	0.6	2.0
	Mx	E	28	17
	Mx	N	20	17
	Mx	Z	31	18
Sk	iP		12 16 37.4	
	iPP		12 19 48.9	
	iS		12 25 59.8	
	iPKKP		12 35 14.2	
	iP'P'		12 43 17.1	
	iSKPP'		12 46 01.8	
Um	iP		12 16 22.7	D
	ipP		12 17 52.8	
	iS		12 25 29	
	iPKKP		12 35 19.7	
	iP'P'		12 43 22.0	
	i		12 45 48.7	
	iSKPP'		12 46 11.6	
Ud	iP		12 16 47.2	D
	ipP		12 18 17.5	
	iS		12 26 29.9	
	iPKKP		12 35 07.9	
	iP'P'		12 43 10.9	
	i		12 45 48.8	
	iSKPP'		12 45 55.8	
De	iP		12 16 58.8	D
	iPP		12 20 26.4	
	iS		12 26 45.5	
	iP'P'		12 43 08.9	
	iSKPP'		12 45 46.7	

Bonin Islands.
h = 400 km (Um,Ud).
m = 7.1, M = 6.8 (Up,Ki).
M not corrected for focal depth

" 27

Ki	iPn		12 59 30.3
	iSn		13 00 17.7
	iLgl		13 00 32.0
Um	iSg		13 02 04.2

Probably northwest Russia.
Origin time = 12 58 26.
Explosion?

" 27

Ki	eSn		13 53 44
	iLgl		13 54 06.5

" 27

Um	iSg		14 36 12.2
Ud	eLgl		14 36 44

(cont.)

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

1970
May 27 (cont.)

De	iLgl		14 37 08.4

Esthonia.
Origin time = 14 33 30.
Explosion?

" 27	Up	iP		19 16 51.3 C
		iPP		19 19 29.9
			micr	sec
		P	Z' 0.8	1.5
		Mx	E 25	18
		Mx	N 40	19
		Mx	Z 42	20
	Ki	iP		19 16 09.3
		iPP		19 18 25.9
			micr	sec
		P	Z' 0.5	1.5
		PP	Z' 0.7	2.0
		Mx	E 47	18
		Mx	N 36	20
		Mx	Z 31	19
	Sk	iP		19 16 45.6
		iPP		19 19 16.7
	Um	iP		19 16 27.1
		i		19 16 28.3
		i		19 16 49.2
		iS		19 25 20
	Ud	iP		19 16 57.6
	De	iP		19 17 15.1
		iPP		19 20 02.5

Japan (h = 30 km).
m = 6.6, M = 6.8 (Up,Ki).

" 27	Up	iP	20 14 51.3
	Ki	iP	20 14 38.9
	Sk	iP	20 14 33.0
	Um	iP	20 14 48.2
	Ud	iP	20 14 42.0
	De	iP	20 14 49.1

Mexico (h = 90 km).

" 27	Ki	iP	21 22 59.0
	Um	iP	21 23 17.4
	Ud	iP	21 23 48.1 D
		ipP	21 23 58.9

Japan.
h = 40 km (Ud).
Origin time = 21 12 29.

" 27	Up	iP	21 28 56.4
	Um	e(P)	21 29 11
	Ud	iP	21 29 11.4
" 27	Sk	eP	21 43 20

1970
May 27

Um	iP		22 38 29.2
	i		22 38 31.3
" 27 Up	iP		22 47 01.4
		micr	sec
	P	Z' 0.4	1.5
	Mx	E 3.8	20
	Mx	N 6.0	21
	Mx	Z 6.8	21
Ki	iP		22 46 20.0 C
	i		22 46 39.3
		micr	sec
	P	Z' 0.6	2.0
	Mx	E 7.0	18
	Mx	N 4.4	18
	Mx	Z 5.7	19
Sk	iP		22 46 54.2 C
Um	iP		22 46 38.7 C
	iS		22 55 29
Ud	iP		22 47 08.6 C
De	iP		22 47 24.8 C
	iPP		22 50 12.2

Japan (h = 15 km).
m = 6.4, M = 6.0 (Up,Ki).

" 27	Um	iP	23 19 35.0
	Ud	iP	23 20 05.2
	De	iP	23 20 21.5

Japan.
Origin time = 23 08 46.

" 28 Long-period microseisms (period around 15 sec), well developed especially on Umeå long-period N-component.

" 28	Up	iP	00 07 51.6
		micr	sec
	P	Z' 0.4	1.5
	Mx	E 2.9	19
	Mx	N 5.0	19
	Mx	Z 4.8	21
	Ki	iP	00 07 10.1 C
		iPP	00 09 30.3
		micr	sec
	P	Z' 0.3	1.6
	Mx	E 6.1	19
	Mx	N 3.6	19
	Mx	Z 5.1	18
	Sk	iP	00 07 44.6 C
	Um	iP	00 07 28.5 C
		i	00 09 02.4
	Ud	iP	00 07 58.9 C
	De	iP	00 08 15.0 C

(cont.)

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

1970 May	28	(cont.)		
		De	iPP	00 10 59.3
		Japan (h = 40 km).		
		m = 6.3, M = 5.9 (Up,Ki).		
"	28	Ud	iP	01 01 49.0
		Aleutian Islands (h = 55 km).		
"	28	Up	iP	01 47 33.7
		Ki	iP	01 48 36.5
"	28	Sk	iP	02 17 29.2
		Ud	iP	02 17 16.2 C
		West Pakistan (h = 35 km).		
"	28	Up	iP	02 57 14.4
		Ki	iP	02 58 21.4
		Um	iP	02 57 46.6
			i	02 57 48.6
		Ud	iP	02 57 31.3
			i	02 57 39.4
		De	iP	02 56 54.8
		Turkey (h = 35 km).		
"	28	Um	iP	03 10 34.9
"	28	Up	iP	04 11 39.9 D
		Ki	iP	04 10 51.1
		Sk	eP	04 11 27
		Um	iP	04 11 13.7
		Ud	iP	04 11 44.9
			i	04 11 58.8
		De	eP	04 12 04
		Kurile Islands.		
		Origin time = 04 00 37.		
"	28	Up	iPKP	04 33 13.4
		Ki	ePKP	04 32 57
		Sk	ePKP	04 33 02
		Um	iPKP	04 32 57.3
		Ud	iPKP	04 33 10.6 C
		De	iPKP	04 33 19.5
		Santa Cruz Islands (h = N).		
		These readings do not fit the origin time given by the USCGS.		
"	28	Ki	iP	05 16 15.9
"	28	Ud	iP	06 31 26.8
"	28	Up	iP	06 40 22.9
		Ki	iP	06 39 34.8 C
		Um	iP	06 39 56.9
		Ud	iP	06 40 27.9 C
		Kurile Islands (h = 30 km).		

1970 May	28	Ki	iSg	07 51 01.6
		Sk	e	07 51 06
			iSg	07 51 09.7
		Um	iSn	07 51 16.2
			iSg	07 51 31.0
		Nordland, Norway.		
		Origin time = 07 49 35.		
"	28	Sk	iPKP	11 52 40.4
		Um	iPKP	11 52 38.2
		New Hebrides Islands (h = 140 km).		
"	28	Ki	iPn	13 24 18.7
			iSn	13 25 03.9
			iLgl	13 25 18.0
		Um	iSg	13 26 16.5
		Probably northwest Russia.		
		Origin time = 13 23 19.		
		Explosion?		
"	28	Up	iP	15 12 30.6
				micr sec
			P Z'	0.1 0.8
"	28	Up	iP	15 26 22.5 D
				micr sec
			P Z'	0.1 0.7
		Ki	iP	15 25 51.2 D
				micr sec
			P Z'	0.1 0.9
		Sk	iP	15 26 19.4
		Um	iP	15 26 04.7 D
		Ud	iP	15 26 29.4 D
		De	iP	15 26 41.4 D
		Bonin Islands (h = 370 km).		
		m = 5.7 (Up,Ki).		
"	28	Up	iP	15 51 05.5 C
"	28	Up	iPKP	16 14 42.0
		Um	iPKP	16 14 37.7
		Ud	iPKP	16 14 46.2
		De	iPKP	16 14 56.1
"	28	Up	iP	17 49 34.8
		Ki	iP	17 48 51.2
		Sk	eP	17 48 59
			i	17 49 07.2
		Um	iP	17 49 10.7
		Ud	iP	17 49 28.0 C
			i	17 50 16.2
		De	iP	17 49 49.3 C
		Vancouver Island (h = 3 km).		

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

1970						
May	29	Sk	eP		00 22 40	
		Um	iP		00 22 43.7	
"	29	Up	iP		04 41 56.6	
			i		04 42 43.2	
					micr	sec
			P	Z'	0.1	0.8
		Ki	iP		04 41 11.1	
		Sk	iP		04 41 47.1	
		Um	iP		04 41 31.6	
		Ud	iP		04 42 02.9	
		De	iP		04 42 21.3	C

Kurile Islands (h = 70 km).

"	29	Up	ePKS		05 37 26	
					micr	sec
			Mx	E	0.8	21
			Mx	N	1.2	20
			Mx	Z	2.0	21
		Ki	ePKP		05 33 41	
					micr	sec
			Mx	E	2.2	20
			Mx	N	1.3	20
			Mx	Z	2.8	21
		Sk	iPKP		05 33 47.4	
			iPKS		05 37 17.9	
		Um	iPKP		05 33 47.2	C
			iPKS		05 37 12.6	
		Ud	iPKP		05 33 53.2	C
			iPKS		05 37 25.6	
		De	iPKP		05 33 54.4	
			iPKS		05 37 35.8	

Tonga Islands (h = N).
M = 5.8 (Up,Ki).
PKS has a relatively long period (around 3 sec) on all our Z'-records.

"	29	Ud	iP		07 38 49.1	
		De	iP		07 38 52.2	
"	29	Up	iP		08 01 47.2	
		Ki	iP		08 01 15.1	C
"	29	Up	iP1		10 44 20.3	D
			iP2		10 44 30.5	
			iP3		10 44 36.2	
			iP4		10 44 48.5	
					micr	sec
			P3	Z'	0.1	0.8
			P4	Z'	0.2	0.8
		Ki	iP1		10 44 13.6	
					micr	sec
			Mx	E	1.2	14
			Mx	N	1.5	21
			Mx	Z	1.6	14

(cont.)

1970				
May	29	(cont.)		
		Sk	iP1	10 44 35.9
			iP3	10 44 52.2
			iP4	10 45 04.5
		Um	iP1	10 44 12.6
			iP3	10 44 29.6
			iP4	10 44 41.6
		Ud	iP1	10 44 33.3
			iP2	10 44 45.5
			iP3	10 44 48.3
			iP4	10 45 01.5
		De	iP1	10 44 34.8
			iP3	10 44 51.9
			iP4	10 45 03.9

Burma-India (h = 45 km).
Several successive onsets, of which P3 and P4 are very clear, but P2 less clear.
Average time differences are: P2 - P1 = 11.2 sec, P3 - P1 = 16.3 sec, P4 - P1 = 28.6 sec.

"	29	Um	iP	11 10 27.4
		Ud	iP	11 10 48.3
		De	iP	11 11 10.9
"	29	Sk	e(Sg)	11 28 45
		Um	i	11 26 52.5
			i(Sg)	11 27 05.1
"	29	Ud	i(P)	12 04 35.6
"	29	Up	iSg	12 26 39.6
		Sk	iSg	12 28 30.2
		Um	iSg	12 27 08.1
		Ud	iLgl	12 27 39.4
		De	iLgl	12 28 03.7

Esthonia.
Origin time = 12 24 27.
Explosion?

"	29	Sk	eLgl	13 39 22
		Um	iSg	13 38 17.9
		Ud	i(Lgl)	13 38 32.0
		De	eLgl	13 39 08

Probably Baltic States.
Explosion?

"	29	Sk	i(P)	14 28 20.1
		Ud	i(P)	14 28 23.3
"	29	Up	i(P)	14 34 09.6
		Ud	i(P)	14 36 24.5
"	29	Um	i(P)	16 53 56.0

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

1970 May	29	Up	ePKP		19 21 17	
					micr	sec
			Mx	E	2.0	21
			Mx	N	5.2	23
			Mx	Z	5.5	21
		Ki			micr	sec
			Mx	E	2.5	21
			Mx	N	2.8	22
			Mx	Z	3.8	20
		Sk	iPKP		19 21 17.3	
		Um	iPKP		19 21 09.0	
			i		19 21 12.1	
		Ud	iPKP		19 21 20.3	
			i		19 21 22.1	
		De	iPKP		19 21 25.8	
			i		19 21 28.4	
		Santa Cruz Islands (h = 50 km). M = 6.2 (Up,Ki).				
"	29	Um	iP		19 43 55.7	
		Ud	iP		19 44 25.0	
		Kurile Islands (h = 45 km).				
"	29	Up	iPKP		20 48 55.7	
			iSKP		20 51 44.7	
		Sk	iPKP		20 48 50.6	
			i		20 48 58.9	
			eSKP		20 51 38	
		Um	iPKP		20 48 45.3	
			i		20 48 51.6	
			i		20 48 56.9	
			iSKP		20 51 32.4	
		Ud	iPKP		20 48 56.8	
			iSKP		20 51 46.1	
		De	iPKP		20 49 07.6 D	
			iSKP		20 51 55.3	
		Fiji Islands (h = 610 km).				
"	29	Um	iP		21 00 19.6	
		Ud	iP		21 00 24.4	
"	29	Up	eP		21 28 34	
		Ud	iP		21 28 22.3	
"	29	Um	iP		22 40 29.1	
"	29	Um	iP		23 44 17.2	
		Ud	eP		23 43 59	
		De	iP		23 43 25.6	
		Turkey (h = 25 km).				
"	30	Um	i(P)		02 40 50.6	
"	30	De	iP		03 44 31.8	
		Loyalty Islands (h = 60 km).				

1970 May	30	Up	iP		04 27 20.9	
		Ki	iP		04 26 59.5	
					micr	sec
			Mx	E	0.9	12
			Mx	N	0.5	13
		Um	iP		04 27 07.1	
		Ud	eP		04 27 29	
			i		04 27 37.4	
		De	eP		04 27 41	
		Formosa (h = N).				
"	30	Up	iP		08 19 36.3	
			i		08 19 39.8	
		Ud	iP		08 19 23.3	
"	30	Up	iSg		10 51 29.7	
		Ki	iSg		10 52 12.9	
		Um	iSg		10 50 50.5	
			i		10 50 57.4	
			e(Rg)		10 51 24	
		Ud	iSg		10 52 20.6	
		De	iSg		10 53 05.2	
		Lake Ladoga. Probably explosion.				
"	30	Up	iPKP		11 12 12.4	
		Um	iPKP		11 12 05.2	
			i		11 12 11.2	
		Ud	iPKP		11 12 14.2	
		De	iPKP		11 12 24.6 C	
			i		11 12 30.8	
		Fiji Islands (h = 620 km).				
"	30	Ud	iP		11 49 15.8	
"	30	Up	iP		11 56 23.6	
			i		11 56 28.7	
		Um	eP		11 56 33	
		Ud	iP		11 56 14.7	
"	30	Um	iP		12 15 57.9	
		Ud	iP		12 16 26.5	
		Japan (h = 30 km).				
"	30	Up	iP		13 29 05.8	
			ipP		13 29 33.3	
			isP		13 29 45.4	
					micr	sec
			P	Z'	0.1	0.6
			Mx	E	0.7	15
			Mx	N	1.4	17
			Mx	Z	0.9	15
		Ki	iP		13 28 47.8	
			i		13 29 19.6	
			isP		13 29 26.3	
		(cont.)				

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

1970 May	30	(cont.)				
		Ki	iS		13 39 00	
					micr	sec
			P	Z'	0.2	1.0
			Mx	E	1.1	15
			Mx	N	0.9	16
			Mx	Z	1.1	17
		Sk	iP		13 29 11.7	
		Um	iP		13 28 54.3	
			ipP		13 29 20.4	
			isP		13 29 32.6	
		Ud	iP		13 29 14.2	
		De	iP		13 29 21.3	
			isP		13 29 59.9	
		Samar.				
		h = 100 km (Up,Ki,Um,De).				
		m = 6.0, M = 5.4 (Up,Ki).				
"	30	Up	iP		14 02 59.0	
		Um	iP		14 02 55.4	
"	30	Up	iP		14 26 23.5	
			iSn		14 29 00.8	
		Ki	iP		14 27 48.9	
		Um	iP		14 27 05.3	
			iPP		14 27 21.0	
			iSS		14 30 59.9	
			i		14 31 03.0	
		Ud	iP		14 26 42.6	
			iSn		14 29 32.2	
			iS		14 29 48.8	
		De	iP		14 26 13.1	
			iSn		14 28 23.6	
			i		14 28 25.6	
		Rumania (h = 60 km).				
"	30	Up	i(P)		17 40 27.6	
			i		17 40 30.6	
		Ud	i(P)		17 40 17.2	
"	30	Weak surface waves are recorded by long-period seismographs at Umeå, possibly due to the atmospheric nuclear explosion at Tuamotu, 22.2°S, 138.8°W, at 18 00 00.				
"	30	Ud	iPKP		18 25 16.5	
			i		18 25 29.7	
		De	iPKP		18 25 27.7	
			i		18 25 41.7	
		Tonga Islands (h = 55 km).				
"	30	Up	iP		23 30 26.0	
		(cont.)				
1970 May	30	(cont.)				
		Ki	iP		23 29 33.3	
		Um	iP		23 29 59.9	
			ipP		23 30 12.0	
			i		23 30 52.4	
		Ud	iP		23 30 24.8	
			ipP		23 30 37.3	
		De	iP		23 30 51.1	
		Unimak Island.				
		h = 45 km (Um,Ud).				
"	31	Up	iP		03 01 48.7	
		Ki	iP		03 00 55.1	
		Um	iP		03 01 22.2	
			ipP		03 01 33.1	
			iPcP		03 02 00.1	
		Ud	iP		03 01 46.8	
		De	iP		03 02 09.6	
		Unimak Island.				
		h = 40 km (Um).				
"	31	Ki	iSn		04 57 42.8	
			iSg		04 58 00.6	
		Um	iSn		04 58 35.3	
			iSg		04 59 07.9	
		Probably northwest Russia.				
		Origin time = 04 55 58.				
		Explosion?				
"	31	Um	i(Lgl)		08 19 55.5	
		Ud	iS		08 16 44.1	
		De	eP		08 13 38	
		Germany (h = 15 km).				
"	31	Up	iP		10 25 20.4	C
		Ki	iP		10 25 57.5	
		Um	iP		10 25 34.1	C
		Ud	iP		10 25 35.4	C
			i		10 25 39.5	
		De	iP		10 25 18.9	
"	31	Up	iP		10 31 09.1	
			iS		10 35 38.2	
		Ki	iP		10 31 45.8	
		Sk	i		10 32 30.2	
			i		10 32 33.3	
			i(Sn)		10 37 59.4	
			iLgl		10 40 32.9	
		Um	iP		10 31 22.0	
			iS		10 36 08.2	
			iSn		10 36 31.5	
		Ud	iP		10 31 27.3	
			i		10 31 29.3	
			iSn		10 36 42.2	
		De	iP		10 31 12.7	
		Caucasus (h = 25 km).				

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

1970 May	31	Ki	ePn	13 36 55	
			iP[x]	13 37 02.7	
			iSn	13 37 39.9	
			iLgl	13 37 54.1	
		Um	iSn	13 38 22.3	
			iSg	13 38 49.3	
		Probably northwest Russia-Finland border region. Origin time = 13 35 56. Explosion?			
"	31	De	iPg	15 49 33.8	
			iSg	15 49 48.7	
"	31	Up	iP	20 37 13.6	D
			i(PP)	20 40 48	
			iPKKP	20 53 23.0	
			i	20 53 41.4	
			i	20 54 05.8	
				micr sec	
			P Z'	0.4 1.1	
			Mx E	330 21	
			Mx N	130 22	
			Mx Z	370 21	
		Ki	iP	20 37 17.4	
			iPP	20 41 26	
			iPKKP	20 53 30.7	
			i	20 53 51.0	
			i	20 54 05.6	
				micr sec	
			P Z'	1.0 2.0	
			Mx E	120 19	
			Mx N	77 18	
			Mx Z	140 19	
		Sk	eP	20 37 01	
			i	20 37 04.4	
			i	20 37 36.0	
			iPKKP	20 53 38.7	
		Um	iP	20 37 18.0	
			i	20 37 20.5	
			i	20 41 57.4	
			iPKKP	20 53 22.1	
			i	20 53 46.5	
			iP'P'	21 01 53.7	
		Ud	iP	20 37 04.5	D
			i	20 37 57.4	
			i	20 38 02.4	
			iP'P'	21 01 41.2	
		De	iP	20 37 05.8	
			i	20 37 49.9	
			i	20 38 03.5	
			iPKKP	20 53 27.2	
			i	20 53 34.3	
			iP'P'	21 01 54.0	
		Peru (h = 45 km). m = 7.0, M = 7.7 (Up,Ki).			

1970 May	31	Up	iP	20 41 19.6
		Ki	iP	20 40 27.2
		Um	iP	20 40 49.1
			i	20 40 52.4
		Kamchatka (h = 30 km).		
"	31	Ki	eP	21 17 40
		Peru (h = N).		
"	31	Um	iP	21 22 28.5
"	31	Ud	iP	21 37 19.3
		Peru (h = 45 km).		
"	31	Up	iP	22 01 54.0
		Ki	iP	22 01 58.0
			ePP	22 06 13
		Um	iP	22 01 58.6
			ipP	22 02 10.9
			i(PP)	22 06 28.1
		Ud	iP	22 01 44.2
			ipP	22 01 56.1
		Peru. h = 45 km (Um,Ud).		
"	31	Up	eP	22 28 38
		Ud	iP	22 28 36.3
			i	22 28 40.7

Markus Båth
April 23, 1971

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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 N E 1 - 30, 1970

1970 June	1	Up	iP		01 20 26.8
			i		01 20 29.8
		Sk	eP		01 21 09
		Um	iP		01 21 08.1
		Ud	iP		01 20 37.0
		Greece-Albania (h = 70 km).			
"	1	Ud	iP		01 26 10.1 C
		Peru (h = 45 km).			
"	1	Up	iP		01 49 57.1
			ipP		01 50 09.7
		Ki	iP		01 50 00.9
		Sk	i(pP)		01 49 59.5
		Um	iP		01 50 02.1 C
			ipP		01 50 14.8
		Ud	iP		01 49 48.3
			ipP		01 50 00.7
		De	ipP		01 50 01.4
		Peru.			
		h = 45 km (Up,Um,Ud).			
"	1	Up	iP		02 59 08.6
					micr sec
			Mx	E	1.1 20
			Mx	N	1.2 20
			Mx	Z	1.6 20
		Ki	iP		02 59 12.8
					micr sec
			Mx	E	0.9 20
			Mx	N	0.8 20
			Mx	Z	1.6 20
		Um	eP		02 59 14
			i(PP)		03 02 59.4
		Ud	iP		02 58 59.0
		Peru (h = 70 km).			
		M = 5.4 (Up,Ki).			

1970 June	1	Up	iP	04 58 36.0
		Ki	iP	04 58 39.7
			iPP	05 02 52.5
		Sk	iP	04 58 24.8
		Um	iP	04 58 40.5
			iPP	05 03 00.5
		Ud	iP	04 58 26.5
		Peru (h = 45 km).		
"	1	Up	iP	06 17 36.3
		Sk	iP	06 17 16.1
		Um	iP	06 17 32.0
		Mexico (h = 60 km).		
"	1	Um	iP	06 48 34.4
			i	06 48 49.6
		Turkey.		
"	1	Um	iP	07 23 31.1
		Japan (h = 50 km).		
"	1	Ud	iP	07 24 38.4 C
		De	iP	07 24 49.1
"	1	Ud	iP	08 00 26.1
		Crete.		
"	1	Um	iP	10 46 17.4
		Ud	iP	10 46 54.8
		De	iP	10 47 06.0
"	1	Sk	eSg	13 12 52
		Um	iSg	13 11 34.2
		Ud	iLgl	13 12 00.2
		Esthonia.		
		Origin time = 13 08 50.		
		Explosion?		

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

1970 June	1	Ud	iP		14 58 29.4	
"	1	Up	iSg		15 42 54.9	
		Ud	i		15 41 56.0	
			iSg		15 41 58.9	
		De	iSg		15 42 35.6	
		Dalsland, Sweden,				
		58.8°N, 12.3°E.				
		Origin time = 15 41 17.				
"	1	Um	iPKP		16 16 30.9	
		Solomon Islands (h = 35 km).				
"	1	Up	iP		17 57 15.8	
			ipP		17 57 22.4	
					micr	sec
			Mx	E	1.1	19
			Mx	N	2.0	24
			Mx	Z	1.6	20
		Ki	iP		17 57 13.6	
					micr	sec
			P	Z'	0.1	1.5
			Mx	E	1.9	20
			Mx	N	1.3	20
			Mx	Z	1.9	20
		Sk	iP		17 57 01.6 C	
			ipP		17 57 08.7	
		Um	iP		17 57 17.5	
			ipP		17 57 24.5	
			iS		18 08 10	
		Ud	iP		17 57 06.6	
		De	iP		17 57 10.1	
		South of Panama.				
		h = 25 km (Up,Sk,Um).				
		M = 5.6 (Up,Ki).				
"	1	Ki	eP		21 27 11	
"	1	Um	iP		22 57 30.0	
		Ud	iP		22 58 07.6	
		De	iP		22 58 15.5	
		USSR-Mongolia.				
"	2	Up	eP		01 51 09	
			i		01 51 25.3	
					micr	sec
			P	Z'	0.1	1.1
			Mx	E	1.0	21
			Mx	N	1.0	20
			Mx	Z	1.7	21
		Ki	iP		01 51 13.0	
			i		01 51 29.1	
					micr	sec
			P	Z'	0.1	1.2
			Mx	E	0.9	20
		(cont.)				

1970 June	2	(cont.)				
			Mx	N	0.6	18
			Mx	Z	1.3	20
		Sk	iP		01 50 59.1	
			i		01 51 15.2	
		Um	iP		01 51 14.8	
			i		01 51 31.0	
			iPP		01 55 32.0	
		Ud	iP		01 51 00.9	
			i		01 51 15.8	
		De	iP		01 51 02.0	
			i		01 51 18.1	
		Peru.				
		m = 6.3, M = 5.4 (Up,Ki).				
		The second phase is				
		considerably bigger than				
		the first. Interpreted as				
		pP, it gives a focal depth				
		of 60 km, or else it may be				
		P of another shock in the				
		same place, 16 sec later.				
"	2	Up	iP		03 09 18.5	
			ipP		03 09 44.9	
			iPcS		03 13 59.8	
			i		03 18 57	
					micr	sec
			P	Z'	0.1	1.0
			Mx	E	0.6	15
			Mx	N	1.0	20
		Ki	iP		03 08 21.9 C	
			iPcS		03 13 25.5	
			iS		03 15 28	
			i(ScS)		03 18 02	
					micr	sec
			P	Z'	0.2	1.0
			Mx	E	0.3	15
			Mx	N	0.5	14
			Mx	Z	1.0	18
		Sk	iP		03 08 49.9	
			ipP		03 09 20.3	
			iPcS		03 13 41.9	
			iS		03 16 21.6	
		Um	iP		03 08 51.1	
			ipP		03 09 17.5	
			iPcS		03 13 42.1	
			iS		03 16 22.5	
		Ud	iP		03 09 14.9 C	
			iPcS		03 13 57.3	
		De	iP		03 09 39.7 C	
		Alaska.				
		h = 120 km (Up,Sk,Um).				
		m = 6.0, M = 5.0 (Up,Ki).				
		Exceptionally clear PcS				
		recorded by Z'.				

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

1970 June	2	Um	iP	08 10 13.5
		Ud	iP	08 10 28.9
		Molucca Passage (h = 35 km).		
"	2	Up	iP	12 16 30.4
		Ki	i(P)	12 16 42.8
		Ud	i(P)	12 16 44.5
"	2	Um	iP	12 21 08.5
		De	eP	12 21 22
"	2	Ud	i(P)	12 52 20.9
"	2	Up	i(P)	13 47 41.7
			i	13 48 00.1
"	2	Up	iSg	18 44 27.4
		Ki	i	18 41 57.0
			iSg	18 42 17.9
		Sk	ePg	18 41 43
			iSg	18 42 21.6
		Um	iSn	18 42 30.9
			iSg	18 42 44.0
		Ud	i(Lgl)	18 44 11.0
		Nordland, Norway,		
		66.4°N, 14.8°E.		
		Origin time = 18 40 49.		
		Explosion?		
"	2	Um	iP	19 35 44.2
		Ud	iP	19 36 41.6
"	2	Up	iP	21 04 39.1
		Ki	iP	21 04 41.0
		Um	eP	21 04 24
		Ud	iP	21 04 40.5
"	2	Up	iPKP	21 20 17.9
			iPKS	21 23 37.0
		Ki	iPKP	21 20 05.7
		Sk	iPKP	21 20 14.7
			iPKS	21 23 27.0
		Um	iPKP	21 20 11.8
			iPKS	21 23 20.2
		Ud	iPKP	21 20 18.2
			iPKS	21 23 37.0
		New Hebrides Islands		
		(h = 160 km).		
"	2	Up	iPKP	21 49 03.8
		Ki	iPKP	21 48 58.6
		Um	iPKP	21 48 55.6
		Ud	iPKP	21 49 05.5
		De	iPKP	21 49 17.0
		Fiji Islands (h = 390 km).		

1970 June	2	Up	iPKP	21 51 02.9
		Ki	iPKP	21 50 53.5
		Um	iPKP	21 50 54.9
			i	21 51 00.9
		Ud	iPKP	21 51 04.7
		De	iPKP	21 51 15.9 C
		Fiji Islands.		
"	2	Up	iP	23 03 44.8
		Um	i(P)	23 03 20.3
		Ud	iP	23 03 52.2
		De	iP	23 04 05.5
"	2	Up	iP	23 44 28.6
			iPcP	23 44 54.6
		Ki	iP	23 43 42.0
				micr sec
			Mx E	0.6 16
			Mx N	0.7 18
			Mx Z	1.3 20
		Sk	iP	23 44 18.2
		Um	iP	23 44 03.4
		Ud	iP	23 44 34.5
			iPcP	23 44 58.4
		De	iP	23 44 53.0
		Kurile Islands (h = 20 km).		
"	3	Up	eP	00 37 14
			i	00 41 08.9
		Ud	iP	00 37 04.1
			i	00 40 55.6
"	3	Up	iP	02 40 36.4
"	3	Um	e(P)	03 46 25
		Ud	iP	03 46 26.9
			i	03 46 30.2
		De	i(P)	03 46 11.1
"	3	Um	iSg	11 45 42.5
		Ud	iLgl	11 46 12.6
		De	iLgl	11 46 37.9
		Esthonia.		
		Origin time = 11 43 01.		
		Explosion?		
"	3	Sk	iP	12 51 57.0
		Ud	e	12 51 37
"	3	Sk	iP	12 55 41.9
		De	i(P)	12 56 02.7
"	3	Ki	iPn	13 06 38.7
			iSn	13 07 26.6
			iLgl	13 07 42.8

(cont.)

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

1970 June	3	(cont.)			
		Um	iSg	13 09 12.7	
		Probably northwest Russia.			
		Origin time = 13 05 35.			
		Explosion?			
"	3	Ud	i(Sg)	13 22 00.2	
		De	i(Sg)	13 22 19.5	
"	3	De	iP	13 41 43.5	
			i(Sg)	13 42 22.0	
"	3	Ud	iP	14 12 47.0	
		De	iP	14 12 02.2	
"	3	Ud	i(P)	14 46 46.7	
		De	iP	14 44 24.7	
			i	14 45 24.4	
"	3	Um	iP	16 02 34.8	
		Ud	iP	16 02 09.8	
"	3	De	iP	17 35 34.4	
"	3	Up	iSg	18 06 16.3	
		Ud	iPg	18 04 55.9	
			iSg	18 05 18.2	
		De	iSg	18 06 01.5	
			i	18 06 16.2	
		Oslo Fjord,			
		59°N, 11°E.			
		Origin time = 18 04 22.			
"	3	Up	iP	18 14 05.6	
		Ki	iP	18 13 37.8	
			ipP	18 14 15.5	
		Ud	eP	18 14 10	
		Mariana Islands.			
		h = 150 km (Ki).			
"	3	Up	iP	22 50 22.4	
		Sk	iP	22 50 23.3	
		Um	iP	22 50 03.1	
		Ud	iP	22 50 37.1	C
		De	iP	22 50 48.6	C
"	3	Up	iPKP	22 56 27.6	
		Ki	iPKP	22 56 13.4	C
		Sk	iPKP	22 56 24.3	C
		Um	iPKP	22 56 19.7	
		Ud	iPKP	22 56 29.4	
			iPKS	22 59 32.4	
		De	iPKP	22 56 36.3	C
			iPKS	22 59 43.4	
		New Hebrides Islands			
		(h = 220 km).			

1970 June	4	Ud	iP		00 52 10.7	
		Indian Ocean (h = N).				
"	4	Up	iP		04 23 13.1	
					micr	sec
			Mx	E	4.9	21
			Mx	N	1.9	19
			Mx	Z	5.8	20
		Ki	iP		04 23 19.0	
					micr	sec
			Mx	E	3.3	20
			Mx	N	1.3	20
			Mx	Z	4.4	20
		Um	iP		04 23 17.3	
			iPP		04 27 37.9	
			iSKS		04 33 52	
			iS		04 34 57	
		Ud	iP		04 23 03.8	
		De	iP		04 22 58.9	
			i		04 23 20.0	
		Peru (h = 60 km).				
		M = 6.1 (Up,Ki).				
"	4	Ki	iP		09 16 05.9	
		Um	iP		09 16 19.5	
		Ud	iP		09 16 44.5	
"	4	Ud	iP		10 15 30.9	
"	4	Sk	eSg		13 37 00	
		Um	iSg		13 35 45.1	
		Ud	iSn		13 35 44.8	
			iLgl		13 36 18.6	
		De	iLgl		13 36 43.5	
		Esthonia.				
		Origin time = 13 33 03.				
		Explosion?				
"	4	Ki	iPn		14 01 18.7	
			iSn		14 02 05.1	
			iSg		14 02 22.5	
		Sk	iLgl		14 05 02.1	
		Um	iSg		14 03 54.7	
		Northwest Russia,				
		69.4°N, 30.0°E.				
		Origin time = 14 00 18.				
		Explosion?				
"	4	Ki	iP		14 45 38.7	
		Um	iP		14 45 41.7	
"	4	Ud	i(Sg)		16 08 18.1	
		De	e(Sg)		16 07 32	
			i		16 07 39.4	

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

1970 June	4	Up	iP		21 03 58.1
		Ki	iPn		21 04 51.0
		Sk	iPn		21 04 58.4
		Um	iP		21 04 10.4
			i		21 04 11.9
		Ud	iP		21 04 14.2 C
		De	e(P)		21 04 07
		Caucasus.			
		Origin time = 20 58 39.			
"	4	Up	iP		21 28 53.0
		Ki	iP		21 28 01.0
		Ud	iP		21 28 43.3
"	4	Ud	iP		23 00 27.3
"	5	Up	iP		05 00 43.7
			iPP		05 02 12.4
			iS		05 06 48
					micr sec
			P	Z'	0.7 1.0
			PP	Z'	0.8 1.2
			Mx	E	150 8
			Mx	N	220 9
			Mx	Z	150 8
		Ki	iP		05 00 36.9
			iPP		05 02 07.2
			iS		05 06 38
					micr sec
			P	Z'	0.5 1.0
			PP	Z'	0.4 1.5
			Mx	E	200 12
			Mx	N	120 9
			Mx	Z	180 11
		Sk	iP		05 01 02.8 C
		Um	iP		05 00 34.4 C
			iPP		05 02 10.9
			iS		05 06 33
		Ud	iP		05 01 00.2 C
		De	iP		05 01 03.5 C
		Tien-Shan (h = 20 km).			
		m = 6.2, M = 7.5 (Up,Ki).			
"	5	Um	iPKP		07 50 34.6
			iPKP2		07 50 59.8
		Ud	iPKP2		07 51 08.2
		Macquarie Islands (h = 15 km).			
"	5	Up	Mx		08 03
					micr sec
			Mx	E	0.9 19
			Mx	N	1.3 21
			Mx	Z	1.4 21
		Indian Ocean (h = N).			

1970 June	5	Ud	iPg		08 51 09.1
			iSg		08 51 34.1
			iRg		08 51 46.3
"	5	Up	iP		09 25 16.3
		Sk	iP		09 25 51.5
		Um	iP		09 25 54.1
		Ud	iP		09 25 16.8
		De	iP		09 24 41.9
			i		09 24 46.8
		Italy (h = 260 km).			
"	5	Up	iP		10 11 22.8
		Sk	iP		10 12 02.7
		Um	iP		10 11 59.3
		Ud	iP		10 11 29.9
			i		10 11 35.4
		De	iP		10 10 54.2 C
		Greece (h = 100 km).			
"	5	Up	iP		10 40 53.8
					micr sec
			P	Z'	0.3 0.9
			Mx	E	2.8 21
			Mx	N	3.4 19
			Mx	Z	1.6 17
		Ki	iP		10 39 55.1 D
					micr sec
			P	Z'	0.2 1.0
			Mx	E	2.1 18
			Mx	N	1.5 13
			Mx	Z	2.9 15
		Sk	iP		10 40 36.8
		Um	iP		10 40 22.4
		Ud	iP		10 40 58.3 D
			i		10 41 10.0
		De	iP		10 41 22.6 D
		Northeast Siberia (h = N).			
		m = 6.0, M = 5.4 (Up,Ki).			
"	5	Um	iP		11 37 52.3
"	5	Up	iP		12 04 00.5
		Ki	iP		12 05 18.3
		Sk	iP		12 04 53.9
			i		12 04 57.4
		Um	iP		12 04 41.3
			i		12 04 58.8
		Ud	iP		12 04 18.2
			iLgl		12 09 27.8
		De	iP		12 03 37.4
		Rumania (h = 130 km).			
"	5	Ki	iP		14 04 47.3
		(cont.)			

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

1970 June	5	(cont.)			
		Sk	eP	14 05 22	
		Um	iP	14 05 13.8	
		Ud	iP	14 05 40.0	
		De	eP	14 06 03	
		Aleutian Islands (h = 45 km).			
"	5	Ud	iP	14 17 18.9	
"	5	Up	iPg	15 32 53.0	
			iSg	15 33 24.5	
		Sk	eLgl	15 34 47	
		Ud	iPg	15 32 40.4	
			iSg	15 33 03.0	
			iRg	15 33 15.0	
		De	iPg	15 32 45.3	
			iSg	15 33 14.1	
		Västergötland, Sweden.			
		Origin time = 15 32 05.			
		Explosion?			
"	5	Up	iP	17 02 38.8	
		Sk	iP	17 01 50.5	
"	5	Sk	iPKP	17 26 10.1	
		Um	iPKP	17 26 03.9	
		New Zealand (h = 130 km).			
"	5	Up	iP	22 50 56.0	C
			ipP	22 51 06.8	
			iS	22 59 28	
				micr sec	
			P	Z' 0.8 1.1	
			Mx	E 1.7 22	
			Mx	N 2.0 20	
			Mx	Z 1.7 21	
		Ki	iP	22 50 02.4	C
				micr sec	
			P	Z' 0.4 1.1	
			Mx	E 2.1 18	
			Mx	N 1.0 17	
			Mx	Z 0.9 13	
		Sk	iP	22 50 39.2	C
		Um	iP	22 50 27.5	C
		Ud	iP	22 50 59.4	C
		De	iP	22 51 20.8	C
			ipP	22 51 32.7	
		Kamchatka.			
		h = 40 km (Up,De).			
		m = 6.6, M = 5.4 (Up,Ki).			
"	6	Ud	iP	00 07 17.9	
"	6	Sk	i(P)	00 59 17.6	
		Ud	iP	00 59 09.3	

1970 June	6	Up	iP	02 01 09.8	
		Sk	iP	02 01 27.9	
		Um	iP	02 01 03.4	
		Ud	iP	02 01 24.0	
"	6	Up	iPKP	06 33 55.7	C
			i	06 34 00.0	
		Sk	iPKP	06 33 56.2	
			i	06 33 59.7	
		Um	iPKP	06 34 03.5	
			i	06 34 07.9	
		Ud	iPKP	06 33 51.3	C
			i	06 33 55.8	
		De	iPKP	06 33 45.9	C
			i	06 33 50.2	
		South Pacific Ocean (h = N).			
		Double PKP at all stations.			
"	6	Ki	iPg	06 51 24.1	
			iSg	06 52 01.9	
		Sk	iPg	06 51 29.0	
			iSg	06 52 08.5	
		Um	iSn	06 52 15.9	
			iSg	06 52 29.0	
		Nordland, Norway,			
		66.5°N, 14.0°E.			
		Origin time = 06 50 28.			
"	6	Up	iP	07 06 43.9	
		Um	iP	07 06 15.9	
		Ud	iP	07 06 48.6	
"	6	Ki	eP	07 10 31	
			i	07 10 35.8	
		Sk	iP	07 10 54.9	
		Ud	iP	07 10 53.6	
		Tien-Shan.			
"	6	Up	iP	08 37 48.7	
		Sk	iP	08 38 04.5	
		Um	iP	08 37 40.0	
		Ud	iP	08 38 03.5	
"	6	Up	iP	10 38 27.9	
		Ki	iP	10 38 09.7	
		Ud	iP	10 38 33.3	
			i	10 38 36.2	
		Mindanao (h = 50 km).			
"	6	Um	iP	12 52 35.8	
		Ud	iP	12 52 48.0	
"	6	Up	iP	13 11 54.2	
			iPP	13 15 35.7	
		(cont.)			

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

1970 June 6 (cont.)

Up		micr	sec
	P	Z' 0.1	0.5
Ki	iP	13 11 26.8 D	
	iPP	13 14 55.9	
		micr	sec
	P	Z' 0.2	1.0
Sk	iP	13 11 51.5 D	
	ePP	13 15 31	
Um	iP	13 11 38.4 D	
	iPP	13 15 13.9	
Ud	iP	13 12 00.6 D	
	iPP	13 15 51.7	
De	iP	13 12 11.5	
	iPP	13 16 11.3	

Mariana Islands (h = 600 km).
m = 5.9 (Up,Ki).

" 6 Up iP 13 18 28.2
Ki iP 13 18 00.4
Mariana Islands (h = 570 km).

" 6 Up iPKP 14 55 49.1 C
Ud iPKP 14 55 50.8 C
De iPKP 14 56 00.1
Kermadec Islands (h = 50 km).

" 6 Up i(Sg) 15 48 42.0
Um i(Sg) 15 49 56.0
Ud e(Sg) 15 49 25
Probably Baltic States.

" 6 Up iSg 17 15 50.1
Ud i 17 16 07.2
iSg 17 16 17.9
De ePg 17 13 51
iSg 17 14 40.7
Near south coast of the Baltic Sea (northern Poland).

" 6 Up iPKP 18 02 07.7
Ud iPKP 18 02 08.1
De iPKP 18 02 20.1 D
Fiji Islands (h = 620 km).

" 7 Up iP 02 31 01.9
Um iP 02 31 19.7
Ud iP 02 31 23.5

" 7 Up iP 04 23 54.3
Ki iP 04 23 14.2
Um iP 04 23 36.9
Ud iP 04 23 48.5
California (h = N).

1970 June 7 Up iPKP 04 38 52.4
Ki iPKP 04 38 38.8
Um iPKP 04 38 45.5
Ud iPKP 04 38 55.2
De iPKP 04 39 01.5
New Hebrides Islands (h = 190 km).

" 7 Up iLgl 07 08 27.2
i 07 08 34.7
Ki iPn 07 04 19.1
iSn 07 05 17.0
iLgl 07 05 38.7
Sk iLgl 07 08 04.3
Um iSn 07 05 58.1
eSg 07 06 31
Ud eSn 07 07 52
iLgl 07 08 58.0
De iLgl 07 10 31.3
Northwest Russia, 67.6°N, 33.2°E.
Origin time = 07 03 04.
Explosion?
This is one of the very few events in this area which has been well recorded over the whole network.

" 7 Up iP 07 56 13.6
Ki iP 07 56 52.2
Sk iP 07 56 45.7
Um iP 07 56 29.8
Ud iP 07 56 25.4
Gulf of Aden.

" 7 Ud iP 11 46 21.7

" 7 Up iP 13 39 50.3 D
iPcP 13 40 25.0
micr sec
P Z' 0.1 0.5
Ki iP 13 38 59.8 D
micr sec
P Z' 0.1 0.6
Sk iP 13 39 36.0
Um iP 13 39 23.1 D
Ud iP 13 39 55.2 D
iPcP 13 40 27.2
De iP 13 40 15.7
Okhotsk Sea (h = 450 km).
m = 5.5 (Up,Ki).

" 7 Ud i(P) 14 29 42.3
De iP 14 29 52.9

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

1970 June	7	Up	iP	17 35 49.9
		Ki	eP	17 35 29
		Um	iP	17 35 36.4
		Ud	iP	17 35 59.9
		De	iP	17 36 08.2
		Luzon (h = 160 km).		
"	7	Up	iP	17 55 12.8
		Ki	iP	17 55 54.1
		Sk	iP	17 55 50.8
		Um	iP	17 55 28.3
		Ud	iP	17 55 28.5
		De	iP	17 55 12.1
		Iran (h = 50 km).		
"	7	Up	iP	18 04 53.5
		Ki	iP	18 04 11.7
		Um	iP	18 04 30.0
		Ud	iP	18 05 00.3
		Japan (h = 60 km).		
"	7	Up	iP	18 36 33.2
		Ud	iP	18 36 48.6
"	7	Up	iP	19 54 16.0
		Um	iP	19 53 59.4
		Ud	iP	19 54 12.1
			i	19 54 19.2
"	7	Ud	iP	20 36 13.7
			ipP	20 36 54.2
		Kurile Islands.		
		h = 160 km (Ud).		
"	7	Ki	iP	22 25 21.5
		Um	iP	22 25 25.3
		Ud	iP	22 25 43.3
		Celebes (h = 140 km).		
"	8	Up	iP	00 36 02.2
		Um	iP	00 36 16.9
"	8	Up	eP	02 19 21
		Ud	iP	02 19 39.8
"	8	Up	iP	03 31 27.9
		Ki	iP	03 31 34.0
		Sk	iP	03 31 15.9
		Um	iP	03 31 35.0
		Ud	iP	03 31 18.4
		De	iP	03 31 19.3
		Venezuela (h = N).		
"	8	Up	iP	04 07 43.0
			ipP	04 08 02.2
		(cont.)		

1970 June	8	(cont.)		
		Ki	iP	04 07 12.3 D
			eS	04 17 04
		Sk	iP	04 07 39.7
			ipP	04 07 59.0
		Um	iP	04 07 25.3
			ipP	04 07 45.0
			iS	04 17 29.5
		Ud	iP	04 07 49.3
			iPP	04 11 10.1
			iS	04 18 15.1
		De	eP	04 08 01
			i	04 08 07.8
		Volcano Islands.		
		h = 70 km (Up,Sk,Um).		
"	8	Um	iP	04 37 37.4
		Ud	iP	04 38 08.5
		Japan (h = 80 km).		
"	8	Sk	iP	06 56 03.0
		Um	iP	06 56 03.1
		Ud	iP	06 55 25.8
		De	iP	06 54 46.8
		Albania (h = 40 km).		
"	8	Up	iP	07 13 29.4
			i	07 13 40.1
		Ki	iP	07 13 40.4 C
			i	07 13 50.2
		Sk	iP	07 13 56.0
		Um	iP	07 13 27.9
		Ud	iP	07 13 45.9 C
		De	iP	07 13 41.6
		Hindu Kush (h = 45 km).		
"	8	Ud	iP	08 19 29.1
"	8	Ud	eP	10 50 05
			i	10 50 06.9
		Aleutian Islands (h = 50 km).		
"	8	Um	iP	11 55 28.4
		Ud	iP	11 55 45.7 C
		Afghanistan.		
"	8	Up	iP	12 38 20.0
		Ki	eP	12 38 56
			iPn	12 39 23.8
		Sk	eP	12 38 56
			i	12 39 09.8
			i	12 39 44.1
		Um	iP	12 38 31.2
			i	12 38 34.9
		Ud	iP	12 38 37.2 C
		De	iP	12 38 25.2
			i	12 39 05.7
		Caucasus (h = N).		

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

1970 June	8	Up	iSg	13 53 57.1
		Ki	eSg	13 56 29
		Sk	iSg	13 55 45.9
		Um	iSg	13 54 28.2
		Ud	iLgl	13 54 59.3
		De	iLgl	13 55 21.7
		Esthonia,		
		59.7°N, 25.6°E.		
		Origin time = 13 51 46.		
		Explosion?		
"	8	Up	iP	16 21 13.3
		Ud	iP	16 21 19.3
			i	16 21 37.7
		De	i(P)	16 21 45.8
"	8	Sk	iP	16 55 30.0
		Colombia (h = 160 km).		
"	8	Ud	iSg	17 44 10.6
		De	iPn	17 41 37.0
			iSn	17 42 18.5
			iSg	17 42 29.1
"	8	Um	iP	19 25 19.9
		Afghanistan.		
"	8	Um	iP	22 49 25.3
		Ud	iP	22 49 16.0
"	9	Up	iP	01 35 23.7
		Um	iP	01 35 06.7
		Ud	iP	01 35 19.4
"	9	Sk	iP	03 16 29.3
		Ud	iP	03 16 19.2
"	9	Up	iP	06 31 18.5
		Ki	iP	06 31 54.0
			i	06 33 03.5
		Sk	i	06 32 04.4
		Um	iP	06 31 29.5
			i	06 31 33.0
		Ud	iP	06 31 35.0
		De	eP	06 31 26
		Caucasus.		
		Origin time = 06 25 59.		
"	9	Ud	iP	07 45 24.0
"	9	Ki	iP	10 42 51.8 C
		Sk	iP	10 42 43.9
			i	10 42 50.9
		Um	i(P)	10 42 38.1
		Ud	iP	10 42 24.8
		(cont.)		

1970 June	9	(cont.)		
		Ud	ipP	10 42 35.4
		Gulf of Aden.		
		h = 40 km (Ud).		
"	9	Up		micr sec
			Mx E	0.8 20
			Mx N	1.1 21
			Mx Z	1.8 22
		Ki	iPKP	11 14 09.2
				micr sec
			Mx E	1.4 19
			Mx N	0.9 19
			Mx Z	1.9 20
		Sk	iPKP	11 14 15.2
		Um	iPKP	11 14 13.1
		Ud	iPKP	11 14 19.7
		De	iPKP	11 14 29.7
		Samoa Islands (h = N).		
		M = 5.7 (Up,Ki).		
"	9	Sk	iP	12 36 13.1
		Mexico (h = 25 km).		
"	9	Up	iP	13 23 59.8
		Ki	iP	13 23 24.4
		Ud	iP	13 24 11.6
		De	iP	13 24 36.8
			i	13 24 46.0
"	9	Ki	iPn	13 24 25.2
			iSn	13 25 17.9
			iLgl	13 25 36.7
		Probably northwest Russia.		
		Origin time = 13 23 17.		
		Explosion?		
"	9	Ud	iP	14 38 15.7
"	9	Um	iP	14 45 46.3
		Ud	iP	14 45 31.5
		Turkey.		
"	9	Ud	iP	16 31 14.6
"	9	Sk	iPKP	16 34 10.3
		Um	iPKP	16 34 04.8
		Ud	iPKP	16 34 15.9
			iPKS	16 37 27.1
		De	iPKS	16 37 38.7
		New Hebrides Islands		
		(h = 160 km).		
"	9	Ki	eSg	17 53 03
		Sk	eSg	17 53 10
		Um	iSg	17 53 22.1
		Nordland, Norway.		

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

1970					
June	9	Up	iP		20 48 42.8
		Ud	iP		20 48 48.8
		Dodecanese Islands (h = 55 km).			
"	9	Up	iP		20 56 42.0
		Sk	eP		20 56 04
		Um	iP		20 56 35.4
			i		20 57 07.3
		Ud	iP		20 56 15.3
"	10	Up	iP		00 27 49.4
		Ki	iP		00 26 56.9
		Um	iP		00 27 21.7
		Ud	iP		00 27 53.2
"	10	Up	i(P)		03 12 20.8
		Ud	i(P)		03 13 11.0
			i		03 13 13.5
		De	i(P)		03 12 35.2
"	10	Um	iP		03 43 10.7
		Ud	iP		03 42 56.1
"	10	Up	iP		05 22 08.7
					micr sec
			Mx	E	0.8 11
			Mx	N	0.5 11
			Mx	Z	0.9 11
		Ki	iP		05 23 13.8
					micr sec
			Mx	E	0.5 12
			Mx	N	0.3 10
			Mx	Z	0.7 13
		Sk	iP		05 22 50.6
		Um	iP		05 22 38.5
			iS		05 27 08
		Ud	iP		05 22 20.1 C
		De	eP		05 21 47
		Turkey (h = 25 km). M = 4.6 (Up,Ki).			
"	10	Up	iPKP		06 16 59.6
		Sk	iPKP		06 16 49.9
		Um	iPKP		06 16 44.3
		Ud	iPKP		06 16 58.1 C
		De	iPKP		06 17 10.3
		Kermadec Islands (h = 25 km).			
"	10	Sk	iP		07 13 10.2
		Um	iP		07 13 03.7
		Ud	iP		07 13 16.1
			i		07 13 23.2
		De	iP		07 13 37.2
"	10	Ud	iP		08 23 14.9 C

1970				
June	10	Up	iP	08 30 39.1
		Ki	iP	08 30 08.2
		Sk	eP	08 30 39
		Ud	eP	08 30 48
			i	08 30 56.6
		Japan (h = 70 km).		
"	10	Ud	i(P)	09 24 12.8
"	10	Ki	i(Sg)	11 44 17.8
		Sk	i(Sg)	11 47 04.2
		Um	i(Sg)	11 45 32.6
"	10	Sk	eSg	12 32 28
		Ud	iSg	12 31 11.0
		De	iSg	12 32 09.4
		South Norway, 59.5°N, 10.4°E. Origin time = 12 30 15. Solution confirmed by Kongsberg readings.		
"	10	Ki	iSg	13 03 47.4
		Sk	iLgl	13 02 52.2
		Um	iSg	13 01 44.5
		Ud	iSn	13 01 38.6
		De	e	13 02 20
		Probably Esthonia. Explosion?		
"	10	Um	iP	13 23 23.0
"	10	Ki	eP	14 05 04
		Ud	eP	14 05 52
		Japan (h = 60 km).		
"	10	Sk	iPKP	15 43 10.0
		Um	iPKP	15 43 05.4
		Ud	iPKP	15 43 14.0
		New Hebrides Islands (h = 120 km).		
"	10	Ud	iPg	15 51 37.9 C
			iSg	15 51 58.1
			iRg	15 52 07.1
		De	iSg	15 52 52.4
		Oslo Fjord, 59.3°N, 10.8°E. Origin time = 15 51 07. Explosion? Solution by combination with Kongsberg reading.		
"	10	Up	iP	16 28 44.6
			i	16 28 46.1
			iScS	16 38 39

(cont.)

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

1970 June 10 (cont.)

Up	iP'P'		16 56 58.6		
			micr	sec	
	P	Z'	0.1	0.5	
	P'P'	Z'	0.6	2.5	
	Mx	E	3.4	20	
	Mx	N	6.1	19	
	Mx	Z	5.5	19	
Ki	iP		16 27 57.4		C
	iPcP		16 28 48.5		
	iScS		16 37 46		
	iP'P'		16 57 15.3		
			micr	sec	
	P	Z'	0.1	1.1	
	P'P'	Z'	0.5	2.7	
	Mx	E	4.6	18	
	Mx	N	2.9	21	
	Mx	Z	7.8	22	
Sk	iP		16 28 33.8		
	iPcP		16 29 03.7		
	iP'P'		16 57 00.3		
	i		16 57 20.4		
Um	iP		16 28 20.3		
	i		16 28 22.4		
	iPcP		16 28 55.0		
	iP'P'		16 57 03.8		
Ud	iP		16 28 49.9		C
	i		16 28 51.4		
	iP'P'		16 56 54.1		
	i		16 57 09.3		
De	iP		16 29 09.3		

Kurile Islands (h = 60 km).
m = 6.1, M = 5.9 (Up,Ki).

" 10	Ud	eP	17 50 04		

Turkey (h = 20 km).

" 10	Um	iP	19 47 05.0		
	Ud	iP	19 46 41.8		
	De	eP	19 46 11		

Dodecanese Islands
(h = 30 km).

" 10	Ki	iP	21 28 48.1		
	Ud	iP	21 28 36.2		
" 10	Ud	iP	23 57 54.3		
	De	iP	23 58 06.0		
" 11	Up	iP	03 45 02.8		
	Um	i(P)	03 44 52.5		
	Ud	iP	03 45 05.2		C
" 11	Up	iPKP	06 21 11.9		C
		iPP	06 21 38		
		iP'P'	06 40 45.5		

(cont.)

1970 June 11 (cont.)

Up				micr	sec
	Mx	E		3.1	20
	Mx	N		3.1	19
	Mx	Z		3.9	20
Ki	iP			06 17 17.1	
	iPKP			06 21 18.1	
	iPP			06 22 06.0	
	iSKS			06 27 51	
	i(PKKP)			06 32 10.3	
	iPKKP			06 32 18.4	
	iP'P'			06 40 40.5	
				micr	sec
	PKP	Z'		0.2	1.7
	Mx	E		5.9	22
	Mx	N		2.8	18
	Mx	Z		7.8	22
Sk	eP			06 17 13	
	iPKP			06 21 01.9	
	iPP			06 21 32.1	
	i(PKKP)			06 32 25.2	
	iP'P'			06 40 48.2	
Um	iP			06 17 16	
	iPKP			06 21 16.4	
	iPP			06 21 55.7	
	iSKS			06 27 44	
	i(PKKP)			06 32 13.4	
	iPKKP			06 32 22.6	
	iP'P'			06 40 41.9	
Ud	iP			06 17 07.0	
	ipP			06 17 30.5	
	i(PP)			06 20 10.7	
	iPKP			06 21 01.5	
	iPP			06 21 26.9	
	iPKKP			06 32 39.8	
	i			06 33 10.6	
	iP'P'			06 40 49.8	
De	iP			06 16 56.4	
	ipP			06 17 25.7	
	e(PP)			06 20 06	
	iPKP			06 20 54.3	
	iPKKP			06 32 45.6	
	i			06 33 17.4	
	iP'P'			06 40 48.4	

Chile-Argentina.
h = 100 km (Ud,De).
M = 6.2 (Up,Ki).
(PP) at Ud,De denotes early arrivals of PP. The time difference P'P'-PKP is 15-16 sec less than according to Gutenberg's table (Trans. Amer. Geophys. Union, Vol. 32, 1951, pp. 373-390).
PKKP exhibits double onsets.

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

1970 June	11	Up	iP	07 41 42.7	
		Sk	iP	07 41 39.2	C
		Um	iP	07 41 33.6	
			i	07 41 45.5	
		Ud	iP	07 41 46.0	C
"	11	Um	iP	08 00 47.5	
		Ud	iP	08 01 06.6	
		Hindu Kush.			
"	11	Up	iPg	09 08 55.7	
			iSg	09 09 22.1	
		Um	iSg	09 10 39.0	
		Ud	iSn	09 10 13.7	
			iSg	09 10 26.7	
		De	iLgl	09 10 53.3	
		Baltic Sea,			
		59.5°N, 21.4°E.			
		Origin time = 09 08 16.			
		Underwater explosion?			
"	11	Um	i(Sg)	13 27 32.0	
		Ud	i(Sg)	13 26 29.1	
		De	i(Sg)	13 26 47.9	
		Probably Baltic Sea.			
"	11	Um	iP	16 00 36.5	
		Ud	iP	16 00 58.7	
		Tadzhik-Sinkiang (h = 70 km).			
"	11	Up	iPKP	17 06 46.0	
				micr	sec
			Mx	E 54	18
			Mx	N 99	25
			Mx	Z 82	19
		Ki		micr	sec
			Mx	E 47	18
			Mx	N 50	20
			Mx	Z 140	21
		Sk	ePKP	17 06 49	
			i	17 06 58.5	
		Um	iPKP	17 06 44.8	
			i	17 06 55.5	
		Ud	iPKP	17 06 42.9	
			i	17 06 53.0	
			i	17 07 22.2	
		De	ePKP	17 06 45	
			i	17 06 57.0	
		Macquarie Islands (h = N).			
		M = 7.6 (Up,Ki).			
		Double PKP, small and large,			
		average difference 10.7 sec,			
		periods around 3 sec.			
"	11	Up	iSg	17 18 49.8	
		Sk	eSg	17 18 53	
		(cont.)			

1970 June	11	(cont.)			
		Ud	iPg	17 17 23.3	C
			iSg	17 17 48.2	
		De	iSg	17 18 50.6	
		South Norway,			
		59.8°N, 10.2°E.			
		Origin time = 17 16 45.			
"	11	Up	iP	17 48 16.7	C
				micr	sec
			P	Z' 0.2	0.5
		Ki	iP	17 48 25.7	C
				micr	sec
			P	Z' 0.2	0.7
		Sk	iP	17 48 42.4	C
		Um	iP	17 48 15.4	C
			ipP	17 48 56.9	
		Ud	iP	17 48 33.5	C
			iPP	17 50 16.2	
		De	iP	17 48 29.9	C
		Hindu Kush.			
		h = 200 km (Um).			
		m = 6.0 (Up,Ki).			
"	11	Ki	iPn	18 39 31.2	
			iSn	18 40 17.5	
			iLgl	18 40 30.3	
		Sk	iSg	18 43 28.4	
		Um	iSg	18 42 10.4	
		Northwest Russia,			
		69.3°N, 30.5°E.			
		Origin time = 18 38 28.			
		Explosion?			
"	12	Ud	iP	03 16 24.4	
		Kurile Islands (h = N).			
"	12	Up	iP	05 04 59.9	C
			ipP	05 05 10.6	
				micr	sec
			P	Z' 0.1	1.0
			Mx	E 0.8	18
			Mx	N 1.2	20
			Mx	Z 1.3	17
		Ki	iP	05 04 05.6	C
				micr	sec
			P	Z' 0.1	1.0
			Mx	E 1.0	16
			Mx	N 1.7	20
		Sk	iP	05 04 32.6	C
			ipP	05 04 43.0	
		Um	iP	05 04 33.9	C
			iS	05 12 45	
		Ud	iP	05 04 56.5	
		De	iP	05 05 20.4	C
		Kodiak Island.			
		h = 40 km (Up,Sk).			
		m = 5.9, M = 5.2 (Up,Ki).			

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

1970 June	12	Up	iP		06 49 49.7
		Ki	iP		06 49 14.1
		Sk	iP		06 49 48.3
		Um	iP		06 49 28.4
		Ud	iP		06 49 54.6
		De	iP		06 50 10.6
		Bonin Islands (h = N).			
"	12	Up	iP		08 20 34.6
					micr sec
			Mx	E	2.7 20
			Mx	N	5.4 22
			Mx	Z	6.1 21
		Sk	eP		08 20 42
		Um	iP		08 20 20.8
			i		08 20 23.8
			iPP		08 24 36.9
		Ud	iP		08 20 41.3
			iPP		08 25 09.6
			i		08 25 28.3
		De	iPP		08 25 17.4
			i		08 25 45.8
		New Guinea (h = 30 km).			
		M = 6.1 (Up).			
"	12	De	iP		08 36 50.1
"	12	Um	iP		10 43 09.5
		Ud	e(P)		10 44 11
"	12	Up	iSg		11 30 02.1
		Sk	eSg		11 31 46
		Um	iSg		11 30 20.3
		Ud	iSg		11 31 03.8
		Esthonia.			
		Explosion?			
"	12	Sk	iSg		11 40 37.7
		Um	i		11 38 43.8
			iSg		11 39 03.3
"	12	Um	i(P)		12 21 16.6
		Ud	iP		12 21 04.3
"	12	Up	iP		13 06 06.5
		Um	iP		13 05 52.8
		Ud	iP		13 06 15.9 C
		Luzon (h = 50 km).			
"	12	Up	iP		16 07 45.1
			i		16 07 48.4
					micr sec
			P	Z'	0.1 0.7
		Sk	eP		16 08 06
			i		16 08 08.4
		Um	iP		16 07 37.6
		(cont.)			

1970 June	12	(cont.)			
		Um	i		16 07 39.9
		Ud	iP		16 08 02.2
			i		16 08 04.7
		De	iP		16 08 04.1
			i		16 08 06.3
		Sinkiang (h = N).			
		Double P.			
"	12	Sk	iP		17 42 43.8
		Um	i(P)		17 42 33.5
"	13	Ud	iP		00 38 15.4
		Pamir.			
"	13	Up	i(P)		02 17 39.3
		Um	i(P)		02 18 09.0
		Ud	i(P)		02 17 41.8
"	13	Ki	iP		02 20 45.6
			i		02 20 50.8
		Ud	iP		02 20 35.5
			i		02 20 45.4
"	13	Um	iP		02 44 47.5
			i		02 44 50.6
			i		02 46 13.3
"	13	Up	iP		05 38 49.9
					micr sec
			P	Z'	0.1 0.5
		Ki	iP		05 37 56.6 C
			iPcP		05 38 41.7
		Sk	iP		05 38 30.6
			iPcP		05 39 01.2
		Um	iP		05 38 22.4
			iPcP		05 38 57.5
		Ud	iP		05 38 50.2 C
		De	iP		05 39 12.9
		Aleutian Islands (h = 55 km).			
"	13	Up	iP		08 14 01.3
					micr sec
			P	Z'	0.1 1.0
		Ud	iP		08 13 49.2
			i		08 13 59.8
"	13	Ud	iP		09 48 44.1
"	13	Ki	iP		11 58 57.3
		Kurile Islands (h = 50 km).			
"	13	Ud	i		14 54 27.4
			i(Sg)		14 55 18.1
"	13	Up	i(P)		20 03 29.8
		Sk	iP		20 04 33.0

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

1970 June	13	Um	iP		23 42 37.9	C
"	13	Up	iP		23 48 29.0	
"	14	Up	iPKP		00 19 25.1	C
			i		00 19 30.6	
					micr	sec
			PKP	Z'	0.2	0.9
			Mx	E	28	21
			Mx	N	26	21
			Mx	Z	50	22
		Sk	iPKP		00 19 24.7	C
			i		00 19 27.7	
			iPKS		00 22 45.4	
		Um	i(PKP)		00 19 21.9	
			iPKP		00 19 30.4	
			i		00 19 37.2	
			i		00 22 10	
			iPKS		00 23 00	
		Ud	iPKP		00 19 22.0	C
			i		00 19 31.6	
			iPP		00 21 49.0	
			iPKS		00 22 47.8	
		De	iPKP		00 19 19.6	C
			iPKS		00 22 41.5	
		Chile (h = N).				
		M = 7.1 (Up).				
"	14	Up	iPKP		00 31 41.4	
		Sk	iPKP		00 31 42.5	
		Um	iPKP		00 31 44.8	
		Ud	iPKP		00 31 34.3	
			i		00 31 53.8	
		De	iPKP		00 31 33.8	
		Chile (h = N).				
"	14	Um	iP		01 03 50.9	
		Ud	iP		01 03 30.7	
		Turkey (h = N).				
"	14	Up	iP		03 14 43.9	
		Um	iP		03 14 23.9	
			i		03 14 34.4	
"	14	Up	i(P)		11 51 56.4	
		Um	iP		11 51 48.5	
		Hindu Kush.				
"	14	Up	iP		12 28 38.3	
		Ud	iP		12 28 44.5	
"	14	Up	iSg		15 39 17.1	
		Um	iSg		15 39 21.7	
		Ud	iSg		15 39 ~~36.4~~ 39	
		Near Baltic coast of northern Hälsingland, Sweden.				

1970 June	14	Up	iP		15 44 28.2	
			i		15 44 37.0	
		Sk	eP		15 44 25	
		Um	iP		15 44 09.5	
			i		15 44 21.0	
		Ud	iP		15 44 35.1	
		Bonin Islands (h = 8 km).				
"	14	Up	iLgl		17 36 ~~37.1~~ 40	
		Ki	iPg Pn		17 34 36.2	
			iSg Sn		17 35 10.5 35 17.8	
		Sk	iSg		17 36 09.3	
		Um	iPg		17 34 17.0	C
			iSg		17 34 36.48	
		Ud	iLgl		17 37 05.6	
		Coast of Västerbotten, near Piteå, Sweden, 65.3°N, 21.7°E.				
		Origin time = 17 33 ~~46~~ 52.				
"	14	Up	e(PKP)		22 02 12	
					micr	sec
			Mx	E	0.6	21
			Mx	N	0.8	20
			Mx	Z	1.0	20
		Ki			micr	sec
			Mx	E	0.6	18
			Mx	N	0.5	17
		Ud	i(PKP)		22 02 13.6	
		South Pacific Ocean (h = N).				
		M = 5.6 (Up,Ki).				
"	14	Up	iP		23 34 20.4	
			i		23 34 31.1	
		Sk	eP		23 34 16	
		Um	iP		23 34 01.9	
		Ud	iP		23 34 27.5	
"	14	Um	iP		23 46 41.5	
		Ud	iP		23 47 13.1	
"	15	Up	iP		01 09 13.4	
		Ki	iP		01 08 48.2	C
		Sk	iP		01 09 22.1	
		Um	iP		01 08 55.5	
		Ud	iP		01 09 27.5	
"	15	Up	iP		01 40 07.7	
		Ki	iP		01 40 10.2	
		Um	iP		01 40 03.0	
		Ud	iP		01 40 21.4	
		Tadzhik SSR.				
"	15	Up	ePKP		06 16 11	
		Ud	iPKP		06 16 15.3	
		Tonga-Kermadec Islands (h = N).				

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

1970 June	15	Up	iPn		06 27 53.3
		Ki	iP		06 28 12.8
			i(Pn)		06 28 30.7
		Sk	iPn		06 28 45.3
		Um	iP		06 27 44.2
			iSn		06 32 56.7
		Ud	iP		06 27 54.1
		De	eP		06 27 39
		Caucasus.			
		Origin time = 06 22 15.			
"	15	Up	iPg		09 38 11.6
			i		09 38 15.5
			iSg		09 38 29.9
		Ud	iPg		09 38 41.3
			iSg		09 39 15.6
		De	i(Pn)		09 38 46.9
			iSg		09 39 36.3
		Baltic Sea,			
		58.6°N, 18.3°E.			
		Origin time = 09 37 48.			
		Probably underwater			
		explosion.			
"	15	Up	iPKP		11 34 00.6
			iPKS		11 37 27.4
				micr	sec
			PKP	Z' 0.1	1.2
			Mx	E 31	19
			Mx	N 28	18
			Mx	Z 46	19
		Ki	iPKP		11 34 07.5
			i		11 34 12.0
			iPKS		11 37 43.8
				micr	sec
			PKP	Z' 0.2	1.3
			Mx	E 34	19
			Mx	N 27	20
		Sk	iPKP		11 34 03.2
			iPKS		11 37 31.9
		Um	iPKP		11 34 06.8
			iPKS		11 37 41.1
		Ud	iPKP		11 33 55.6
			iPKS		11 37 19.4
		De	iPKP		11 33 53.3
			i		11 33 56.8
		Falkland Islands (h = N).			
		M = 7.2 (Up,Ki).			
"	15	Up	i(Sg)		13 50 38.3
		Ud	i(Sg)		13 50 48.4
		De	i(Sg)		13 50 26.2
"	15	Ki	eSg		15 08 32
		Sk	eLgl		15 07 45
		Um	iSg		15 06 33.6
		Ud	iLgl		15 07 03.9
		(cont.)			

1970 June	15	(cont.)		
		De	eLgl	15 07 28
		Esthonia,		
		59.7°N, 25.6°E.		
		Origin time = 15 03 53.		
		Explosion?		
"	15	Ud	iP	16 05 27.9
		Turkey (h = N).		
"	15	Up	iP	17 09 01.0
		Ud	iP	17 09 03.3
"	15	Ud	iPg	17 16 26.2
			iSg	17 16 51.1
		De	iSg	17 17 07.0
"	15	Ud	i(Sg)	18 00 34.1
		De	i	17 58 00.7
			i(Sg)	17 58 48.2
"	15	Up	iP	18 23 46.3
		Ud	iP	18 23 27.3
		De	iP	18 23 38.4
"	15	Sk	i(P)	18 29 31.5
"	15	Sk	eP	20 28 08
		Um	iP	20 28 06.3
		Ud	iP	20 27 28.3
		De	iP	20 26 49.1
		Albania.		
"	15	Sk	iP	20 47 16.9
		Ud	iP	20 46 41.6
		De	iP	20 46 01.4
		Albania.		
"	15	Um	iP	22 52 51.7
"	15	Um	iP	23 48 30.2
		Ud	i(P)	23 49 11.9
"	16	Sk	iP	02 08 54.8
		Guatemala (h = 90 km).		
"	16	Up	iPKP	02 51 09.9
		Ki	iPKP	02 51 00.7 C
		Sk	iPKP	02 51 04.2
		Um	iPKP	02 51 03.0
			i	02 51 07.3
			iSKP	02 53 48.5
		Ud	iPKP	02 51 12.1
		De	iPKP	02 51 22.7
			ipPKP	02 53 40.5
		Tonga-Kermadec Islands.		
		h = 620 km (De).		

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

1970 June	16	Up	iP		04 23 10.2
		Um	iP		04 23 56.3
		Ud	iP		04 23 07.9
		Italy.			
"	16	Up	iP		05 23 35.2
					micr sec
			Mx	E	1.2 25
			Mx	N	0.9 22
			Mx	Z	2.1 25
		Ki	iP		05 23 34.2
					micr sec
			Mx	E	0.9 20
			Mx	N	1.2 22
			Mx	Z	1.4 21
		Sk	iP		05 23 21.0
		Um	iP		05 23 36.5
		Ud	iP		05 23 27.1
		De	iP		05 23 30.5 C
		South of Panama (h = 15 km).			
		M = 5.4 (Up,Ki).			
"	16	Ki	iP		06 02 46.4
		Sk	eP		06 03 08
		Um	iP		06 02 52.1
		Ud	iP		06 03 12.4
		De	eP		06 03 17
		Mindanao (h = 70 km).			
"	16	Up	iP		07 18 46.2
		Um	iP		07 18 26.5
			i		07 18 29.4
		Ud	iP		07 19 00.3
		De	iP		07 19 11.9
"	16	Up	iP		08 21 44.5 D
		Ki	iP		08 21 25.7 D
		Um	iP		08 21 31.7
		Ud	iP		08 21 53.4 D
		Luzon (h = 30 km).			
"	16	Up	i(P)		12 23 17.6
		Ud	iP		12 23 16.9
		De	iP		12 23 27.7
"	16	Ud	iPg		12 33 12.8
			iSg		12 33 34.7
		De	iSg		12 33 51.8
		Explosion?			
"	16	Up	iSg		13 26 19.8
		Ud	i		13 26 11.1
			iSg		13 26 28.1
		De	iPg		13 24 19.4
			iSg		13 24 37.9
		(cont.)			

1970 June	16	(cont.)		
		South Baltic Sea,		
		55.4°N, 15.6°E.		
		Origin time = 13 23 51.		
		Probably underwater explosion.		
"	16	Ud	i(Pg)	14 13 02.0 C
			i(Sg)	14 13 24.0
		De	i	14 14 18.9
"	16	Um	i(Sg)	14 37 31.6
		Ud	i	14 36 39.2
		De	i	14 36 55.2
"	16	Ud	iPg	15 49 37.1
			iSg	15 50 09.6
		De	iPg	15 49 32.6
			iSg	15 49 57.9
		Probably off west coast of Sweden.		
		Underwater explosion?		
"	16	Up	iP	17 04 44.9
		Ud	iP	17 04 53.6
"	16	Ud	iPn	17 16 58.7
			iSn	17 17 55.6
			iSg	17 18 20.2
"	16	Up	iP	17 32 18.5
		Ud	iP	17 32 30.0 C
		De	iP	17 32 16.3
		Iran (h = 40 km).		
"	16	Up	iPKP	18 13 57.6
		Sk	ePKP	18 13 53
		Um	iPKP	18 13 51.7
		Ud	iPKP	18 13 58.6
		De	iPKP	18 14 09.8
			i	18 14 16.7
		Tonga-Kermadec Islands (h = 120 km).		
"	16	Up	iPg	21 33 22.0
			iSg	21 33 39.2
			~~eRg~~	~~21 33 46~~
		Ud	iPg	21 33 10.6
			iSg	21 33 19.0
			iRg	21 33 22.2
		Central Sweden,		
		60.0°N, 14.9°E.		
		Origin time = 21 32 ~~57~~ 59.		
		Probably explosion.		
"	16	Up	iP	23 10 11.6
		(cont.)		

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

1970
June 16 (cont.)

Um	iP	23 09 52.3	
Ud	iP	23 10 18.4	
De	iP	23 10 30.8	
	i	23 10 43.8	

Bonin Islands (h = N).

" 17	Up	eP	00 40 05
	Ki	iPn	00 41 02.3
	Sk	ePn	00 40 57
	Um	iP	00 40 15.8
		i	00 40 18.0
	Ud	iP	00 40 22.8
	De	eP	00 40 09

Caucasus.
Origin time = 00 34 46.

" 17	Ud	iP	04 10 47.0

Hindu Kush.

" 17	Up	iP		04 58 11.8
		iPP		05 02 25.1
		iSKS		05 08 37
				micr sec
		Mx	E	1.0 18
		Mx	N	1.0 20
		Mx	Z	1.4 18
	Ki	iPP		05 02 39.5
				micr sec
		Mx	E	2.1 21
		Mx	N	0.8 19
		Mx	Z	2.8 19
	Sk	iP		04 58 04.8
		iPP		05 02 07.2
	Um	iPP		05 02 32.0
		iSKS		05 08 46
		i		05 09 30
	Ud	iP		04 58 03.0
		iPP		05 02 08.4
	De	iP		04 57 59.3
		iPP		05 02 08.2

Peru (h = 90 km).
M = 5.6 (Up,Ki).

" 17	Up	iP	05 14 04.7
		i	05 14 25.0
	Ki	iP	05 13 58.5
		i	05 14 14.2
	Sk	iP	05 14 10.0
		i	05 14 33.2
	Um	iP	05 13 59.9
		i	05 14 17.1
	Ud	iP	05 14 10.4
		i	05 14 33.3
	De	iP	05 14 12.9

1970
June 17

Up	iP	06 04 49.4	
Sk	iP	06 05 31.6	
Um	iP	06 05 27.7	
Ud	iP	06 04 56.6	
De	iP	06 04 20.3	C

Greece (h = 6 km).

" 17	Um	iP	08 40 07.0
	Ud	iP	08 40 26.8
	De	iP	08 40 23.5

Hindu Kush-Pamir.

" 17	Ud	iP	08 41 40.5
" 17	Ud	iP	09 18 02.4 D
" 17	Um	iP	09 18 52.4

Off coast of Central America (h = N).

" 17	Ki	iPn	11 33 40.5
		iSn	11 34 40.2
	Sk	iLgl	11 37 16.4
	Um	iSg	11 35 39.8

Northwest Russia,
66.7°N, 33.0°E.
Origin time = 11 32 23.
Explosion?

" 17	Up	iP	12 00 55.4
	Ki	iP	12 00 45.3
	Sk	iP	12 01 07.7
	Um	iP	12 00 49.9
	Ud	iP	12 01 08.5

Yunnan, China (h = N).

" 17	Ud	i(P)	13 57 16.2
" 17	Ud	i(P)	15 08 56.4
		i	15 09 40.3
	De	iP	15 09 02.4 C
" 17	Ud	iSg	17 40 17.8
	De	iPg	17 37 43.0
		iSg	17 38 28.1
" 17	Ud	iP	17 37 59.0 C
		i	17 38 09.3
" 17	Ud	iP	18 37 37.5
	De	e	18 38 02
" 17	Up	iP	18 55 27.6
			micr sec
		Mx E	1.0 17

(cont.)

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

1970 June 17 (cont.)

Up	Mx	N	1.1	18
	Mx	Z	1.7	18
Ki			micr	sec
	Mx	E	3.1	18
	Mx	N	2.0	17
	Mx	Z	3.6	17
Um	iP		18 55 09.7	
Ud	iP		18 55 37.1	
De	iP		18 55 49.5	

Japan (h = 25 km).
M = 5.4 (Up,Ki).

" 17	Up	iP	20 06 40.3
	Um	iP	20 06 07.7
	Ud	iP	20 06 35.3
		i	20 06 49.1
" 17	Up	iP	21 34 56.4
	Ud	iP	21 34 57.6
		i	21 35 23.8
	De	iP	21 35 08.4
" 17	Um	iPKP	21 49 24.4
	Ud	iPKP	21 49 26.7

South Pacific Ocean (h = N).

" 17	Up	iP	23 34 06.5
	Um	iP	23 33 51.0 C
	Ud	iP	23 34 12.2

Mariana Islands (h = 100 km).

" 18	Up	iP	00 35 41.9
	Ki	iP	00 35 15.4
	Um	iP	00 35 22.4
	Ud	iP	00 35 56.3 C
	De	iP	00 36 07.6

USSR-Mongolia.

" 18	Up	iP	01 59 29.3
" 18	Up	iP	02 06 40.4
	Um	iP	02 06 32.3
	Ud	iP	02 06 52.6
	De	iP	02 06 55.2
" 18	Ud	iP	05 27 51.7

" 18	Up		micr	sec
		Mx E	1.1	19
		Mx N	1.0	20
		Mx Z	1.9	20
	Ki		micr	sec
		Mx E	1.9	20
		Mx N	1.2	19
		Mx Z	1.7	19

(cont.)

1970 June 18 (cont.)

Ud	ePKP	06 59 13

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

" 18	Up	iP	09 07 36.2
			micr sec
		P Z'	0.1 0.5
	Ki	iP	09 08 52.6
	Um	iP	09 08 19.6
	Ud	iP	09 07 34.1 C
	De	iP	09 06 55.4

Sardinia.

" 18	Up	iP	11 06 50.5
			micr sec
		Mx E	0.6 16
		Mx N	0.4 15
		Mx Z	0.9 14
	Ki	iP	11 06 19.4
			micr sec
		Mx E	1.4 19
		Mx N	1.0 17
		Mx Z	1.8 17
	Sk	iP	11 06 50.8
	Um	iP	11 06 32.4
	Ud	iP	11 06 59.1
	De	eP	11 07 18

Japan (h = 60 km).
M = 5.2 (Up,Ki).

" 18	Up	iSg	11 17 43.0
	Sk	eSg	11 19 26
	Um	iSg	11 18 13.2
	Ud	iLgl	11 18 43.2
	De	eLgl	11 19 08

Esthonia,
59.7°N, 25.6°E.
Origin time = 11 15 31.
Explosion?

" 18	Up	iP	16 16 26.3
	Ud	iP	16 16 31.1
	De	e(P)	16 16 01
" 18	Ki	iPn	20 48 11.0
		iSn	20 48 57.5
		iLgl	20 49 14.6
	Sk	iLgl	20 51 53.9
	Um	i	20 50 26.0
		iSg	20 50 50.9

Northwest Russia.
Origin time = 20 47 07.
Explosion?

" 19	Ud	iP	02 55 39.5

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

1970 June	19	Up	iP		06 56 13.9	
		Ki	eP		06 57 28	
		Sk	eP		06 56 55	
			i		06 56 57.1	
		Um	iP		06 56 53.7	
		Ud	iP		06 56 20.9	
		De	eP		06 55 44	
		Greece (h = N).				
"	19	De	iP		08 27 10.9	
		Turkey.				
"	19	De	iP		08 46 26.0	
"	19	Up	iPg		10 09 43.2	
			iSg		10 10 51.1	
		Ud	iSg		10 11 16.1	
		De	iPn		10 09 00.5	
			iPg		10 09 08.7	
			iSg		10 09 51.8	
		South coast of the Baltic Sea,				
		near 54 1/2°N, 19°E.				
		Origin time = 10 07 54.				
		Explosion?				
"	19	Ud	iP		11 06 27.5	
		De	i(P)		11 06 38.6	
"	19	Up	iPP		11 14 59.6	
			iS		11 22 30	
			iPKKP		11 26 03.4	
					micr	sec
			PP	Z'	0.1	1.5
			Mx	E	2.7	23
			Mx	N	1.5	19
			Mx	Z	3.8	23
		Ki	iPKP		11 14 42.1	
			iS		11 22 55	
			i		11 25 42.0	
			iPKKP		11 25 51.0	
					micr	sec
			PKKP	Z'	0.1	1.1
			Mx	E	4.5	23
			Mx	N	2.2	23
			Mx	Z	4.7	22
		Sk	iP		11 10 25.0	
			iPP		11 14 47.4	
			i		11 25 55.0	
			iPKKP		11 26 09.7	
		Um	iPKP		11 14 39.6	
			iS		11 22 49	
			i		11 25 44.1	
			iPKKP		11 25 54.0	
		Ud	iP		11 10 23.4	
		(cont.)				

1970 June	19	(cont.)				
		Ud	iPP		11 14 45.9	
			iPKKP		11 26 11.4	
		De	iP		11 10 18.8	
			iPP		11 14 39.6	
			iPKKP		11 26 15.7	
		Chile (h = 50 km).				
		M = 6.0 (Up,Ki).				
		Double PKKP.				
"	19	Up	iSg		11 24 47.0	
		Ki	iPn		11 20 30.8	
			iSn		11 21 29.0	
			iSg		11 21 52.6	
		Sk	iSg		11 24 15.0	
		Um	iS^x		11 22 21.7	
			iSg		11 22 38.1	
		Ud	iSg		11 25 17.4	
		Northwest Russia,				
		67.4°N, 32.9°E.				
		Origin time = 11 19 15.				
		Explosion?				
"	19	Up	iP		11 38 05.6	
		Sk	e		11 38 45.8	
		De	i(P)		11 38 04.4	
"	19	Up	iP		12 02 42.9	
"	19	Up	iP		12 55 42.4	
			ipP		12 56 05.1	
					micr	sec
			P	Z'	0.2	0.7
		Ki	iP		12 55 18.7	
			ipP		12 55 39.7	
					micr	sec
			P	Z'	0.1	1.0
		Um	iP		12 55 27.2	
			ipP		12 55 48.3	
		Ud	iP		12 55 52.3	
			ipP		12 56 14.1	
		De	iP		12 56 00.6	
			ipP		12 56 23.4	
		Formosa.				
		h = 80 km (Up,Ki,Um,Ud,De).				
		m = 6.1 (Up,Ki).				
"	19	Up	iP		14 35 47.3	
			i		14 35 57.9	
			iS		14 44 21	
					micr	sec
			P	Z'	0.2	1.7
			Mx	E	2.7	23
			Mx	N	3.1	17
			Mx	Z	4.5	23
		(cont.)				

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

1970 June 19 (cont.)

Ki	iP		14 36 10.4	
	i		14 36 19.4	
	iS		14 45 06	
			micr	sec
	P	Z'	0.4	2.0
	Mx	E	7.4	23
	Mx	N	3.3	21
	Mx	Z	9.2	21
Sk	iP		14 35 41.5	
	i		14 36 06.1	
Um	eP		14 36 04	
	i		14 36 13.2	
	i		14 36 28.3	
	iS		14 44 48	
Ud	iP		14 35 35.1	C
	i		14 35 44.9	
De	iP		14 35 28.4	C
	i		14 35 36.8	

North Atlantic Ocean (h = N).
m = 6.2, M = 5.8 (Up,Ki).
Double P, in average 9.5 sec apart, the first of longer period (2-3 sec), the second of shorter period (1 sec).

" 19

Up	iP		15 16 13.8	
Um	iP		15 16 10.9	
Ud	iP		15 16 30.6	C
De	iP		15 16 27.7	
	i		15 17 41.9	
	i		15 18 29.2	

Afghanistan-USSR (h = N).

" 19

Up	i		15 42 28.4	
	i(Sg)		15 42 46.3	
De	e		15 42 10	
	i(Sg)		15 43 00.6	

" 19

De	e(P)		16 13 36	

" 19

Ki	eP		16 53 01	
Um	iP		16 53 07.5	
Ud	iP		16 53 27.0	
	ePP		16 57 19	

Mindanao (h = 80 km).

" 19

Up	iS^x		17 24 12.6	
	iSg		17 24 31.5	
Sk	iLgl		17 24 33.5	
Ud	eP^x		17 22 27	
	iPg		17 22 37.8	
	iS^x		17 23 25.8	
	iSg		17 23 33.9	
De	iPg		17 22 31.8	
	i		17 22 47.9	

(cont.)

1970 June 19 (cont.)

De	iSg		17 23 22.1	

Skagerrak,
57.7°N, 7.0°E.
Origin time = 17 21 14.

" 19

Um	iP		17 37 15.3	C

" 19

Up			micr	sec
	Mx	E	1.1	20
	Mx	N	1.8	22
	Mx	Z	3.2	20
Ki	iPKP		18 57 26.2	
			micr	sec
	Mx	E	1.9	20
	Mx	N	1.5	21
	Mx	Z	1.9	20
Sk	ePKP		18 57 44.5	
Um	iPKP		18 57 35.2	

Fiji Islands (h = N).
M = 5.8 (Up,Ki).

" 19

Up	iP		19 02 38.1	C
			micr	sec
	P	Z'	0.2	1.5
Ki	iP		19 01 41.4	C
			micr	sec
	P	Z'	0.2	1.5
Sk	iP		19 02 19.0	C
Um	iP		19 02 08.2	
Ud	iP		19 02 40.8	C
De	iP		19 03 03.6	C

Kamchatka (h = N).
m = 6.1 (Up,Ki).

" 19

Up			micr	sec
	Mx	E	1.0	17
	Mx	N	0.9	18
	Mx	Z	1.1	18
Sk	iPKP		19 08 57.9	
Um	iPKP		19 08 53.6	
Ud	iPKP		19 09 01.4	
	iPP		19 11 45.1	
De	iPKP		19 09 12.2	
	i		19 09 24.2	

Fiji Islands (h = N).

" 19

Up	iP		22 31 33.9	C
	i		22 31 41.6	
			micr	sec
	P	Z'	0.2	0.6
Ki	iP		22 32 50.5	
Sk	iP		22 32 15.8	C
	i		22 32 24.7	
Um	iP		22 32 14.2	
Ud	iP		22 31 40.4	C

(cont.)

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

1970 June	19	(cont.)				
		De	iP		22 31 02.6	
		Greece.				
"	19	Up	iP		23 40 55.4	
		Sk	iP		23 41 38.8	
		Ud	iP		23 41 02.9	
		De	iP		23 40 26.6	
		Greece.				
"	19	Up	iP		23 52 08.7	
		Um	iP		23 52 14.8	
		Ud	iP		23 52 04.9	
		De	iP		23 52 03.5	
"	20	Up	iP		02 35 39.1	C
			ipP		02 35 50.3	
					micr sec	
			Mx	E	0.5 18	
			Mx	N	0.7 17	
		Ki	iP		02 34 56.7	
			ipP		02 35 06.2	
					micr sec	
			Mx	E	0.7 17	
			Mx	N	0.7 18	
			Mx	Z	0.7 17	
		Sk	iP		02 35 31.3	
		Um	iP		02 35 15.8	C
			ipP		02 35 25.3	
		Ud	iP		02 35 46.1	C
			ipP		02 35 55.6	
		De	iP		02 36 02.1	
		Japan.				
		h = 35 km (Up,Ki,Um,Ud).				
		M = 5.1 (Up,Ki).				
"	20	Up	e		04 20 18	
			iLgl		04 20 33.4	
		Ki	iPn		04 15 52.1	
			iSn		04 16 56.7	
			iSg		04 17 25.9	
		Sk	eLgl		04 19 58	
		Um	iSn		04 17 49.9	
			iLgl		04 18 31.4	
			iSg		04 18 44.9	
		North coast of Kola Peninsula,				
		69.2°N, 35.1°E.				
		Origin time = 04 14 26.				
"	20	De	iPKP		04 22 15.0	
		Fiji Islands (h = 630 km).				
"	20	Up	iP		06 09 20.8	
			i		06 09 24.0	
		(cont.)				

1970 June	20	(cont.)				
		Up			micr sec	
			Mx	E	0.5 10	
			Mx	N	0.6 12	
			Mx	Z	0.7 12	
		Ki	iP		06 10 30.9	
					micr sec	
			Mx	E	0.6 13	
			Mx	N	0.5 14	
			Mx	Z	0.5 8	
		Sk	eP		06 10 07	
		Um	iP		06 09 53.8	
			i		06 10 06.4	
		Ud	iP		06 09 34.4	C
		Turkey (h = 25 km).				
		M = 4.5 (Up,Ki).				
"	20	Ud	eP		08 24 46	
		De	eP		08 24 08	
		Greece.				
"	20	Up	iP		08 40 14.7	
		Ki	iP		08 39 47.3	
		Sk	iP		08 40 24.3	
		Um	iP		08 39 55.5	C
		Ud	iP		08 40 29.4	C
		De	iP		08 40 40.4	C
"	20	Ki	e(P)		09 10 36	
"	20	Ki	iP		09 33 48.5	
		Um	iP		09 33 28.0	
"	20	Ud	iP		10 49 54.7	
"	20	Up	i		11 08 56.5	
			iSg		11 09 28.0	
		Ki	iSg		11 10 14.4	
		Sk	eSg		11 10 38	
		Um	iSg		11 08 52.4	
		Ud	eSn		11 09 39	
			iSg		11 10 30.0	
		De	iSg		11 11 09.6	
		Lake Ladoga,				
		61.0°N, 31.3°E.				
		Origin time = 11 05 41.				
"	20	Ki	iP		12 16 04.1	
"	20	Up	iP		13 15 40.8	
		Ki	iP		13 15 22.1	
			ipP		13 15 31.4	
		Sk	iP		13 15 46.7	
		Um	iP		13 15 28.3	
			ipP		13 15 39.3	
		(cont.)				

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

1970 June	20	(cont.)		
		Ud	iP	13 15 50.3 C
			ipP	13 16 00.7
		Luzon.		
		h = 40 km (Ki,Um,Ud).		
"	20	Um	iP	13 31 06.5
"	20	De	eP	14 29 50
"	20	Ki	iP	15 20 35.3
"	20	Up	iP	16 40 04.4
			iPP	16 41 43.3
		Ki	eP	16 40 12
		Um	iP	16 40 02.7
		Ud	iP	16 40 21.5
		Hindu Kush.		
"	20	Ki	iP	17 13 59.0
		Um	iP	17 14 05.7
		Ud	iP	17 14 49.2
"	20	Ki	iP	17 40 25.6
		Ud	iP	17 40 55.2
"	20	Ud	iP	18 05 55.1
"	20	Sk	eP	18 18 01
		Ud	eP	18 17 49
		South Atlantic Ocean		
		(h = N).		
"	20	Ki	eP	19 25 54
"	20	Ki	e(P)	19 46 55
		Um	iP	19 47 24.7
"	20	Sk	i(P)	20 31 49.5
		Um	iP	20 31 10.8
			i	20 31 21.4
"	20	Ud	iP	20 36 55.6
		De	iP	20 36 37.0
"	20	Um	iP	20 52 26.3
"	20	Ud	iP	22 23 56.4
"	20	Um	iP	22 32 10.4
"	21	Um	i(P)	00 29 37.8
		Ud	iP	00 29 51.0
"	21	Ud	iP	01 25 24.2
"	21	Ki	e(P)	02 10 42
		(cont.)		

1970 June	21	(cont.)		
		Sk	eP	02 10 49
			i	02 12 40.7
"	21	Um	eP	02 44 39
"	21	Um	iP	03 44 10.1
"	21	Ud	eP	04 15 32
"	21	Up	iP	04 37 47.5
		Um	iP	04 37 02.4
"	21	Um	iP	04 42 56.9
		Ud	eP	04 43 11
"	21	Up	iSg	06 08 38.6
		Ki	iPn	06 04 28.0
			iSn	06 05 26.0
			iLgl	06 05 46.8
		Sk	iSg	06 08 16.0
		Um	iSg	06 06 32.9
		Ud	iSg	06 09 10.1
		De	iSg	06 10 44.5
		Northwest Russia,		
		67.1°N, 32.8°E.		
		Origin time = 06 03 13.		
		Explosion?		
		Cf remark on June 7, 07 08.		
"	21	Up	iSg	07 05 51.6
			i	07 05 58.7
		Ki	iPn	07 01 43.8
			iSn	07 02 45.6
			iLgl	07 03 06.8
		Sk	iSn	07 04 34.9
			iLgl	07 05 28.4
		Um	i	07 03 22.9
			iS^x	07 03 36.8
			iLgl	07 03 48.3
			iSg	07 03 53.8
		Ud	i	07 05 30.8
			iLgl	07 06 20.9
			iSg	07 06 32.3
		De	iPg	07 04 34.8
			iLgl	07 07 50.0
			iSg	07 08 05.3
		Northwest Russia,		
		67.0°N, 33.9°E.		
		Origin time = 07 00 23.		
		Explosion?		
		Cf remark on June 7, 07 08.		
"	21	Um	iP	10 01 11.0
"	21	Ki	e(P)	10 03 20
		Um	iP	10 04 13.5

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

1970				
June	21	Um	i(P)	12 28 54.9
"	21	Up	iP	15 15 54.3
"	21	De	iP	15 20 47.5
"	21	Up	iP	15 27 25.6
			i	15 27 40.8
		Ki	iP	15 27 29.2
		Um	iP	15 27 24.3
		Ud	iP	15 27 16.4
		Peru (h = 50 km).		
"	21	Up	iP	16 20 28.5
		Ki	iP	16 20 30.5 C
		Sk	iP	16 20 52.0
		Um	eP	16 20 24
		Ud	iP	16 20 45.6 C
		De	iP	16 20 51.0
		Tien-Shan.		
"	21	Up	i(P)	16 25 59.3
		Ki	eP	16 25 33
			i	16 25 52.0
		Ud	iP	16 25 57.7
			i	16 26 09.6
		Sumbawa Island (h = 35 km).		
"	21	De	iP	16 32 39.5
"	21	Um	iP	17 48 50.9
		Ud	iP	17 48 19.0
		De	iP	17 47 52.4
"	21	Ki	eP	18 29 39
		Ud	eP	18 29 13
"	21	Up	iP	20 01 11.5
				micr sec
			P	Z' 0.2 2.0
		Sk	iP	20 01 23.0 C
			i	20 01 28.3
		Ud	iP	20 01 08.6
			i	20 01 15.2
		De	iP	20 00 51.8
		South Atlantic Ocean (h = N).		
"	21	Up	iP	22 03 35.2
"	21	Ki	eP	23 34 30
"	21	Ki	iP	23 48 27.2
"	21	Ki	eP	23 56 53
"	22	Up	iP	00 53 22.9
		(cont.)		

1970				
June	22	(cont.)		
		Up	i	00 53 27.6
		Ud	iP	00 53 30.2
		De	iP	00 53 40.8
"	22	Um	iP	02 31 40.3
"	22	Up	iP	02 41 51.1
		Ki	iP	02 41 19.3
		Sk	iP	02 41 50.2
		Um	iP	02 41 31.9
		Ud	iP	02 42 00.0
"	22	Up	iP	05 16 35.2
			i	05 16 46.7
		De	e(P)	05 16 18
"	22	Ki	iP	05 50 51.7
			i	05 51 07.2
"	22	Um	iPKP	06 07 05.5
		De	iPKP	06 07 15.4
		Loyalty Islands (h = N).		
"	22	Um	iP	06 21 44.6
		De	e(P)	06 21 42
"	22	Up	iPKP	09 40 41.5
				micr sec
			PKP	Z' 0.2 0.9
		Ki	ePKP	09 40 16
		Sk	ePKP	09 40 37
		Um	iPKP	09 40 29.9
		Ud	iPKP	09 40 43.9
			i	09 41 11.6
		De	iPKP	09 40 51.5
			i	09 40 55.4
		Tonga-Kermadec Islands (h = 90 km).		
"	22	Up	iPKP	11 57 42.6
		Ki	ePKP	11 57 26
		Sk	iPKP	11 57 39.9
		Um	iPKP	11 57 35.8
		New Hebrides Islands (h = 110 km).		
"	22	Up	iP	12 04 34.6
"	22	Ki	ePn	12 48 03
			iSn	12 48 49
			iLgl	12 48 59.4
		Sk	iLgl	12 51 49.6
		Um	iSx	12 50 17.1
			iSg	12 50 38.9
		Northwest Russia, 69.4°N, 30.0°E. (cont.)		

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

1970 June	22	(cont.)					
		Origin time = 12 47 01.					
		Explosion?					
"	22	Up	iP		14 50 08.7		
					micr	sec	
			P	Z'	0.1	0.9	
			Mx	E	0.6	13	
			Mx	N	1.4	17	
			Mx	Z	1.1	14	
		Ki	iP		14 49 15.5		C
			ipP		14 49 23.6		
			iS		14 57 11		
					micr	sec	
			P	Z'	0.5	1.4	
			Mx	E	1.0	16	
			Mx	N	1.2	19	
			Mx	Z	2.3	19	
		Sk	iP		14 49 43.2		C
			ipP		14 49 53.8		
		Um	iP		14 49 42.9		C
			ipP		14 49 50.5		
			iS		14 58 03		
		Ud	iP		14 50 06.6		C
			ipP		14 50 14.9		
		De	iP		14 50 29.8		C
			ipP		14 50 36.4		
		South of Alaska.					
		h = 30 km (Ki,Sk,Um,Ud,De).					
		m = 6.2, M = 5.1 (Up,Ki).					
"	22	Up	iP		14 54 51.7		
		Ki	iP		14 53 57.9		
			ipP		14 54 04.9		
		Sk	iP		14 54 25.7		
			i		14 54 47.2		
		Um	iP		14 54 25.3		C
			ipP		14 54 32.8		
		Ud	iP		14 54 48.2		
		De	iP		14 55 12.4		
			ipP		14 55 19.5		
		South of Alaska.					
		h = 25 km (Ki,Um,De).					
		Origin time = 14 44 13.					
"	22	Ud	iP		14 56 29.4		
		Talaud Islands (h = 50 km).					
"	22	Ud	iP		15 30 38.7		
			i		15 30 54.8		
"	22	Um	iP		15 42 48.1		
		De	i(P)		15 41 52.7		
"	22	De	i		15 49 49.1		
			i(Sg)		15 50 33.2		

1970 June	22	Um	iP		17 21 47.9		
"	22	Up	iP		18 14 02.5		
		Ki	iP		18 13 08.7		C
		Sk	iP		18 13 45.9		
		Um	iP		18 13 34.0		
		Ud	iP		18 14 05.9		
			ipP		18 14 19.6		
		De	iP		18 14 26.7		
		Kamchatka.					
		h = 50 km (Ud).					
"	22	Up	i(P)		18 45 45.2		
		Ki	iP		18 45 30.2		
		Ud	iP		18 45 56.1		
		Mindanao (h = 60 km).					
"	22	Ki	i(P)		21 33 23.7		
		Um	i(P)		21 31 39.3		
"	22	Up	iP		21 44 36.1		C
			iS		21 53 40		
					micr	sec	
			P	Z'	0.4	1.3	
			Mx	E	1.9	17	
			Mx	N	3.9	15	
			Mx	Z	3.8	15	
		Ki	iP		21 43 50.4		C
			ipP		21 44 01.8		
					micr	sec	
			P	Z'	0.2	1.4	
			Mx	E	3.6	17	
			Mx	N	4.0	20	
			Mx	Z	8.1	16	
		Sk	iP		21 44 26.5		C
			ipP		21 44 38.7		
		Um	iP		21 44 10.8		C
			ipP		21 44 22.7		
		Ud	iP		21 44 42.4		C
			i		21 47 47.4		
		De	iP		21 45 00.2		C
			ipP		21 45 10.5		
		Kurile Islands.					
		h = 45 km (Ki,Sk,Um,De).					
		m = 6.3, M = 5.8 (Up,Ki).					
"	22	Sk	i(P)		21 51 27.5		
		Um	iP		21 51 53.0		
		Ud	iP		21 51 58.5		
"	22	Um	iP		22 31 14.2		
			i		22 31 18.0		
			i		22 31 43.1		
		Ud	eP		22 31 33		
"	22	Um	eP		23 52 28		
		Ud	eP		23 52 12		
		Turkey.					

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

1970 June	23	Um	iP		03 01 53.3
		Ud	iP		03 01 39.1
"	23	Up	iPKP		03 57 34.1 C
			ipPKP		03 57 47.4
		Ki	ePKP		03 57 49
		Sk	iPKP		03 57 39.6
			ipPKP		03 57 52.4
		Um	iPKP		03 57 43.3
		Ud	iPKP		03 57 32.5
			ePP		03 59 00
			i		03 59 16.3
		De	iPKP		03 57 27.2
		South Sandwich Islands.			
		h = 45 km (Up,Sk).			
"	23	Up	ePKP2		04 28 19
					micr sec
			Mx	E	0.5 17
			Mx	N	1.0 20
			Mx	Z	1.1 17
		Ki	iPKP2		04 28 17.7
			i		04 28 33.2
					micr sec
			PKP2	Z'	0.2 1.9
			Mx	E	0.5 18
			Mx	N	1.0 17
			Mx	Z	1.3 18
		Sk	iPKP2		04 28 34.1
		Um	iPKP2		04 28 18.4
			i		04 28 25.2
		Ud	iPKP2		04 28 29.1
			i		04 28 36.9
		Macquarie Islands (h = 30 km).			
		M = 5.9 (Up,Ki).			
		Large negative residuals			
		(average about -22 sec)			
		are obtained by comparison			
		with the USCGS solution.			
"	23	Ki	eP		04 59 42
"	23	De	eP		06 09 36
"	23	Um	iPKP		08 33 12.7
		Ud	iPKP		08 33 14.4
		De	iPKP		08 33 26.1 C
		Tonga-Kermadec Islands			
		(h = 650 km).			
"	23	Ki	iP		10 14 51.4
"	23	Ki	i		10 35 33.4
		Um	i(P)		10 32 10.2
"	23	Sk	eP		10 59 50

1970 June	23	Sk	eP	11 06 38
"	23	De	iP	12 57 48.9
"	23	Um	iP	13 06 22.3
		Ud	iP	13 07 05.1
"	23	Sk	e(Sg)	14 01 29
		Um	i(Sg)	14 00 22.4
"	23	Um	iP	16 14 29.2
"	23	Up	iPKP	16 28 39.1
		Sk	iPKP	16 28 33.9
		Um	iPKP	16 28 27.3
			i	16 28 31.9
		Ud	iPKP	16 28 41.2 C
			i	16 28 47.6
		De	iPKP	16 28 49.1 C
			i	16 29 01.7
		Kermadec Islands (h = 40 km).		
"	23	Up	iP	16 34 49.8
		Ki	iP	16 34 29.8
			ipP	16 34 38.8
		Sk	eP	16 34 55
		Um	iP	16 34 46.9
		Ud	iP	16 34 59.2 C
			ipP	16 35 08.8
		Luzon.		
		h = 35 km (Ki,Ud).		
"	23	Sk	i(Sg)	16 50 08.3
"	23	Sk	i(Sg)	17 32 20.7
"	23	Up	iP	19 35 02.7
		Ki	eP	19 34 37
		Mariana Islands (h = N).		
"	23	Sk	iPKKP	20 36 40.4
		Um	i(PKKP)	20 36 52.9
		Ud	iPKP	20 24 49.3
		De	iPKP	20 24 47.6
		Chile (h = 120 km).		
"	23	Ud	iP	21 01 52.1
"	23	Up	iP	21 18 01.3
		Ki	iP	21 18 04.0
		Sk	eP	21 18 18
		Um	i(P)	21 17 43.9
		Ud	iP	21 18 12.4
"	23	Ki	iP	21 36 28.8
"	23	Um	iP	22 17 30.9
		Germany.		

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

1970 June	23	Ud	iP		23 02 42.1		
"	23	Sk	iP		23 23 42.1		
		De	eP		23 23 46		
"	23	Ud	eP		23 57 06		
"	24	Um	iP		00 04 12.7		
"	24	Up	iP		00 53 03.3		
			ipP		00 53 12.5		
					micr	sec	
			pP	Z'	0.1	0.6	
		Ki	iP		00 52 52.8		
			ipP		00 53 00.0		
		Sk	iP		00 53 17.6		
			ipP		00 53 24.5		
		Um	iP		00 52 53.4		
			ipP		00 53 00.5		
		Ud	iP		00 53 17.1		
			ipP		00 53 23.9		
		De	iP		00 53 21.6		
			ipP		00 53 27.5		
		India-China.					
		h = 30 km (Up,Ki,Sk,Um,Ud,De).					
"	24	Um	iP		01 33 21.2		
"	24	Sk	iP		01 41 56.2		
"	24	Ud	iP		02 39 40.1		
"	24	Ud	iP		04 24 13.1		
"	24	Ki	iP		06 36 11.3		
"	24	Ki	iP		06 39 02.1		
		Ud	iP		06 39 08.4		
		De	iP		06 39 37.3		
"	24	Ki	iP		06 50 54.0		
"	24	Up	iP		07 41 14.3		
					micr	sec	
			Mx	E	0.8	15	
			Mx	N	3.6	22	
			Mx	Z	3.6	22	
		Ki	iP		07 40 26.0		
					micr	sec	
			P	Z'	0.1	1.3	
			Mx	E	2.4	19	
			Mx	N	3.6	19	
			Mx	Z	5.7	19	
		Sk	iP		07 40 44.9		
		Um	iP		07 40 52.5		
			i		07 40 55.7		
		(cont.)					

1970 June	24	(cont.)		
		Um	iS	07 49 22
		Ud	iP	07 41 07.9 C
		De	iP	07 41 29.0
		Queen Charlotte Islands		
		(h = N).		
		M = 5.6 (Up,Ki).		
"	24	Ud	iP	07 46 28.9
"	24	Sk	iP	08 32 24.6
"	24	Sk	eP	11 53 46
"	24	Um	iP	12 04 17.1
"	24	Ki	iP	12 10 40.1
		Sk	iP	12 10 47.9
		Um	iP	12 10 21.8
"	24	Sk	eP	12 32 20
			i	12 32 22.8
"	24	Up	i	12 41 47.4
		Ki	iPn	12 37 11.1
			iSn	12 38 01.6
			iLgl	12 38 15.5
		Probably northwest Russia.		
		Origin time = 12 36 02.		
		Explosion?		
"	24	Up	iP	12 38 03.1
"	24	Up	iSg	12 59 25.5
		Ki	iSg	13 01 53.8
			i	13 02 09.1
		Sk	iSg	13 01 14.4
			i	13 01 33.3
		Um	iSg	12 59 57.0
		Ud	iLgl	13 00 26.8
		De	iLgl	13 00 51.2
		Esthonia,		
		59.7°N, 25.6°E.		
		Origin time = 12 57 15.		
		Explosion?		
"	24	Up	iSg	13 11 23.7
		Ki	eSg	13 13 49
		Sk	eSg	13 13 14
		Um	iSg	13 11 55.6
		De	iLgl	13 12 51.9
		Esthonia,		
		59.7°N, 25.6°E.		
		Origin time = 13 09 13.		
		Explosion?		

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

1970 June	24	Up	iP		13 19 54.1		
			i		13 19 59.7		
			iS		13 28 47		
					micr	sec	
			P	Z'	0.3	0.9	
			Mx	E	81	22	
			Mx	N	250	22	
			Mx	Z	270	22	
		Ki	iP		13 19 07.2		C
			i		13 19 13.6		
			iS		13 27 20		
			eP'P'		13 48 57		
					micr	sec	
			P	Z'	0.9	1.8	
			Mx	E	260	23	
			Mx	N	370	25	
			Mx	Z	640	25	
		Um	iP		13 19 31.8		
			i		13 19 39.8		
			iS		13 28 08		
			iP'P'		13 48 36.1		
		Ud	iP		13 19 48.4		C
			i		13 19 54.7		
			iP'P'		13 48 28.0		
		De	iP		13 20 11.4		C
			i		13 20 17.7		
		Queen Charlotte Islands					
		(h = 10 km).					
		m = 6.5, M = 7.5 (Up,Ki).					
		Double P.					
"	24	Up	iP		13 27 44.0		
					micr	sec	
			P	Z'	0.1	1.0	
		Ki	iP		13 26 57.2		
					micr	sec	
			P	Z'	0.1	1.2	
		Sk	iP		13 27 15.0		
		Um	iP		13 27 22.4		
		Ud	iP		13 27 37.8		
		De	iP		13 27 59.2		
		Queen Charlotte Islands					
		(h = N).					
		m = 5.9 (Up,Ki).					
"	24	Up	iP		13 35 38.1		
		Ki	iP		13 34 48.6		
		Ud	iP		13 35 30.0		
		Queen Charlotte Islands.					
		Origin time = 13 24 53.					
"	24	Up	iP		13 48 36.6		
"	24	Um	i(P)		14 42 38.3		
		Ud	i(P)		14 43 10.4		

1970 June	24	Up	iP		15 28 42.4		
		Um	iP		15 28 10.1		
		Ud	iP		15 28 59.8		C
			i		15 29 12.5		
		De	iP		15 29 11.2		
"	24	Ki	i(Sg)		15 38 43.3		
		Sk	i(Sg)		15 38 50.0		
"	24	Up	i(Sg)		15 41 58.8		
		Um	i(Sg)		15 42 11.7		
"	24	Up	iP		17 22 32.9		
		Um	iP		17 23 07.6		
"	24	Ud	i(Sg)		18 29 07.1		
"	24	Up	Mx		19 44		
					micr	sec	
			Mx	E	1.2	21	
			Mx	N	0.8	20	
			Mx	Z	1.7	21	
		Ki	Mx		19 45		
					micr	sec	
			Mx	E	1.1	20	
			Mx	N	0.8	20	
			Mx	Z	2.1	21	
"	24	Up	iP		20 33 16.8		
"	24	Up	iPKP		23 20 29.9		
			i		23 22 58.3		
		Um	iPKP		23 20 28.2		
		Ud	iPKP		23 20 32.2		
		De	ePKP		23 20 42		
"	25	Um	i(P)		02 31 30.3		
		De	iP		02 32 07.8		
"	25	Up	iP		05 04 51.3		
			i(Li)		05 10 45.0		
					micr	sec	
			P	Z'	0.2	0.5	
		Ki	iP		05 05 00.0		
			iS		05 09 16.9		
			iLi		05 11 41.4		
					micr	sec	
			P	Z'	0.1	1.0	
		Sk	iP		05 05 20.0		
			i		05 05 30.8		
			i(Lgl)		05 13 02.6		
		Um	iP		05 04 45.5		
			i		05 08 20.1		
		Ud	iP		05 05 12.7		C
			iS		05 09 36.2		

(cont.)

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

1970 June	25	(cont.)				
		De	iP		05 05 12.8	
			i		05 05 20.8	
			iLgl		05 13 03.8	
		Ural Mountains-Caspian Sea.				
		m = 5.6 (Up,Ki).				
		Underground explosion.				
"	25	Up	iPKP		05 32 40.9	
			ipPKP		05 32 56.9	
			ePP		05 34 08	
					micr	sec
			pPKP	Z'	0.1	0.7
			PP	Z'	0.3	1.5
			Mx	E	3.4	22
			Mx	N	4.1	22
			Mx	Z	5.0	22
		Ki	iPKP		05 32 30.3 C	
			ipPKP		05 32 45.0	
			iPP		05 33 21.1	
					micr	sec
			Mx	E	4.5	22
			Mx	N	3.6	22
		Sk	iPKP		05 32 41.2	
			ipPKP		05 32 55.6	
			iPP		05 34 00.4	
		Um	iPKP		05 32 36.1 C	
			ipPKP		05 32 50.2	
			iPP		05 33 43.1	
		Ud	iPKP		05 32 45.2 C	
			ipPKP		05 32 59.8	
			iPP		05 34 13.2	
			i		05 34 19.5	
		De	iPKP		05 32 51.2 C	
			ipPKP		05 33 05.8	
		Solomon Islands.				
		h = 50 km (Up,Ki,Sk,Um,Ud,De).				
		M = 6.2 (Up,Ki).				
"	25	Ki	epPKP		05 43 21	
		Um	ipPKP		05 43 19.8	
		Ud	iPKP		05 43 19.7 C	
		De	iPKP		05 43 25.7 C	
		Solomon Islands (h = 60 km).				
"	25	Sk	i(P)		06 22 56.2	
"	25	Ki	iP		06 45 10.6	
		Sk	iP		06 45 31.8	
		Um	iP		06 45 09.2	
		Ud	iP		06 45 29.4	
"	25	Sk	iP		09 32 27.2	
"	25	De	iPKP		13 25 33.7	
		Solomon Islands (h = 60 km).				

1970 June	25	Up	iP	14 47 41.0
		Ki	iP	14 46 47.4
		Sk	eP	14 47 20
		Um	iP	14 47 12.9
		Ud	iP	14 47 41.3 C
"	25	Up	i(Sg)	16 03 51.6
		Um	i(Sg)	16 04 43.1
"	25	Up	eP	16 18 38
		Ki	iP	16 18 25.4
			i	16 18 34.0
		Sk	iP	16 18 12.1
			i	16 18 19.5
		Um	iP	16 18 35.0
			i	16 18 46.7
		Off east coast of USA.		
		Underwater explosion.		
"	25	Up	ipP	20 49 26.9
		Ki	iP	20 48 59.5
			ipP	20 49 07.3
		Sk	iP	20 49 23.6
		Um	ipP	20 49 15.2
		Ud	iP	20 49 28.0
			ipP	20 49 36.4
		Luzon.		
		h = 30 km (Ki,Ud).		
"	25	Up	iP	22 40 13.4
		Um	iP	22 39 45.8
		Ud	iP	22 40 11.4
"	26	Ki	eP	02 02 41
		Sk	eP	02 02 37
		Ud	iP	02 02 13.4
		De	iP	02 01 56.0
"	26	Um	i(P)	03 19 30.9
		Ud	iP	03 19 26.8
"	26	Up	iP	03 47 14.7
		Ki	iP	03 46 39.4
		Sk	iP	03 47 10.5
		Um	iP	03 46 54.4
			i	03 47 05.8
			i	03 48 08.8
		Ud	iP	03 47 22.6
		South of Japan (h = 130 km).		
"	26	Sk	eP	06 47 27
			e	06 47 35
		Um	iP	06 47 25.3
			i	06 47 34.4
		Ud	iP	06 47 43.4
"	26	De	iP	11 01 29.5

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

1970 June	26	Ki	iPn	11 18 24.9
			iSn	11 19 23.6
			iSg	11 19 50.9
		Um	iSg	11 20 37.2
		Northwest Russia.		
		Origin time = 11 17 09.		
		Explosion?		
"	26	Up	iLgl	12 45 41.6
		Ki	iSg	12 48 25.3
		Sk	iSg	12 47 42.6
		Um	iSg	12 46 22.5
		Ud	iLgl	12 46 52.0
		De	eLgl	12 47 17
		Esthonia.		
		Origin time = 12 43 41.		
		Explosion?		
"	26	Up	iP	16 03 54.4 C
			ipP	16 04 07.8
		Ki	iP	16 04 37.9 C
			ipP	16 04 50.3
				micr sec
			P Z'	0.1 1.4
			Mx E	0.6 18
			Mx N	0.8 19
			Mx Z	1.0 20
		Sk	iP	16 04 04.4 C
			ipP	16 04 15.7
		Um	iP	16 04 19.2 C
			i	16 04 22.7
		Ud	iP	16 03 48.0 C
			i	16 03 51.8
		De	iP	16 03 29.2 C
			i	16 03 33.1
		North of Ascension Island.		
		h = 45 km (Up,Ki,Sk).		
		Double P (Um,Ud,De).		
"	26	Up	iP	18 37 37.1
		Ki	e(P)	18 37 25
"	26	Ki	eP	21 33 35
		Ud	iP	21 34 00.6
		Molucca Passage (h = 55 km).		
"	27	Up	iP	00 51 23.8
			iPn	00 51 38.4
			iLi	00 58 00.7
		Ki	iP	00 52 00.2
			iPn	00 52 23.7
			eSn	00 57 49
		Sk	i(Pn)	00 52 42.9
		Um	iP	00 51 35.6
			iPn	00 52 03.9
			iSn	00 56 43.9
		(cont.)		

1970 June	27	(cont.)		
		Ud	iP	00 51 41.3
			i	00 51 46.2
			i	00 52 40.7
		De	eP	00 51 28
		Caucasus (h = N).		
"	27	Up	iP	02 17 55.4
"	27	Up	iP	03 35 38.9
		Ki	eP	03 34 47
		Ud	iP	03 35 46.8
		De	iP	03 36 04.2
		Kurile Islands (h = N).		
"	27	Up	iP	05 22 07.3
		Ki	eP	05 22 44
			iPn	05 23 07.1
		Sk	ePn	05 23 11
		Um	iP	05 22 18.7
			i	05 22 27.7
			iSn	05 27 30.2
		Ud	iP	05 22 26.2 D
			iPn	05 22 56.3
			i(Sn)	05 28 23.4
		De	iP	05 22 16.7
			i(Sn)	05 27 47.8
		Caucasus.		
		Origin time = 05 16 48.		
"	27	Um	iP	07 24 30.4
"	27	Up	iP	08 04 27.8
		Ki	iP	08 05 04.4
			iPP	08 06 27.5
		Um	iP	08 04 39.1
			i	08 04 48.1
		Ud	iP	08 04 42.5
			i	08 04 52.4
		De	iP	08 04 28.7
		Iran (h = 15 km).		
"	27	Ki	iPn	09 09 18.8
			iSn	09 10 14.7
			iLgl	09 10 35.4
		Sk	i	09 13 51.1
		Probably northwest Russia.		
		Origin time = 09 08 05.		
		Explosion?		
"	27	Up	iP	09 59 13.0
		Ud	iP	09 59 04.7
		De	iP	09 59 06.2 C
		Peru (h = 60 km).		
"	27	Sk	eP	10 47 02
		Um	iP	10 47 11.2
		Ud	iP	10 46 44.8

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

1970 June	27	Up	iLgl	12 37 15.1	
		Ki	iPn	12 32 37.1	
			iSn	12 33 26.0	
			iLgl	12 33 37.3	
		Sk	iLgl	12 36 22.0	
		Um	iSn	12 34 35.6	
			iSg	12 35 11.3	
		Ud	iLgl	12 37 34.0	
		De	iSg	12 39 29.5	

Northwest Russia,
69.3°N, 31.1°E.
Origin time = 12 31 31.
Explosion?
Cf remark on June 7, 07 08.

"	27	Up	iP		13 26 15.2	C
					micr	sec
			P	Z'	0.1	0.8
			Mx	E	0.8	18
			Mx	N	2.3	22
			Mx	Z	1.5	19
		Ki	iP		13 25 59.4	C
			ipP		13 26 24.0	
					micr	sec
			P	Z'	0.1	1.0
			Mx	E	1.4	17
			Mx	N	2.0	20
			Mx	Z	1.4	17
		Sk	iP		13 26 20.6	
			isP		13 27 01.1	
		Um	iP		13 26 04.6	
			ipP		13 26 32.7	
		Ud	iP		13 26 23.9	
			ipP		13 26 50.1	
		De	iP		13 26 29.4	C
			i		13 30 50.1	

Talaud Islands.
h = 100 km (Ki,Um,Ud).
m = 6.3, M = 5.7 (Up,Ki).

"	27	Up	iP	13 32 15.3
		Ud	iP	13 32 17.4

"	27	Ki	iPn	14 26 27.8
			iSn	14 27 12.4
			iSg	14 27 28.8
		Sk	eLgl	14 29 50
		Um	iSn	14 27 54.0
			iSg	14 28 25.8

Northwest Russia-Finland
border region,
67.5°N, 30.0°E.
Origin time = 14 25 30.
Explosion?

"	27	Up	iP	19 01 27.0

(cont.)

1970 June	27	(cont.)			
				micr	sec
			Mx	E	0.5	10
		Ki	eP		19 02 47
			i		19 03 06.4
				micr	sec
			Mx	N	0.4	12
		Sk	iP		19 02 11.3
			i		19 02 16.0
		Um	iP		19 02 09.6
		Ud	iP		19 01 33.4
		De	iP		19 00 53.1

Albania (h = 25 km).
M = 4.3 (Up,Ki).

"	27	Up	iP	21 01 18.6
		Ud	iP	21 01 21.4
		De	iP	21 01 32.2

"	27	Up	iP	23 06 09.3	
		Ki		micr	sec
			Mx	E	1.1	20
			Mx	N	0.7	18
			Mx	Z	1.6	20
		Sk	iP	23 05 51.4	
		Um	eP	23 06 04	
			i	23 06 07.1	
		Ud	iP	23 05 59.9	

Mexico (h = 40 km).

"	28	Um	iP	00 40 15.9
		Ud	i(P)	00 40 15.3

"	28	Up	eP	01 44 19	
			i	01 44 23.1	
			i(PP)	01 47 30.2	
			iPP	01 48 40.7	
				micr	sec
			PP	Z'	0.1	0.7
			Mx	E	6.9	20
			Mx	N	7.7	22
			Mx	Z	6.5	22
		Ki	iP	01 44 07.1	
			iPP	01 48 26.0	
				micr	sec
			P	Z'	0.1	1.0
			Mx	E	7.8	19
			Mx	N	8.0	22
			Mx	Z	7.6	20
		Sk	iP	01 44 27.3	
			iPP	01 48 59.0	
		Um	iP	01 44 10.1	C
			i(PP)	01 47 32.7	
			iPP	01 48 35.7	
		Ud	iP	01 44 27.6	C
			i(PP)	01 47 44.9	

(cont.)

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

1970
June 28 (cont.)

De	iP	01 44 31.9	
	iPP	01 49 03.8	

Timor (h = 40 km).
m = 6.6, M = 6.4 (Up,Ki).
(PP) denotes early arrivals of PP.

" 28	Up	iP		02 04 52.6	C
		iPn		02 05 58.2	
		iPP		02 06 10.9	
				micr sec	
		P	Z'	0.2 0.5	
		PP	Z'	0.2 0.8	
	Ki	iP		02 04 37.1	C
		iPn		02 05 31.5	
				micr sec	
		P	Z'	0.6 0.6	
	Sk	iP		02 05 08.1	C
		iPn		02 06 24.6	
		iPP		02 06 29.8	
	Um	iP		02 04 37.5	C
		iPP		02 05 52.6	
	Ud	iP		02 05 09.2	C
		iPn		02 06 21.8	
	De	iP		02 05 16.2	C
		iPn		02 06 31.0	
		iPP		02 06 43.6	

Kazakh SSR.
m = 6.3 (Up,Ki).
Underground explosion.

" 28	Um	e(Sg)	05 48 04
" 28	Up	eSg	06 13 42
	Ki	iPn	06 09 30.0
		iSn	06 10 26.7
		iLgl	06 10 46.9
	Sk	eSg	06 13 18
	Um	iSg	06 11 40.4
	Ud	e(Lgl)	06 14 12
	De	iSg	06 15 52.6

Northwest Russia,
67.3°N, 33.0°E.
Origin time = 06 08 15.
Explosion?
Cf remark on June 7, 07 08.

" 28	Up	iP	07 59 47.2
		iPn	08 00 00.0
		iPP	08 00 27.7
		i	08 06 24.1
		iLgl	08 07 16.0
	Ki	e(Pn)	08 00 40
		iSn	08 06 35.3
	Sk	ePn	08 00 53

(cont.)

1970
June 28 (cont.)

Sk	iPP	08 01 02.8	
Um	iP	07 59 54.7	C
	iSn	08 05 12.7	
Ud	iP	08 00 01.2	
	eSn	08 04 59	
De	iP	07 59 51.5	
	iPP	08 00 27.1	

Caucasus.
Origin time = 07 54 26.

" 28	Ki	iPn	09 50 51.5
		iSn	09 51 49.7
		iLgl	09 52 11.5
	Sk	eLgl	09 54 28
		iSg	09 54 42.7
	Um	iSn	09 52 29.5
		iS^{x}	09 52 43.3
		iSg	09 53 05.8

Northwest Russia,
67.5°N, 33.3°E.
Origin time = 09 49 35.
Explosion?

" 28	Up	iP		11 12 19.9	C
		iP'P'		11 39 26.1	
				micr sec	
		P	Z'	0.2 0.5	
		P'P'	Z'	0.3 1.5	
		Mx	E	0.6 17	
		Mx	N	1.2 20	
		Mx	Z	1.9 20	
	Ki	iP		11 11 26.4	
		iP'P'		11 39 51.0	
				micr sec	
		P	Z'	0.3 0.8	
		P'P'	Z'	0.2 2.0	
		Mx	E	1.8 18	
		Mx	N	1.3 17	
		Mx	Z	0.8 14	
	Sk	iP		11 12 03.1	C
	Um	iP		11 11 51.7	C
		iP'P'		11 39 45.3	
	Ud	iP		11 12 23.4	C
		iP'P'		11 39 23.4	
	De	iP		11 12 45.6	C
		iP'P'		11 39 10.2	

Kamchatka (h = 25 km).
m = 6.5, M = 5.3 (Up,Ki).

" 28	Up	iPKP		11 28 05.3	
		iSKP		11 30 53.3	
		iPP		11 31 15.5	
				micr sec	
		PKP	Z'	0.2 0.5	
		SKP	Z'	0.2 1.0	
		PP	Z'	0.5 1.4	

(cont.)

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

1970 June 28 (cont.)

Ki	iPKP		11 27 46.6	C
	i		11 27 57.8	
	iSKP		11 30 30.4	
			micr sec	
	PKP	Z'	0.2 0.9	
	SKP	Z'	0.7 1.4	
Sk	iPKP		11 28 57.9	
	iSKP		11 30 46.4	
	iSKKP		11 39 40.7	
Um	iPKP		11 27 51.8	
	i		11 27 54.3	
	i		11 28 06.5	
	iSKP		11 30 41.1	
Ud	iPKP		11 28 07.3	C
	iSKP		11 30 54.2	
De	iPKP		11 28 19.5	
	iSKP		11 31 03.7	

Fiji Islands (h = 620 km).

" 28	Ki	iP	12 03 48.1	
	Sk	iP	12 04 11.0	
	Um	iP	12 04 03.2	
	Ud	iP	12 04 24.4	
" 28	Up	eP	13 45 25	
			micr sec	
		Mx E	1.7 18	
		Mx N	1.3 13	
		Mx Z	1.2 13	
	Ki	eP	13 46 40	
			micr sec	
		Mx E	1.8 18	
		Mx N	0.8 17	
		Mx Z	1.0 14	
	Sk	eP	13 45 58	
	Um	iP	13 46 14.4	
	Ud	iP	13 45 25.9	
	De	iP	13 44 52.6	

Tunisia.
M = 4.8 (Up,Ki).

" 28	Ki	iPn	17 34 23.3	
		iSn	17 35 09.7	
		iLgl	17 35 24.8	
	Um	iSg	17 36 58.6	

Probably northwest Russia.
Origin time = 17 33 20.
Explosion?

" 28	Up	iP	21 24 07.8	
	Ud	iP	21 24 19.1	C
" 28	Up	iPKP	22 57 56.0	
	Um	iPKP	22 57 56.4	
	Ud	iPKP	22 57 58.2	C

(cont.)

1970 June 28 (cont.)

De	iPKP		22 58 08.1

Tonga Islands (h = 35 km).

" 29	Up	iPKP		06 07 31.4
		i		06 07 37.0
				micr sec
		PKP	Z'	0.5 0.5
	Ki	iPKP		06 07 08.2
				micr sec
		PKP	Z'	0.1 1.0
	Sk	iPKP		06 07 24.8
	Um	iPKP		06 07 20.1
	Ud	i(PKP)		06 07 26.6
		iPKP		06 07 33.1
		i		06 07 40.0
	De	i(PKP)		06 07 31.5
		iPKP		06 07 41.4
		i		06 07 54.0

Kermadec Islands (h = 340 km).

" 29	Sk	eP	12 20 11
	Um	iP	12 20 06.4
	Ud	iP	12 19 31.6

Yugoslavia-Albania.

" 29	De	iP	13 39 29.0
" 29	Up	iP	14 27 34.0 C
	Ki	eP	14 28 50
	Sk	iP	14 28 12.7
	Um	iP	14 28 13.5
	Ud	iP	14 27 37.6

Ionian Sea.

" 29	Sk	e(P)	14 38 25
" 29	Up	iSg	16 11 36.5
	Sk	eSg	16 13 57
		i	16 13 59.9
	Um	iSg	16 12 55.0
	Ud	iSg	16 12 41.4

Baltic Sea, between the Islands of Dagö and Ösel, 58.7°N, 22.7°E.
Origin time = 16 10 02.
Explosion?

" 29	Ki	iPn	17 39 48.3
		iP^x	17 39 56.4
		iSn	17 40 34.5
		iLgl	17 40 46.2
	Sk	iLgl	17 43 31.0
		iSg	17 43 44.1
	Um	iLgl	17 42 18.4
		iSg	17 42 27.9

(cont.)

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

1970 June	29	(cont.)			
		Ud	iLgl	17 44 51.4	
		Northwest Russia,			
		69.4°N, 30.5°E.			
		Origin time = 17 38 45.			
		Explosion?			
"	29	Up	iP	18 14 01.9	
		Ki	eP	18 14 45	
		Sk	iP	18 14 11.9	
		Um	iP	18 14 26.7	
		Ud	iP	18 13 55.2	C
		North of Ascension Island			
		(h = N).			
"	29	Up	iP	18 42 33.8	
		Ki	iP	18 41 51.8	
		Um	iP	18 42 10.5	
		Ud	iP	18 42 42.5	
"	29	Um	iP	19 46 48.1	
"	29	Ki	iP	21 18 10.1	
		Sk	eP	21 18 20	
"	29	Ki	iP	21 20 16.2	
"	29	Um	iP	21 39 49.2	
"	29	Ki	iP	23 01 00.3	
		Um	i(P)	23 01 16.0	
		Ud	eP	23 01 26	
"	29	Up	iP	23 30 23.3	C
		Ud	iP	23 30 25.5	
"	29	Up	iPKP	23 32 15.9	D
			i	23 32 21.0	
		Ki	iPKP	23 31 52.9	
		Sk	iPKP	23 32 10.0	D
		Um	iPKP	23 32 04.6	D
		Ud	iPKP	23 32 17.8	
			i	23 32 24.2	
		De	iPKP	23 32 25.7	
		Kermadec Islands (h = 360 km).			
"	30	Um	iP	02 55 06.6	
"	30	Ki	iP	03 41 35.7	
				micr	sec
			Mx E	0.3	15
			Mx N	0.3	15
			Mx Z	0.4	13
		Um	iP	03 41 56.0	
		Ud	iP	03 41 55.7	C
		De	iP	03 42 25.1	C
		Iceland (h = N).			

1970 June	30	Up	iP	03 57 21.4	C
		Ki	iP	03 56 59.0	
		Um	iP	03 57 07.0	
		Ud	iP	03 57 31.0	C
		De	iP	03 57 39.3	
		Formosa (h = 90 km).			
"	30	Ud	iP	06 34 40.7	
		Peru (h = 55 km).			
"	30	Um	iP	08 19 07.0	
		Ud	iP	08 19 31.2	
"	30	Sk	i(Sg)	10 03 47.8	
		Ud	iSg	10 02 53.0	
"	30	Ud	iP	13 14 40.8	
"	30	Um	i(P)	14 21 14.4	
"	30	Um	iP	15 06 40.0	
		Ud	iP	15 06 41.7	
		Gulf of California (h = N).			
"	30	Ki	eP	15 43 07	
		Um	iP	15 42 43.5	
		Ud	iP	15 42 54.6	C
		Iran (h = N).			
"	30	Up	iP	16 24 51.5	
		Ki	iP	16 24 08.4	C
		Um	iP	16 24 26.8	
			ipP	16 24 40.6	
		Ud	iP	16 24 58.6	
			ipP	16 25 11.5	
		De	iP	16 25 17.2	
		Japan.			
		h = 50 km (Um,Ud).			
"	30	Up	iP	17 57 15.7	
		Um	iP	17 57 43.9	
		Ud	iP	17 57 25.0	
		Ionian Islands.			
"	30	Up	iP	18 26 04.1	
			i	18 26 15.2	
				micr	sec
			P Z'	0.1	0.8
			Mx E	1.2	11
			Mx N	1.2	15
			Mx Z	1.1	12
		Ki	iP	18 27 21.4	C
				micr	sec
			Mx E	3.1	14
			Mx N	0.6	15
			Mx Z	1.6	16
		(cont.)			

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

1970 June	30	(cont.)				
		Sk	iP	18	26	45.5
		Um	iP	18	26	45.4
		Ud	iP	18	26	10.5
			i	18	26	14.4
		De	iP	18	25	35.3
			i	18	25	41.4
			i	18	26	15.7
		Greece (h = 6 km).				
		m = 4.9 (Up,Ki).				
"	30	Um	iP	19	15	45.1
			ipP	19	16	01.8
		Ud	ipP	19	16	33.3
		Japan.				
		h = 60 km (Um).				
"	30	Ud	iPKP	21	54	47.7
		De	iPKP	21	55	00.3
		Tonga Islands (h = 70 km).				
"	30	Up	iP	22	19	59.4
		Ki	eP	22	21	15 C
		Sk	iP	22	20	40.0
		Um	iP	22	20	38.8
		Ud	iP	22	20	08.3
		Greece.				
		Origin time = 22 15 09.				
"	30	Um	iPKP	23	05	44.1
		Ud	iPKP	23	05	37.1
		Easter Island region				
		(h = N).				

Markus Båth
July 2, 1971

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BOX 517
751 20 UPPSALA 1

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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	Up		micr	sec
		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.)

Up			micr	sec
	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.)

Up			micr	sec
	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(Lgl)		14 57 28		
		Northwest Russia.					
		Origin time = 14 52 35.					
		Explosion?					
"	2	Ki	iSn		16 53 16.6		
			i(Lgl)		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
		iP^x	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	
		iLgl		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.)

		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.)

		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.

				micr	sec
"	31	Ki			
			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

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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 = Delary

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	
			iLgl	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	
			iLgl	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 = Delary

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 = Delary

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.)

1970 Aug.	31	(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?

"	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

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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	0.9	19	E
			Mx	1.0	17	N
			Mx	1.3	20	Z
		Ki	iP	21 21 26.9		
			i	21 21 43.9		
		(cont.)				

1970 Sep.	13	(cont.)				
		Ki			micr	sec
			Mx		0.9	17	E
			Mx		0.8	17	Z
		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	0.1	1.5	Z'
		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	0.7	11	E
		Turkey (h = 35 km).				
"	14	Up	iP	09 51 17.6		
			i	09 51 23.0		
				micr	sec	
			P	0.1	0.9	Z'
		Ki	iP	09 51 15.9		
			i	09 51 20.5		
				micr	sec	
			P	0.1	1.0	Z'
		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 = Delary

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	
			iP^{x}		12 34 40.6	
			iSn		12 35 18.7	
			iLgl		12 35 31.8	
			iSg		12 35 36.1	
		Sk	iLgl		12 38 21.2	
		Um	iSg		12 37 06.9	
		Ud	iLgl		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	iLgl		12 51 15.2	
		De	eLgl		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 = Delary

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

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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	iLgl		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.)

			micr	sec
Up				
	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°N, 33.0°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

1970
Oct. 25 (cont.)

			micr	sec
Ki				
	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	

A = 20°
5.36
−0.25
5.11

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	

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

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BOX 517
751 20 UPPSALA 1

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BOX 517
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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 42.6
		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~~ 49.		
"	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~~ 51.		
"	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°N, 14.1°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 Sn	05 34 54.4	
			iSg	05 35 15.3	
		Sk	eSg	05 37 42 Sn 35 34.0	
		Um	i	05 35 47.1	
			iSg?	05 36 ~~10.3~~ 09.6	
		(cont.) Sg2		36 21.4	

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

1970
Nov. 29 (cont.) Ud eS,7 05 38 40

De	eLgl		05 40 14		

~~Torne Valley~~, Sweden-Finland border region, NW USSR
66.9°N, 23.7°E. 33 40 EXPL,
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

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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
			iSgl		16 23 33.3
		Sk	iSgl		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	13
		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
		Sk			12 29 12
"	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	iSgl	12 16 03.3	
			iSg2	12 16 23.2	
		Ki	iPn	12 12 06.1	
			iSn	12 13 05.0	
			iSgl	12 13 28.5	
		Sk	iSgl	12 15 53.4	
		Um	iSn	12 13 44.1	
			iSgl	12 14 14.0	
		Ud	iPn	12 13 33.9	
			iSn	12 15 45.0	
			iSgl	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	iSgl	09 56 09.4
		Sk	iSgl	09 56 13.6
			iSg2	09 56 18.2
		Um	iPgl	09 55 49.2
			iSn	09 56 23.9
			iSgl	09 56 38.0
		Ud	iSgl	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).		

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