

Seismological Institute
Uppsala

SEISMOLOGICAL BULLETIN
UPPSALA, KIRUNA, SKALSTUGAN, GÖTEBORG
UMEÅ, KARLSKRONA and UDDEHOLM

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
Göteborg	(Gb):	57°41.9'N,	11°58.7'E;	h = 66 m
Umeå	(Um):	63°48.9'N,	20°14.2'E;	h = 16 m
Karlskrona	(Ka):	56°09.9'N,	15°35.5'E;	h = 11 m
Uddeholm	(Ud):	60°05.4'N,	13°36.4'E;	h = 240 m

JANUARY 1 - 31, 1967

1967					1967				
Jan.	1	Ki	iPKP	00 39 54.6	Jan.	1	(cont.)		
		Sk	iPKP	00 40 05.7			Up	ipPKP	07 25 18.4
		Um	iPKP	00 40 00.0				ePKS	07 28 23
		Ud	iPKP	00 40 10					microns sec
		Santa Cruz Islands						M	E 3.1 20
		(h = 30 km).						M	N 7.2 22
"	1	Ki	eP	01 19 11				M	Z 7.2 22
		Um	iP	01 19 16.0		Ki	iPKP	07 24 48.7	
		Molucca Sea (h = 30 km).					ipPKP	07 25 05.5	
"	1	Up	iP	03 11 00.2			iPP	07 26 44.6	
			ipP	03 11 19.9			iPKS	07 28 18	
		Ki	iP	03 11 01.1			eSKKS	07 33 39	
		Gb	iP	03 11 26.4				microns sec	
		Um	iP	03 10 56.9			PKP Z'	0.1 1.0	
		Andaman Islands.					PP Z'	0.4 2.0	
		h = 80 km (Up).					PKS N	1.1 8	
"	1	Up	iP	03 47 38.3			M	E 3.7 20	
		Ki	eP	03 47 39			M	N 2.7 20	
		Um	iP	03 47 39.1			M	Z 7.1 21	
		Ud	iP	03 47 55			(D = 14100 km		
		Nicobar Islands					= 127°).		
		(h = 40 km).				Sk	iPKP	07 24 59.9	
"	1	Ki	iPKP	04 22 54.3			iPP	07 27 17.3	
		Sk	ePKP	04 23 06			Gb	i(PKP)	07 25 11.4
		Um	iPKP	04 23 00.6			Um	iPKP	07 24 57.0
		Santa Cruz Islands					i	07 26 23.2	
		(h = 30 km).					iPP	07 27 24	
"	1	Up	iPKP	07 24 59.6			iPKS	07 28 19	
		(cont.)					iSKKS	07 34 00	
						Ka	iPKP	07 25 23.1	
						Ud	iPKP	07 25 12	
							ipPKP	07 25 27	
						(cont.)			

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967
Jan. 1 (cont.)
Tonga Islands.
h = 60 km (Up,Ki,Ud).
Magn. = 6.5 (Up,Ki).

" 1 Up i(P) 10 44 31.3
i 10 44 48.2
Sk i(P) 10 43 15.2

" 1 Ki ePKP 14 37 33
Santa Cruz Islands
(h = 30 km).

" 1 Ki ePKP 17 57 25
Santa Cruz Islands
(h = 30 km).

" 1 Up iP 22 22 46.0
Ki ----
microns sec
M E 1.4 17
M N 1.0 17
M Z 1.4 17
Sk iP 22 23 28.9
Um iP 22 23 26.8
e 22 36 16
i 22 39 14
Greece.

" 2 Ki iPKP 00 58 36.0
Santa Cruz Islands
(h = 30 km).

" 2 Ud iP 02 51 51

" 2 Up iP 08 25 22.3
i 08 25 44.4
Ki iP 08 26 30.9
iX 08 27 31.7
microns sec
P Z' 0.1 1.3
Sk iP 08 26 00.4
Gb eP 08 25 13
Um iP 08 25 59.8
Ka iP 08 24 50.4
Ud iP 08 25 26
iX 08 26 28
Libya (h = 20 km).

" 2 Up iP 09 59 05.5
Ki iP 09 59 49.8
ipP 09 59 59.5
(cont.)

1967
Jan. 2 (cont.)
Ki microns sec
P Z' 0.1 1.2
Sk ipP 09 59 40.2
Um iP 09 59 27.1
ipP 09 59 37.7
Ud iP 09 59 07
Congo. h = 40 km (Ki,Um).

" 2 Up iP 13 57 09.0
iPP 13 58 45.4
microns sec
P Z' 0.1 0.7
Ki iP 13 57 47.9
i 13 58 07.9
iPP 13 59 30.6
iPcS 14 03 34.4
Sk iP 13 57 44.5
Gb iP 13 57 19.5
Um iP 13 57 23.4
i(P) 13 58 35.8
Ka iP 13 56 58.0
Ud iP 13 57 21
i 13 57 29
i 13 57 40
Iran (h = 40 km).

" 2 Ki iP 14 58 56.8
Ud iP 14 59 23
Philippine Islands
(h = 30 km).

" 2 Up ----
microns sec
M E 1.7 22
M N 2.7 22
M Z 3.0 23
Ki ePKP 20 18 52
i 20 19 04.6
microns sec
M E 1.2 18
M N 1.0 20
M Z 2.0 18
Sk iPKP 20 19 06.1
Um iPKP 20 18 53.4 C
i 20 19 00.5
Ud iPKP 20 19 04
i 20 23 26
Santa Cruz Islands
(h = 30 km).
Magn. = 6.0 (Up,Ki).
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skälstugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

[illegible]

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå
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1967
Jan. 4 (cont.)

Up		microns	sec
P	Z'	0.2	1.0
M	E	1.3	14
M	N	1.5	15
Ki	iP	03 53	15.3 D
	ipP	03 53	25.2
		microns	sec
P	Z'	0.2	1.5
M	E	1.1	13
M	N	0.9	14
M	Z	1.3	12
Sk	iP	03 53	42.6
	ipP	03 53	50.9
Gb	iP	03 53	54.8
	ipP	03 54	04.3
Um	iP	03 53	22.0
	ipP	03 53	31.9
Ka	iP	03 53	49.0
	ipP	03 53	59.0
Ud	iP	03 53	42
	ipP	03 53	53
	iPP	03 56	57

Philippine Islands.
h = 35 km (Up,Ki,Sk,Gb,
Um,Ka,Ud).
Magn. = 5.8 (Up,Ki).

"	4	Up	iLgl	04 48	³² 38.1
		Ki	iPg	04 44	23.6 D
			iSg	04 44	27.7
			D = 30 km =	0.3°	
		Sk	ePg	04 46	07
			eLgl	04 47	^{12.5} 10.1
			D = 610 km =	5.5°	
		Um	iPg	04 45	40.5 ^{Um} { ⁴⁶ 08.4
			iLgl	04 46	^{26.7} 27.7 { ⁴⁶ 18.9
			D = 460 km =	4.1°	
		Ud	iSn	04 47	51
			iLgl	04 48	39 43

Swedish Lapland,
68.6°N, 21.8°E.
Origin time = 04 44 18.
Felt, especially at
Kurravaara.

"	4	Up	iP	06 03	44.6
			iS	06 07	54
				microns	sec
		P	N	1.0	3
		P	Z'	0.3	0.7
		S	N	1.1	6

(cont.)

1967
Jan. 4 (cont.)

Up		microns	sec
M	E	1.8	10
M	N	2.4	11
M	Z	2.2	10
	D =	2450 km =	22°
Ki	iP	06 04	58.6
		microns	sec
P	Z'	0.3	1.5
M	E	2.3	8
M	N	1.5	11
M	Z	2.5	11
Sk	iP	06 04	25.4 D
	i	06 04	28.2
Gb	iP	06 03	32.1
Um	iP	06 04	22.9
	i	06 04	24.8
	iPcP	06 07	54.2
	iS	06 08	47
Ka	iP	06 03	06.9
Ud	iP	06 03	49
	iS	06 07	54
	Greece (h = 5 km).		
	Magn. = 6.0 (Up,Ki).		

"	4	Sk	iP	07 15	46.4
		Gb	iP	07 14	51.2
		Um	eP	07 15	42
		Ud	iP	07 15	05
			Greece (h = 40 km).		

"	4	Up	ipP	11 37	26.8
		Ki	iP	11 37	03.7
			ipP	11 37	23.1
		Sk	epP	11 37	47
		Um	iP	11 37	00.5
			ipP	11 37	21.1
		Ka	ipP	11 37	35.3
		Ud	iP	11 37	23 C
			ipP	11 37	41

Burma-India.
h = 70 km (Ki,Um,Ud).
pP is bigger than P. An
alternative interpretation
would be in terms of two
shocks, about 19 sec apart,
in the same place,
the second stronger than
the first.

"	4	Ki	ePn	13 46	11
			iSn	13 46	56.1

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967

Jan. 4 (cont.)
Ki iSg 13 47 15.4
D = 420 km = 3.8°.
Possibly northwest Russia.
Origin time = 13 45 09.
Explosion?

" 4 Up iP 15 00 09.3
Ki iP 14 59 15.0 C
Um iP 14 59 40.7
Ud iP 15 00 06
Aleutian Islands
(h = 40 km).

" 4 Ki iP 18 11 14.4
Sk iP 18 11 46.7
Um iP 18 11 29.6
Ud iP 18 11 53
Japan (h = 420 km).

" 4 Up iP 20 27 35.5 C
i 20 27 37.5
microns sec
P Z' 0.3 0.7
Ki iP 20 27 44.9 C
i 20 27 56.7
ipP 20 28 04.9
microns sec
P Z' 0.3 1.1
Sk iP 20 27 23.6 C
Gb iP 20 27 17.8
Um iP 20 27 43.4 C
ipP 20 28 06.6
Ka iP 20 27 28.1 C
Ud iP 20 27 (19) C
Venezuela. h = 80 km (Ki,
Um). Magn. = 6.2 (Up, Ki).

" 4 Ki iPKP 23 07 20.4
Um ePKP 23 07 16
i 23 07 26.0
South Sandwich Islands
(h = 90 km).

" 5 Up iP 00 23 17.4 C
i 00 23 20.4
iPP 00 25 12
iS 00 30 10
microns sec
P E 3.8 4
P N 2.5 5
P Z 8.9 5
(cont.)

1967

Jan. 5 (cont.)
Up microns sec

P Z' 3.5 1.5
PP E 12 5
PP N 8.5 5
PP Z 17 5
S E 120 19
S N 100 21
M E 750 24
M N 520 20
M Z 850 19
D = 5350 km = 48°.

Ki iP 00 22 45.4 C
i 00 22 52
iPP 00 24 31
iS 00 29 15

microns sec
P E 13 6
P N 2.0 6
P Z 19 5
P Z' 2.1 1.4
PP E 33 6
PP N 5.5 7
PP Z 25 5
S E 140 19
S N 35 14
S Z 34 13
M E 460 20
M N 230 15
M Z 780 20

D = 4900 km = 44°.

Sk iP 00 23 21.6 C
i 00 23 27.4
Gb iP 00 23 43.7 C
i 00 23 47.3
Um iP 00 22 55.9 C
i 00 22 59.7
iPP 00 24 42
iS 00 29 37
Ka iP 00 23 35.7 C
i 00 23 40.5
Ud iP 00 23 29 C
i 00 23 35

Mongolia (h = 30 km).

Magn. = 7.4 (Up, Ki).

PL waves recorded by long-
period instruments.

Multiple P.

" 5 Up iP 00 50 49.5
microns sec
P Z' 0.9 1.4
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967

Jan. 5 (cont.)

Ki iP 00 50 15.8
microns sec
P Z' 3.0 2.5
Sk iP 00 50 52.9
Gb iP 00 51 14.7
Um iP 00 50 27.1
Ka iP 00 51 08.1
Ud iP 00 51 03
Mongolia (h = 30 km).
Magn. = 6.7 (Up,Ki).

" 5 Sk iPKP 02 29 14.7
Um iPKP 02 29 09.3
Santa Cruz Islands
(h = 30 km).

" 5 Up iP 06 25 46.4
ipP 06 26 36.5
microns sec
P Z' 0.1 0.9
M N 0.9 18
Ki iP 06 25 29.2
ipP 06 26 15.5
iS 06 35 22
microns sec
P Z' 0.1 1.0
S E 1.1 7
S N 0.6 11
M E 0.8 16
M N 0.6 15
M Z 0.9 15
Sk iP 06 25 51.1
Gb iP 06 26 02.7
Um iP 06 25 34.4 C
i 06 25 39.8
ipP 06 26 16.9
iS 06 35 32
Ud iP 06 25 55 C
ipP 06 26 42
Mindoro.
h = 180 km (Up,Ki,Um,Ud).
Magn. = 5.6 (Up,Ki).

" 5 Up iP 10 15 32.9
i 10 16 52
iPP 10 17 06.2
iSS 10 24 07
iLgl 10 28 40
microns sec
PP Z' 0.1 1.0
M E 1.3 14
(cont.)

1967

Jan. 5 (cont.)

Up microns sec
M N 1.7 14
M Z 1.6 13
Ki iP 10 15 36.4 D
iPP 10 17 08.0
eSS 10 24 20
iLgl 10 29 03
microns sec
P Z' 0.1 1.0
PP E 0.6 5
PP Z' 0.1 1.2
M E 2.5 9
M N 2.5 9
M Z 3.0 9
Sk iP 10 15 56.1 D
iPP 10 17 38.8
Gb iP 10 15 45.8
i(P) 10 17 38.1
iPcP 10 17 54.7
Um iP 10 15 27.8 D
i 10 16 55
iPP 10 17 01.6
iS 10 21 26
iSS 10 23 46
iLgl 10 28 16
Ka iP 10 15 39.4 D
iPP 10 17 16.6
Ud iP 10 15 46
ePP 10 17 22
Kirghiz SSR (h = 10 km).
Magn. = 5.9 (Up,Ki).

" 5 Sk iPKP 10 54 42.8
Um iPKP 10 54 38.1
Ud i(PKP) 10 54 43
Santa Cruz Islands
(h = 60 km).

" 5 Up iP 12 14 20.4 C
microns sec
P Z' 0.1 0.5
" 5 Ki iP 13 54 36.5
" 5 Up iP 14 24 56.2 C
" 5 Ki iPn 14 41 35.6
iSn 14 42 23.7
iLgl 14 42 38.6
D = 440 km = 4.0°.

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967

Jan. 5 (cont.)
Possibly northwest Russia.
Origin time = 14 40 33.
Explosion?

" 5 Up iP 17 04 47.2
i 17 04 55.6
Ki eP 17 06 02
Sk iP 17 05 28.8
Um iP 17 05 24.5
Ud iP 17 04 55
Greece (h = 30 km).

" 5 Ki iP 22 48 32.5
Sk iP 22 49 08.7
Um iP 22 48 42.4
Ud iP 22 49 18

" 6 Up iP 00 06 58.4
microns sec
P Z' 0.1 1.2
Ki iP 00 06 27.1 C
iPP 00 08 02.9
eS 00 13 06
microns sec
P Z' 0.3 1.0
M E 1.9 8
M N 3.6 10
M Z 1.3 9
D = 4900 km = 44°.
Sk iP 00 07 03.2 C
Gb iP 00 07 25.4
Um iP 00 06 37.3 C
iPP 00 08 04.3
iS 00 13 12
Ka iP 00 07 18.4
Ud iP 00 07 12 C
i 00 07 57
Mongolia (h = 30 km).

" 6 Up iP 00 15 06.9 C
ipP 00 15 18.5
ePP 00 17 41
iS 00 24 17
microns sec
P N 0.4 3
P Z 0.7 3
P Z' 0.2 0.9
PP E 0.7 8
S E 1.0 9
S N 1.0 7
M E 3.4 20

(cont.)

1967

Jan. 6 (cont.)

Up microns sec
M N 5.9 22
M Z 4.3 22
D = 7650 km = 69°.
Ki iP 00 14 24.1 C
ipP 00 14 34.5
i 00 15 25.6

microns sec
P N 0.5 8
P Z 1.1 6
P Z' 0.1 1.0
M E 3.7 19
M N 2.4 19
M Z 5.7 20

Sk iP 00 14 59.3
i(pP) 00 15 12.7
Gb iP 00 15 28.4
Um iP 00 14 43.0 C
i(pP) 00 14 51.6
Ka iP 00 15 28.1
Ud iP 00 15 15 C
ipP 00 15 26

Japan.
h = 40 km (Up, Ki, Sk, Um, Ud).
Magn. = 6.0 (Up, Ki).

" 6 Up i(P) 00 21 33.0 C
Ki i(P) 00 22 44.4
Um iP 00 21 01.2
Ud i(P) 00 21 36

" 6 Um i(P) 00 34 37.2
Ud i(P) 00 35 12
Montana, USA (h = 10 km).

" 6 Um i(P) 02 07 39.9
Ud iP 02 08 52

" 6 Ki iP 03 00 46.7
Um iP 03 01 02.1
Ud eP 03 01 41

" 6 Up i(P) 06 03 26.7
Um i(P) 06 03 23.3
Ud i(P) 06 03 36

" 6 Um iP 06 16 28.4

" 6 Ki iP 10 16 33.6
i 10 16 42.0
Um iP 10 16 37.1

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967	Jan.	6	(cont.) Molucca Sea (h = 60 km).	1967	Jan.	7	Ki	iP	13 11 50.2 C
								P	Z' 0.1 1.0
"		6	Um iP 17 46 36.0 Japan (h = 30 km).				Sk	iP	13 12 26.3
"		6	Um iP 18 17 59.4				Um	iP	13 12 00.6 C
"		6	Um iP 18 17 59.4				Ud	iP	13 12 35 C
"		7	Up iPKS 00 50 03 microns sec M E 0.7 18 M N 1.1 18 M Z 0.6 18 Ki ePKP 00 46 33 i 00 46 41.9 microns sec M E 1.5 20 M N 0.8 18 M Z 2.3 19 Sk iPKP 00 46 44.1 C Gb iPKP 00 46 41.0 Um iPKP 00 46 37.0 iPP 00 49 24 iPKS 00 50 02 iSKKS 00 55 56 Southwest of Australia (h = 30 km). Magn. = 5.8 (Up, Ki).	"	7	Up iP 13 48 13.4 Ki iP 13 47 47.4 C microns sec P Z' 0.2 1.0 Sk iP 13 48 10.8 Gb iP 13 48 29.5 Um iP 13 47 57.4 C Ud iP 13 48 18 i 13 48 20 Mariana Islands (h = 40 km).			
"		7	Sk iP 01 38 58.1 Um iP 01 38 52.5 D	"	7	Um iPKP 16 12 45.4 Santa Cruz Islands (h = 30 km).			
"		7	Up iP 05 06 24.8 C Ud iP 05 06 22 Aleutian Islands (h = 70 km).	"	7	Up --- microns sec M E 1.0 17 M N 1.1 18 M Z 1.4 18 Sk iPKP 17 00 02.1 Um iPKP 16 59 56.5 Ud iPKP 17 00 05 Santa Cruz Islands (h = 30 km).			
"		7	Ki iPn 08 01 38.0 iSn 08 02 34.9 iLgl 08 02 52.3 iSg 08 03 02.0 D = 530 km = 4.8°. Sk eSg 08 05 30 Um iSn 08 03 19.6 iSg 08 03 58.4 D = 730 km = 6.6°. Northwest Russia, 67.9°N, 33.2°E. Origin time = 08 00 22. Explosion?	"	7	Up iP 18 19 13.8 i 18 19 17.9 Sk iP 18 19 33.1 Um iP 18 18 59.3 i 18 19 03.9 Ud iP 18 19 29 C			
"		7	Up iP 10 00 29.5	"	7	Um iP 19 37 05.0 Mexico (h = 70 km).			
"		7	Um iPKP 11 51 54.6 Santa Cruz Islands (h = 30 km).	"	8	Up iP 01 51 32.3 Um iP 01 51 42.7 Ud iP 01 51 46 i 01 55 32			
"		7	Up iP 10 00 29.5	"	8	Up eP 05 13 04 iPcP 05 13 46.3 (cont.)			

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå
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1967				1967			
Jan.	8	(cont.)		Jan.	9	(cont.)	
		Up	microns sec			Up	i 02 03 33.6
		M	E 1.6 17				iPP 02 04 32.6
		M	N 2.4 17			Ki	iP 02 03 29.9 C
		M	Z 2.2 17				iPP 02 05 14.2
		Ki	iP 05 12 09.8				microns sec
			ipP 05 12 21.2			P	Z' 0.2 1.0
			microns sec			PP	Z' 0.2 1.3
		P	Z' 0.1 1.3			Sk	iP 02 03 28.3 C
		M	E 2.0 16				i 02 03 30.2
		M	N 2.8 18				i 02 05 26.7
		M	Z 2.9 15			Gb	iP 02 03 06.3
		Sk	iP 05 12 53.1 D			Um	iP 02 03 07.0 C
		Gb	iP 05 13 25.6				i 02 03 08.9
		Um	iP 05 12 40.5				i 02 03 22.2
			iPcP 05 13 30.6				iPP 02 04 48.5
		Ka	iP 05 13 29.1			Ka	iP 02 02 44.6
		Ud	iP 05 13 06				i 02 02 46.7
			iPcP 05 13 47			Ud	iP 02 03 08
		Kamchatka. h = 40 km (Ki).					i 02 03 10
		Magn. = 5.7 (Up,Ki).					i 02 03 31
							iPP 02 04 46
"	8	Ki	iP 05 16 08.7			Iran (h = 15 km).	
		Kamchatka (h = 25 km).				Magn. = 6.1 (Ki).	
"	8	Up	iP 06 53 38.6			Multiple P with a small	
			i 06 53 43.8			onset followed after 2 sec	
			microns sec			by a much larger phase	
		P	Z' 0.1 1.2			(Up,Sk,Um,Ka,Ud).	
		Ki	eP 06 52 49	"	9	Ki	iP 09 50 58.7
			i 06 52 54.5			Um	iP 09 51 09.4
		Gb	iP 06 54 04.9			Formosa (h = 50 km).	
		Um	iP 06 53 14.9	"	9	Ki	eP 18 21 12
		Ka	iP 06 54 09.1				i 18 21 36.5
		Ud	eP 06 53 47			Sk	iP 18 20 57.9
			iPcP 06 54 26			Gb	iP 18 20 59.0 C
		Kamchatka (h = 40 km).				Um	iP 18 21 15.0 C
"	8	Ki	eP 08 41 22				i 18 21 40.1
			i 08 41 28.5			Ud	iP 18 21 01
		Ud	iP 08 42 19			Colombia (h = 40 km).	
			iPcP 08 42 59	"	9	Um	iPKP 20 06 06.5 C
		Kamchatka (h = 25 km).				Santa Cruz Islands	
"	8	Up	iP 13 58 07.4			(h = 80 km).	
"	8	Um	iP 17 38 25.3	"	10	Um	iP 08 41 27.0
"	8	Up	iP 19 09 46.9			Japan (h = 30 km).	
"	9	Up	iP 02 02 54.8 C	"	10	Ki	iP 09 40 32.9 C
			i 02 02 56.6	"	10	Ud	iP 12 45 05
		(cont.)					

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Jan.	10	Ki	iP	17 52 03.8 C	Jan.	11	(cont.)		
		Ud	iP	17 52 53			Ud	iSg	13 03 26
		Kamchatka (h = 30 km).					Probably explosion in southern Baltic Sea.		
"	11	Um	iPKP	03 16 53.4	"	11	Ka	iSg	14 45 57.2
		Santa Cruz Islands (h = 30 km).					Ud	e	14 46 53
								iSg	14 48 06
"	11	Up	iP	06 07 30.2			Probably explosion in southern Baltic Sea.		
		Ki	iP	06 07 14.7					
				microns sec	"	11	Ki	iP	16 21 07.7
			P	Z' 0.1 1.3			Sk	iP	16 20 56.2
		Um	iP	06 07 17.8			Um	iP	16 21 10.4
		Ud	iP	06 07 34			South of Panama (h = 20 km).		
		Celebes (h = 25 km).							
"	11	Ud	iP	06 55 45 C	"	12	Ki	iSg	09 38 19.6
"	11	Up	iP	11 27 06.4 C			Sk	iSg	09 38 24.2
			i	11 27 11.4			Um	iSg	09 38 47.3
			iS	11 32 20			Nordlands Fylke, Norway.		
				microns sec	"	12	Ki	iPn	13 35 58.4
			P	Z' 0.1 0.5				iSn	13 36 43.6
		M	E	5.0 20				i(Sg)	13 36 59.7
		M	N	6.5 19				D = 420 km = 3.8°.	
		M	Z	4.0 16			Possibly northwest Russia.		
		D = 3500 km					Origin time = 13 34 56.		
		= 31 1/2°.					Explosion?		
		Ki	iP	11 27 50.9 C	"	12	Up	iP	18 22 01.2
			iPP	11 29 07.2				i	18 22 12.4
			e(S)	11 33 42			Ki	iP	18 22 31.8
				microns sec			Um	iP	18 22 09.2
			P	Z' 0.7 1.5			Ud	eP	18 22 12
		PP	Z' 0.2 1.0				Iran (h = 30 km).		
		M	E	5.0 22	"	12	Ki	iP	22 32 57.8
		M	N	3.6 22			Um	iP	22 32 32.3
		M	Z	7.8 22			Uganda (h = 30 km).		
		Sk	iP	11 27 44.5	"	12	Um	iP	23 54 56.7
			i(PP)	11 28 44.7				i	23 56 02.7
		Gb	iP	11 27 16.0	"	13	Um	iP	03 59 23.8 C
			iPP	11 28 13.8			Ud	iP	03 59 43
		Um	iP	11 27 23.5	"	13	Up	iP	04 37 19.8
		Ka	iP	11 26 53.3 C			Um	iP	04 36 59.9
			i	11 27 01.3			Ud	iP	04 37 27
		Ud	iP	11 27 21			South of Japan (h = 390 km).		
		Iran-Iraq (h = 30 km).							
		Magn. = 5.9 (Up, Ki).							
"	11	Up	i	13 03 06.3					
			iSg	13 03 22.7					
		Ka	iSg	13 01 15.1					
		Ud	i	13 02 26					
		(cont.)							

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Jan.	13	Ki	iP	09 46 31.2 C	Jan.	14	(cont.)		
		Alaska	(h = 130 km).			Up	isP	12 15 55.8	
								microns sec	
"	13	Ud	iP	10 09 18 D		Ki	P	Z' 0.1 0.8	
							iP	12 14 46.5 C	
"	13	Up		---			ipP	12 15 00.2	
								microns sec	
			M	E 3.8 20			P	Z' 0.1 0.9	
			M	N 2.4 20		Sk	iP	12 15 20.3	
			M	Z 5.2 20		Gb	iP	12 15 56.4	
		Ki	iPKP	14 06 50.0			ipP	12 16 08.5	
						Um	iP	12 15 12.6 C	
			M	E 2.9 21			ipP	12 15 24.1	
			M	N 4.0 20		Ud	iP	12 15 42 C	
			M	Z 6.3 22			ipP	12 15 54	
		Solomon Islands						Aleutian Islands.	
		(h = 30 km).						h = 40 km (Up,Ki,Gb,Um,Ud).	
		Magn. = 6.2 (Up,Ki).						Magn. = 5.7 (Up,Ki).	
"	13	Ki	iP	14 14 44.7	"	14	Um	iP	12 44 08.7
		Um	iP	14 14 43.6					
		Ud	iP	14 15 05	"	14	Up	ipP	12 54 32.9
			ipP	14 15 31		Ki	iP	12 54 18.0	
		Burma-India.					ipP	12 54 32.3	
		h = 100 km (Ud).				Sk	eP	12 54 30	
"	13	Ud	iP	20 01 29			ipP	12 54 44.8	
						Um	iP	12 54 15.5	
"	13	Up	iP	21 42 07.0			ipP	12 54 29.7	
						Ud	iP	12 54 27	
"	14	Up	iP	02 21 35.9			ipP	12 54 41	
		Japan (h = 130 km).				Sumatra.			
						h = 50 km (Ki,Sk,Um,Ud).			
"	14	Ki	ePn	11 04 59	"	14	Up	iP	13 37 27.5
			iSn	11 05 54.2			Ud	iP	13 37 38
			iSg	11 06 17.0			Mindoro (h = 40 km).		
			D = 510 km = 4.6°.						
		Um	iSn	11 06 40.1	"	14	Ki	iPg	14 24 39.6 C
			i	11 06 46.5			iSg	14 24 44.1	
			iSg	11 07 20.3				microns sec	
			D = 720 km = 6.5°.				Sg	Z' 0.2 0.5°	
		Probably northwest Russia.					D = 30 km = 0.3°.		
		Origin time = 11 03 46.				Sk	eSg	14 27 24	
		Explosion?				Um	iSn	14 26 19.0	
"	14	Ki	iP	11 06 55.6			iSg	14 26 35.2	
		Ud	iP	11 07 07 D			D = 410 km = 3.7°.		
		Tadzhik SSR				Swedish Lapland,			
		(h = 25 km).				67.6°N, 20.9°E.			
						Origin time = 14 24 34.			
"	14	Up	iP	12 15 39.8 C	"	14	Um	iPKP	14 32 33.6
			ipP	12 15 50.8			(cont.)		
		(cont.)							

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå
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1967						1967					
Jan.	14	(cont.)				Jan.	15	Up	iP	20 07 07.6	C
		Santa Cruz Islands						iPP		20 09 02.4	
		(h = 30 km).								microns sec	
"	14	Up	iP	15 36 50.5				M	E	1.2	13
			i	15 37 07.3				M	N	1.5	13
		Ki	iP	15 36 47.2				M	Z	1.8	14
		Sk	iP	15 37 06.6			Ki	iP		20 06 24.8	C
			i	15 37 16.2						microns sec	
		Um	iP	15 36 37.5				M	E	1.4	17
		Ud	iP	15 37 01				M	N	1.2	15
		Sinkiang (h = 30 km).						M	Z	2.8	16
"	15	Ud	iP	00 10 43			Sk	iP		20 07 05.4	
		Iran (h = 30 km).					Um	iP		20 06 40.3	
"	15	Sk	i(PKP)	02 50 53.1				iPP		20 08 20.5	
		Um	i(PKP)	02 50 48.0	C			iS		20 13 03	
		Ud	i(PKP)	02 51 01				iSS		20 16 28	
"	15	Up	iP	05 55 08.9			Lake Baikal (h = 30 km).				
		Um	iP	05 54 47.8		"	15	Ki	iP	22 25 44.2	
		Ud	iP	05 55 17				Pamir.			
		Sea of Japan (h = 380 km).				"	16	Um	iP	03 43 13.9	
"	15	Up	iSg	08 11 58.5				Japan (h = 40 km).			
		Ki	ePg	08 08 11		"	16	Up		---	
			iSn	08 08 40.9						microns sec	
			iSg	08 09 03.1				M	E	2.4	21
			D = 470 km = 4.2°.					M	N	2.4	20
		Sk	eSg	08 11 30				M	Z	3.0	19
		Um	iSn	08 09 21.8			Um	iPKP		14 45 19.6	
			iSg	08 09 52.9				i		14 45 28.8	
		Ud	eS ^x	08 12 02			Ud	iPKP		14 45 28	
			iSg	08 12 34				i		14 45 37	
		Northwest Russia,								Santa Cruz Islands	
		67.4°N, 31.4°E.								(h = 5 km).	
		Origin time = 08 06 46.				"	16	Ud	iP	20 05 25	
		Explosion??						Dodecanese Islands			
"	15	Up	iP	09 26 49.2				(h = 160 km).			
			ipP	09 26 56.1		"	17	Ud	iP	00 44 01	
		Ki	iP	09 25 55.1				Kurile Islands			
		Sk	iP	09 26 22.7				(h = 30 km).			
			ipP	09 26 29.5		"	17	Up	iPP	01 25 52.6	
		Um	iP	09 26 23.1				Um	i(PKP)	01 25 09.5	
		Kodiak Island.						iPKP		01 25 22.5	
		h = 25 km (Up,Sk).						Ud	iPKP	01 25 15	C
"	15	Up	iP	09 55 26.1				iPP		01 25 40	
								Argentina (h = 590 km).			
"	15	Um	iP	17 31 19.9		"	17	Up	iPKP	01 36 17.9	
								(cont.)			

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1967

Jan. 17 (cont.)

Up e(PP) 01 38 49
Um iPKP 01 36 11.3 C
Ud iPKP 01 36 21
i(PP) 01 38 56
iPKS 01 39 38

New Hebrides Islands
(h = 90 km).

" 17 Ud iPKP 03 39 38
Fiji Islands (h = 500 km).

" 17 Um iPKP 10 44 21.5
South Sandwich Islands
(h = 30 km).

" 17 Up iPKP 11 10 30.4
Um iPKP 11 10 17.4
i 11 10 25.8
Ud iPKP 11 10 28
i 11 10 51

Kermadec Islands
(h = 30 km).

" 17 Up iP 12 10 52.0 C
ipP 12 11 03.1
iS 12 20 10

microns sec

P E 1.4 6
P N 0.8 4
P Z 1.9 4
P Z' 1.2 1.3
S E 3.7 10
S N 6.2 9
M E 31 17
M N 37 24
M Z 54 18

D = 7950 km

= 71 1/2°.

Ki iP 12 10 11.5 C
ipP 12 10 24.2
i 12 18 28
iS 12 18 52
iPS 12 19 16

microns sec

P Z' 0.9 1.5
S N 7.3 10
M E 39 16
M N 27 22
M Z 65 16

D = 7200 km = 65°.

Sk iP 12 10 45.0 C
(cont.)

1967

Jan. 17 (cont.)

Sk ipP 12 10 57.0
Gb iP 12 11 12.6 C
ipP 12 11 26.4
iPP 12 14 02.7

Um iP 12 10 29.3 C
ipP 12 10 41.8
iS 12 19 23

Ka iP 12 11 11.6 C
ipP 12 11 25.3

Ud iP 12 11 00 C
ipP 12 11 13

Japan. h = 50 km (Up, Ki, Sk,
Gb, Um, Ka, Ud).
Magn. = 6.7 (Up, Ki).

" 17 Up iP 12 37 42.3
Ki iP 12 37 01.3
Um iP 12 37 19.6
Ud iP 12 37 51
ipP 12 38 02

Japan. h = 40 km (Ud).

" 17 Ud iP 12 52 23
Kurile Islands
(h = 30 km).

" 18 Up iP 04 31 36.9
i 04 31 44.1
Ki iP 04 30 45.9
Um iP 04 31 10.2 C
Ka iP 04 32 00.3
Ud iP 04 31 38

Kurile Islands
(h = 40 km).

" 18 Up iP 05 43 21.2 D
iPa 05 45 41
iS 05 50 25
iSS 05 54 05

microns sec

P E 0.7 4
P N 1.0 4
P Z 3.0 6
P Z' 0.3 0.6
S E 4.8 10
S N 5.8 8
M E 58 19
M N 68 16
M Z 20 17

D = 5500 km

= 49 1/2°.

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967

Jan. 18 (cont.)

Ki	iP	05 42 31.8
	iPP	05 44 23
	i(PcS)	05 48 29
	iS	05 48 57
	iSS	05 51 54
		microns sec
P	E	2.3 6
P	Z	4.5 7
P	Z'	0.4 0.8
PP	E	6.3 8
PP	N	4.2 8
PP	Z	5.3 8
S	E	10 12
S	N	5.8 6
S	Z	4.5 7
M	E	34 12
M	N	47 11
M	Z	16 8
		D = 4800 km = 43°.
Sk	iP	05 43 14.1
Gb	iP	05 43 47.1
Um	iP	05 42 53.3
	iPP	05 44 41
	iPa	05 44 54
	iS	05 49 30
	iSS	05 52 44
Ka	iP	05 43 46.0
Ud	iP	05 43 27

Eastern Russia

(h = 10 km).

Magn. = 6.6 (Up,Ki).

P: long-period motion dominates the first period, after which shorter periods set in (on the Z' records). Pa: this phase is definitely distinct from PP and PPP, contrary to some recently expressed ideas. Clear higher-mode surface waves are recorded.

" 18 Ud iP 06 32 26
Kurile Islands
(h = 30 km).

" 18 Up iP 08 29 17.3
iPcP 08 29 44.2
microns sec
P Z' 0.3 0.9

(cont.)

1967

Jan. 18 (cont.)

Up		microns sec
M	E	4.7 26
M	N	3.7 25
Ki	iP	08 28 24.0
		microns sec
P	Z'	0.4 0.8
Sk	iP	08 28 53.7
Gb	iP	08 29 32.0
Um	iP	08 28 51.0
	iPcP	08 29 27.3
Ka	iP	08 29 39.6
	iPcP	08 29 57.4
Ud	iP	08 29 12
		Aleutian Islands
		(h = 40 km).
		Magn. = 6.2 (Up,Ki).

" 18 Ki iP 08 39 18.1
Sk iP 08 39 53.1
Um iP 08 39 37.9
Ud iP 08 40 05
Japan (h = 70 km).

" 18 Ki iP 10 50 52.6
ipP 10 51 14.6
Sk epP 10 51 48
Ud iP 10 51 46
ipP 10 52 09
Alaska, h = 100 km
(Ki,Ud).

" 18 Ud i(P) 14 47 37

" 18 Up iP 15 38 41.3
Ki eP 15 37 53
Um iP 15 38 13.9
Kurile Islands
(h = 140 km).

" 18 Up eP 21 58 02
Ki iP 21 57 31.8 C
microns sec
P Z' 0.1 1.0
Sk iP 21 58 07.6
Um iP 21 57 41.9
Mongolia (h = 30 km).

" 19 Up iPKP 12 57 16.6
Ki iPKP 12 57 03.2
microns sec
PKP Z' 0.1 1.0

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
Jan.	19	(cont.)		Jan.	19	Up	iP 16 56 49.2
		Sk	iPKP 12 57 14.9				microns sec
		Gb	iPKP 12 57 22.3			P	Z' 0.1 0.8
		Um	iPKP 12 57 09.1			Ki	iP 16 56 14.4 C
		Ka	iPKP 12 57 25.0			Sk	iP 16 56 21.9
		Santa Cruz Islands				Um	iP 16 56 34.2
		(h = 160 km).				i	16 56 39.9
"	19	Up	iPKS 13 02 55			Ud	iP 16 56 38 C
		eSS	13 19 43			Nevada.	
			microns sec			Origin time = 16 45 00.	
		PKS N	2.0 4			Underground explosion.	
		M E	14 21	"	19	Um	iP 19 55 50.3
		M N	40 23			Caribbean Sea (h = 30 km).	
		M Z	35 23				
		Ki	iPKP 12 59 24.1	"	20	Um	iP 00 31 01.8
			microns sec				
		PKP Z'	0.1 1.5	"	20	Up	iP 02 05 59.9
		M E	26 21			i	02 06 02.0
		M N	17 20			iPcP	02 07 27.8
		M Z	44 21			iPP	02 07 51
		Um	iPKP 12 59 27.0			iS	02 12 55
		iPP	13 01 23			iPS	02 13 11
		iPPS	13 13 08			i(SS)	02 16 46
		Fiji Islands (h = 20 km).					microns sec
		Magn. = 7.1 (Up,Ki).				P E	4.2 5
"	19	Up	iP 13 52 18.6 C			P N	2.7 5
		Ka	iP 13 52 23.9			P Z	8.1 4
"	19	Ki	iP 14 48 05.6			P Z'	0.4 1.0
		Kamchatka (h = 30 km).				PP E	8.4 5
"	19	Up	iP 14 52 30.7			PP N	6.0 5
			microns sec			PP Z	12 5
		P	Z' 0.1 0.5			S E	4.9 9
		Ki	iP 14 51 37.1			M E	110 12
		iPcP	14 52 23.9			M N	41 11
			microns sec			M Z	110 12
		P	Z' 0.1 0.8			D = 5350 km = 48°.	
		Sk	iP 14 52 15.2			Ki	iP 02 05 27.4 C
		i	14 52 42.6			i	02 05 30.6
		Gb	iP 14 52 45.0			iPP	02 07 07.8
		Um	iP 14 52 04.2			iS	02 11 54
		iPcP	14 52 40.3			iPS	02 12 15
		Ka	iP 14 52 53.7			iSS	02 15 03
		Aleutian Islands					microns sec
		(h = 60 km).				P E	10 6
		Magn. = 5.9 (Up,Ki).				P N	1.6 6
"	19	Um	iP 15 27 03.0			P Z	16 5
						P Z'	5.6 2.0
						PP E	14 7
						PP N	2.4 7
						PP Z	8.6 6
						PP Z'	3.5 2.7
				(cont.)			

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967

Jan. 20 (cont.)

Ki microns sec
S E 4.4 7
M E 53 15
M N 56 10
M Z 56 11
D = 4900 km = 44°.
Sk iP 02 06 04.7 C
 i 02 06 06.7
 iPcP 02 07 28.8
 iPP 02 08 00.3
Gb iP 02 06 26.6
 i 02 06 28.8
 iPcP 02 07 41.9
 iPP 02 08 21.2
Um iP 02 05 38.8 C
 i 02 05 41.1
 iPcP 02 07 14.1
 iPP 02 07 23
 iPS 02 12 30
Ka iP 02 06 20.3 C
 i 02 06 22.4
 iPcP 02 07 38.2
Ud iP 02 06 13 C
 i 02 06 15
 iPcP 02 07 35
Mongolia (h = 30 km).
Magn. = 7.0 (Up,Ki).
Multiple P: in general
about 2.2 sec between
the first small and
the second large onset;
compare Jan. 5, 1967, at
06 25.

" 20 Ki iP 03 35 20.1
 Sk iP 03 35 56.4
 Um iP 03 35 28.8
 Ud iP 03 36 04
 Mongolia (h = 30 km).

" 20 Ki iP 03 36 52.4
 Sk iP 03 37 28.3
 Um iP 03 37 02.6 C
 Ud iP 03 37 35
 Mongolia (h = 30 km).

" 20 Um iP 04 17 12.7

" 20 Um iP 04 22 45.2

" 20 Um iP 05 24 58.1
 (cont.)

1967

Jan. 20 (cont.)

West Pakistan
(h = 70 km).

" 20 Ki iP 06 31 23.0
 microns sec

P Z' 0.1 1.0
Sk iP 06 31 58.6
Um iP 06 31 32.7
Ka iP 06 32 13.8
Ud iP 06 32 05
Mongolia (h = 30 km).

" 20 Ki i(Pg) 13 44 03.9
 i 13 44 47.4
 iSg 13 44 50.8
Um i(Sn) 13 45 33.2
 iSg 13 46 02.6

" 20 Up iP 17 51 51.7
 Ki iP 17 51 18.1 C
 Sk iP 17 51 26.0
 Gb iP 17 51 51.8
 Um iP 17 51 37.6
 Ud iP 17 51 43
Nevada.
Origin time = 17 40 00.
Probably underground
explosion.

" 20 Ud iP 21 28 28
 Mongolia (h = 30 km).

" 20 Sk iP 22 01 40.8
 Um iP 22 01 01.7 C
 Ud iP 22 01 33

" 21 Ki iP 00 49 37.7
 microns sec
P Z' 0.1 1.1
Sk iP 00 50 14.1 C
Um iP 00 49 48.3 C
Ud iP 00 50 22 C
Mongolia (h = 30 km).

" 21 Up i(PKP) 03 13 54.7
 iPKP 03 14 01.5

 microns sec
PKP Z' 0.1 1.4
M E 2.0 18
M N 2.4 20
M Z 3.0 19

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967		1967	
Jan.	22	Jan.	23
	(cont.)	Ki	iP 09 32 37.8
	Sk iP 12 10 31.0 C	Ud	iP 09 32 58
	Um iP 12 10 05.4 C		Celebes (h = 170 km).
	Ud iP 12 10 40	"	23 Um iP 11 19 41.1
	Mongolia (h = 30 km).		
"	22 Up iP 12 21 33.5	"	23 Up iPKP 11 29 24.4
	Ki iP 12 21 34.4		Um iPKP 11 29 13.0
	Sk iP 12 21 50.2		Ud iPKP 11 29 25
	Um iP 12 21 30.5		Kermadec Islands
	Ud iP 12 21 48		(h = 60 km).
	Nicobar Islands	"	23 Ki e(P) 16 36 51
	(h = 40 km).		Sk e(P) 16 36 08
"	22 Ki iP 12 24 08.2 C		Um i(P) 16 34 51.8
	Sk iP 12 24 44.4		Ud i(P) 16 35 18
	Um iP 12 24 18.4	"	23 Up ---
	Ud iP 12 24 54		microns sec
	Mongolia (h = 30 km).		M E 2.7 18
"	22 Um iP 12 36 18.5		M N 2.8 20
"	22 Ki iP _n 16 00 36.8		M Z 3.4 21
	iP ^x 16 00 46.1	Ki	eP 20 38 11
	iS _n 16 01 25.5		microns sec
	iLg ₁ 16 01 38.3	P	Z' 0.1 1.5
	D = 440 km = 4.0°.	M	E 2.7 14
	Sk iS _g 16 04 27.9	M	N 2.8 17
	Um iP _n 16 01 14.5	M	Z 5.6 18
	iS ^x 16 02 47.6	Um	eP 20 38 24
	iS _g 16 03 09.3		iS 20 49 08
	D = 720 km = 6.5°.		iSS 20 54 52
	Northwest Russia,		Revilla Giedo Islands
	68.8°N, 31.1°E.		(h = 60 km).
	Origin time = 15 59 34.		Magn. = 5.9 (Up, Ki).
	Explosion?	"	23 Sk eP 20 58 54
	This event is considerably		i 20 59 04.6
	stronger than the average		Um iP 20 59 09.3
	in this series.		i 20 59 16.7
"	22 Um iP 19 33 10.2		Ud iP 20 58 40
	North of Ascension Island		i 20 58 49
	(h = 30 km).		North of Ascension Island.
"	22 Um iSKP 22 56 35.0		h = 30 km (Sk, Um, Ud).
	Fiji Islands (h = 600 km).	"	24 Um iPKP 02 03 02.4
"	22 Ki eP 23 19 51		Santa Cruz Islands
	Um iP 23 19 51.4		(h = 30 km).
	Formosa (h = 60 km).	"	24 Up iP 03 16 39.2 C
"	23 Um iP 05 26 37.5 C		ipP 03 17 01.4
			microns sec
			P N 0.4 3
			(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967

Jan. 24 (cont.)

Up			microns	sec
	P	Z'	0.2	1.0
	M	E	1.8	19
	M	N	3.0	21
	M	Z	3.6	22
Ki	iP		03 15	56.5
	iPP		03 18	06.8
			microns	sec
	P	Z'	0.4	1.4
	M	E	1.3	16
	M	N	1.8	19
	M	Z	3.6	18
Sk	iP		03 16	31.3
	ipP		03 16	49.4
Gb	iP		03 17	00.2
	ipP		03 17	17.1
Um	iP		03 16	14.8 C
Ka	iP		03 16	59.3
	ipP		03 17	21.4
Ud	iP		03 16	47 C
	ipP		03 17	06
Japan.	h = 70 km	(Up, Sk, Gb,		
Ka, Ud).				
Magn.	= 6.2	(Up, Ki).		

"	24	Um	iP	03 32 12.7
			i	03 32 19.3
		Ud	iP	03 33 02

" 24 Um iP 04 59 05.7
Ud iP 04 59 37
Japan ($h = 160$ km).

```

"      24   Up      iP1      09 40 05.6
                   iP2      09 40 18.9
                   iPcP     09 40 48
                   eS       09 49 10
                   microns sec
                   P2  Z' 0.2  1.0
                   M   E 11   23
                   M   N 18   17
                   M   Z 15   18
                   D = 7550 km = 68°.
      Ki      iP2      09 41 00.5 C
                   ePa     09 45 41
                   iS      09 50 26
                   microns sec
                   P   N 0.7  6
                   P   Z 1.3  7
                   P2  Z' 0.5  1.5
                   S   E 3.2  13
      (cont.)

```

1967

Jan. 24 (cont.)

	Ki		microns	sec	
7		S	N	4.3	13
		M	E	18	19
		M	N	13	19
		M	Z	25	18
	Sk	iP1		09 40	13.8
		iP2		09 40	27.4
	Gb	iP2		09 39	56.2 C
		i		09 40	06.7
	Um	iP1		09 40	29.0 C
		i		09 40	33.5
		iP2		09 40	42.5
		iPa		09 45	13
		iS		09 49	52
	Ka	iP1		09 39	42.4
		iP2		09 39	56.0
	Ud	iP1		09 39	57
		iP2		09 40	11

Northwest of Ascension
Island ($h = 30$ km).
Magn. = 6.4 (Up, Ki).
Probably two shocks in
the same area, marked P1
and P2 above, 13.6 sec
apart. The second shock is
much larger than the first
one.

"	24	Up	iP	14 55 39.2
				microns sec
			P	Z' 0.1 0.7
			M	N 2.0 17
		Ki	iP	14 55 21.0
				microns sec
			M	E 3.1 14
			M	N 2.0 17
			M	Z 4.6 13
		Sk	iP	14 55 48.3
		Um	iP	14 55 25.5
		Ud	iP	14 55 51

Szechwan, China
(h = 30 km).

" 24 Um iP 15 33 18.8
Northwest of Ascension
Island (h = 30 km).

" 24 Ki iPn 20 33 22.5
 iSn 20 34 01.6
 iSg 20 34 17.6
 D = 390 km = 3.5^o.
 (cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967		1967	
Jan.	24 (cont.)	Jan.	25
	Sk ePn 20 34 08	Ud iPKP 07 49 58	
	Um iPn 20 34 10.8	Fiji Islands (h = 520 km).	
	iSn 20 35 30.8	" 25 Ud eP 13 19 50	
	iSg 20 36 12.8	Aleutian Islands	
	D = 780 km = 7.0°.	(h = 30 km).	
	Norwegian Sea, near	" 25 Ud iP 21 21 18	
	70 1/2°N, 13 1/2°E.	Aleutian Islands	
	Origin time = 20 32.4.	(h = 30 km).	
"	25 Up	" 26 Um iPKP 02 30 19.3	
	iP 01 57 38.3 C	South Sandwich Islands	
	iPP 01 59 06	(h = 30 km).	
	iPcP 01 59 26	" 26 Ki iP 06 17 01.4	
	iS 02 03 29	Sk eP 06 17 00	
	iSS 02 06 54	Um iP 06 17 14.3	
	microns sec	Revilla Ggedo Islands	
	P Z' 0.7 0.5	(h = 30 km).	
	S N 1.3 3	" 26 Up iP 10 15 26.3	
Ki	iP 01 57 46.0 C	microns sec	
	i 01 57 53.6	P Z' 0.1 0.5	
	iPP 01 59 12.8	" 26 Um eP 10 16 32	
	iS 02 03 44	Formosa (h = 50 km).	
	iSS 02 07 05	" 26 Up iP 16 17 11.5	
	microns sec	Um iP 16 17 58.5	
	P Z' 1.6 0.7	Ud iP 16 17 09	
	PP Z' 1.1 1.5	i 16 17 21	
	S E 2.1 9	Tunisia (h = 30 km).	
	S N 2.6 9	" 26 Up iP 16 23 17.1	
	M E 1.7 8	iX 16 24 22.6	
	M N 1.7 8	microns sec	
Sk	iP 01 58 03.6 C	M E 3.0 22	
	iPP 01 59 32.4	M N 2.3 22	
Gb	iP 01 57 59.7 C	M Z 3.6 22	
	iPP 01 59 26.8	Ki iP 16 23 03.1	
	iPcP 01 59 45.2	iX 16 24 08.3	
Um	iP 01 57 36.0 C	e 16 32 03	
	ipP 01 58 34.4	microns sec	
	iPP 01 59 04.1	M E 2.2 20	
	i 02 00 30	M N 1.1 21	
	iS 02 03 24	M Z 3.5 21	
	iSS 02 05 02	Um iP 16 23 10.8	
	iSS 02 06 26	i 16 23 39.9	
Ka	iP 01 57 43.6 C	i 16 25 06	
	iPP 01 59 11.0	iS 16 33 32	
	isPP 02 00 46.2	(cont.)	
Ud	iP 01 57 56 C		
	ipP 01 58 55		
	iPP 01 59 24		
	Hindu Kush.		
	h = 290 km (Um,Ud).		
	Magn. = 6.3 (Up,Ki).		

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967
Jan. 26 (cont.)
Ud iP 16 23 03 C
Mexico-Guatemala
(h = 60 km).
" 26 Um iP 20 30 57.8
i 20 31 06.1
" 27 Um iP 05 19 36.0
" 27 Um iPKP 14 32 29.6
Ud ePKP 14 32 49
Kermadec Islands
(h = 470 km).
" 27 Ki iP 19 10 22.3
Um iP 19 10 19.5
Sumatra (h = 30 km).
" 28 Up eP 01 52 03 D
ipP 01 52 26.2
microns sec
pP Z' 0.1 1.3
Ki iP 01 51 39.2 D
ipP 01 52 02.0
microns sec
pP Z' 0.1 1.2
Gb iP 01 52 24.5
ipP 01 52 47.7
Um iP 01 51 47.9 D
ipP 01 52 10.1
Ud iP 01 52 13 D
ipP 01 52 35
Formosa.
h = 90 km (Up, Ki, Gb, Um, Ud).
" 28 Um iP 03 06 48.9
Ud iP 03 07 05
West Pakistan (h = 40 km).
" 28 Up iP 10 12 36.1
i 10 12 51.2
" 28 Up iP 14 03 53.2 C
iPcP 14 04 17.5
eS 14 12 45
iScS 14 13 48
iP'P' 14 32 13.1
microns sec
P N 4.1 10
P Z 6.2 10
P Z' 0.4 1.0
(cont.)

1967
Jan. 28 (cont.)
Up microns sec
S N 3.9 10
M E 43 25
M N 77 22
M Z 64 21
D = 7500 km
= 61 1/2°.
Ki iP 14 03 00.0 C
ipP 14 03 15.4
i 14 08 35
iS 14 11 09
microns sec
P N 3.3 8
P Z' 0.7 1.0
S E 5.0 17
S N 4.8 9
M E 34 18
M N 42 18
D = 6600 km
= 59 1/2°.
Sk iP 14 03 30.2
iPcP 14 04 06.3
Gb iP 14 04 07.4
iPcP 14 04 29.8
Um iP 14 03 26.4 C
ipP 14 03 42.0
iPP 14 05 41
iS 14 12 00
iP'P' 14 32 19.2
Ka iP 14 04 14.3
Ud iP 14 03 53 C
Aleutian Islands.
h = 60 km (Ki, Um).
Magn. = 6.6 (Up, Ki).
" 28 Up iP 14 16 52.7
microns sec
P Z' 0.1 1.0
Ki iP 14 15 59.3
microns sec
P Z' 0.1 1.0
Sk iP 14 16 29.5
Gb iP 14 17 07.0 C
Um iP 14 16 25.7
Ud iP 14 16 51 C
Aleutian Islands
(h = 50 km).
Magn. = 5.7 (Up, Ki).
" 28 Up iP 14 18 09.0
Ki iP 14 17 15.0
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Jan.	28	(cont.)			Jan.	28	Um	iP	15 44 48.9
		Ki	microns sec				Ud	iP	15 45 14
			P Z' 0.1 1.0				Aleutian Islands		
		Um	iP	14 17 41.8			(h = 30 km).		
		Ud	iP	14 18 07					
		Aleutian Islands.			"	28	Um	iP	15 55 53.3
		Origin time = 14 07 14.					Aleutian Islands		
"	28	Um	iP	14 23 25.0			(h = 30 km).		
"	28	Up	iP	14 34 21.5	"	28	Ud	iP	16 27 29 C
			microns sec		"	28	Up	iP	16 42 18.3
			P Z' 0.1 1.0					microns sec	
		Ki	iP	14 33 28.7				P Z' 0.2 1.0	
			microns sec				Ki	iP	16 41 25.4 C
			P Z' 0.1 1.0					microns sec	
		Sk	iP	14 33 58.8				P Z' 0.3 1.2	
		Gb	iP	14 34 35.6			Sk	iP	16 41 55.2 C
		Um	iP	14 33 54.4 C			Gb	iP	16 42 33.0 C
		Ud	iP	14 34 20			Um	iP	16 41 50.9 C
		Aleutian Islands					Ka	iP	16 42 41.5
		(h = 50 km).					Ud	iP	16 42 16
		Magn. = 5.7 (Up,Ki).					Aleutian Islands		
"	28	Up	iP	14 41 20.7			(h = 30 km).		
			microns sec				Magn. = 6.1 (Up,Ki).		
			P Z' 0.1 1.0		"	28	Ki	iP	17 06 33.4
		Ki	iP	14 40 27.8	"	28	Ki	iP	17 09 20.3
			microns sec				Um	iP	17 09 47.0
			P Z' 0.1 1.0				Ud	iP	17 10 12
		Sk	iP	14 40 57.4			Aleutian Islands		
		Gb	iP	14 41 35.5			(h = 30 km).		
		Um	iP	14 40 54.1	"	28	Um	iP	17 23 31.0
		Ud	iP	14 41 19				ipP	17 23 41.9
		Aleutian Islands					Aleutian Islands.		
		(h = 30 km).					h = 40 km (Um).		
		Magn. = 5.7 (Up,Ki).			"	28	Up	eP	14 47 03
"	28	Up	eP	14 47 03	"	28	Up	iP	17 30 29.2 C
"	28	Up	iP	14 52 19.5				microns sec	
		Ki	iP	14 51 24.8				P Z' 0.1 1.0	
		Um	iP	14 51 51.4			Ki	iP	17 29 36.1
		Ud	iP	14 52 16				microns sec	
		Aleutian Islands						P Z' 0.1 1.0	
		(h = 60 km).					Sk	iP	17 30 06.1 C
"	28	Um	iP	15 00 03.7			Gb	iP	17 30 44.1
		Ud	iP	15 00 30			Um	iP	17 30 02.3 C
		Aleutian Islands					Ud	iP	17 30 29 C
		(h = 50 km).					Aleutian Islands		
							(h = 40 km).		
		Magn. = 5.7 (Up,Ki).							

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Jan.	28	Up	iP	17 37 30.1	Jan.	28	Ki	iP	20 58 35.0
				microns sec			Um	iP	20 59 02.0
			P	Z' 0.1 1.0			Ud	iP	20 59 28
		Ki	iP	17 36 35.5			Aleutian Islands		
				microns sec			(h = 50 km).		
			P	Z' 0.1 1.0					
		Sk	iP	17 37 07.0	"	28	Um	iP	21 13 23.5
		Um	iP	17 37 03.2			Ud	iP	21 13 49
			ipP	17 37 15.4			Aleutian Islands		
		Ud	eP	17 37 28			(h = 30 km).		
			i	17 37 30					
		Aleutian Islands.			"	28	Up	iP	22 38 07.3
		h = 45 km (Um).						ipP	22 38 46.6
		Magn. = 5.7 (Up,Ki).					Ki	iP	22 37 13.5
"	28	Um	iP	17 39 59.4			Sk	iP	22 37 50.7
"	28	Up	iP	17 52 55.3 C			Gb	eP	22 38 28
			i	17 52 58.6			Um	iP	22 37 39.5
				microns sec				isP	22 38 30.5
			P	Z' 0.3 0.9			Ka	iP	22 38 32.8
			M	E 2.2 19			Ud	iP	22 38 13
			M	N 3.4 21				ipP	22 38 51
			M	Z 3.4 21			Kamchatka.		
		Ki	iP	17 52 02.1 C	"	29	Ki	iP	00 06 37.2
				microns sec			Um	iP	00 07 04.0
			P	Z' 0.5 1.1			Ud	iP	00 07 33 C
			M	E 2.8 18			Aleutian Islands		
			M	N 2.4 19			(h = 30 km).		
		Sk	iP	17 52 32.4	"	29	Up	iP	00 15 05.7
		Gb	iP	17 53 09.9				iS	00 17 15.1
		Um	iP	17 52 28.9 C				iSS	00 17 30.5
		Ka	iP	17 53 19.3 C				iLg2	00 18 47
			iPcP	17 53 44.3				D = 1350 km = 12°.	
		Ud	iP	17 52 56			Ki	iP	00 16 49.4
		Aleutian Islands						iLg2	00 23 02.0
		(h = 50 km).					Sk	iP	00 15 53.1
		Magn. = 6.4 (Up,Ki).						iLg2	00 20 41.9
"	28	Um	iP	18 21 22.3			Gb	iS	00 16 24.4
"	28	Ki	i(P)	19 03 43.0				iLg2	00 17 43.9
		Ud	iP	19 04 27			Um	iP	00 15 58.9
		Aleutian Islands						iLg2	00 21 03.7
		(h = 50 km).					Ka	iP	00 14 14.0
"	28	Um	iP	20 05 03.5 C				iLg2	00 16 47.8
"	28	Um	iP	20 20 48.2			Ud	eP	00 15 13
		Ud	iP	20 21 15				iS	00 17 32
		Aleutian Islands						iLg1	00 18 47
		(h = 30 km).					Austria (h = 25 km).		
"	29	Um	iP	02 18 08.6	"	29	Um	iP	02 18 08.6

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967

Jan. 29 Up iP 04 01 48.4
microns sec
P Z' 0.1 1.0
Ki iP 04 02 21.7
i 04 02 25.5
microns sec
P Z' 0.1 1.0
Sk iP 04 02 23.5
Um iP 04 02 00.6
Ud iP 04 02 06
i 04 02 08
iPP 04 03 53
Iran (h = 40 km).
Magn. = 5.7 (Up,Ki).

" 29 Up iP 04 43 55.3
Ki iP 04 43 00.6
Um iP 04 43 27.5 D
Ud iP 04 43 54
Aleutian Islands
(h = 30 km).

" 29 Ki iP 07 09 40.1
Sk iP 07 10 18.1
Um iP 07 09 52.4
Ud iP 07 10 28
Mongolia (h = 30 km).

" 29 Up iP 07 13 48.2
Ki eP 07 14 23
Um iP 07 14 01.4
iPP 07 15 37.5
Iran (h = 60 km).

" 29 Up iP 07 19 57.3 C
Ki iP 07 20 29.7
Iran (h = 30 km).

" 29 Up iP 07 21 01.9
Ki iP 07 21 35.5
Sk iF 07 21 34.9
Um iP 07 21 11.8
Ud iP 07 21 17
Iran.
Origin time = 07 13 11.

" 29 Up iP 07 21 26.6
microns sec
M N 1.5 15
M Z 1.0 13
Ki iP 07 22 03.2
eSS 07 31 58
(cont.)

1967

Jan. 29 (cont.)
Ki microns sec
M E 2.1 15
M N 0.8 12
Sk iP 07 22 00.5
Um iP 07 21 38.7
iPP 07 23 19.9
Ud iP 07 21 44
Iran.
Origin time = 07 13 38.

" 29 Up iP 08 04 30.1
i 08 04 32.7
eS 08 10 41
iSS 08 13 53
microns sec
P Z' 0.1 0.6
S E 1.1 10
M E 2.8 15
M N 2.6 13
M Z 3.5 14
D = 4650 km = 42°.

Ki iP 08 05 01.4
i 08 05 07.0
iPP 08 06 59.1
iS 08 11 38
iSS 08 15 00
microns sec
P Z' 0.1 0.8
PP Z' 0.3 1.9
S N 0.4 7
M E 5.7 15
M N 2.4 13
D = 5100 km = 46°.

Sk eP 08 05 02
i 08 05 06.8
Gb iP 08 04 43.5
Um iP 08 04 40.4
i 08 04 44.6
iPP 08 06 24
iS 08 10 56
iSS 08 14 18
Ka iP 08 04 21.0
i 08 04 23.9
Ud iP 08 04 47
i 08 04 51
Iran (h = 40 km).
Magn. = 5.8 (Up,Ki).
Multiple P.

" 29 Ki iP 09 33 42.6
Um iP 09 34 08.9
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
Jan.	29	(cont.)		Jan.	30	(cont.)	
		Ud	iP 09 34 37 C			Ki	iP 04 08 36.6 C
		Aleutian Islands					i 04 10 11.8
		(h = 30 km).				Sk	iP 04 09 07.8
"	29	Ud	eP 12 21 17			Um	iP 04 08 37.6
		Aleutian Islands				Ud	iP 04 09 12
		(h = 100 km).				Kazakh SSR.	
						Origin time = 04 02 00.	
						Underground explosion.	
"	29	Ki	eP 13 28 57	"	30	Up	iP 07 19 31.6
		Um	iP 13 28 35.3				iX 07 19 46.5
		Iran (h = 30 km).				Sk	iP 07 19 48.7 C
"	29	Ud	iP 15 53 55			Um	iP 07 19 24.9
		Ryukyu Islands					i 07 19 35.4
		(h = 30 km).					iX 07 19 39.9
"	30	Up	iP 01 25 52.3			Ud	iP 07 19 44
			i 01 25 56.3			India-East Pakistan	
			iS 01 30 26			(h = 30 km).	
			microns sec	"	30	Um	iP 10 50 51.8
		P	Z' 0.2 1.0			Japan (h = 210 km).	
		S	N 1.5 5	"	30	Up	iP 12 30 27.0
		M	E 3.2 17				i 12 30 32.2
		M	N 9.3 20				microns sec
		M	Z 4.5 16				P Z' 0.1 0.9
		D = 2800 km = 25°.				Ki	iP 12 31 18.8
		Ki	iP 01 26 34.9				microns sec
			i 01 26 37.7				P Z' 0.1 1.0
			eS 01 31 34			Sk	eP 12 31 06
			microns sec			Um	iP 12 30 48.4
		P	Z' 0.2 0.9			Ud	iP 12 30 46
		S	E 0.5 7				iPn 12 31 18
		M	E 7.6 15			Turkey (h = 30 km).	
		M	N 5.1 14			Magn. = 5.5 (Up,Ki).	
		D = 3300 km		"	30	Up	iP 21 15 47.9 C
		= 29 1/2°.					microns sec
		Sk	eP 01 26 36				P Z' 0.2 0.7
			i 01 26 57.2			Ki	iP 21 15 39.2 C
		Gb	iP 01 26 08.0				microns sec
			i 01 26 28.3				P Z' 0.1 1.0
		Um	iP 01 26 08.3			Sk	iP 21 16 02.6 C
			i 01 26 10.3			Gb	iP 21 16 08.9 C
			iS 01 30 37			Um	iP 21 15 39.4 C
		Ka	iP 01 25 43.6			Ka	iP 21 15 57.5
		Ud	iP 01 26 13 C			Ud	iP 21 16 04 C
		Caucasus (h = 30 km).				Burma (h = 40 km).	
		Magn. = 5.5 (Up,Ki).				Magn. = 6.1 (Up,Ki).	
		Multiple P.		"	31	Um	iP 00 49 23.3
"	30	Up	iP 04 08 52.6				
			iPP 04 09 59.8				
		(cont.)					

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Jan.	31	Um	iP	01 49 12.2	Jan.	31	(cont.)		
"	31	Um	iP	02 04 05.1			Ud	iP	19 08 31
"	31	Um	iP	03 08 04.2			Iran (h = 15 km).		
"	31	Up	iP	03 44 14.0			Magn. = 5.7 (Up,Ki).		
"	31	Ki	iP	03 43 42.8	"	31	Up	iP	19 12 14.1
				microns sec			Ki	iP	19 12 48.5
		P	Z'	0.1 1.0			Sk	iP	19 12 47.7
		Sk	iP	03 44 18.8			Um	iP	19 12 26.7
		Um	iP	03 43 53.2			Ud	eP	19 12 26
		Ud	iP	03 44 27 D			Iran.		
		Mongolia (h = 30 km).					Origin time = 19 04 19.		
"	31	Um	iP	05 48 37.1	"	31	Um	eP	20 12 04
"	31	Ki	iP	09 15 39.3			i		20 12 19.8
"	31	Um	iP	11 37 22.8	"	31	Ki	iP	20 15 05.8
"	31	Um	iP	13 36 26.1			Um	iP	20 14 41.7
"	31	Um	iP	13 50 56.2			Ud	iP	20 14 45
		Central America			"	31	Um	iP	21 09 30.5
		(h = 30 km).			"	31	Um	iP	21 09 55.4
"	31	Up	iP	17 54 57.6 C			Formosa (h = 20 km).		
		ipP		17 55 09.9					
				microns sec					
		P	Z'	0.2 0.7					
		Ki	iP	17 54 13.8					
				microns sec					
		P	Z'	0.1 1.0					
		Sk	iP	17 54 48.2					
		Gb	iP	17 55 19.3					
		Um	iP	17 54 33.3 C					
		Ud	iP	17 55 02					
		Japan. h = 45 km (Up).							
		Magn. = 6.0 (Up,Ki).							
"	31	Up	iP	19 08 17.4					
				microns sec					
		P	Z'	0.1 1.0					
		Ki	iP	19 08 53.3 C					
				microns sec					
		P	Z'	0.1 1.0					
		Sk	iP	19 08 52.7					
		Um	iP	19 08 28.7					
			iPP	19 10 11.8					
			iSS	19 18 08					
		(cont.)							

Markus Båth
June 21, 1967

Seismological Institute
Uppsala

SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, SKALSTUGAN, GÖTEBORG,
UMEÅ, KARLSKRONA and UDDEHOLM

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
Göteborg	(Gb):	57°41.9'N,	11°58.7'E;	h = 66 m
Umeå	(Um):	63°48.9'N,	20°14.2'E;	h = 16 m
Karlskrona	(Ka):	56°09.9'N,	15°35.5'E;	h = 11 m
Uddeholm	(Ud):	60°05.4'N,	13°36.4'E;	h = 240 m

FEBRUARY 1 - 28, 1967
.....

1967				1967			
Feb.	1	Up	iP	01 15 10.0 C	Feb.	1	(cont.)
			i	01 15 12.4			121 47 57
				microns sec		Gb	iSg 12 48 32.9
			P	Z' 0.1 1.0		Ud	iPg 12 48 22 146
			M	N 0.8 14			iSg 12 48 42 47 59
		Ki	iP	01 15 44.6 C		Västergötland, Sweden,	
			eSS	01 25 54		58.5°N, 13.7°E.	
				microns sec		Origin time = 12 47 53.	
			P	Z' 0.1 1.0	"	1	Ki iP 15 33 01.2
			M	E 1.0 14			microns sec
			M	N 0.7 10			P Z' 0.1 1.0
			M	Z 1.0 14		Sk	iP 15 33 15.2
		Sk	iP	01 15 43.5		Um	iP 15 32 58.5
		Um	iP	01 15 23.2		Ud	iP 15 33 09
			eSS	01 25 04			i 15 33 26
		Ud	iP	01 15 24		Sumatra (h = 30 km).	
			i	01 15 26			
		Iran (h = 20 km).			"	1	Up iPKP 18 03 56.2
		Magn. = 5.7 (Up, Ki).					Um iPKP 18 03 40.9
							Ud iPKP 18 03 53
"	1	Um	iP	07 22 51.9		Kermadec Islands	
						(h = 270 km).	
"	1	Um	iP	09 05 10.4 C			
		Ud	iP	09 05 34	"	1	Up iP 19 48 44.8
		Aleutian Islands					i 19 48 51.3
		(h = 30 km).				Ki	iP 19 47 52.5
							i 19 48 03.8
"	1	Ki	iP	09 27 55.5		Um	iP 19 48 17.5
			ipP	09 28 31.2		Kamchatka (h = 30 km).	
		Ud	iP	09 28 53			
		Kamchatka. h = 160 km (Ki).		"	1	Up i(P) 21 01 48.5	
							microns sec
"	1	Up	iSg	12 49 11.6			(P) Z' 0.1 0.6
		Sk	iLgl	12 50 30.9		Ud	iSg 21 02 44
		(cont.)				Probably blast in the	
						Uppsala area.	

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967
Feb. 2 Ki iP 01 26 34.1
Kirghiz-Sinkiang
(h = 30 km).

" 2 Up iPKP 06 44 34.5
microns sec
PKP Z' 0.1 0.6
M E 2.4 21
M N 3.0 21
M Z 3.2 20
Ki iPKP 06 44 49.2 C
iX 06 44 59.8
iPKS 06 48 08.4
microns sec
PKP Z' 0.2 1.4
PKS E 0.7 10
PKS N 1.0 13
PKS Z' 0.2 1.5
M E 2.7 22
M N 2.7 20
M Z 4.4 20
Sk iPKP 06 44 39.3
Um iPKP 06 44 42.4 C
iX 06 44 52.5
iPP 06 46 40
iPKS 06 48 01
i 06 56 09
iSS 07 03 23
Ka iPKP 06 44 27.9 C
Ud iPKP 06 44 30
iX 06 44 40
iPP 06 46 00
iPKKP 06 54 31
South Sandwich Islands
(h = 80 km).

" 2 Up iP 07 45 33.6
iLg1 07 59 22
iLg2 08 00 07
microns sec
P Z' 0.1 1.0
M E 1.8 14
M N 1.6 16
M Z 2.0 13
Ki iP 07 45 33.8
i 07 45 43.8
iLi 07 57 06
iLg1 07 59 07
microns sec
P Z' 0.2 0.8
M E 2.1 13
M N 1.0 11
(cont.)

1967
Feb. 2 (cont.)
Ki microns sec
M Z 2.5 15
Sk iP 07 45 56.5
iPP 07 47 35.7
Gb iP 07 45 57.5
i 07 48 10.7
Um iP 07 45 27.3
i 07 45 34.4
i 07 55 44
iLi 07 56 52
iLg1 07 58 45
Ka iP 07 45 41.0
Ud iP 07 45 47
i 07 46 04
iPP 07 47 29
Sinkiang (h = 40 km).
Magn. = 5.9 (Up,Ki).
Well developed higher
modes (typical for
Sinkiang earthquakes on
our records).

" 2 Sk eP 13 55 35

" 2 Up iP 16 35 21.6
ipP 16 36 06.0
iS 16 44 05
Ki iP 16 34 40.2
iX 16 34 47.4
iPP 16 36 50.5
iS 16 42 43
eSS 16 46 37
microns sec
P Z' 0.1 0.9
S E 0.5 6
S N 0.9 8
M E 0.4 16
M N 0.3 10
D = 6900 km = 62°.

Sk iP 16 35 14.8
i 16 37 40.0
Gb iP 16 35 42.8
iPP 16 38 26.3
Um iP 16 34 57.8
iX 16 35 09.4
ipP 16 35 41.5
iS 16 43 21
iSS 16 47 23
Ka iP 16 35 41.9
iX 16 35 51.2
Ud iP 16 35 30
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
m Ka = Karlskrona, Ud = Uddeholm

1967
Feb.

2

(cont.)

Ud iX 16 35 39

Japan. h = 180 km (Up,
Um). Magn. = 5.7 (Ki).

"

2

Ud i(Sg) 17 02 37

"

2

Ki iP 17 06 07.1 C

Um iP 17 05 58.0 C

Ud iP 17 06 18

Pamir.

"

3

Ki eP 08 27 50

microns sec

M E 0.7 15

M N 0.8 18

M Z 0.9 15

Um iP 08 28 06.4

Japan (h = 25 km).

"

3

Ki eP 12 43 16

Um iP 12 43 15.8

Ud iP 12 43 30

Java Sea (h = 570 km).

"

3

Up iP 13 00 39.3

iX 13 00 41.5

iPP 13 04 44.2

microns sec

P Z' 0.1 0.7

Ki iP 13 00 33.7

iX 13 00 35.9

iSKS 13 10 18

Sk iP 13 00 49.5

Um iP 13 00 32.5

iX 13 00 34.0

i 13 00 36.5

ipP 13 02 33.0

iS 13 10 55

iSP 13 12 23

Ud iP 13 00 46

iX 13 00 47

iPP 13 04 46

Java Sea. h = 550 km (Um).

Multiple P (denoted P
and X).

"

3

Up iP 13 01 43.8

Ki iP 13 01 38.6

Sk iP 13 01 54.5

Um iP 13 01 38.6

(cont.)

1967
Feb.

3

(cont.)

Ud iP 13 01 52

Java Sea.

Origin time = 12 49 14.5.

Probably about same depth
as for the preceding shock.

"

3

Um iP 21 36 58.8

Kodiak Island
(h = 30 km).

"

4

Up eP 02 38 34

i 02 38 42.6

"

4

Ki ePn 09 35 41

eSn 09 36 37

iSg 09 36 58.4

Um iSn 09 37 21.9

i 09 37 38.8

iSg 09 38 10.7

Probably northwest Russia.
Explosion?

"

4

Um iP 11 18 58.4

"

4

Um i(P) 12 37 01.0

"

4

Ki iPn 12 40 06.9

iP^x 12 40 15.6

iSn 12 40 53.5

iLgl 12 41 08.5

D = 430 km = 3.9°.

Possibly northwest Russia.
Origin time = 12 39 05.
Explosion?

"

4

Up iPn 15 35 31.7

iPg 15 35 39.7

iSn 15 35 58.3

microns sec

Pn Z' 0.1 0.5

Pg Z' 0.2 0.5

Sn Z' 0.4 0.5

Ki eSn 15 38 52

iLgl 15 39 35.5

iSg 15 39 58.3

Sk iPn 15 35 56.8

iPg 15 36 07.8

iSn 15 36 42.9

iSg 15 37 01.1

Gb iPn 15 35 28.6

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967
Feb.

4

(cont.)

Gb

iPg

15 35 36.0

iSn

15 35 55.2

Um

ePn

15 36 26

i

15 36 32.3

iSn

15 37 28.8

iLgl

15 37 40.5

Ka

iPg

15 36 06.8

i

15 36 22.6

iSg

15 36 45.1

Ud

iPg

15 35 05 C

iSg

15 35 13

Värmland, Sweden.

USCGS: 59.6°N, 13.3°E.

Origin time = 15 34 55.7.

Felt.

"

4

Up

iP

17 50 07.1

i

17 50 12.9

Sk

iP

17 50 19.4

Um

iP

17 49 53.7

i

17 49 59.6

"

4

Up

iP

18 01 29.1

Ki

iP

18 00 57.8

Sk

iP

18 01 27.1

Um

iP

18 01 10.2

Ud

iP

18 01 37

i

18 01 42

Volcano Islands
(h = 30 km).

"

5

Um

iP

03 04 08.2

Ud

iP

03 04 29

"

5

Ki

i

07 21 03.7

i(Sg)

07 21 25.8

Um

i(Sg)

07 22 19.0

"

5

Ki

iP

19 07 36.4

i

19 07 42.1

Um

iP

19 07 15.9

i

19 07 21.1

Ud

iP

19 06 48

Ascension Island
(h = 20 km).

"

6

Ki

iP

03 35 36.2

ipP

03 36 04.6

Sk

iP

03 36 05.5

Um

iP

03 36 05.8

iPcP

03 37 00.5

(cont.)

1967
Feb.

6

(cont.)

Ud

iP

03 36 30

Alaska. h = 120 km (Ki).

"

6

Up

eP

04 40 18

i

04 40 27.2

Um

eP

04 40 02

Ud

i(P)

04 40 40

"

6

Um

iP

12 12 35.6

"

6

Um

iP

13 01 29.6

"

7

Ki

iP

08 41 39.2

Um

iP

08 41 50.0

i

08 42 45.6

Ud

iP

08 42 10

Mariana Islands
(h = 140 km).

"

7

Up

iP

13 55 53.9

microns sec

P

Z'

0.1 0.5

"

7

Up

iP

15 03 39.3

Ki

iP

15 02 44.9

i(pP)

15 02 57.1

microns sec

P

Z'

0.1 1.0

Sk

iP

15 03 13.3

Gb

iP

15 03 52.9

iPcP

15 04 30.3

Um

iP

15 03 13.4

ipP

15 03 29.0

iPcP

15 03 59.1

Ka

iP

15 04 03.2

Ud

iP

15 03 36

ipP

15 03 52

Alaska. h = 60 km (Um, Ud).

"

7

Ki

eSg

16 29 22

Sk

eSg

16 29 26

Um

iSg

16 29 51.2

Nordlands Fylke, Norway.

"

7

Ki

iP

19 49 54.3

Kamchatka (h = 30 km).

"

8

Um

iP

10 00 40.5

Japan (h = 50 km).

"

8

Um

i(Sg)

13 40 30.4

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Feb. 8 (cont.)

Ud e 13 40 33
i(Sg) 13 41 00

" 8 Ki iPn 15 20 43.4
iSn 15 21 33.1
iLgl 15 21 48.3
D = 470 km = 4.2°.
Possibly northwest Russia.
Origin time = 15 19 36.
Explosion?

" 8 Up iP 17 28 13.1
Sk iP 17 28 32.3
Um iP 17 28 05.9 C
i 17 28 20.3
Ka iP 17 28 19.4
Ud iP 17 28 23
i 17 28 46
Burma-India (h = 30 km).

" 8 Up i(PKP) 19 47 40.8
i 19 47 44.4
Um i(PKP) 19 47 28.4
Ud i(PKP) 19 47 42

" 9 Um iP 10 55 59.8
Japan (h = 30 km).

" 9 Ud iPg 12 12 41
iSg 12 13 01
D = 170 km = 1.5°.
Origin time = 12 12 11.

" 9 Up iP 14 12 53.5 C
i 14 13 47.2
iS 14 16 37

microns sec
P N 0.6 3
P Z 0.9 4
P Z' 0.2 0.6
S E 0.9 6
S N 0.8 3
M E 7.0 17
M N 12 15
M Z 7.1 15

D = 2200 km = 20°.

Ki iP 14 14 11.8
eS 14 18 50
e 14 19 19
iLg2 14 24 08

(cont.)

1967

Feb. 9 (cont.)

Ki microns sec

P Z' 0.3 1.5

M E 5.6 11

M N 11 15

M Z 16 15

D = 3100 km = 28°.

Sk iP 14 13 35.8

i 14 13 52.8

Gb iP 14 12 39.0

i 14 12 40.9

Um iP 14 13 34.4 C

i 14 13 42.3

iPP 14 14 01.8

iS 14 17 43

i(Sn) 14 17 55.9

Ka iP 14 12 11.8

i 14 12 15.3

Ud iP 14 12 56

i 14 12 58

i 14 14 55

Greece-Albania (h = 3 km).

Magn. = 5.6 (Up, Ki).

Multiple P.

" 9 Up iP 15 37 35.3 C

iX 15 37 46.2

iPP 15 37 52

iPP 15 41 05

ipPP 15 41 19

iSKS 15 47 58

iS 15 48 18

microns sec

P E 1.4 6

P Z 5.4 7

P Z' 0.3 1.2

pP E 4.0 7

pP N 2.4 6

pP Z 16 8

PP E 1.6 5

SKS E 9.0 11

S E 20 10

S N 28 14

M E 140 23

M N 81 24

M Z 200 23

D = 9800 km = 88°.

Ki iP 15 37 39.0 C

iX 15 37 49.7

ipP 15 37 55

iPP 15 41 11.9

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967						1967					
Feb.	9	(cont.)				Feb.	10	Ki	iP	02 48 44.2	
		Ki	ipPP	15 41 27				Ud	iP	02 49 05	
			iSKS	15 48 05				Tien-Shan.			
			iS	15 48 30							
				microns sec		"	10	Up	iP	05 54 49.2	
		P	E	3.3 7				Ki	iP	05 54 55.7	
		P	N	0.6 6				Sk	iP	05 55 13.7	
		P	Z	11 9				Um	iP	05 54 47.3	
		P	Z'	1.6 1.7				Ka	iP	05 54 54.6	
		pP	E	6.6 7				Ud	iP	05 55 07	
		pP	N	1.8 6				Kashmir-India (h = 25 km).			
		pP	Z	20 7							
		PP	E	8.2 7		"	10	Up	iP	05 59 15.8	
		PP	Z	8.8 7				Ki	iP	05 59 02.5 C	
		SKS	E	27 10						microns sec	
		SKS	N	7.4 9					P	Z'	0.1 1.0
		S	N	24 14				Sk	iP	05 59 30.9 C	
		M	E	130 23				Um	iP	05 59 02.8 C	
		M	N	71 23					i	05 59 14.4	
		M	Z	240 24				Ka	iP	05 59 28.8	
		D = 9900 km = 89°.						Ud	iP	05 59 32 C	
		Sk	iP	15 37 23.6 C				Sinkiang (h = 25 km).			
			ipP	15 37 42.0							
		Gb	iP	15 37 22.2 C		"	10	Ki	eP	06 51 46	
			iX	15 37 33.4				Sk	iP	06 52 32.3	
		Um	iP	15 37 39.9 C				Um	iP	06 52 34.8	
			iX	15 37 51.0					i	06 52 42.9	
			i	15 40 25					i	06 52 58.9	
			ipP	15 41 05				Ud	iP	06 53 11	
			i	15 47 15				West of Svalbard.			
		Ka	iP	15 37 32.5							
			ipP	15 37 50.4		"	10	Ki	iP	08 49 07.2	
		Ud	iP	15 37 24 C					i(Sg)	08 49 38.4	
			iX	15 37 35							
		Colombia.				"	10	Um	iP	11 43 51.2	
		h = 60 km (Up,Ki,Sk,Ka).						Ud	ePP	11 48 46	
		Magn. = 7.3 (Up,Ki).						Banda Sea (h = 25 km).			
		An alternative interpretation									
		could be that the phase				"	10	Ud	eP	12 39 17	
		marked X is pP, and then the				"	10	Ki	iP	12 44 07.9	
		depth would be only 40 km.				"	10	Up	iP	14 17 20.4	
"	9	Um	iP	18 55 54.0		"	10	Ud	iP	21 10 34	
"	9	Ud	eP	21 28 02		"	10	Sk	eP	22 53 52	
			i	21 28 11				Ud	eP	22 53 17	
		Colombia (h = 60 km).				"	10	Greece.			
"	9	Um	iP	23 18 30.1 C							
"	10	Ud	eP	01 46 30		"	11	Ki	iP	00 43 50.1	
			i	01 48 04				Um	iP	00 43 45.2	
								(cont.)			

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Feb.	11	(cont.)			Feb.	11	(cont.)		
		Ud	eP	00 43 57			Up	microns	sec
		Andaman Islands.					M	Z	2.4 15
"	11	Up	iP	02 50 24.4 C			Ki	iP	09 35 27.4
			i	02 50 45.3				iPP	09 37 09.0
				microns sec					microns sec
			P	Z' 0.3 1.0			Sk	M	N 1.6 16
		Ki	iP	02 49 31.6 C				iP	09 36 01.4
			i	02 49 39.0				i	09 36 32.5
				microns sec				i	09 38 20.3
			P	Z' 0.3 1.0			Gb	eP	09 36 35
		Sk	iP	02 50 07.8 C			Um	iP	09 35 35.9
		Gb	iP	02 50 44.8 C				i	09 35 43.3
		Um	iP	02 49 56.6 C				iPP	09 37 23.7
			i	02 50 12.7			Ka	iP	09 36 28.5 C
		Ka	iP	02 50 47.8 C			Ud	iP	09 36 11
		Ud	iP	02 50 30 C				i	09 36 18
		Kamchatka (h = 20 km).					Lake Baikal (h = 5 km).		
		Magn. = 6.3 (Up,Ki).			"	11	Ud	i(P)	09 41 24
"	11	Ud	iP	04 23 40	"	11	Up	iPg	11 28 38.0
"	11	Ud	iP	06 17 11				iSg	11 28 46.8
"	11	Um	iP	06 47 03.1				iRg	11 28 52.0
		Ud	iP	06 47 35				D = 90 km = 0.8°.	
"	11	Up	iP	08 12 53.6			Ud	iPg	11 29 03
			iPP	08 14 19.0				iSg	11 29 32
			i	08 14 34.4				D = 230 km = 2.1°.	
		Um	iP	08 12 46.8			Gulf of Bothnia,		
		Ka	eP	08 12 52			60.7°N, 17.7°E.		
			i	08 12 59.5			Origin time = 11 28 22.		
		Ud	iP	08 13 04			Explosion?		
			i	08 13 10	"	11	Up	iP	14 43 56.3
			i	08 13 29			Ki	eP	14 43 07
		Hindu-Kush (h = 60 km).					Gb	iP	14 44 17.5
"	11	Gb	iPg	08 17 01.0			Um	iP	14 43 30.8
			iSg	08 17 21.8			Ud	iP	14 44 02
		Ud	ePg	08 17 11			Kurile Islands		
			iSg	08 17 47			(h = 25 km).		
		Near coast of south			"	11	Up	iP	15 25 10.5 C
		Norway. By combination					Ki	eP	15 25 44
		with Lillehammer readings.					Sk	eP	15 25 47
"	11	Up	iP	09 35 59.3			Gb	iP	15 25 21.2
			i	09 36 10.0			Um	iP	15 25 25.3
				microns sec			Ka	iP	15 25 00.1
			M	E 1.9 17			Ud	iP	15 25 27 C
			M	N 1.7 11			Iran (h = 40 km).		
		(cont.)			"	11	Up	iP	15 36 03.2
							Ki	iP	15 34 25.8
								i	15 35 04.8
							(cont.)		

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Feb. 11 (cont.)

Ki	P	microns sec		
		Z'	0.1	1.0
Sk	iP	15	35	16.4
Gb	iP	15	36	21.2
	i	15	36	32.0
Um	iP	15	35	15.2
	i	15	35	18.8
Ka	iP	15	36	37.2 C
	i	15	36	52.8
Ud	iP	15	35	57 C
	iPP	15	36	14

West of Svalbard
(h = 30 km).

" 11 Um i(P) 18 26 03.1
i 18 26 23.8

" 11 Up iP_n 18 27 10.6
iP_x 18 27 18.2
iSn 18 27 58.4
iSg 18 28 13.8
D = 430 km = 3.9°.

Gb iSg 18 26 28.1
i 18 26 47.9

Ka eSn 18 27 35
iSg 18 27 46.8

Ud iP_n 18 26 51
iSg 18 27 34

Off west coast of Sweden,
57.8°N, 11.0°E.
Origin time = 18 26 08.

" 11 Ki e 20 38 24
iSg 20 38 32.0

Sk eSg 20 38 16

Um iPg 20 38 03.4
iSg 20 38 53.9
D = 430 km = 3.9°.

Ud eSg 20 40 05

Nordlands Fylke, Norway,
66.3°N, 13.2°E.
Origin time = 20 36 45.

" 11 Up iP 23 01 36.4
Aleutian Islands
(h = 30 km).

" 11 Um iP 23 08 24.1

" 12 Up iP 16 14 26.4
(cont.)

1967

Feb. 12 (cont.)

Up	P	microns sec		
		Z'	0.1	0.5
Ki	iP	16	14	36.5
Sk	iP	16	14	53.3
Gb	iP	16	14	48.5
Um	iP	16	14	25.6
	i	16	14	32.1
	ipP	16	14	48.0
Ka	iP	16	14	30.7
	ipP	16	14	53.8
Ud	iP	16	14	44
	ipP	16	15	07

Hindu-Kush.
h = 110 km (Um, Ka, Ud).

" 12 Um iP 16 43 31.5
Ud eP 16 43 56

" 12 Up iP 16 53 10.0 D
Ka iP 16 52 59.4
Ud iP 16 53 24
Iran (h = 30 km).

" 13 Ki iP 10 17 34.5
Um iP 10 18 01.5
Ud iP 10 18 28
Aleutian Islands
(h = 50 km).

" 13 Up eP 11 32 31
Ki iP 11 31 54.1 C
Sk iP 11 32 28.2
Um iP 11 32 11.0 C
i 11 32 13.5
Ka iP 11 32 52.7
Ud iP 11 32 40 C
Japan (h = 60 km).

" 13 Up iP 11 41 47.4
Um iP 11 41 22.6
Ka iP 11 42 08.9
Ud iP 11 41 53
Kurile Islands
(h = 30 km).

" 13 Sk i(Sg) 14 05 36.6

" 13 Up eSg 15 50 53
Um iSg 15 51 21.5
Ka iSg 15 52 00.9
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Feb. 13 (cont.)

Ud e 15 51 29
iSg 15 52 00
Esthonia,
59.3°N, 26.4°E.
Origin time = 15 48 24.
Explosion?

" 13 Up iP 17 16 14.6 D
Gb iP 17 16 35.4
Um iP 17 15 50.0
Ka iP 17 16 36.2
Ud iP 17 16 26

Kurile Islands
(h = 30 km).

" 13 Up iP 20 54 49.1
Ki iP 20 53 56.3
Um iP 20 54 22.9
Ka eP 20 55 11
Ud iP 20 54 53

Aleutian Islands
(h = 30 km).

" 13 Ud iP 21 11 43

" 13 Ka eP 22 47 58

" 13 Up iP1 23 20 19.7 C
iP2 23 20 27.4
iS 23 25 09

$\Delta = 28^\circ$

5.60

0.83

6.4

microns sec

P2 E 8.4 4

P2 N 1.4 3

P2 Z 7.4 5

P2 Z' 1.4 0.8

S E 23 11

S N 29 18

M E 92 19

M N 180 20

M Z 150 22

D = 3200 km = 29°.

Ki iP1 23 20 26.9 C

iP2 23 20 34.0

i 23 20 48.4

iPeP 23 23 34

iS 23 25 33

microns sec

P2 E 2.9 8

P2 Z 9.6 11

P2 Z' 7.3 3.0

S N 5.8 11

(cont.)

1967

Feb. 13 (cont.)

Ki microns sec
M E 52 12
M N 67 16
M Z 220 21
D = 3350 km = 30°.

Sk iP1 23 19 55.8

iP2 23 20 03.7

Gb iP1 23 19 57.1 C

iP2 23 20 05.2

i 23 20 18.5

Um iP1 23 20 26.8 C

iP2 23 20 35.0

i 23 20 40.5

iS 23 25 23

Ka iP1 23 20 16.7 C

iP2 23 20 23.6

i 23 20 34.7

Ud iP1 23 20 06 C

iP2 23 20 14

i 23 21 45

North Atlantic Ocean
(h = 10 km).

Magn. = 6.6 (Up, Ki).

P is multiple, especially
clear are the phases
marked P1 and P2 above.

The amplitude of P2 is
much larger than that of P1
and the average time
difference P2 - P1 is 7.7
sec. PL waves are recorded.

" 14 Up iP 01 47 31.2
iPP 01 50 14.9
i(S) 01 57 14

microns sec

P E 0.9 5

P Z' 0.2 1.3

(S) E 4.1 17

(S) N 5.2 12

M E 50 25

M N 37 20

M Z 71 26

D = 8050 km

= 72 1/2°.

Ki iP 01 47 28.6

i(S) 01 57 14

microns sec

P Z' 0.9 2.0

(S) E 4.9 13

(S) N 8.0 11

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Feb. 14 (cont.)

Ki microns sec
M E 46 18
M N 58 20
M Z 70 17
D = 8050 km
= 72 1/2°.
Sk iP 01 47 46.4
 i 01 47 51.1
Gb iP 01 47 47.9
Um iP 01 47 25.7
 i 01 47 40.1
 e(S) 01 56 55
Ka iP 01 47 36.7 D
 i 01 48 28.8
Ud iP 01 47 41
 ePP 01 50 19
Andaman Islands
(h = 25 km).
Magn. = 6.7 (Up,Ki).

" 14 Up iP 01 50 51.6
 Ki iP 01 50 49.0
 Sk iP 01 51 06.2
 Um iP 01 50 46.0
 Ka iP 01 50 57.2
 Ud iP 01 51 01
Andaman Islands.
Origin time = 01 39 25.1.
Probably same focus
location as for the
preceding shock.

" 14 Up iPKP 05 20 37.1
 iSKP 05 23 04.0
 microns sec
 SKP Z' 0.3 0.6
 Ki iPKP 05 20 23.0
 microns sec
 PKP Z' 0.1 0.9
 Sk iPKP 05 20 33.7
 iSKP 05 22 57.3
 Gb iPKP 05 20 43.8
 iSKP 05 23 16.0
 Um iPKP 05 20 29.5 C
 Ka iPKP 05 20 42.2
 iSKP 05 23 16.8
 Ud iPKP 05 20 41
 iSKP 05 23 11
New Hebrides Islands
(h = 640 km).
(cont.)

1967

Feb. 14 (cont.)

Our stations cover the
distance range of 122° -
133° and exhibit a good
example of the relative
amplitudes of PKP and SKP.
There is no SKP at Ki and
Um, but it is very strong
at Up.

" 14 Ud iP 08 07 57
" 14 Ud iP 08 20 06
" 14 Sk iSg 14 17 07.2
 Um i 14 15 29.5
 iSg 14 15 40.0
 Ud eSg 14 16 12
Esthonia. Explosion?

" 14 Up iP 14 46 54.0
 Sk iP 14 47 28.7
 Ka iP 14 46 14.7
 i 14 46 20.9
 Ud iP 14 46 56
" 14 Up iP 17 44 59.3
 Ka iP 17 45 03.3
 Ud iP 17 45 15
Hindu-Kush.

" 14 Up iP 22 13 42.7
Aleutian Islands
(h = 20 km).

" 15 Up iP 01 53 51.8
 i 01 53 56.3
 Ki iP 01 54 33.9 C
 microns sec
 P Z' 0.1 1.0
 Um iP 01 54 07.8
 Ka iP 01 53 41.8
 Ud iP 01 54 08
 i 01 54 34
Iran (h = 40 km).

" 15 Ud iP 02 01 04

" 15 Up iP 06 08 11.6
 iX 06 08 26.3
 i 06 08 48.7
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Feb. 15 (cont.)

Up					
	P	Z'	0.1	1.0	
Ki	iP		06 08	06.8	
	iX		06 08	23.1	
Sk	iP		06 08	27.1	
	iX		06 08	42.4	
	i		06 09	08.7	
	iPP		06 10	56.3	
Gb	iP		06 08	29.7	
	iX		06 08	44.4	
Um	iP		06 08	04.5	
	iX		06 08	20.3	
Ka	iP		06 08	18.5	
	iX		06 08	33.1	
Ud	iP		06 08	27	
	iX		06 08	41	
	iPP		06 10	59	

Burma (h = 10 km).
X is a clear phase at all
our stations (on Z'),
about 15 sec after P:
another shock or pP?

" 15 Up iSg 14 09 22.8
Sk eSg 14 11 15
Um iSg 14 09 55.4
Ka eSg 14 10 28
Ud e 14 09 58
eSg 14 10 25
Esthonia, 59.2°N, 26.1°E.
Origin time = 14 06 55.
Explosion?

" 15 Up iP 16 23 41.9
✓ ipP 16 25 52.3
iPP 16 27 48.4
iSKS 16 33 17
iS 16 34 11
eP'P' 16 48 32

	P	Z'	0.2	0.8	
	pP	Z'	0.6	1.8	
	PP	Z'	0.6	2.0	
	SKS	E	5.4	9	
	S	E	4.1	6	
	S	N	3.9	9	
	M	E	3.1	20	
	M	N	2.8	20	
	M	Z	4.1	21	

(D = 10800 km
= 97°).
(cont.)

1967

Feb. 15 (cont.)

Ki	iP	16 23	50.6
	ipP	16 26	04
	i	16 27	32.9
	iSKS	16 33	30
	iSP	16 36	05
	iPKKP	16 40	14.3
	i	16 40	42.5

	P	Z'	0.6	1.3	
	SKS	E	8.1	9	
	M	E	4.9	21	
	M	N	3.6	22	
	M	Z	7.8	23	

(D = 11000 km
= 99°).

Sk	iP	16 23	32.5
	ipP	16 25	44.3
	iPP	16 27	37.3
	ipPP	16 29	21.6
	iPKKP	16 40	25.1
	iP'P'	16 48	36.9
Gb	iP	16 23	27.5
	i	16 23	29.8
	ipP	16 25	39.4
Um	iP	16 23	49.6
	ipP	16 25	58.4
	iPP	16 27	58.9
	iSKS	16 33	28
	iS	16 34	24
	i	16 35	39
	iPKKP	16 40	15.7
	iP'P'	16 48	26.9
Ka	iP	16 23	36.3
	ipP	16 25	44.7
	isPP	16 30	40.8
Ud	iP	16 23	34
	ipP	16 25	43

Peru-Brazil. h = 600 km
(Up, Ki, Sk, Gb, Um, Ka, Ud).
Magn. = 6.8 (Up, Ki).

" 15 Gb ePKP 19 52 01
Ud iPKP 19 51 54
Tonga-Kermadec Islands
(h = 70 km).

" 15 Up iP 23 48 52.5
Um iP 23 48 54.2
Ud iP 23 48 32
North Atlantic Ocean
(h = 30 km).

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Feb. 16 Ud iP 12 02 11
Iran (h = 15 km).
" 16 Ki iPn 15 46 31.7
iSn 15 47 27.0
iLgl 15 47 45.9
D = 510 km = 4.6°.
Sk eLgl 15 50 25
Um iSn 15 48 37.4
iLgl 15 49 14.8
D = 830 km = 7.4°.
Northwest Russia,
69.8°N, 32.0°E.
Origin time = 15 45 20.
Explosion?

" 16 Ki e(P) 20 35 24
Um i(P) 20 34 54.3

" 17 Ki iP 00 50 40.4
i 00 51 02.4
i 00 51 12.1
Um iP 00 50 46.6
i 00 51 02.3
Ud iP 00 51 04
Talaud Islands
(h = 70 km).

" 17 Up iPKP 10 30 19.7
i 10 30 39.9
i 10 31 39
iPP 10 33 34
iPKS 10 34 01
microns sec
PKP Z 0.9 5
PKP Z' 0.2 1.0
PP Z 1.1 5
PKS N 1.8 5
M E 4.4 21
M N 11 21
M Z 7.2 22
(D = 15800 km
= 142°).
Ki i(PKP) 10 29 59.6
iPKP 10 30 08.5
iPP 10 32 34
i 10 33 09
iPKS 10 33 34
eX 10 33 56
iPKKS 10 42 54
microns sec
PKP Z 1.1 5

(cont.)

1967

Feb. 17 (cont.)
Ki microns sec
PKP Z' 1.1 2.5
PP Z 0.9 9
PKS E 1.3 9
PKS N 2.2 10
M E 5.6 20
M N 9.5 21
M Z 14 21
(D = 14950 km
= 134 1/2°).
Sk i(PKP) 10 30 14.5
iPKP 10 30 21.5
Gb iPKP 10 30 29.0 D
i 10 30 47.5
i 10 31 04.4
Um i(PKP) 10 30 08.2
iPKP 10 30 16.5
i 10 33 41
iPKS 10 33 56
iX 10 34 10.2
i 10 34 20.3
iSKKS 10 40 00
iPKKS 10 42 32
Ka iPKP 10 30 32.0 D
Ud iPKP 10 30 21
Tonga Islands (h = 20 km).
Magn. = 6.6 (Up, Ki).
The phases marked X (at Ki,
Um on Z') are pronounced,
but unidentified.

" 17 Up iSg 13 18 27.9
Sk iSg 13 20 17.4
Um iSg 13 18 56.5
Ud i 13 19 01
iSg 13 19 30
Esthonia, 59.2°N, 26.1°E.
Origin time = 13 15 58.
Explosion?

" 18 Ud iP 00 40 44
North Atlantic Ocean
(h = 30 km).

" 18 Up iPKP 02 58 00.7
Ki iPKP 02 57 48.1
Sk iPKP 02 58 00.1
Um iPKP 02 57 53.1
Ud iPKP 02 58 07 C
New Ireland (h = 40 km).

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Feb.	18	Ki	iPn	09 22 01.6	Feb.	19	Up	iP	12 40 29.8 D
			iSn	09 22 57.3			Ki	iP	12 40 00.4
			iSg	09 23 18.5			Sk	iP	12 40 27.2
			D = 510 km = 4.6°				Um	iP	12 40 13
		Sk	eSg	09 25 50			Mariana Islands		
		Um	iSn	09 23 42.7			(h = 380 km).		
			iSg	09 24 17.5					
			i	09 24 29.8		"	19	Up	iP 12 53 25.4
			D = 710 km = 6.4°					i	12 53 38.5
		Northwest Russia,							
		67.8°N, 32.6°E.				"	19	Up	iP 20 09 31.5
		Origin time = 09 20 49.						Um	iP 20 09 03.8
		Explosion?						Ud	iP 20 09 34
							Aleutian Islands.		
"	18	Ki	iP	10 00 32.1		"	19	Up	iP 20 16 19.5
		Um	iP	10 01 00.0					microns sec
		Kodiak Island (h = 50 km).						P	Z' 0.1 0.8
"	18	Sk	eP	11 35 28			Ki	iP	20 16 08.5
		Um	iP	11 34 59.4			Sk	iP	20 16 36.5
		Ud	iP	11 35 18			Gb	iP	20 16 45.7
		Hindu-Kush.					Um	iP	20 16 07.3
							Ka	iP	20 16 32.3
"	18	Ki	ePn	14 01 50			Ud	iP	20 16 36 C
			iSn	14 02 35.6			Sinkiang (h = 30 km).		
			iSg	14 02 52.3					
			D = 420 km = 3.8°		"	19	Up	iP	21 40 37.7
		Sk	eSg	14 05 17			Ki	iP	21 39 44.1
		Um	iSn	14 03 17.8			Um	iP	21 40 10.7 C
			iSg	14 03 48.0				iPcP	21 40 46.4
			D = 610 km = 5.5°				Ud	iP	21 40 37
		Northwest Russia,					Aleutian Islands		
		67.5°N, 30.4°E.					(h = 50 km).		
		Origin time = 14 00 48.				"	19	Up	iP 22 28 14.5
		Explosion?						iX	22 28 23.4
"	19	Up	iP	06 43 31.9				iPP	22 32 16.8
		Um	iP	06 43 05.0				iS	22 39 39
		Ud	iP	06 43 42					microns sec
		Kurile Islands						P	Z' 0.2 1.3
		(h = 30 km).						PP	Z' 0.1 0.9
								S	N 1.9 8
"	19	Ki	iPn	10 25 09.9				M	E 2.0 21
			iSn	10 26 08.5				M	N 8.4 30
			iLgl	10 26 28.3				M	Z 1.9 20
			D = 560 km = 5.0°					(D = 11100 km	
		Sk	eSg	10 28 57				= 100°).	
		Um	iSg	10 27 18.1			Ki	iP	22 28 08.5
		Northwest Russia,						iPP	22 32 06.8
		67.1°N, 33.4°E.						iSKS	22 38 45
		Origin time = 10 23 51.						i(PKKP)	22 45 00.9
		Explosion?					(cont.)		

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967		1967	
Feb.	19	Feb.	20
(cont.)			
Ki		Ki	iP
microns sec			14 32 11.8
PP	Z' 0.1 1.0	Sk	eP
SKS	E 1.4 5	Um	iP
M	E 1.5 14	Ud	iP
M	N 1.6 16	Kashmir (h = 30 km).	
M	Z 2.0 16		
(D = 11000 km		"	20
= 99°).		Up	iP
			15 26 57.8 C
			iPP
			15 28 39.0
		microns sec	
Sk	iP	P	Z' 0.2 0.7
	i(X)	M	E 2.6 14
	i	M	N 2.1 13
Um	iP	M	Z 2.8 13
	iX	Ki	iP
	iS		15 27 04.4 C
	iSS		iX
			15 27 18.0
Ka	iPP		iSS
	22 32 29.9		15 37 21
Ud	iP	microns sec	
	22 28 25	P	Z 1.2 5
	iX	P	Z' 0.6 1.2
	22 28 34	M	E 3.7 11
	iPP	M	N 3.5 12
	22 32 42	M	Z 3.2 11
	ePKKP		
	22 44 42	Sk	iP
Java (h = 80 km).			15 27 22.0 C
Magn. = 6.4 (Up,Ki).			i
X is a clear phase (Up,Sk,			15 28 37.4
Um,Ud); interpreted as pP,		Gb	iP
it gives a focal depth of			15 27 18.8 C
only 35 km.			iX
			15 27 32.9
		Um	iP
			15 26 55.5 C
			i
			15 28 26.6
			iSS
			15 36 48
"	19	Ka	iP
Up	iP		15 27 03.1 C
	23 41 53.2	Ud	iP
	microns sec		15 27 13 C
M	E 1.7 22		i
M	N 4.0 27		15 27 35
M	Z 3.0 23	Kashmir (h = 25 km).	
Ki	iP	Magn. = 6.4 (Up,Ki).	
	23 41 40.5		
	microns sec		
P	Z' 0.1 1.3	"	20
M	E 2.5 17	Up	iP
M	N 1.5 19		16 45 37.0
M	Z 4.0 19	Sk	iP
			16 45 58.1
Sk	iP	Um	iP
	23 42 00.6		16 45 44.1
Um	iP	Ud	iP
	23 41 44.4		16 45 44
	iPP	Chagos Islands	
	23 45 42.9	(h = 30 km).	
	iSKS		
	23 52 06	"	20
Ud	iP	Um	iPKP
	23 42 00		23 00 40.4
Molucca Sea (h = 100 km).		Santa Cruz Islands	
		(h = 20 km).	
"	20	Sk	iP
			04 27 41.7
		Sk	iP
			04 27 22.9
		Um	iP
			04 27 43.7
		Mona Passage (h = 40 km).	
"	20	Ki	iP
Ki	iP		05 30 20.6
	12 25 46.3		
Ryukyu Islands			
(h = 20 km).			

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Feb.	21	Ki	iP	09 24 44.9	Feb.	22	(cont.)		
		Sk	iP	09 25 10.3			Ud	iX	18 52 19
		Um	iP	09 24 56.5 D			New Hebrides Islands.		
		Mariana Islands					h = 100 km (Ki,Um).		
		(h = 70 km).					The phase X (Um,Ud)		
"	21	Um	iP	12 13 22.9			possibly belongs to an		
							independent earthquake.		
"	21	Ki	iP	12 46 08.2 C	"	22	Um	iPKP	23 46 55.7
				microns sec			South Sandwich Islands		
			P	Z' 0.1 1.0			(h = 30 km).		
		Sk	iP	12 46 26.1					
		Um	iP	12 45 59.3	"	23	Ki	iP	05 23 19.2
		Ud	iP	12 46 17			Colombia (h = 170 km).		
		Kashmir (h = 30 km).			"	23	Um	iP	12 20 51.0
"	21	Ud	iP	13 56 54	"	23	Ki	ePn	13 42 59
"	21	Ki	eP	15 17 56				iSn	13 43 43.5
		Ud	iP	15 17 23				iSg	13 44 00.8
		Iran (h = 60 km).						D = 410 km = 3.7°.	
"	21	Ki	iP	18 55 15.0 D			Um	iSg	13 44 57.4
		Um	iP	18 55 20.4			Probably northwest Russia.		
		Ud	iP	18 55 33			Origin time = 13 41 59.		
		Halmaheira (h = 130 km).					Explosion?		
"	21	Ud	iP	19 17 44	"	23	Up	iP	14 37 29.1 D
"	22	Up	iP	03 16 46.5				ipP	14 37 38.6
"	22	Um	iP	08 58 14.3			Ki	iP	14 37 04.6
			ipP	08 58 23.3			Sk	iP	14 37 32.3
		Ud	iP	08 58 41			Um	iP	14 37 13.3 D
		Japan. h = 30 km (Um).					Ud	iP	14 37 35 D
"	22	Ud	iP	15 01 26	"	23	Up	iP	19 01 48.3
		Kurile Islands						microns sec	
		(h = 50 km).					P	Z' 0.2 1.0	
"	22	Up	iSKP	18 49 17.6			Ki	iP	19 01 14.6 C
			i	18 49 21.1				iPcP	19 01 32.8
		Ki	ipPKP	18 45 41.7 C				microns sec	
			ipPKP	18 46 07.5			P	Z' 0.2 1.2	
		Gb	iSKP	18 49 28.6			Sk	iP	19 01 22.1 C
		Um	ipPKP	18 45 47.7			Gb	iP	19 01 48.5
			ipPKP	18 46 14.7			Um	iP	19 01 33.9 C
			iSKP	18 49 04.8				iPP	19 04 17.4
			isPKS	18 49 46.4			Ud	iP	19 01 39 C
			iX	18 51 54.2			Nevada.		
		Ud	ipPKP	18 45 54			Origin time = 18 50 00.		
			iSKP	18 49 17			Magn. = 6.1 (Up,Ki).		
		(cont.)					Underground explosion.		
							According to newspaper		
							reports, the yield was		
							200 kiloton and the depth		
							702 m below ground level.		

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967						1967					
Feb.	23	Up	iP	20 45 01.3		Feb.	25	(cont.)			
"	23	Up	iP	20 50 49.8 C				Um	iP	00 28 37.6 D	
			ipP	20 51 01.1				Ud	iP	00 29 07	
								Sea of Japan (h = 210 km).			
				microns sec		"	25	Um	iP	06 11 44.8	
			P	Z' 0.1 0.8				i		06 11 50.0	
			M	E 2.6 13				North Atlantic Ocean			
			M	N 1.7 17				(h = 30 km).			
			M	Z 2.8 13							
		Ki	iP	20 50 22.0 C		"	25	Up	iP	07 50 34.5 C	
			i	20 50 30.9							
				microns sec		"	25	Um	iP	10 36 43.2	
			P	Z' 0.2 1.5							
			M	E 1.5 13		"	25	Up	iP	11 34 15.7	
			M	N 1.7 15				Ki	iP	11 34 02.4	
			M	Z 1.4 13				Sk	iP	11 34 22.6	
		Sk	iP	20 50 50.6				Um	iP	11 34 06.9	
			ipP	20 51 03.5				Ud	iP	11 34 25 C	
		Um	iP	20 50 32.8 C				Celebes (h = 70 km).			
			i	20 50 40.6		"	25	Up	iP	11 52 11.9	
			ipP	20 50 44.3				i		11 52 15.1	
		Ud	iP	20 51 00 C				Ki	iP	11 51 57.7	
			ipP	20 51 12				Sk	iP	11 52 18.2	
		Ryukyu Islands.						Um	iP	11 52 02.0 C	
		h = 40 km (Up,Sk,Um,Ud).						Ka	iP	11 52 34.2	
		Magn. = 5.9 (Up,Ki).						Ud	iP	11 52 20	
"	23	Up	iP	22 42 40.0 C				Celebes (h = 110 km).			
		Um	iP	22 43 24.0		"	25	Up	iP	12 06 10.1	
		Yugoslavia.						Sk	iP	12 06 25.6	
"	24	Ki	iP	00 26 02.9 C				Um	iP	12 06 01.8 C	
		Sk	iP	00 26 20.8				Ka	iP	12 06 21.5	
		Um	iP	00 25 53.9				Ud	iP	12 06 24 C	
		Ud	iP	00 26 14		"	25	Um	iPKP	16 05 30.1 C	
		Pamir.						Tonga Islands			
"	24	Sk	iP	08 16 00.5				(h = 360 km).			
"	24	Ki	iP	15 26 23.6		"	25	Um	iP	21 47 50.5	
		Um	iP	15 25 44.2				Sumatra (h = 40 km).			
			i	15 25 48.7							
"	24	Up	iP	18 28 01.6		"	25	Up	iP	23 04 11.4	
		Alaska (h = 170 km).									
										microns sec	
								P	Z' 0.1 0.6		
"	24	Up	iP	19 27 43.5		"	26	Um	iP	03 09 38.1	
"	25	Up	iP	00 29 01.2				Ud	eP	03 09 46	
		Ki	iP	00 28 19.1				Sunda Strait (h = 30 km).			
		Sk	iP	00 28 54.8		"	26	Up	iP	04 04 52.9 C	
		Gb	iP	00 29 23.9				(cont.)			
		(cont.)									

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967
Feb. 26 (cont.)

Up i 04 05 23.2
iPn 04 05 56.2
iPP 04 06 11.7
iLgl 04 16 12
microns sec
P Z' 0.5 0.7
PP Z' 0.4 0.9
Ki iP 04 04 37.4 C
iPn 04 05 37.4
i 04 07 50.5
microns sec
P Z' 0.9 0.8
Sk iP 04 05 08.6 C
i 04 05 18.9
i 04 05 38.6
iPP 04 06 31.2
Gb iP 04 05 21.1 C
iPn 04 06 41.0
Um iP 04 04 37.8 C
iPn 04 05 17.5
iPP 04 05 52.5
Ka iP 04 05 09.1 C
i 04 05 44.3
iPn 04 06 22.3
iPP 04 06 35.6
Ud iP 04 05 03 C
i 04 05 15
iPn 04 06 15
Kazakh SSR.
Magn. = 6.6 (Up,Ki).
Underground explosion.

" 26 Up iP 06 50 36.2
Ki eP 06 50 07
Um iP 06 50 18.7
Ud iP 06 50 47
Ryukyu Islands
(h = 30 km).

" 26 Up iPKP 12 16 22.5
Ud iPKP 12 16 25
i 12 16 30
Tonga-Kermadec Islands
(h = 540 km).

" 26 Up iP 15 31 41.7
Um iP 15 31 38.1
Ud iP 15 31 56
Hindu-Kush.

" 27 Up iP 02 19 39.8
(cont.)

1967
Feb. 27 (cont.)

Ki iP 02 19 43.5
Sk iP 02 19 29.7
Um iP 02 19 45.1
Ud iP 02 19 26
Colombia (h = 70 km).

" 27 Ki iPKP 02 48 27.9
Chile (h = 30 km).

" 27 Ki eP 18 12 10
Um iP 18 13 00.4
i 18 13 08.9
Ud iP 18 13 47
i 18 13 54

" 27 Up iP 21 04 21.4 D
i 21 04 23.3
iPP 21 04 34.5
iS 21 07 10.4
iLgl 21 09 13
iPcP 21 09 25
microns sec
P Z' 0.1 0.5
Ki eP 21 05 47
i 21 05 57.3
iLi 21 12 41
iLgl 21 13 02.1
microns sec
P Z' 0.1 1.0
Sk iP 21 05 17.2
i 21 05 18.3
iLgl 21 11 37.5
Um iP 21 05 03.0
i 21 05 05.9
i 21 08 13.0
iLgl 21 11 02
i 21 11 19.6
Ka iP 21 03 47.0
i 21 05 03.8
iLgl 21 08 09.7
Ud iP 21 04 40
i 21 04 44
i(S) 21 08 22
iLgl 21 10 03
Rumania. Multiple P.

" 28 Up iP 09 49 09.5
ipP 09 49 21.3
microns sec
P Z' 0.1 0.6
M E 2.7 18
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967
Feb. 28 (cont.)

Up microns sec
M N 2.7 17
M Z 3.2 17
Ki iP 09 48 32.6 C
ipP 09 48 45.0
iS 09 57 47

microns sec
P Z' 0.2 1.5
S E 1.6 7
M E 3.1 17
M N 3.0 18
M Z 5.3 16
D = 7900 km = 71°.

Sk iP 09 49 04.5
ipP 09 49 18.0
Um iP 09 48 49.1 C
ipP 09 49 01.3
iS 09 58 15
iSS 10 02 50
Ud iP 09 49 16

South of Japan.
h = 50 km (Up, Ki, Sk, Um).
Magn. = 6.0 (Up, Ki).

" 28 Up iP 14 26 45.1
ipP 14 27 00.6

microns sec
P Z' 0.1 0.6

Ki iP 14 27 59.0
Sk iP 14 27 24.6
Gb iP 14 26 33.0
Um iP 14 27 25.0
ipP 14 27 39.0
Ka iP 14 26 06.3
Ud iP 14 26 51

Greece. h = 70 km (Up, Um).

" 28 Up iP 15 06 27.8

microns sec
P Z' 0.1 0.7

" 28 Up iP 15 26 23.0

microns sec
P Z' 0.1 0.5

Ki iP 15 25 29.2
Sk iP 15 26 06.7
Um iP 15 25 54.7
Ud iP 15 26 27

Kamchatka (h = 30 km).

" 28 Up iP 18 38 17.1
(cont.)

1967

Feb. 28 (cont.)

Um i(P) 18 37 59.7 D
Ud iP 18 38 22

Markus Båth
July 10, 1967

Seismological Institute
Uppsala

SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, SKALSTUGAN, GÖTEBORG,

UMEÅ, KARLSKRONA and UDDEHOLM

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
Göteborg	(Gb):	57°41.9'N,	11°58.7'E;	h = 66 m
Umeå	(Um):	63°48.9'N,	20°14.2'E;	h = 16 m
Karlskrona	(Ka):	56°09.9'N,	15°35.5'E;	h = 11 m
Uddeholm	(Ud):	60°05.4'N,	13°36.4'E;	h = 240 m

MARCH 1 - 31, 1967

1967					1967				
Mar.	1	Up	iP	10 20 32.2	Mar.	2	(cont.)		
		Ki	iP	10 21 05.4			Ki	iP	03 00 35.0 D
		Um	iP	10 20 43.7					microns sec
			ipP	10 20 51.2			P	Z'	0.1 1.0
		Ud	iP	10 20 48			Sk	iP	03 00 21.2
		Iran. h = 30 km (Um).					Gb	iP	03 00 22.1
"	1	Ki	iP	14 37 41.5			Um	iP	03 00 36.9 D
		Molucca Passage						i	03 00 42.5
		(h = 50 km).						ipP	03 04 23.8
"	1	Gb	i(P)	16 42 49.7			Ud	iP	03 00 25 D
"	1	Um	iP	16 46 41.9			Ecuador (h = 120 km).		
"	1	Ki	eP	18 50 37	"	2	Ki	iP	03 36 33.5
		Um	iP	18 50 59.1			Um	iP	03 36 51.4
		Japan (h = 30 km).					Ud	iP	03 37 13
"	1	Up	iP	20 31 17.7 D			Japan (h = 30 km).		
"	1	Up	iP	22 27 29.2	"	2	Ud	iPKP	06 17 05 C
				microns sec			Tonga-Kermadec Islands		
		P	Z'	0.2 0.7			(h = 480 km).		
		Ki	iP	22 26 36.0	"	2	Ud	iP	08 02 59
		Sk	iP	22 27 08.5			Iran (h = 30 km).		
		Um	iP	22 27 02.3	"	2	Up	iP	08 29 10.7
		Ud	iP	22 27 30 C			Ki	iP	08 28 32.8 C
		Aleutian Islands					Sk	iP	08 29 05.8
		(h = 30 km).					Um	iP	08 28 49.3 C
"	2	Up	iP	03 00 33.2				ipP	08 29 10.3
		(cont.)					Ud	iP	08 29 21
							Japan. h = 80 km (Um).		

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967						1967					
Mar.	2	Ki	iP	09 58 59.6		Mar.	2	(cont.)			
		Um	iP	09 58 51.6				Kamchatka (h = 20 km).			
		Ud	iP	09 59 15 C				Magn. = 5.7 (Up,Ki).			
		Kirghiz SSR (h = 60 km).				"	3	Ki	e(Pg)	00 07 30	
"	2	Up	iP	11 56 44.4				iSg	00 08 05.5		
		Ki	iP	11 56 42.2				Um	iSg	00 09 54.0	
		Ud	iP	11 56 59		"	3	Up	iP	01 37 37.5 C	
		Tibet (h = 40 km).						i	01 37 44.7		
"	2	Um	i(Sg)	12 07 34.5				Um	eP	01 38 26	
"	2	Ki	ePn	13 49 54				Ka	iP	01 36 58.4	
			iSn	13 50 40.2				Ud	iP	01 37 46	
			iSg	13 50 57.3				Ionian Sea (h = 30 km).			
			D = 420 km = 3.8°.			"	3	Up	iP	06 00 41.0	
		Possibly northwest Russia.						Gb	iP	06 00 48.2	
		Origin time = 13 48 52.						Um	iP	06 00 49.5	
		Explosion?							ipP	06 00 57.1	
"	2	Up	iP	20 58 12.7				Ud	iP	06 00 52	
			ipP	20 58 23.6					ipP	06 00 59	
			microns sec					Chagos Islands.			
			P	Z' 0.1 1.0				h = 25 km (Um,Ud).			
		Ki	eP	20 57 19		"	3	Um	iPKP	14 59 48.4	
			ipP	20 57 31.6				South of Australia			
			microns sec					(h = 30 km).			
			P	Z' 0.1 1.0		"	3	Ud	iP	15 26 41	
		Sk	iP	20 57 56.1		"	4	Up	iP	01 24 11.8	
		Gb	iP	20 58 33.8				ipP	01 24 28.7		
			ipP	20 58 43.9				Ki	iP	01 23 46.3	
		Um	iP	20 57 44.6				Um	iP	01 23 58.9	
			ipP	20 57 56.6				Ud	iP	01 24 22	
		Ka	iP	20 58 37.7				Formosa. h = 60 km (Up).			
		Ud	iP	20 58 22		"	4	Up	iP	05 21 12.0	
			ipP	20 58 33				i	05 21 16.5		
		Kamchatka.						microns sec			
		h = 40 km (Up,Ki,Gb,Um,Ud).						P	Z' 0.2 0.6		
		Magn. = 5.7 (Up,Ki).						Ki	iP	05 20 49.8 D	
"	2	Up	iP	23 14 05.9				ipP	05 21 30.8		
			microns sec					e	05 51 26		
			P	Z' 0.1 1.0				microns sec			
		Ki	iP	23 13 11.9				P	Z' 0.2 1.0		
			i	23 13 13.1				M	E 1.4 15		
			microns sec					M	N 0.9 14		
			P	Z' 0.1 1.0				M	Z 1.6 14		
		Sk	iP	23 13 49.5				Sk	iP	05 21 15.3	
		Gb	iP	23 14 26.9				Gb	iP	05 21 30.4	
		Um	iP	23 13 37.4				Um	iP	05 20 57.0	
		Ka	iP	23 14 30.6				(cont.)			
		Ud	iP	23 14 12				(cont.)			
		(cont.)						(cont.)			

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
Mar.	4	(cont.)		Mar.	4	(cont.)	
		Um	ipP 05 21 38.0			Probably northwest Russia.	
			iS 05 30 22			Origin time = 15 19 23.	
		Ka	iP 05 21 26.7			Explosion?	
		Ud	iP 05 21 23				
			ipP 05 22 10	"	4	Up	eP 18 02 49 D
		Formosa. h = 170 km (Ki,Um,Ud).				i	18 02 50.5
		Magn. = 5.9 (Up,Ki).				iPP	18 03 18.6
						iS	18 06 38
"	4	Up	iPKP 06 35 09.5				microns sec
			i 06 35 17.1			P	E 5.9 7
			iPP 06 38 02.8			P	N 23 7
		Ki	iPKP 06 35 04.8			P	Z 22 7
			microns sec			P	Z' 1.3 1.5
			PKP Z' 0.2 1.5			S	E 24 8
		Sk	e(PKP) 06 35 06			S	N 30 10
			i 06 35 17.0			S	Z 73 11
		Gb	iPKP 06 35 18.8			M	E 180 7
		Um	i(PKP) 06 34 57.6			M	N 110 7
			i 06 35 06.6			M	Z 230 11
			iPKP 06 35 11.5				D = 2350 km = 21°.
			iPP 06 38 22.2			Ki	iP 18 04 03.3
		Ud	iPKP 06 35 10 C				iPa 18 04 38
			iPP 06 38 08				iPcP 18 07 21
		Tonga Islands (h = 230 km).					iS 18 08 53
							iSa 18 09 23
"	4	Ki	iPn 11 22 02.7				iSS 18 10 22
			iSn 11 22 58.6				microns sec
			iLgl 11 23 19.4			P	N 5.6 7
			D = 520 km = 4.7°.			P	Z 8.0 7
		Sk	iSg 11 25 57.2			P	Z' 0.8 1.7
		Um	iSn 11 23 42.5			S	E 11 10
			iSg 11 24 23.0			S	N 47 18
			D = 710 km = 6.4°.			M	E 250 13
		Ud	iSg 11 27 00			M	N 240 14
		Northwest Russia,				M	Z 260 16
		67.7°N, 32.8°E.					D = 3200 km = 29°.
		Origin time = 11 20 50.				Sk	iP 18 03 32.4
		Explosion?				Gb	iP 18 02 40.3
							i 18 02 41.8
"	4	Up	iP 15 10 36.2				iS 18 06 28.6
		Ki	iP 15 09 43.7			Um	eP 18 03 24 D
		Um	iP 15 10 09.9				i 18 03 27.0
		Ud	iP 15 10 38				iPcP 18 06 59
		Aleutian Islands					iS 18 07 48
		(h = 40 km).				Ka	iP 18 02 13.8
							i 18 02 16.2
"	4	Ki	iPn 15 20 28.9				iS 18 05 37.7
			iSn 15 21 17.5			Ud	eP 18 02 58
			iLgl 15 21 31.2				i 18 03 00
			D = 460 km = 4.1°.				e(S) 18 07 11
		Um	i 15 22 39.0			Aegean Sea (h = 30 km).	
			iSg 15 23 00.9			Magn. = 6.8 (Up,Ki).	
		(cont.)				Multiple P.	

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967 Mar.	4	Up	eP	18 42 48	1967 Mar.	5	(cont.)		
		Sk	iP	18 43 31.2			Up	i	18 58 01.8
		Um	iP	18 43 24.5			Um	iP	18 58 39.2
			i	18 43 51.9			Ka	iP	18 57 18.4
		Ud	iP	18 42 59			Ud	eP	18 58 13
		Aegean Sea (h = 40 km).					Rumania (h = 60 km).		
"	4	Um	iP	22 49 35.3	"	5	Ki	iP	19 31 34.8 C
"	4	Ki	iP	22 54 33.3	"	5	Ki	iPn	19 52 19.5
			i	22 54 50.5				iSn	19 53 07.7
		Caroline Islands						iLgl	19 53 23.3
		(h = 20 km).						D = 440 km = 4.0°.	
"	4	Um	iP	23 21 39.1			Um	iSn	19 54 19.1
"	5	Ud	iP	01 04 31				iS ^x	19 54 43.5
		Aegean Sea.						iSg	19 54 58.5
"	5	Ki	iPn	04 29 41.0				D = 760 km = 6.8°.	
			iSn	04 30 41.2			Probably northwest Russia.		
			iLgl	04 31 02.0			Origin time = 19 51 17.		
			D = 560 km = 5.0°.		"	6	Up	iP	02 55 18.4
		Sk	eLgl	04 33 28			Ki	eP	02 55 04
			iSg	04 33 36.9			Talaud Islands (h = 80 km).		
		Um	iSn	04 31 21.5	"	6	Up	iP	04 51 21.2
			i	04 31 32.0				microns sec	
			iSg	04 31 56.2				P	Z' 0.2 0.6
			D = 720 km = 6.5°.				Ki	iP	04 50 50.6 D
		Ud	eSg	04 34 27				microns sec	
		Northwest Russia,						P	Z' 0.1 1.0
		67.5°N, 33.5°E.					Gb	iP	04 51 41.2
		Origin time = 04 28 24.					Um	iP	04 51 02.6 D
		Explosion?						i	04 51 08.1
"	5	Up	iP	10 06 09.5				ipP	04 52 49.8
		Ki	iP	10 05 21.5			Ka	iP	04 51 39.0
		Um	iP	10 05 43.5				ipP	04 54 49.5
		Ud	iP	10 06 09			Ud	iP	04 51 28
		Kurile Islands (h = 30 km).						ipP	04 53 24
"	5	Up	iP	17 26 21.0			South of Japan.		
			i	17 26 36.5			h = 510 km (Um,Ud).		
		Ki	iP	17 27 50.7			Magn. = 5.6 (Up,Ki).		
			ipP	17 28 13.2	"	6	Up	eP	05 00 26
		Um	iP	17 27 02.6				i	05 00 28.9
			i	17 32 24.5			Um	i(P)	04 59 53.4
		Ka	iP	17 25 46.0			Ka	iP	05 01 02.3
		Ud	iP	17 26 37			Ud	iP	05 00 43
		Rumania. h = 120 km (Ki).			"	6	Sk	iP	05 54 17.8
"	5	Up	iP	18 57 52.7	"	6	Ki	iPKP	08 30 50.6
		(cont.)					(cont.)		

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967						1967					
Mar.	6	(cont.)				Mar.	7	(cont.)			
		Gb	iPKP	08 31 06.5	D			Um	iSg	16 16 18.6	
		Um	i(PKP)	08 30 50.7				Nordlands Fylke, Norway.			
			iPKP	08 30 56.1							
		Ka	iPKP	08 31 08.7	D	"	7	Ki	iP	16 34 10.0	
			i	08 31 11.7						microns sec	
		Ud	iPKP	08 30 58					P	Z' 0.1 1.0	
		Tonga-Kermadec Islands						Um	iP	16 34 14.9	C
		(h = 230 km).						Ud	iP	16 34 34	
		Talaud Islands									
		(h = 170 km).									
"	6	Up	iP	11 40 58.1							
			ipP	11 41 12.9							
		Ki	iP	11 40 59.5	C	"	8	Um	eP	01 16 20	
			ipP	11 41 11.7							
		Um	iP	11 40 55.4		"	8	Up	iP	05 26 05.2	
		Ka	iP	11 40 58.7				Um	iP	05 25 47.7	C
		Ud	iP	11 41 08				Ud	iP	05 26 10	
			ipP	11 41 23				Volcano Islands (h = 30 km).			
		Sumatra.				"	8	Um	iP	10 07 23.2	
		h = 50 km (Up,Ki,Ud).				"	8	Sk	e(P)	11 06 43	
"	6	Ki	iP	11 46 44.2				Um	iP	11 05 29.1	
		Ud	iP	11 47 36				Ud	iP	11 05 40	
		Aleutian Islands				"	8	Ki	iP _n	14 57 03.2	
		(h = 10 km).							iP ^x	14 57 11.2	
"	7	Ud	iP	03 11 43					iSn	14 58 00.3	
									iLgl	14 58 15.9	
"	7	Ki	iP	04 53 20.0					D = 530 km = 4.8°.		
		Um	iP	04 53 32.4				Um	eSg	14 59 37	
		Ud	iP	04 53 53				Probably northwest Russia.			
		Volcano Islands						Origin time = 14 55 46.			
		(h = 170 km).						Explosion?			
"	7	Sk	eP	06 36 43		"	8	Up	iP	21 57 30.0	
		Ud	iP	06 37 03	C						
"	7	Ud	iP	07 29 06		"	8	Up	iPKP	22 32 52.8	
		Atlantic Ocean (h = 30 km).						Ki	iPKP	22 32 38.8	
								Sk	iPKP	22 32 50.2	
"	7	Ki	iP	08 05 51.0				Um	iPKP	22 32 44.6	
		Sk	iP	08 05 09.4				Ud	iPKP	22 32 56	
		Um	iP	08 05 10.6	D			New Hebrides Islands			
		Yugoslavia (h = 30 km).						(h = 130 km).			
"	7	Ud	iP	10 19 58	D	"	8	Um	eP	22 40 32	
"	7	Ud	iP	11 51 05		"	9	Up	iSSS	07 41 12	
		Japan (h = 30 km).								microns sec	
								M	E	2.8 21	
"	7	Ki	iSg	16 15 51.9				M	N	3.8 23	
		Sk	iSg	16 15 56.1				M	Z	4.5 23	
		(cont.)						(cont.)			

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
Mar.				Mar.			
9	(cont.)			9	Um	iP	20 40 43.1
	Ki	eSKSP	07 28 27		Ud	iP	20 40 11
			microns sec		North Atlantic Ocean		
	M	E	4.3 24		(h = 30 km).		
	M	N	3.2 22	"	9	Ud	iP 21 05 10
	M	Z	3.5 21		North Atlantic Ocean		
	Um	iPKP	07 17 30.5		(h = 30 km).		
	i		07 27 47	"	9	Um	iP 21 06 29.8
	iSKSP		07 28 59		Ud	iP	21 06 19
	Santa Cruz Islands			"	9	Ki	iP 21 17 33.6
	(h = 30 km).					Um	iP 21 17 48.6 C
	Magn. = 6.2 (Up,Ki).					Ud	iP 21 18 14
"	9	Up	iSn 12 17 58.3		South of Japan		
	Sk	iSg	12 18 55.1		(h = 250 km).		
	Gb	iPg	12 16 18.1	"	9	Ud	iP 21 28 13
		iSn	12 16 46.9		North Atlantic Ocean		
		iSg	12 16 50.8		(h = 30 km).		
	Um	iLgl	12 20 01.7	"	9	Um	iP 21 30 43.9
	Ka	ePn	12 16 45		Ud	iP	21 30 22
		iSg	12 18 05.7	"	9	Up	iPKP 21 44 24.1
	Ud	iPg	12 16 40		Um	iPKP	21 44 23.9
		iSn	12 17 17		Ka	iPKP	21 44 36.4
		iSg	12 17 37		Ud	iPKP	21 44 27
	South coast of Norway,				Fiji Islands (h = 280 km).		
	57.9°N, 7.5°E.			"	9	Ud	eP 22 23 32
	Origin time = 12 15 30.				North Atlantic Ocean		
"	9	Up	i(P) 15 22 47.4		(h = 30 km).		
	Um	i(P)	15 22 28.1	"	10	Up	iP 00 42 30.9
"	9	Um	iP 15 28 29.0			i	00 42 36.7
"	9	Ki	iPKP 17 51 27.8				microns sec
	Um	iPKP	17 51 34.4			P	Z' 0.1 0.5
	New Zealand (h = 160 km).				Ki	iP	00 41 59.7 C
"	9	Um	iP 18 16 23.1		Sk	iP	00 42 28.7 C
"	9	Up	eL 19 03		Um	iP	00 42 12.7 C
			microns sec			ipP	00 44 06.7
	M	N	2.4 23		Ka	iP	00 42 47.1
	M	Z	2.3 23		Ud	iP	00 42 37 C
	Ki	eL	19 06		Bonin Islands.		
			microns sec		h = 540 km (Um).		
	M	N	1.7 20	"	10	Ud	iP 01 49 28
	M	Z	3.8 20		North Atlantic Ocean		
	Santa Cruz Islands				(h = 30 km).		
	(h = 60 km).			"	10	Ud	iPKP 06 52 14
	Magn. = 5.9 (Up,Ki).				(cont.)		
"	9	Ud	iP 20 08 16				
	North Atlantic Ocean						
	(h = 30 km).						

1967						1967					
Mar.	10	(cont.)				Mar.	11	(cont.)			
		Tonga-Kermadec Islands						Ki iP	06 38 40.4		
		(h = 550 km).							microns sec		
"	10	Ud iP 07 27 16						P Z' 0.2 1.3			
		North Atlantic Ocean						Sk iP 06 38 57.7			
		(h = 30 km).						Um iP 06 38 30.0 C			
"	10	Ud eP 11 20 03						ipP 06 39 16.0			
		North Atlantic Ocean						Ka iP 06 38 36.1 C			
		(h = 30 km).						i 06 38 39.6			
"	10	Ki iP 14 26 50.8						iPP 06 40 07.0			
		Um iP 14 27 07.7						Ud iP 06 38 50 C			
		Ud iP 14 27 36						ipP 06 39 36			
		Japan (h = 310 km).						Hindu Kush.			
"	10	Up i(P) 14 55 19.7				"	11	Um iPKP 08 52 15.9			
		microns sec						Santa Cruz Islands			
		(P) Z' 0.1 0.7						(h = 50 km).			
"	10	Up iPg 15 38 51.6				"	11	Ki e 09 07 12			
		iSg 15 39 04.1						i(Sg) 09 07 57.7			
		microns sec						Um i(Sg) 09 09 20.8			
		Sg Z' 0.1 0.8				"	11	Ki iPn 11 11 08.7			
		Ud iPg 15 39 19						iSn 11 12 04.6			
		iSg 15 39 48						iSg 11 12 27.6			
		Gulf of Bothnia,						D = 520 km = 4.7°			
		60.9°N, 17.7°E.						Sk iSg 11 15 06.2			
		Origin time = 15 38 35.						Um iSn 11 12 49.4			
		Probably underwater explosion.						iSg 11 13 36.6			
"	10	Sk iP 17 17 59.2						Northwest Russia,			
"	10	Sk e 17 38 01						68.1°N, 32.9°E.			
		i(Sg) 17 38 33.2				"	11	Origin time = 11 09 54.			
"	10	Ud iP 20 52 01						Explosion?			
		North Atlantic Ocean				"	11	Um iP 12 26 03.5			
		(h = 30 km).				"	11	Um iP 12 26 51.9			
"	11	Um eP 03 11 15						Ud eP 12 26 17			
		Ud eP 03 10 54						Iceland (h = 30 km).			
		North Atlantic Ocean				"	11	Up eP 14 57 31			
		(h = 30 km).						ipP 14 57 43.8			
"	11	Up iP 06 38 31.4 C						microns sec			
		ipP 06 39 18.2						Z' 0.1 1.3			
		microns sec						Ki iP 14 57 17.0 C			
		P Z' 0.1 0.5						ipP 14 57 31.4			
		(cont.)						i 14 57 47.8			
								microns sec			
								P Z' 0.5 1.8			
								(cont.)			

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1967									1967									
Mar.	11	(cont.)							Mar.	12	(cont.)							
		Ki		microns	sec						Um	iP	03 02 30.6	C				
		M	E	4.5	22						i		03 02 59.4					
		M	N	2.0	22						Ka	iP	03 03 17.0					
		M	Z	6.3	22						Ud	iP	03 02 59	C				
		Sk	iP	14 57	11.5						Japan (h = 30 km).							
			ipP	14 57	24.1						Magn. = 5.8 (Up,Ki).							
		Gb	eP	14 57	24					"	12	Um	iP	06 57 34.5				
			ipP	14 57	37.9						"	12	Ki	ePn	13 27 27			
		Um	iP	14 57	27.1								iSn	13 28 12.1				
			ipP	14 57	39.8								iSg	13 28 27.9				
		Ka	iP	14 57	36.8	C							D = 410 km = 3.7°.					
			ipP	14 57	50.7							Sk	eSg	13 30 59				
		Ud	iP	14 57	28							Um	e(Pg)	13 28 08				
		i		14 57	34								iSn	13 28 54.4				
		Mexico.											iSg	13 29 21.3				
		h = 50 km (Up,Ki,Sk,Gb,Um,Ka).											D = 600 km = 5.4°.					
		Magn. = 6.0 (Up,Ki).										Northwest Russia,						
"	11	Up	iP	17 06	52.8	C						67.5°N, 30.0°E.						
				microns	sec							Origin time = 13 26 27.						
		P	Z'	0.2	0.8							Explosion?						
		Ki	iP	17 06	43.6	C					"	13	Ud	eP	07 43 12			
				microns	sec								Greece.					
		P	Z'	0.1	1.0						"	13	Ki	iPKP	07 55 42.8			
		Sk	iP	17 07	08.0	C							Um	iPKP	07 55 49.2			
		Gb	iP	17 07	11.9								Ka	iPKP	07 56 01.1			
		Um	iP	17 06	43.6	C							Ud	iPKP	07 55 53			
		Ka	iP	17 07	02.7								Fiji Islands (h = 590 km).					
		Ud	iP	17 07	07	C												
		India-China (h = 5 km).																
		Magn. = 6.0 (Up,Ki).																
"	11	Up	iP	18 21	00.0						"	13	Um	iP	12 12 41.5			
		North Atlantic Ocean									"	13	Up	iP	14 54 56.5			
		(h = 30 km).											Ki	iP	14 54 02.7	C		
"	11	Ki	iP	18 54	55.1								Sk	iP	14 54 33.1			
		Ud	iP	18 55	10								Um	iP	14 54 29.5			
		Nepal (h = 10 km).											Ud	iP	14 54 57			
"	12	Um	i(PcP)	01 34	48.8								Aleutian Islands					
		(Aleutian Islands).											(h = 30 km).					
"	12	Up	iP	03 02	55.0	C					"	13	Ki	iPKP	16 25 57.4	C		
				microns	sec								Um	iPKP	16 25 55.0			
		P	Z'	0.1	1.0								Ud	iPKP	16 25 50	C		
		Ki	iP	03 02	11.4								Chile (h = 30 km).					
				microns	sec						"	13	Ki	iP	17 40 17.6			
		P	Z'	0.2	1.3										microns	sec		
		Sk	iP	03 02	46.9									P	Z'	0.1	1.5	
		Gb	iP	03 03	19.1									Ud	iP	17 40 45		
		(cont.)											Talaud Islands (h = 60 km).					

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1967						1967					
Mar.	13	Ki	iP	17 49 28.9		Mar.	14	Up	iP	07 08 06	
		Um	iP	17 48 52.2				iS		07 16 12	
		Ud	iP	17 48 26						microns sec	
		Greece (h = 90 km).						P	E	0.8 4	
"	13	Up	iP	19 14 26.8				M	E	13 15	
		Ki	iP	19 14 10.6				M	N	11 16	
				microns sec				M	Z	17 15	
			P	Z' 0.1 1.1				D = 6600 km =			
		Um	iP	19 14 15.2			Ki	iP		07 07 56.6 C	
		Ud	iP	19 14 39 D				ipP		07 08 03.7	
		Talaud Islands (h = 40 km).						i		07 27 02	
"	13	Ud	iP	19 28 31						microns sec	
"	13	Up	iP	19 30 15.4 C				P	Z'	0.5 1.3	
			iPP	19 32 05.3				M	E	14 15	
				microns sec				M	N	6.8 17	
			P	Z' 0.6 2.0				M	Z	12 14	
		Ki	iP	19 31 07.5			Sk	iP		07 08 20.6 C	
		i		19 31 32.1				ipP		07 08 28.2	
				microns sec			Gb	iP		07 08 26.9	
			P	Z' 0.5 1.7			Um	iP		07 07 56.3 C	
		Sk	iP	19 30 51.9				iPa		07 11 36	
		i		19 31 22.5				iS		07 15 56	
		Gb	iP	19 30 15.2 C				iSS		07 19 47	
		i		19 30 36.6			Ka	iP		07 08 15.1 C	
		Um	iP	19 30 36.9			Ud	iP		07 08 18 C	
			iPP	19 32 16.5			India-China.				
		Ka	iP	19 29 54.1			h = 25 km (Ki,Sk).				
		Ud	iP	19 30 31 C			Magn. = 6.3 (Up,Ki).				
		Red Sea (h = 5 km).				"	14	Up	iP	07 55 24.9	
		Magn. = 6.3 (Up,Ki).						iPn		07 55 45.4	
"	13	Ud	iP	20 55 58 C				iSn		08 00 20.3	
		North Atlantic Ocean						i		08 00 58	
		(h = 30 km).						iLgl		08 02 56	
"	13	Um	iP	21 39 01.0						microns sec	
								M	E	1.7 15	
								M	N	4.3 11	
"	13	Ki	iP	21 47 38.1				M	Z	3.8 11	
			iPP	21 47 47.9			Ki	iP		07 53 47.8 D	
			iS	21 50 18.4				iS		07 56 29.0	
		Um	iP	21 48 23.3				iLgl		07 58 23.0	
			iS	21 51 58.1				iLg2		07 58 40	
			iPcP	21 52 58.2						microns sec	
		Ud	iP	21 49 20				P	Z'	0.3 1.0	
		Arctic Ocean (h = 10 km).						S	Z'	0.3 1.5	
"	14	Up	iP	00 17 47.0				M	E	4.8 13	
		Ud	iP	00 17 38				M	N	8.0 11	
		i		00 17 46				M	Z	10 11	
								D = 1650 km = 15°.			
							Sk	iP		07 54 52.1	
								iLgl		08 00 43.2	
							(cont.)				

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1967						1967					
Mar.	14	(cont.)				Mar.	14	Up	iP	23 11 51.4	
		Sk	iLg2	08 01 28.3				Ki	iP	23 10 45.3	
		Gb	iP	07 55 49.5			"	14	Up	iPg	23 20 02.6
			i	08 04 27.0					iSg	23 20 25.1	
			iLg2	08 04 36.2						D = 190 km = 1.7°.	
		Um	iP	07 54 38.0						Degerfors, central Sweden.	
			i	07 54 49.7						Underwater explosion.	
			i	07 57 14.8			"	14	Up	iP	23 24 02.2
			iS	07 58 02.0					i	23 24 12.8	
		Ka	i(Sn)	08 01 02.2						microns sec	
		Ud	iP	07 55 23					P	Z' 0.1 1.0	
			iLg2	08 03 09							
				Arctic Ocean (h = 30 km).			"	14	Up	iPKP	23 43 00.3
				Very clear higher-mode waves.					Ki	iPKP	23 42 50.8
				There is some indication of					Gb	iPKP	23 43 10.7
				teleseismic Pn and Sn - for					Um	i(PKP)	23 42 48.7
				the first time from this						iPKP	23 42 59.3
				locality (cf Båth, Pure and						iSKP	23 45 34.9
				Appl. Geophys., 64: 159-170,					Ka	iPKP	23 43 12.8
				1966, and 66: 181-187, 1967).						Tonga-Kermadec Islands	
"	14	Ki	iPn	12 34 17.8			"	15	Ki	ePn	06 16 56
			e	12 34 30						iSn	06 17 46.4
			iSn	12 35 04.5						iLgl	06 18 04.0
			iLgl	12 35 19.7						D = 470 km = 4.2°.	
				D = 430 km = 3.9°.					Um	iSg	06 19 36.7
				Possibly northwest Russia.						Probably northwest Russia.	
				Origin time = 12 33 16.						Origin time = 06 15 50.	
				Explosion?						Explosion?	
"	14	Ud	iP	14 42 50			"	15	Ki	e(Pn)	07 09 37
				Hindu Kush (h = 190 km).						iSn	07 10 28.0
"	14	Up	iPg	20 45 46.4						iLgl	07 10 36.8
			iSg	20 46 08.8						Possibly northwest Russia.	
				D = 190 km = 1.7°.						Explosion?	
				Degerfors, central Sweden.							
				Underwater explosion.							
"	14	Up	iP	22 53 08.8			"	15	Up	iP	14 50 04.3
"	14	Up	iPg	23 03 21.9			"	15	Ki	iPn	15 04 38.5
			i	23 03 38.2						iP ^x	15 04 47.9
			iSg	23 03 44.1						iSn	15 05 27.3
				microns sec						iLgl	15 05 42.9
				Sg Z' 0.2 0.7°.						D = 440 km = 4.0°.	
				D = 190 km = 1.7°.						Possibly northwest Russia.	
		Sk	iLgl	23 05 07.6						Origin time = 15 03 36.	
		Um	i(Lgl)	23 05 23.8						Explosion?	
				Degerfors, central Sweden.			"	15	Ki	eP	15 18 05
				Origin time = 23 02 48.						i(Sg)	15 19 20.8
				Underwater explosion.							

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1967						1967					
Mar.	15	Um	iPKP	22 21	10.9	Mar.	17	(cont.)			
				South Sandwich Islands				New Ireland (h = 30 km).			
				(h = 30 km).				Magn. = 6.2 (Up,Ki).			
"	16	Ki	iP	03 20	51.5	"	17	Ki	iP	21 50	33.7
		Um	iP	03 20	21.4						
			iPP	03 21	57.8	"	18	Ki	iP	00 17	17.5
				Red Sea (h = 30 km).				Um	iP	00 16	34.3
"	16	Up	iP	12 23	40.1				i	00 16	41.5
		Ki	eP	12 23	31			Ud	iP	00 16	38 C
				Burma (h = 5 km).				Caucasus.			
"	16	Um	iPKP	12 28	47.3	"	18	Um	eP	01 13	11
			iSKP	12 32	12.0	"	18	Um	iPKP	09 45	44.0
				Loyalty Islands (h = 70 km).				iSKP	09 48	23.4	
"	16	Um	iP	14 22	22.6			Ka	iPKP	09 46	01.7
								Ud	iPKP	09 45	51
"	16	Um	iPKP	17 50	58.0 C					Fiji Islands (h = 650 km).	
		Ud	iSKP	17 53	31	"	18	Ki	iPn	11 24	25.5
				New Hebrides Islands				iSn	11 25	20.8	
				(h = 640 km).				iLgl	11 25	35.0	
"	17	Up	iSg	02 33	29.8			iSg	11 25	44.1	
		Sk	iSg	02 32	23.5			D = 510 km = 4.6°.			
		Um	iSg	02 34	02.8		Sk	eSn	11 27	19	
		Ud	ePg	02 31	53			iSg	11 28	14.6	
			iSg	02 32	31		Um	iPn	11 24	52.3	
				South Norway, near				iSn	11 26	05.6	
				61.6°N, 8.7°E.				iSg	11 26	42.1	
				Origin time = 02 30 56.				i	11 26	52.7	
"	17	Um	iP	02 33	12.4			D = 710 km = 6.4°.			
				Japan (h = 60 km).				Ud	eSn	11 28	01
"	17	Um	iP	06 58	02.0					Northwest Russia,	
				Aleutian Islands						67.9°N, 32.6°E.	
				(h = 40 km).						Origin time = 11 23 13.	
"	17	Up								Explosion? This is one	
										of the strongest events	
										in this whole series.	
"	17	Up		---		"	18	Up	iP	12 18	46.6 C
				microns sec		"	18	Up	iP	14 30	54.8
		M	E	4.6 20		"	18	Ka	iPKP	17 09	34.0
		M	N	5.2 23						New Hebrides Islands	
		M	Z	8.4 25						(h = 20 km).	
		Ki		---		"	18	Up	iP	18 01	09.8
				microns sec					ipP	18 01	29.0
		M	E	4.7 25				Ki	iP	18 00	31.5
		M	N	2.7 19					i	18 01	10.5
		M	Z	9.6 24						(cont.)	
		Um	iPS	11 53	08						
			iSS	11 59	15						
				(cont.)							

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1967 Mar.	18	(cont.)	1967 Mar.	19	(cont.)
		Sk iP 18 01 05.6			Ki iP 04 11 49.0
		Um iP 18 00 48.7			i 04 11 50.8
		ipP 18 01 06.1			iS 04 20 03
		Ka iP 18 01 30.2			iScS 04 21 41
		Ud iP 18 01 18 C			microns sec
		Japan. h = 70 km (Up,Um).			P Z 6.3 9
"	19	Up iP 01 24 54.0 C			P Z' 0.2 1.0
		iPKP 01 29 09.9			S E 8.3 17
		i 01 29 16.9			S N 3.5 11
		Ki iP 01 24 39.5			M E 71 16
		i 01 25 23.2			M N 57 19
		iPKP 01 28 53.6			M Z 90 21
		Um iP 01 24 44.3 C			D = 6800 km = 61°.
		i 01 25 16.3			Sk iP 04 12 24.8
		iPKP 01 29 00.0			Gb iP 04 12 56.9
		Ka iPP 01 29 41.7			i 04 12 59.8
		Ud iP 01 25 06			i! 04 13 13.4
		iPKP 01 29 10			Um iP 04 12 09.8
		iPP 01 29 38			i! 04 12 25.8
		Banda Sea (h = 60 km).			iPa 04 16 11
"	19	Ud ePP 02 33 28			iS 04 20 46
		Chile (h = 30 km).			i 04 21 25
"	19	Up iP 03 06 09.2			Ka iP 04 12 58.3
		Ki iP 03 05 39.6			i 04 13 00.9
		Sk iP 03 06 09.4			Ud iP 04 12 40
		Gb iP 03 06 29.1			Kurile Islands (h = 30 km).
		Um iP 03 05 51.1			Magn. = 6.6 (Up,Ki).
		Ka iP 03 06 26.4			Multiple P.
		Ud iP 03 06 17 C	"	19	Up iP 06 07 26.4 C
		Ryukyu Islands (h = 50 km).			Ki iP 06 07 09.2 C
"	19	Up iP 04 12 34.0			Um iP 06 07 14.8
		i 04 12 36.3			Ka eP 06 07 38
		ePa 04 17 24			Ud iP 06 07 38 C
		eS 04 21 18			Mindoro (h = 100 km).
		i 04 21 46	"	19	Um iP 07 37 27.9
		iScS 04 22 31	"	19	Up iP 07 48 22.5
		i 04 22 52			i 07 48 32.9
		iP'P' 04 40 54.4	"	19	Up iP 11 20 25.1 C
		microns sec			i 11 20 32.6
		P Z 3.9 7			Um i(P) 11 20 34.1
		P Z' 0.2 0.7	"	19	Ki eP 15 29 40
		S N 3.8 12			Leyte (h = 130 km).
		M E 47 19	"	19	Ki iP 16 06 03.5
		M N 61 20			Leyte (h = 30 km).
		M Z 55 19			
		D = 7550 km = 68°.			
		(cont.)			

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1967						1967					
Mar.	19	Up	iP	17 36 06.0		Mar.	20	(cont.)			
			ipP	17 36 17.8				Kurile Islands (h = 50 km).			
				microns sec				Magn. = 6.4 (Up,Ki).			
			pP	Z' 0.1 0.9							
		Ki	iP	17 35 14.5		"	20	Up	iP	13 49 49.7	
			ipP	17 35 25.0				Um	iP	13 49 23.9	
		Um	iP	17 35 39.4				Ud	iP	13 49 54	
			ipP	17 35 50.8				Kurile Islands (h = 50 km).			
		Ud	iP	17 36 05		"	20	Up	iP	13 51 49.7	
			ipP	17 36 16				i		13 51 56.4	
		Aleutian Islands.						iPcP		13 52 15.0	
		h = 40 km (Up,Ki,Um,Ud).								microns sec	
"	19	Up	iP	22 01 43.9 C				P		Z' 0.2 0.6	
		Ki	iP	22 00 56.9				Ki	iP	13 51 02.5	
		Um	iP	22 01 17.1				ipP		13 51 15.8	
		Ud	iP	22 01 48						microns sec	
		Kurile Islands (h = 30 km).						P		Z' 0.2 0.9	
"	19	Up	iP	23 07 13.1				Sk	iP	13 51 37.0	
								Gb	iP	13 52 10.6	
"	20	Ud	iP	05 25 04				Um	iP	13 51 24.5 C	
		Kurile Islands (h = 30 km).						i		13 51 33.3	
"	20	Up	iP	09 41 34.6 C				Ka	iP	13 52 12.2	
		Ki	iP	09 40 48.2				Ud	iP	13 51 55 C	
		Um	iP	09 41 09.2				ipP		13 52 08	
		Ud	iP	09 41 41 C				Kurile Islands.			
		i		09 41 55				h = 50 km (Ki,Ud).			
		Kurile Islands (h = 30 km).				"	20	Up	iP	14 03 04.0	
"	20	Up	iP	10 58 57.2				i		14 03 09.0	
		Ki	iP	10 58 03.4						microns sec	
		Um	iP	10 58 30.1				P		Z' 0.1 0.5	
		Ud	iP	10 58 57				Ki	iP	14 02 16.7	
		Aleutian Islands								microns sec	
		(h = 50 km).						P		Z' 0.1 0.9	
"	20	Up	iP	13 42 31.5				Sk	iP	14 02 55.3	
		i		13 42 35.7				i		14 03 15.3	
				microns sec				Gb	iP	14 03 25.2	
		P		Z' 0.2 0.6				Um	iP	14 02 37.9	
		Ki	iP	13 41 44.1				Ka	iP	14 03 27.7	
		i		13 41 53.4				Ud	iP	14 03 09 C	
				microns sec				Kurile Islands (h = 30 km).			
		P		Z' 0.4 0.8		"	20	Ki	iPn	14 31 09.9	
		Sk	iP	13 42 20.0 C				iSn		14 31 58.4	
		Gb	iP	13 42 51.1 C				iLgl		14 32 15.3	
		Um	iP	13 42 04.7				D = 440 km = 4.0°.			
		Ka	iP	13 42 53.7				Possibly northwest Russia.			
		i		13 43 10.4				Origin time = 14 30 07.			
		Ud	iP	13 42 36				Explosion?			
		(cont.)									

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå
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1967					1967				
Mar.	20	Up	iP	14 55 16.0	Mar.	21	Up	iP	18 23 59.1
		Ki	iP	14 54 28.1			Ki	iP	18 24 02.5
		Um	iP	14 54 50.4			Sk	iP	18 23 46.8
		Ud	iP	14 55 20			Um	iP	18 24 03.6
		Kurile Islands (h = 50 km).					Colombia (h = 150 km).		
"	20	Up	iP	15 57 24.7	"	22	Ki	iP	06 08 23.1
		Ki	iP	15 56 37.2			Aleutian Islands		
		Gb	iP	15 57 44.6			(h = 30 km).		
		Um	iP	15 56 58.5 C	"	22	Um	iP	18 07 16.1
		Ud	iP	15 57 30	"	22	Ki	iPKP	21 36 38.9
		Kurile Islands (h = 60 km).					Um	iPKP	21 36 35.4
"	20	Ud	iP	16 23 06			South Sandwich Islands		
		Kurile Islands (h = 30 km).					(h = 25 km).		
"	20	Up	iP	17 22 33.7	"	22	Up	iP	21 47 14.6 C
		Ki	iP	17 21 46.4			i		21 47 17.2
		Um	iP	17 22 08.0 C	"	23	Ki	i	06 16 34.9
		Ud	iP	17 22 41 C			i(Sg)		06 16 53.7
		Kurile Islands (h = 30 km).					Sk	e(Sg)	06 19 55
"	20	Ki	iPKP	19 26 34.0			Um	i	06 18 19.2
		Gb	iPKP	19 26 52.6			i(Sg)		06 18 34.9
		Um	iPKP	19 26 39.6	"	23	Ki	ePn	07 40 09
		Ud	iPKP	19 26 44			iP ^x		07 40 17.7
		Loyalty Islands (h = 30 km).					iSn		07 41 01.0
"	20	Up	iP	22 06 12.6			iLgl		07 41 12.6
		Ki	iP	22 05 36.2			D = 490 km = 4.4°.		
		Sk	iP	22 06 10.9			Um	iSg	07 42 42.1
		Um	iP	22 05 50.7			i		07 42 58.4
			iPcP	22 06 12.3			Probably northwest Russia.		
		Ud	iP	22 06 17			Origin time = 07 38 58.		
		Japan (h = 60 km).					Explosion?		
"	20	Ki	iP	22 37 31.7	"	23	Ki	iP	10 17 35.2
				microns sec	"	23	Up	iP	13 52 55.6
			P	Z' 0.1 1.0			ipP		13 53 06.1
		Um	iP	22 37 05.7			Ki	iP	13 52 08.1 C
		Ka	iP	22 36 38.6					microns sec
		Ud	iP	22 37 16					P Z' 0.1 1.0
		Iraq (h = 40 km).					Um	iP	13 52 29.7
"	21	Up	iP	00 34 31.8			Ud	iP	13 53 01
"	21	Up	iP	00 45 16.6			ipP		13 53 14
"	21	Ki	iP	14 43 28.8			Kurile Islands.		
"	21	Um	iP	15 16 04.2			h = 40 km (Up,Ud).		
		Japan (h = 40 km).			"	23	Ki	iP	15 13 30.6
							(cont.)		

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1967
Mar. 23 (cont.)
Um iP 15 13 27.2
Ud iP 15 13 43
Sumatra (h = 30 km).
" 23 Ki iPn 15 32 53.5
iSn 15 33 51.8
iLgl 15 34 09.6
D = 530 km = 4.8°.
Um iSg 15 35 36.9
Northwest Russia.
Origin time = 15 31 39.
Explosion?
" 24 Up iP 01 19 49.4
Ud iP 01 20 01
Formosa (h = 50 km).
" 24 Up iP 02 05 40.6
i 02 05 43.9
Sk iP 02 06 16.6
Um iP 02 06 04.4
Red Sea (h = 30 km).
" 24 Up iP 02 09 41.5 C
Sunda Strait (h = 20 km).
" 24 Um eP 03 26 51
Sinkiang (h = 30 km).
" 24 Up iP 04 22 46.6 D
ipP 04 22 53.3
Ki iP 04 22 15.2
Um iP 04 22 23.1
Ud eP 04 22 57
Japan. h = 25 km (Up).
" 24 Ki iP 06 46 54.1
Red Sea (h = 40 km).
" 24 Um iP 07 11 19.0
Tashkent.
" 24 Up iP 08 27 06.6
Hindu Kush.
" 24 Up iP 09 12 50.6
ipP 09 15 00.1
iPP 09 16 57.7
ipPP 09 18 49.8
iSKS 09 22 27
iS 09 23 18
(cont.)

1967
Mar. 24 (cont.)
Up microns sec
pP Z 0.9 4
pP Z' 0.5 1.5
PP Z' 0.5 1.5
SKS E 2.7 10
S N 3.5 10
M E 2.4 18
M N 3.6 22
M Z 2.6 20
(D = 10650 km = 96°).
Ki iP 09 12 45.9
ipP 09 14 53.7
iPP 09 16 37.7
i 09 17 56.0
iSKS 09 22 20
microns sec
pP Z' 0.4 1.6
SKS E 6.9 10
M E 4.5 21
M N 2.7 20
M Z 6.3 22
(D = 10550 km = 95°).
Sk iP 09 13 01.1
ipP 09 15 11.7
iPP 09 17 21.8
i 09 18 46.3
ipPP 09 19 10.6
Gb ipPP 09 19 02.8
Um iP 09 12 44.1
ipP 09 14 53
iPP 09 16 42.5
Ka iPP 09 17 10.6
Um ipPP 09 18 37
iSKS 09 22 22
iS 09 23 08
i 09 24 34
Ud iP 09 13 01
ipP 09 15 11
iPP 09 17 08
isPP 09 19 06
Java Sea.
h = 590 km (Up, Ki, Sk, Um, Ud).
Magn. = 6.5 (Up).
" 24 Ki ePn 09 50 25
iSn 09 51 24.6
Sk eSg 09 54 33
Um iPn 09 51 00.8
iSn 09 52 25.9
iLgl 09 53 06.8
D = 840 km = 7.6°.
(cont.)

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1967				1967			
Mar.	24	(cont.)		Mar.	25	Up	iP 07 46 49.5
		Northern coast of the Kola Peninsula, 69.5°N, 33.4°E.				Um	eP 07 46 31
		Origin time = 09 49 07.				Ud	iP 07 47 01
		Explosion?				Formosa (h = 120 km).	
"	24	Up	iP 11 58 44.6	"	25	Ki	iPn 10 09 28.6
		Um	iP 11 58 37.6				iSn 10 10 24.8
			ipP 12 00 49.5				iLgl 10 10 42.3
		Ud	iP 11 58 54				D = 520 km = 4.7°.
		Java Sea. h = 610 km (Um).				Sk	eSg 10 13 23
"	24	Um	iP 12 36 41.1			Um	iSn 10 11 08.7
"	24	Up	iP 18 41 38.2 C				iSg 10 11 48.3
		Bonin Islands (h = 30 km).					D = 720 km = 6.5°.
"	24	Ki	iPKP 19 29 04.9			Northwest Russia, 67.9°N, 32.8°E.	
		Um	iPKP 19 29 12.0			Origin time = 10 08 15.	
		i	19 29 19.8			Explosion?	
		New Zealand (h = 30 km).		"	25	Ki	iPn 12 44 33.8
"	24	Up	iPKP 23 18 00.8				iSn 12 45 30.0
			iSKP 23 20 35.2				iLgl 12 45 43.3
		Um	iSKP 23 20 23.5				D = 520 km = 4.7°.
		Ud	iSKP 23 20 40			Um	iSn 12 46 14.3
		Fiji Islands (h = 650 km).					iSg 12 46 53.7
"	25	Up	iP 06 04 53.7 C				D = 720 km = 6.5°.
			iPn 06 05 59.3			Northwest Russia.	
			iPP 06 06 12.2			Origin time = 12 43 19.	
			microns sec			Explosion?	
		P	Z' 0.1 0.7	"	25	Um	iP 14 42 03.1
		PP	Z' 0.1 0.8			Panama (h = 40 km).	
		Ki	iP 06 04 38.5 C	"	25	Um	iP 14 46 23.1
			iPn 06 05 31.7			Panama (h = 30 km).	
			microns sec	"	25	Ki	iP 22 34 45.8
		P	Z' 0.2 0.7			Um	iP 22 34 27.9
		Sk	iP 06 05 09.7 C			Ud	iP 22 34 36
			iPn 06 06 23.4			Iran (h = 40 km).	
		Gb	iP 06 05 22.1	"	25	Up	iP 22 58 56.7
		Um	iP 06 04 38.9 C				ipP 22 59 10.7
			iPn 06 05 40.4				microns sec
			iPP 06 05 53.7			P	Z' 0.3 1.0
		Ka	iP 06 05 09.8 C			M	E 8.1 18
		Ud	iP 06 05 09 C			M	N 5.3 20
			i 06 05 41			M	Z 4.6 18
			iPn 06 06 22			Ki	iP 22 58 09.6
		Kazakh SSR.					ipP 22 58 25.1
		Magn. = 5.9 (Up, Ki).					microns sec
		Underground explosion.				P	Z' 0.3 1.0
						(cont.)	

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå
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1967						1967					
Mar.	25	(cont.)				Mar.	26	(cont.)			
		Ki		microns	sec			Up	iP	08 02 14.1	
		M	E	11	17			Aleutian Islands.			
		M	N	6.3	17			h = 40 km (Up).			
		M	Z	8.7	18		"	26	Ki	iPn	09 56 01.3
		Sk	iP	22 58	46.7				iSn	09 56 59.9	
		Gb	iP	22 59	18.7				iLgl	09 57 21.0	
		Um	iP	22 58	31.1				D = 560 km = 5.0°.		
			ipP	22 58	46.2			Sk	eSg	09 59 52	
			iS	23 07	09			Um	i	09 57 22.9	
		Ka	iP	22 59	20.1				iSg	09 58 15.1	
		Ud	iP	22 59	04						
			ipP	22 59	17						
		Kurile Islands.						Northwest Russia,			
		h = 50 km (Up,Ki,Um,Ud).						67.3°N, 33.3°E.			
		Magn. = 6.2 (Up,Ki).						Origin time = 09 54 43.			
								Explosion?			
"	26	Um	iP	01 42	03.8	"	26	Up	iP	13 37 41.4	
		Japan (h = 50 km).									
"	26	Up	iP	03 16	56.9	"	26	Up	iP	16 33 34.2	
		Ki	iP	03 17	16.1			Ki	iP	16 33 03.0	
		Sk	eP	03 17	33			Um	iP	16 33 16.3 D	
		Um	iP	03 17	00.8			Bonin Islands (h = 450 km).			
		Ud	eP	03 17	09	"	26	Ki	iP	17 13 29.6 C	
			i	03 17	37			Um	eP	17 13 38	
		West Pakistan (h = 20 km).						Mindanao (h = 90 km).			
"	26	Sk	iP	04 33	22.8	"	26	Up	iPKP	21 29 57.8	
		Um	iP	04 33	24.5				i	21 30 03.2	
		Alaska (h = 30 km).						Ki	iPKP	21 29 30.8	
"	26	Up	iSg	06 16	34.0			Sk	iPKP	21 29 49.3	
		Sk	eSg	06 16	12			Um	iPKP	21 29 40.5	
		Um	iSn	06 13	56.6			New Zealand (h = 30 km).			
			iS ^x	06 14	12.7	"	26	Um	iP	21 38 27.6	
			iSg	06 14	32.7			Japan (h = 30 km).			
		Northwest Russia.									
		Explosion?				"	26	Um	iPKP	22 57 40.9	
								New Guinea (h = 15 km).			
"	26	Ki	iSn	06 19	23.5	"	27	Up	iP	01 02 48.8	
			iLgl	06 19	45.2						
		Sk	eSg	06 22	12			Up	iP	08 20 12.5	
		Um	eSn	06 20	05				ipP	08 20 17.3	
			iSg	06 20	34.2			Ki	iP	08 20 23.1	
		Northwest Russia.							ipP	08 20 28.7	
		Origin time = 06 17 36.						Sk	iP	08 20 35.3 C	
		Explosion?						Um	iP	08 20 13.1	
"	26	Um	iP	07 37	48.8				ipP	08 20 19.2	
"	26	Up	iP	08 02	03.4			Ud	iP	08 20 23 C	
		(cont.)							ipP	08 20 27	
								(cont.)			

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå
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1967						1967					
Mar.	28	Up	iP	07 14 55.3		Mar.	29	(cont.)			
"	28	Up	iS	15 54 43.5				Up	i	02 08 31.9	
		Gb	iP	15 51 26.6				Sk	ePKP	02 08 14	
			i	15 51 33.5					i	02 08 36.3	
			iS	15 52 59.7				Gb	iPKP	02 08 29.0	
		Um	iP	15 53 06.2				Um	iPKP	02 08 09.3	
		Ka	iP	15 51 32.7					i	02 08 20.8	
			iS	15 53 06.6				Ud	iPKP	02 08 26	
		Ud	iP	15 51 56 C					i	02 08 39	
			iS	15 53 54				Kermadec Islands.			
		Belgium (h = 20 km).				"	29	Up	iSg	13 06 45.0	
"	28	Up	iP	18 32 24.1				Um	iSg	13 07 15.3	
"	28	Up	iP	19 44 44.3				Ud	iSg	13 07 47	
			ipP	19 44 57.8				Southwest Finland.			
		Ki	iP	19 44 26.0				Origin time = 13 05 29.			
		Sk	iP	19 44 54.9				Explosion?			
		Gb	iP	19 45 01.4		"	29	Up	iSKP	17 30 13.0	
		Um	iP	19 44 31.3				Um	iSKP	17 30 03.6	
		Ud	iP	19 44 55				Ka	iPKP	17 27 41.7	
		Luzon. h = 50 km (Up).						Ud	iSKP	17 30 18	
"	28	Up	iP	20 04 25.3				Fiji Islands (h = 610 km).			
			i	20 04 35.6		"	29	Ud	iP	21 09 33	
"	28	Up	ePKP	21 23 44				East of Crete.			
			i	21 23 53.1		"	30	Up	eP	02 22 00	
		Sk	i(PKP)	21 23 45.1					i	02 22 22.2	
		Um	iPKP	21 23 32.1 C					iPP	02 26 11.5	
			i	21 23 40.0					iPS	02 35 28	
		Ud	iPKP	21 23 45					microns sec		
			i	21 23 54				PP	Z'	0.2 1.5	
		(Kermadec Islands).						M	E	2.8 21	
"	28	Ud	iP	21 35 34				M	N	7.8 25	
		Luzon (h = 50 km).						M	Z	4.1 21	
"	28	Up	i(PKP)	21 39 50.5				Ki	iP	02 21 54.3	
		Sk	i(PKP)	21 39 43.6					iX	02 25 52.8	
		Um	iPKP	21 39 32.3				microns sec			
		Ud	iPKP	21 39 45				M	E	2.5 16	
		(Kermadec Islands).						M	N	2.7 19	
"	29	Up	iP	01 20 23.0 C				M	Z	2.8 16	
		Ki	iP	01 20 22.1 C				Sk	eP	02 22 13	
		Sk	iP	01 20 36.6					iPP	02 26 38.0	
		Um	iP	01 20 20.0 C				Um	iP	02 21 53.9	
		Sumatra (h = 90 km).							i	02 22 06.7	
"	29	Up	iPKP	02 08 21.5					iX	02 25 51.4	
		(cont.)							iPP	02 26 05.9	
									iSKS	02 32 33	
									iPS	02 35 09	
									iSS	02 40 41	
								Ka	iX	02 26 17.0	
								(cont.)			

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1967					1967				
Mar.	30	(cont.)			Mar.	31	Ki	iP	07 07 01.3
		Ud	iP	02 22 08 C			Um	iP	07 07 08.0
			iPP	02 26 32			Ud	iP	07 07 27
		Bali (h = 30 km).					Luzon (h = 30 km).		
		Magn. = 6.3 (Up,Ki).							
"	30	Ki	eP	03 32 30	"	31	Up	iP	09 26 20.4
		Arctic Ocean (h = 30 km).					i		09 26 26.0
"	30	Ki	iP	08 45 48.2			Ki	iP	09 25 27.1
		Um	iP	08 46 30.1			Um	iP	09 25 52.3
		Arctic Ocean (h = 30 km).					i		09 26 09.9
"	30	Up	iP	19 28 41.5			Ud	iP	09 26 22 C
		Unimak Island (h = 20 km).					Aleutian Islands		
"	30	Up	iP	20 58 38.0			(h = 50 km).		
"	31	Ki	eL	00 06	"	31	Ud	iPKP	10 48 55
				microns sec			Southern Pacific Ocean		
		M	N	1.5 19			(h = 30 km).		
		M	Z	3.2 20	"	31	Ki	iPn	13 15 11.2
		Fiji Islands (h = 30 km).					iSn		13 16 10.4
"	31	Up	iP	02 23 17.0 C			iSg		13 16 36.8
				microns sec			D = 560 km = 5.0°		
		P	Z'	0.1 1.0			Um	iS ^x	13 17 04.5
		Ki	iP	02 22 23.9 C			iSg		13 17 24.2
				microns sec			Probably northwest Russia.		
		P	Z'	0.2 1.0			Origin time = 13 13 52.		
		Sk	eP	02 22 54			Explosion?		
		Gb	iP	02 23 31.4	"	31	Up	iPKP	20 24 14.5
		Um	iP	02 22 50.2 C			iSKP		20 27 26.9
		Ka	iP	02 23 39.9			iPKS		20 27 37.8
		Ud	iP	02 23 12			Ki	iPKP	20 24 00.4 C
		Aleutian Islands (h = 30 km).							microns sec
		Magn. = 5.8 (Up,Ki).					PKP	Z'	0.1 0.8
"	31	Up	iP	03 26 16.1 C			Sk	ePKP	20 24 11
		Ki	iP	03 27 09.3 C			Um	i(PKP)	20 23 57.4
		Sk	iP	03 26 52.2			iPKP		20 24 05.9
		Um	iP	03 26 39.9			Ud	iPKP	20 24 14
		Red Sea (h = 30 km).					New Hebrides Islands		
"	31	Ki	iP	04 27 13.3			(h = 130 km).		
			ipP	04 27 30.4	"	31	Um	iP	21 18 15.4
		Um	iP	04 27 41.9			Japan (h = 10 km).		
		Alaska. h = 60 km (Ki).							
"	31	Um	iP	06 50 24.4					
		Azores Islands (h = 30 km).							

Markus Båth
August 4, 1967

Seismological Institute
Uppsala

SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, SKALSTUGAN, GÖTEBORG,

UMEÅ, KARLSKRONA and UDDEHOLM

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
Göteborg	(Gb):	57°41.9'N,	11°58.7'E;	h = 66 m
Umeå	(Um):	63°48.9'N,	20°14.2'E;	h = 16 m
Karlskrona	(Ka):	56°09.9'N,	15°35.5'E;	h = 11 m
Uddeholm	(Ud):	60°05.4'N,	13°36.4'E;	h = 240 m

A P R I L 1 - 30, 1967

1967				1967			
Apr. 1	Up	iP	06 05 16.0 C	Apr. 1	(cont.)		
		ipP	06 05 31.2		Up	microns sec	
		eS	06 14 22		P	Z' 0.3 0.8	
			microns sec		Ki	iP 06 07 16.6	
		P	Z' 0.4 0.8		ipP	06 07 31.3	
		M	E 8.1 18			microns sec	
		M	N 11 20		P	Z' 0.3 0.9	
		M	Z 8.9 21		Sk	iP 06 07 50.7	
		D = 7550 km = 68°.			ipP	06 08 07.0	
	Ki	iPa	06 08 29		Gb	iP 06 08 26.2	
		eS	06 12 48		ipP	06 08 41.3	
			microns sec		Um	iP 06 07 37.3	
		S	E 1.9 14		ipP	06 07 52.4	
		S	N 0.9 11		Ka	iP 06 08 26.6	
		M	E 13 17		ipP	06 08 40.8	
		M	N 9.5 17		Ud	iP 06 08 11	
		M	Z 17 19		ipP	06 08 28	
	Sk	eP	06 05 04			Kurile Islands.	
		iPcP	06 05 33.4			h = 60 km (Up,Ki,Sk,Gb,Um,Ka).	
	Gb	iP	06 05 37.4			Magn. = 6.3 (Up,Ki).	
		ipP	06 05 50.9				
		i	06 07 05.5	" 1	Ki	iP 07 47 51.3	
	Um	iP	06 04 49.6 C		Um	iP 07 48 12.5	
		ePP	06 07 13		Ud	eP 07 48 47	
		iPa	06 08 45			Kurile Islands (h = 40 km).	
		iS	06 13 27				
		iPS	06 13 45	" 1	Up	iP 07 59 24.6	
	Ka	iP	06 05 38.9 C		Ki	iP 07 58 37.5 C	
	Ud	iP	06 05 24			microns sec	
					P	Z' 0.1 1.0	
					M	E 1.2 18	
					M	N 1.3 20	
					M	Z 1.7 19	
					Um	iP 07 58 58.6	
					Ud	iP 07 59 34	
						Kurile Islands (h = 40 km).	
" 1	Up	iP	06 08 03.0				
		ipP	06 08 18.1				
	(cont.)						

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
Apr.	1	Up	iP 08 00 02.9	Apr.	1	(cont.)	
		Ki	iP 07 59 16.8			Ki	iP 12 33 45.1 C
		Um	iP 07 59 38.2				iS 12 41 51
		Ud	iP 08 00 13				microns sec
		Kurile Islands.				P	N 0.6 8
		Origin time = 07 49 07.				P	Z 1.0 9
"	1	Up	iP 10 07 18.5 C			P	Z' 0.7 1.0
"	1	Ki	i(Pg) 10 49 15.0			S	E 1.8 15
			i(Sg) 10 49 38.2			S	N 0.7 10
"	1	Ki	iPn 10 51 42.1			M	E 11 16
			iSn 10 52 37.6			M	N 11 19
			iLgl 10 52 57.7			M	Z 14 18
			D = 520 km = 4.7°.			D = 6700 km = 60 1/2°.	
		Sk	eSg 10 55 37	Sk		iP	12 34 20.7
		Um	iSn 10 53 22.2			i	12 34 39.9
			iSg 10 54 01.4			i	12 35 11.7
			D = 710 km = 6.4°.	Gb		iP	12 34 53.3 C
		Northwest Russia, 67.7°N,		Um		iP	12 34 06.6
		32.8°E.				iPa	12 38 11
		Origin time = 10 50 29.				iS	12 42 29
		Explosion?				iPS	12 42 50
"	1	Up	eL 11 26	Ka		iP	12 34 54.9
			microns sec	Ud		iP	12 34 36 C
		M	E 2.0 21	Kurile Islands (h = 40 km).			
		M	N 1.1 19	Magn. = 6.3 (Up,Ki).			
		M	Z 2.9 22	"	1	Um	iP 12 45 43.2
		Ki	eL 11 25			Ud	iP 12 45 28
			microns sec	Iceland (h = 2 km).			
		M	E 3.0 23	"	1	Up	iP 14 11 32.7 C
		M	N 2.4 24				microns sec
		M	Z 5.8 24			P	Z' 0.2 0.7
		Easter Island Rise				M	E 1.0 18
		(h = 30 km).				M	N 1.4 18
		Magn. = 6.0 (Up,Ki).				M	Z 1.5 19
"	1	Up	iP 12 04 42.0	Ki		iP	14 10 45.6
		Um	iP 12 05 13.0			microns sec	
		Ka	e(P) 12 05 49			P	Z' 0.1 0.7
"	1	Up	i(P) 12 12 34.7			M	E 1.8 16
"	1	Up	iP 12 34 32.5 C			M	N 1.5 19
			iS 12 43 38			M	Z 2.8 19
			iScS 12 44 27	Sk		iP	14 11 20.9
			microns sec	Gb		iP	14 11 54.3 C
		P	Z' 0.5 0.8	Um		iP	14 11 06.6 C
		M	E 8.3 19			ipP	14 11 13.2
		M	N 8.5 20	Ka		iP	14 11 55.7
		M	Z 7.9 22	Ud		iP	14 11 37
		D = 7550 km = 68°.		Kurile Islands.			
(cont.)				h = 25 km (Um).			
				"	1	Up	iP 17 26 43.7
						Ki	iP 17 25 56.3
						Um	iP 17 26 17.9
				(cont.)			

Up = Uppsala, Ki = Kiruna, Sk = Skälstugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967

Apr. 1 (cont.)
Ud iP 17 26 51
ipP 17 27 04
Kurile Islands.
h = 50 km (Ud).
" 1 Up iP 17 29 41.2
ipP 17 29 47.6
Ki iP 17 28 53.7
ipP 17 29 00.2
Um iP 17 29 15.2
ipP 17 29 21.9
Ud iP 17 29 49
ipP 17 29 56
Kurile Islands.
h = 25 km (Up, Ki, Um, Ud).
" 1 Up iP 17 32 07.3
Ki iP 17 31 20.4
microns sec
P Z' 0.1 1.0
Sk iP 17 31 56.8
Um iP 17 31 41.6
Ud iP 17 32 16
ipP 17 32 29
Kurile Islands.
h = 50 km (Ud).
" 1 Up iP 21 52 53.6
" 1 Up iP 23 31 21.9
Ki iP 23 30 26.9
Sk iP 23 30 55.6
Um iP 23 30 54.4
iPcP 23 31 45.3
Ud iP 23 31 20
Alaska (h = 100 km).
" 2 Um ePKP 00 25 57
New Hebrides Islands
(h = 30 km).
" 2 Up iP 15 28 20.1
Ki eP 15 27 22
Um iP 15 27 52.0
Ud iP 15 28 14
Yukon (h = 30 km).
" 2 Up ---
microns sec
M E 1.9 20
M N 2.0 20
M Z 3.2 20
(cont.)

1967

Apr. 2 (cont.)
Ki iPS 18 09 02
microns sec
M E 1.7 19
M N 1.2 19
M Z 3.4 19
Um iPKP 17 59 10.0
iPS 18 09 23
i(SS) 18 16 04
New Britain (h = 40 km).
Magn. = 6.0 (Up, Ki).
" 2 Up iP 20 56 27.6
Aleutian Islands
(h = 30 km).
" 3 Up iP 07 46 22.8
Ki iP 07 47 15.4
microns sec
P Z' 0.2 1.8
Sk iP 07 46 59.0
Um iP 07 46 45.8
Ud iP 07 46 30
Red Sea (h = 30 km).
" 3 Um i(SS) 08 39 38
New Britain (h = 15 km).
" 3 Ki eL 14 06
microns sec
M N 1.7 20
M Z 3.2 20
Tonga Islands (h = 50 km).
" 3 Ki iP 15 43 55.7
Um iP 15 44 22.6
Aleutian Islands
(h = 50 km).
" 3 Up iP 16 40 02.5
Ki eP 16 41 35
Um iP 16 40 48.3
Ud iP 16 40 03
Italy (h = 30 km).
" 3 Ki iSn 18 33 20.6
i 18 33 37.1
Sk ePg 18 31 14
iSg 18 31 50.2
Um iSn 18 33 09.1
iLgl 18 33 31.6
Probably off west coast of
Norway.

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
Apr.	3	Ki	iP	19 08 53.7	Apr.	4	(cont.)
		Um	iP	19 09 03.1		Ka	iP 04 05 47.6
"	3	Up	iP	21 41 48.9		Ud	iP 04 05 30 C
				microns sec			ipP 04 05 43
			P	Z' 0.1 0.5		Kurile Islands.	
"	3	Ki	iP	21 53 11.8		h = 50 km (Up,Ki,Sk,Gb,Um, Ud).	
"	4	Up		---	"	4	Sk iPKP 04 35 13.3
				microns sec		South of Australia (h = 30 km).	
		M	E	1.1 20	"	4	Ki iP 09 16 28.6
		M	N	1.4 20			i 09 16 32.2
		M	Z	1.9 20			ipP 09 17 46.0
		Ki		---		Sk	iP 09 16 59.3
				microns sec		Um	iP 09 16 43.0
		M	E	1.5 18			ipP 09 18 01.8
		M	N	0.8 19		Ud	iP 09 17 12
		M	Z	2.0 18			ipP 09 18 33
		Um	iP	00 51 30.8		South of Japan.	
			i	00 51 37.9		h = 350 km (Ki,Um,Ud).	
			e(PS)	01 04 58	"	4	Up iP 17 04 18.6
			iSS	01 10 54			i 17 04 40.5
		New Guinea (h = 10 km).				Ki	iP 17 05 27.8
		Magn. = 5.8 (Up,Ki).				Sk	iP 17 04 57.8
"	4	Up	iP	01 43 57.9		Gb	iP 17 04 03.9
				microns sec		Um	iP 17 04 51.6
			P	Z' 0.1 0.6		Ka	iP 17 03 43.3
"	4	Up	iP	02 47 09.9			iS 17 07 33.0
		Ka	iP	02 46 32.5		Ud	iP 17 04 30
		Ud	iP	02 47 16			iS 17 08 48
		Greece.				Crete (h = 70 km).	
"	4	Um	iP	03 52 26.1	"	4	Ud iP 18 00 02
			i	03 52 36.4		Aegean Sea (h = 30 km).	
		Ud	eP	03 51 58	"	4	Up iP 18 09 31.4
		Turkey (h = 40 km).					i 18 09 46.0
"	4	Up	iP	04 05 25.4 C		Sk	iP 18 10 24.5
			ipP	04 05 38.2		Gb	iP 18 09 27.8
		Ki	iP	04 04 37.4 C		Um	iP 18 10 12.4
			ipP	04 04 50.4			i 18 10 29.6
				microns sec		Ka	iP 18 08 57.3
			P	Z' 0.1 1.0		Ud	iP 18 09 48
			M	N 0.9 19		Rumania (h = 130 km).	
			M	Z 2.5 18	"	4	Up iP 20 41 43.5
		Sk	eP	04 05 12	"	5	Up iP 02 47 07.4 D
			ipP	04 05 24.5			ipP 02 47 21.6
		Gb	iP	04 05 46.6			microns sec
			ipP	04 05 58.7			P Z' 0.3 0.8
		Um	iP	04 04 59.5 C			M E 1.1. 20
			ipP	04 05 12.5		(cont.)	
		(cont.)				(cont.)	

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Apr. 5	(cont.)				Apr. 5	Up	iP	03 02 56.4	
	Up	microns sec				Ki	iP	03 02 27.3	
		M N 1.6 20				Sk	iP	03 02 52.8	
		M Z 1.8 19				Um	iP	03 02 39.6	
	Ki	iP 02 46 38.1				Ka	iP	03 03 11.6	
		ipP 02 46 52.9				Ud	iP	03 03 07	
		eS 02 57 04				Mariana Islands.			
		eScS 02 57 20				Origin time = 02 49 59.8.			
		microns sec							
		P Z' 0.7 1.5			" 5	Up	iP	08 07 59.2	
		M E 2.1 21				Ki	iP	08 07 22.7	
		M N 1.3 17				Um	iP	08 07 38.1	
		M Z 3.2 20				Ud	iP	08 08 10	
		D = 9350 km = 84°.				Japan (h = 270 km).			
	Sk	iP 02 47 04.3 C			" 5	Ki	iPg	15 07 45.0	
		ipP 02 47 20.6					iSn	15 08 18.9	
		i 02 49 20.6					iSg	15 08 39.8	
	Gb	iP 02 47 25.1					D = 490 km = 4.4°.		
	Um	iP 02 46 50.9 D				Um	iSg	15 09 34.8	
		ipP 02 47 04.3				Northwest Russia.			
		iPP 02 50 13				Origin time = 15 06 16.			
		iSKS 02 57 14				Explosion?			
		iS 02 57 27							
	Ka	iP 02 47 22.9			" 5	Ki	iSg	16 21 17.4	
		ipP 02 47 36.6				Sk	iSg	16 21 21.0	
		iPP 02 51 09.7				Um	iSg	16 21 43.7	
	Ud	iP 02 47 18				Nordlands Fylke, Norway.			
		ipP 02 47 32							
	Mariana Islands.				" 5	Up	eP	18 36 53	
	h = 50 km (Up,Ki,Sk,Um,Ka, Ud).				" 5	Ki	iP	19 04 30.7	
	Magn. = 6.2 (Up,Ki).								
" 5	Up	iP 03 00 52.1 D			" 5	Ki	eP	20 52 20	
		ipP 03 01 05.9				Ud	iP	20 51 47	
		microns sec				Atlantic Ocean (h = 30 km).			
		P Z' 0.1 0.5							
	Ki	iP 03 00 23.0 D			" 5	Up	iP	21 37 15.8	
		ipP 03 00 36.6							
		microns sec			" 5	Ki	iPKP	22 49 16.9	
		P Z' 0.7 2.0				Sk	iPKP	22 49 24.9	
		M E 1.2 18				Um	iPKP	22 49 15.9	
		M N 1.3 17				West of Macquarie Islands			
		M Z 3.2 20				(h = 30 km).			
	Sk	iP 03 00 48.1 C			" 5	Up	iP	23 10 13.0	
		i 03 00 54.7					i	23 10 28.1	
	Gb	iP 03 01 08.6				Ki	iP	23 10 13.0	
	Um	iP 03 00 35.7 D				Um	iP	23 10 10.2	
		ipP 03 00 49.5				Sumatra (h = 30 km).			
	Ka	iP 03 01 07.3			" 5	Up	i(PKP)	23 52 46.3	
		iPP 03 04 53.4					iPKP	23 52 50.8	
	Ud	iP 03 01 02 D					i	23 52 54.8	
	Mariana Islands.					(cont.)			
	h = 50 km (Up,Ki,Um).								
	Magn. = 6.1 (Up,Ki).								

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
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1967		1967	
Apr.	5	Apr.	6
	(cont.)		(cont.)
	Up	Sk	iP 09 18 21.2
	microns sec	Um	iP 09 18 00.3
	PKP Z' 0.2 0.7	Japan (h = 25 km).	
Ki	i(PKP) 23 52 28.5		
	iPKP 23 52 36.5		
Sk	i(PKP) 23 52 40.4	"	6 Up iP 12 34 56.9 D
	iPKP 23 52 44.9		microns sec
	i 23 52 54.1		P Z' 0.2 0.6
Gb	iPKP 23 52 58.1	Ki	iP 12 34 27.6
	i 23 53 07.8		microns sec
Um	i(PKP) 23 52 34.6		P Z' 0.3 1.5
	iPKP 23 52 38.8		M N 1.5 19
	i 23 52 44.1		M Z 1.7 19
Ka	iPKP 23 52 59.7 C	Sk	iP 12 34 53.5
Kermadec Islands			i 12 35 11.2
(h = 60 km).		Gb	iP 12 35 14.1
		Um	iP 12 34 40.2 D
"	6 Ki iP 02 45 33.2		i 12 34 53.2
	Sk iP 02 46 03.6	Ka	iP 12 35 11.7
	Um iP 02 45 45.0	Mariana Islands (h = 20 km).	
	iPcP 02 46 08.1	Magn. = 6.2 (Up,Ki).	
Ryukyu Islands (h = 30 km).			
"	6 Um iP 03 18 23.7	"	6 Ka iPg 13 00 53.5
Virgin Islands (h = 15 km).			iSg 13 00 58.9
"	6 Up iP 06 29 08.5	"	6 Up iP 13 04 26.3 C
	microns sec		i 13 04 36.7
	P Z' 0.3 1.5		microns sec
	M E 1.4 19		P Z' 0.1 0.6
	M N 1.4 17	Ki	iP 13 05 05.3 C
Ki	iP 06 28 30.7		iPP 13 06 39.4
	i 06 29 04.6		microns sec
	microns sec		P Z' 0.1 1.0
	M E 1.9 17		M E 1.2 14
	M N 1.9 18	Sk	iP 13 05 02.2
Sk	iP 06 29 05.6	Gb	iP 13 04 39.1
Um	iP 06 28 46.3	Um	iP 13 04 40.7
Ka	eP 06 29 34		i(Pn) 13 06 00.9
Japan (h = 15 km).			iS 13 10 37.5
Magn. = 5.7 (Up,Ki).		Ka	eP 13 04 17
			i 13 04 27.4
"	6 Ki i(Sg) 08 15 47.9	Iran (h = 10 km).	
		Magn. = 5.8 (Up,Ki).	
"	6 Ki	"	6 Ki eP 14 13 53
	microns sec		Um iP 14 14 03.3
	M E 1.4 17		i 14 14 09.8
	M N 1.1 18	Mexico (h = 50 km).	
	M Z 1.7 19		
Um	iP 09 00 56.3 D	"	6 Up iPg 15 19 20.0
Japan (h = 30 km).			iSg 15 19 33.8
"	6 Up iP 09 18 24.6	"	6 Up iP 23 40 31.6
	Ki iP 09 17 44.6	(cont.)	
(cont.)			

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967
Apr. 6 (cont.)

1967
Apr. 7 (cont.)

Up microns sec
M E 1.1 20
M N 1.6 16
Ki iP 23 39 53.4
iS 23 48 59
microns sec
S N 0.4 9
M E 2.2 20
M N 0.9 16
M Z 1.5 18
D = 7600 km = 68 1/2°.
Sk iP 23 40 25.7
Um iP 23 40 09.0
iS 23 49 25
Ka eP 23 40 51
Japan (h = 15 km).
Magn. = 5.6 (Up,Ki).

" 6 Up iP 23 43 38.4
ipP 23 43 50.5
Ki iP 23 43 00.1 C
microns sec
P Z' 0.1 1.1
Sk iP 23 43 32.8 C
Um iP 23 43 16.8 C
ipP 23 43 29.9
Japan, h = 50 km (Up,Um).

" 7 Um eP 01 14 01

" 7 Up iP 01 51 10.5

" 7 Ki eP 06 40 03
i 06 40 14.1
South of Alaska (h = 30 km).

" 7 Up i(P) 13 24 29.7
Gb i(P) 13 24 09.1

" 7 Up iP 15 28 16.0

" 7 Ki e(Sg) 16 05 25

" 7 Up iP 17 12 39.8
e(S) 17 16 48
iSa 17 17 19
microns sec
(S) E 0.3 5
M E 0.8 14
M N 0.5 11
M Z 0.5 11
D = 2800 km = 25°.
Ki iP 17 13 36.3
(cont.)

Ki microns sec
M E 0.7 15
M N 0.4 10
Sk iP 17 13 21.3
Gb iP 17 12 44.9
Um iP 17 13 04.6 C
iS 17 17 52
i 17 21 21
Ud eP 17 12 57
Turkey (h = 50 km).
Clear higher-mode surface waves.

" 7 Up iP 18 38 54.0
i 18 38 57.0
i 18 40 33.2
iS 18 43 23
i(Sa) 18 43 31
microns sec
P Z' 0.1 0.8
S E 0.2 4
M E 1.1 12
M N 0.8 13
M Z 1.5 12
D = 2800 km = 25°.
Ki iP 18 39 53.3
iSa 18 46 24
eLg1 18 49 51
microns sec
P Z' 0.1 1.5
M E 1.7 17
M N 1.0 10
M Z 0.9 11
Sk iP 18 39 38.0
Gb iP 18 39 01.0
i 18 39 07.9
i 18 39 18.5
Um iP 18 39 20.5
iS 18 44 08
i 18 44 20
iLg1 18 48 08
Ka iP 18 38 37.4
i 18 38 41.7
Ud iP 18 39 09.9
Turkey (h = 40 km).
Magn. = 5.1 (Up,Ki).
Clear higher-mode surface waves.

" 7 Up iP 19 49 25.0 C
Ki iP 19 48 38.5 C
microns sec
P Z' 0.1 1.0
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skälstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
Apr.	7	(cont.)		Apr.	9	(cont.)	
		Sk	iP 19 49 14.6		Up		microns sec
		Um	iP 19 48 59.6		M	E	2.0 21
		Ud	iP 19 49 30.9 C		M	N	2.3 22
		Okhotsk Sea (h = 300 km).			M	Z	2.7 21
"	7	Up	iP 21 29 11.9		Ki	eP	00 19 06
					iPP	00 23 25	
					eSKS	00 29 46	
"	8	Up	iPKP 05 53 26.1				microns sec
			iSKP 05 56 12.3		PP	Z	0.5 7
			i 05 56 19.5		SKS	E	0.4 6
		Ki	iPKP 05 53 18.1		M	E	1.7 19
			iSKP 05 55 47.2		M	N	1.3 20
			microns sec		M	Z	3.2 20
			SKP Z' 0.2 1.5		Um	iP	00 19 16.1
		Sk	iPKP 05 53 17.7		iPP	00 23 36	
			iSKP 05 56 04.7		iSKS	00 29 53	
		Gb	iPKP 05 53 35.7		i(S)	00 31 05	
		Um	iPKP 05 53 19.2		iPS	00 32 42	
			i 05 53 27.6		eSS	00 38 30	
			i(SKP) 05 55 52.0		Ud	iP	00 19 36
			iSKP 05 55 59.6		New Guinea (h = 15 km).		
			ipPKS 05 59 14		Magn. = 6.1 (Up,Ki).		
			i 06 00 22				
			i 06 01 55	"	9	Up	iP 01 19 31.9
		Ud	iPKP 05 53 26.7				
			iSKP 05 56 11.8	"	9	Up	iP 01 23 22.8
		Fiji Islands (h = 620 km).				ipP	01 23 38.1
					Ki	iP	01 23 24.1
"	8	Ki	iP 09 05 39.7		Sk	eP	01 23 41
		Um	iP 09 06 02.0		Um	iP	01 23 20.0
		Ud	iP 09 06 33.4			ipP	01 23 35.5
		Kurile Islands (h = 60 km).			Sumatra. h = 60 km (Up,Um).		
"	8	Ki	iSg 10 36 13.3	"	9	Um	iPKP 01 46 18.7
		Sk	iSg 10 36 17.0			Fiji Islands (h = 420 km).	
		Um	iSg 10 36 38.8	"	9	Ki	ePKP 06 48 31
		Nordlands Fylke, Norway.				iSKP	06 50 59.4
"	8	Up	iP 20 27 06.9		Um	iSKP	06 51 11.1
		Ki	iP 20 26 49.4		Fiji Islands (h = 650 km).		
		Sk	iP 20 27 10.3	"	9	Up	iPKP 09 15 43.9
		Um	iP 20 26 55.0		Ki	iPKP	09 15 32.6
		Ud	iP 20 27 15 D				microns sec
		Mindanao (h = 140 km).			M	E	0.6 21
"	8	Um	iP 21 22 20.1		M	N	0.3 20
		Ud	iP 21 22 39		M	Z	0.6 20
		Hindu Kush.			Sk	iPKP	09 15 42.6
"	9	Up	iPP 00 23 55		Gb	iPKP	09 15 51.0
			iS 00 31 21		Um	iPKP	09 15 36.9 C
			i(SS) 00 38 31		Ka	iPKP	09 15 50.1
		(cont.)			Ud	iPKP	09 15 46
					Solomon Islands (h = 40 km).		

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Apr.	9	Um	iP	13 52 17.4	Apr.	10	(cont.)		
			i	13 52 40.0			Ki	meters sec	
"	9	Um	iP	17 55 47.6			M E	1.2 21	
		Banda Sea	(h = 140 km).				M N	1.2 22	
"	9	Um	iPKP	21 37 14.1			M Z	1.6 20	
			i	21 39 32.8			Um	iPKP	05 18 32.1
		Solomon Islands	(h = 40 km).				iPP	05 19 24	
"	9	Up	iP	21 39 03.0			iSKKS	05 26 34	
		Ki	eP	21 39 07			ePS	05 29 06	
		Ud	eP	21 39 13	"	10	Solomon Islands	(h = 40 km).	
"	9	Up	iP	22 03 32.7			Magn. = 5.8	(Up,Ki).	
		Ki	iP	22 02 45.2	"	10	Ki	eP	10 32 23
		Um	eP	22 03 06			Up	i(P)	12 07 51.4
		Ud	eP	22 03 38			Sk	i(P)	12 07 52.5
		Kurile Islands	(h = 30 km).				Um	i(P)	12 07 33.1
"	10	Um	iPP	00 19 16	"	10	Ki	iSg	12 46 34.5
			eSS	00 36 48			Sk	iSg	12 45 54.0
		Tonga Islands	(h = 70 km).				Um	iSg	12 44 34.4
"	10	Um	iP	02 41 27.6			Ud	e(Sn)	12 44 27
			i	02 41 41.1			iSg	12 45 03.2	
"	10	Ki	eP	03 07 36			North coast of Esthonia,		
"	10	Sk	iP	04 39 24.8 C			near Reval.		
"	10	Up	eLg1	05 17 35	"	10	Origin time = 12 41 51.		
		Ki	ePg	05 15 20			Explosion?		
			i(P)	05 15 22.3	"	10	Um	iP	13 30 37.8
			iSg	05 15 58.3			Up	iPKP	15 21 27.7
			iS ₂	05 16 01.0			iPP	15 22 42	
		D = 300 km	= 2.7°				meters sec		
		Sk	iSg	05 17 00.4			M E	2.0 21	
		Um	iPg	05 15 04.7 05.3			M N	2.4 20	
			iSg	05 15 27.6			M Z	2.9 22	
		D = 200 km	= 1.8°				Ki	iPKP	15 21 19.4
		Ud	eSn	05 17 23			ePP	15 22 11	
			iLgl	05 17 57			iPS	15 31 24	
		Gulf of Bothnia, 65.5°N,					meters sec		
		22.6°E.					M E	2.6 20	
		Origin time = 05 14 28.					M N	2.7 20	
"	10	Up	iPP	05 19 57			M Z	6.3 20	
			meters sec				Sk	iPKP	15 21 25.9
		M E	0.7 19				iPP	15 22 45.5	
		M N	1.5 24				Gb	iPKP	15 21 35.1
		M Z	1.2 24				Um	iPKP	15 21 20.6
		Ki	ePs	05 28 41			ePP	15 22 18	
		(cont.)					eS	15 29 59	
							iPS	15 31 52	
							Ka	ePKP	15 21 40
							Ud	iPKP	15 21 29.7
							i	15 22 25.9	
							Solomon Islands	(h = 30 km).	
							Magn. = 6.1	(Up,Ki).	

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
Apr.	10	Um	iP 15 31 56.9	Apr.	10	Sk	ePKP 22 08 03
"	10	Up	i 17 20 17			Um	iPKP 22 07 58.0
			eSKKS 17 20 40			Ud	iPKP 22 08 07.2
			i 17 21 13			Solomon Islands (h = 40 km).	
			microns sec	"	11	Um	iP 01 21 19.3 C
			M E 2.7 23			Leeward Islands (h = 30 km).	
			M N 6.0 24	"	11	Ki	iP 03 21 43.6
			M Z 4.8 24			Sk	iP 03 21 58.5
		Ki	i 17 14 35			Nicobar Islands (h = 30 km).	
			iSKKS 17 20 58	"	11	Up	---
			microns sec				microns sec
			M E 3.2 22			M	E 1.0 18
			M N 2.3 20			M	N 1.4 18
			M Z 3.9 22			M	Z 1.5 19
		Sk	ePKP2 17 09 53			Ki	
			ePP 17 13 40				microns sec
		Um	iSKKS 17 20 36			M	E 2.5 21
			iSKSP 17 24 27			M	N 2.2 18
			South Pacific Ocean			M	Z 3.5 21
			(h = 30 km).			Sk	ePP 05 27 06
			Magn. = 6.2 (Up,Ki).			Um	iSKS 05 33 17
			Sk is very close to the			Celebes (h = 20 km).	
			antipode of the epicenter.			Magn. = 5.8 (Up,Ki).	
"	10	Up	iP 19 11 38.6	"	11	Ki	iPg 12 45 44.6
		Um	iP 19 11 25.5				iSg 12 45 56.7
		Colorado (h = 5 km).				Sk	e(Sg) 12 48 51
"	10	Up	iP 20 07 44.8			Um	i(Sg) 12 47 38.7
			iPcP 20 08 25.6	"	11	Up	iS 13 02 50
			iS 20 16 00			Ki	eP 12 54 03
			microns sec				i 12 54 10.3
			P Z' 0.1 1.0				microns sec
			D = 6850 km = 61 1/2°.			M	E 1.7 19
		Ki	iP 20 06 49.0			M	N 0.8 19
			iPcP 20 07 54.5			M	Z 1.7 19
			microns sec			Sk	iP 12 53 35.9
			P Z' 0.1 1.2			Um	iP 12 53 56.4
		Sk	iP 20 07 17.7				i 12 54 04.4
			i 20 07 30.1				iS 13 03 04
			iPcP 20 08 10.0			Ud	iP 12 53 40.6
		Gb	iP 20 07 56.9			Leeward Islands (h = 50 km).	
			iPcP 20 08 33.0	"	11	Um	i(Sg) 13 03 11.7
		Um	iP 20 07 17.9	"	11	Ki	eP 13 54 38
			iPcP 20 08 10.2			Um	iP 13 54 54.5
		Ka	iP 20 08 08.1				i 13 55 24.9
		Ud	iP 20 07 41.6			Ud	eP 13 55 18
			iPcP 20 08 24.0			South of Japan (h = 50 km).	
			Alaska (h = 90 km).				
			Magn. = 5.6 (Up,Ki).				
"	10	Um	iPKP 21 26 19.6				
		Solomon Islands (h = 100 km).					

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
Apr.	12	Sk	eP 01 04 44	Apr.	12	(cont.)	
		Um	iP 01 44 48.4			Ki	microns sec
		Ud	iP 01 05 08.2			M	Z 40 20
		Alaska (h = 40 km).				D = 8850 km = 79 1/2°.	
"	12	Um	eSS 02 34 22			Sk	iP1 05 03 58.7 C
		Bismarck Sea (h = 30 km).					iP2 05 04 05.3
"	12	Up	iSKP 04 53 59.4			Gb	iP1 05 03 58.5
		Ki	ePKP 04 50 26				iP2 05 04 04.4
		Sk	ePKP 04 50 33				i 05 05 10.4
			iSKP 04 53 49.9			Um	iP1 05 03 39.7 C
		Um	iPKP 04 50 33.8				iP2 05 03 46.6
			iSKP 04 53 40.5				i 05 04 06.2
		Ud	iSKP 04 53 59.2				i 05 06 22
		New Hebrides Islands					iPP 05 06 44
		(h = 200 km).					iS 05 13 36
"	12	Ki	iP 04 52 03.8			Ka	iP1 05 03 49.3
		Sk	iP 04 51 44.4				iP2 05 03 52.6
		Um	iP 04 52 04.3			Ud	iP1 05 03 54.0 C
		Ud	iP 04 51 47.2				iP2 05 04 00.6
		Leeward Islands (h = 40 km).				Sumatra (h = 60 km).	
"	12	Up	iP1 05 03 43.5			Magn. = 6.6 (Up, Ki).	
			iP2 05 03 49.2			Multiple P, denoted P1 and	
		e	05 13 30			P2 above; time difference	
		iS	05 13 42			P2 - P1 is generally 6-7	
			microns sec			sec, and the amplitude of	
		P2	E 1.0 8			P2 much greater than that	
		P2	Z 2.4 7			of P1.	
		P2	Z' 0.4 0.8	"	12	Up	iP 05 23 19.8
		S	E 1.7 5			Ki	iP 05 23 20.8 C
		S	N 1.4 5				microns sec
		M	E 20 20				P Z' 0.1 0.8
		M	N 25 21			Sk	iP 05 23 35.7
		M	Z 29 21			Um	iP 05 23 17.0 C
		D = 8850 km = 79 1/2°.				Ud	iP 05 23 31.0 C
		Ki	iP1 05 03 43.8 C			Sumatra (h = 30 km).	
			iP2 05 03 50.1			12	Ki iP 05 30 10.8
			i 05 04 29				Um iP 05 30 07.5
			iPP 05 06 50				ipP 05 30 29.6
			iS 05 13 46				Ud eP 05 30 21
			iPS 05 14 34			Sumatra. h = 80 km (Um).	
			microns sec	"	12	Um	iP 05 39 56.1
		P2	E 1.9 8			Ud	iP 05 40 17.0
		P2	Z 4.3 8	"	12	Um	iP 05 55 14.0
		P2	Z' 0.6 1.0			Mariana Islands (h = 140 km).	
		PP	E 2.0 8	"	12	Gb	iPg 09 09 55.8
		S	E 7.9 7				iSg 09 10 11.5
		S	N 2.1 6			D = 160 km = 1.4°.	
		S	Z 2.0 6			Um	iSg 09 13 20.5
		M	E 22 19			Ka	i(Sg) 09 11 27.8
		M	N 20 18			(cont.)	
		(cont.)				(cont.)	

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967
Apr. 12 (cont.)
Ud iPg 09 10 11.7
iSg 09 10 43.9
D = 260 km = 2.3°.
Off south coast of Norway,
58.7°N, 9.9°E.
Origin time = 09 09 27.

" 12 Ud e(Sg) 13 42 49

" 12 Up
microns sec
M E 1.1 22
M N 1.0 20
Ki
microns sec
M E 1.2 21
Sk ePKP 14 13 40
Um iPKP 14 13 34.3
Ud iPKP 14 13 43.9
Solomon Islands (h = 50 km).

" 12 Um iP 14 34 36.4
Mariana Islands (h = 60 km).

" 12 Sk iP 14 45 12.9
Mexico (h = 30 km).

" 12 Sk eP 16 06 49
Alaska (h = 10 km).

" 12 Ki i(Pn) 19 38 33.3
iSg 19 39 13.4
Um eSg 19 38 26

" 12 Up iP 19 45 51.0
Ki iP 19 45 51.3
Sk iP 19 46 06.2
Um iP 19 45 47.4
Ud iP 19 46 02.1
Sumatra (h = 60 km).

" 12 Ud eP 20 14 12

" 12 Um iPKP 21 41 04.5
i 21 41 15.6
Ud iPKP 21 40 55.7
i 21 41 06.8
iPKKP 21 51 15.8
Chile (h = 10 km).

" 13 Um iPKP 04 33 22.2
New Hebrides Islands
(h = 120 km).

1967
Apr. 13 Ud iP 04 58 14.2
Kurile Islands (h = 50 km).

" 13 Up iP 08 37 45.2
Ki iP 08 37 45.9 C
Um iP 08 37 42.3
Ud iP 08 37 56.3 C
Sumatra (h = 70 km).

" 13 Up eSg 08 50 38 ✓
Ki iPg 08 46 24.0 C
iSg 08 46 29.7
microns sec
Sg Z' 0.8 0.5
D = 40 km = 0.4°.
Sk ePn 08 47 41
iSg 08 49 16.3 ✓
Um iPg 08 47 33.2
iSn 08 48 13.7 10.8
iSg 08 48 31.2
Ka iSg 08 52 37.2
Ud ePn 08 48 25
iSn 08 49 54.8
iSg 08 50 49.8 ✓
Swedish Lapland, 67.7°N,
21.5°E.
Origin time = 08 46 47.

" 13 Up i(P^x)₁ 09 04 48.7
i 09 05 21.1
iSn 09 05 26.4
iLg1 09 05 32.5
microns sec
Lg1 Z' 0.1 0.5
Ki iSg 09 06 10.8
microns sec
Sg Z' 0.1 0.7
Sk iPg 09 04 39.4
iSg 09 05 19.4
Gb i(Sn) 09 06 47.2
iLg1 09 07 07.1
Um iPg 09 04 00.7 D
iSg 09 04 10.7
D = 90 km = 0.8°.
Ka iLg1 09 07 28.8
Ud i(P^x)₁ 09 04 58.0
iSn 09 05 36.6
iLg1 09 05 50.9
Near Örnsköldsvik, Sweden,
63.4°N, 18.8°E.
Origin time = 09 03 45.
Felt.

" 13 Um iSKP 17 34 27.2
Fiji Islands (h = 610 km).

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Apr. 13

Up

iP

18 50 47.7

1967

Apr. 14

Ki

iSg

08 26 01.6

Ki

iP

18 49 52.0

Sk

iSg

08 26 06.4

Um

iP

18 50 19.2 D

Um

iSg

08 26 29.3

Ud

iP

18 50 50.6

Nordlands Fylke, Norway.

Kamchatka (h = 50 km).

"

14

Up

iPg

14 49 42.5

iSg

14 50 09.4

microns sec

P

Z' 0.5 1.0

Sg

Z' 0.2 0.6

Ki

iP

20 05 00.2 C

D = 220 km = 2.0°.

ipP

20 05 07.6

Ka

i(Rg)

14 51 36.5

microns sec

Ud

iSg

14 50 51.5

P

Z' 0.7 1.3

iRg

14 51 03.4

Sk

iP

20 05 29.8 C

Probably underwater explosion in the Baltic.

ipP

20 05 38.9

"

14

Ud

iP

15 39 42.1

Gb

iP

20 05 49.4 C

Aleutian Islands

Um

iP

20 05 11.5 C

(h = 40 km).

Ka

iP

20 05 45.0 C

"

14

Up

iPg

15 58 01.3

Ud

iP

20 05 38.3 C

iSg

15 58 33.1

Ryukyu Islands.

D = 260 km = 2.3°.

h = 30 km (Ki,Sk).

Magn. = 6.6 (Up,Ki).

"

13

Up

iP

20 12 29.4

Sk

eSn

15 59 40

iS

20 22 58

eLg1

16 00 02

microns sec

Gb

iPg

15 57 40.8

P

Z' 0.1 1.0

iSg

15 58 02.4

D = 9600 km = 86 1/2°.

D = 160 km = 1.4°.

Ki

iP

20 12 14.0

Ud

iPg

15 57 48.6

Sk

iP

20 12 11.3 D

iSg

15 58 11.0

ipP

20 12 36.2

D = 190 km = 1.9°.

Gb

iP

20 12 23.5 D

Lake Vetter, Sweden, 58.3°N,

Um

iP

20 12 23.9 D

14.4°E.

iS

20 23 01

Origin time = 15 57 15.

Ka

iP

20 12 34.9 D

"

14

Up

iP

19 07 39.1

Ud

iP

20 12 20.9 D

Um

iP

19 07 51.6 D

Mexico. h = 90 km (Sk).

Arabian Sea (h = 30 km).

"

14

Up

iP

03 05 34.1

"

14

Ud

iP

21 42 47.9

Um

iP

03 05 13.2

"

14

Ud

iP

22 18 56.3

i

03 05 24.6

"

14

Um

iSn

22 31 40.0

"

14

Up

i(P)

05 31 41.0

iSg

22 32 16.6

Ki

eP

05 31 05

Ka

eSn

22 31 51

ipP

05 31 20.8

iSg

22 32 30.3

i

05 31 27.8

Probably Esthonia.

Sk

iP

05 31 05.7

Origin time = 22 29 01.

ipP

05 31 17.2

Explosion?

Gb

iP

05 31 14.4

"

14

Up

i

22 32 43.5

Um

iP

05 31 15.1

iSg

22 34 24.4

ipP

05 31 30.9

Mexico. h = 50 km (Ki,Sk,Um).

Ka

iP

05 31 28.1

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
Apr.	14	(cont.)		Apr.	15	Up	iP 21 06 43.6
		Ud	e 22 32 58			i	21 06 44.9
			eSg 22 34 16				microns sec
						P	Z' 0.1 0.6
"	14	Gb	iP 23 49 22.8		Ki	iP	21 05 51.8
		Ka	iP 23 49 06.9 C		Gb	iP	21 07 00.7
		Ud	iP 23 49 46.6		Um	iP	21 06 17.5
					Ud	iP	21 06 44.8
"	15	Up	iPKP 01 01 03.1		Aleutian Islands		
		Um	iPKP 01 00 47.8		(h = 50 km).		
			i 01 00 52.8				
		Ud	ePKP 01 01 01	"	15	Up	iP 23 46 49.7
		South of Kermadec Islands			Ki	iP	23 46 07.2
		(h = 40 km).			Um	iP	23 46 25.6
"	15	Up	iP 01 14 58.6		Ud	iP	23 46 56.4
		Mariana Islands			Japan (h = 70 km).		
		(h = 100 km).		"	16	Up	iP 06 48 47.4
"	15	Up	iP 02 11 47.2	"	16	Um	iPKP 07 37 18.6
		Yugoslavia.				i	07 37 31.4
					Fiji Islands (h = 40 km).		
"	15	Up	iPKP 09 19 39.5	"	16	Gb	iPKP 07 49 13.6
			i 09 19 42.3		Tonga Islands.		
		Sk	iPKP 09 19 33.0	"	16	Ud	iP 10 05 40.4
"		Um	iPKP 09 19 27.1 C		Central Atlantic Ocean		
		Ka	iPKP 09 19 49.9		(h = 30 km).		
		Ud	iPKP 09 19 41.1	"	16	Up	iP 10 21 04.3
		Kermadec Islands					microns sec
		(h = 350 km).				P	Z' 0.1 0.8
"	15	Ki	iPn 10 21 05.6		Ki	iP	10 20 16.6 C
			iSn 10 22 01.1			i	10 20 28.8
			iSg 10 22 24.5				microns sec
			D = 510 km = 4.6°.			P	Z' 0.1 0.9
		Um	iSn 10 22 46.5		Sk	iP	10 20 52.0
			iSg 10 23 28.0		Gb	iP	10 21 26.1
			D = 720 km = 6.5°.		Um	iP	10 20 38.6 C
		Northwest Russia, 68.1 N,			Ka	iP	10 21 27.4 C
		32.6° E.			Ud	iP	10 21 10.2 C
		Origin time = 10 19 54.				i	10 21 49.1
		Explosion?			Kurile Islands (h = 25 km).		
"	15	Um	iP 12 00 29.5		Magn. = 5.7 (Up, Ki).		
"	15	Up	iPKP 12 30 59.6	"	16	Ki	iPn 13 45 31.2
		Um	iPKP 12 30 41.1			iSn	13 46 19.7
		Ud	ePKP 12 30 53			iLg1	13 46 34.0
		Kermadec Islands				D =	460 km = 4.1°.
		(h = 20 km).			Um	iS $\bar{x}$	13 47 48.3
"	15	Up	iP 14 58 15.9			iSg	13 48 08.5
"	15	Ud	iP 19 52 56.5		Probably northwest Russia.		
					Origin time = 13 44 26.		
					Explosion?		

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Apr.	17	Ki	iP	11 18 34.5	Apr.	19	(cont.)		
		Um	iP	11 18 47.3			Um	iP	22 08 27.2
		Formosa (h = 30 km).						i	22 08 32.7
"	17	Um	iPKP	11 37 12.9				ipP	22 08 54.2
		Santa Cruz Islands						isP	22 09 05.2
		(h = 50 km).					Ud	ipP	22 08 40.1
"	17	Ki	iP	19 48 17.3			Dominican Republic.		
"	17	Up	iP	20 42 02.1	"	20	Um	iP	00 15 05.8
"	17	Ki	iP	21 44 36.9			Ud	iP	00 15 24.1
		Cyprus (h = 30 km).					Banda Sea (h = 160 km).		
"	18	Sk	i(Sg)	11 26 39.3	"	20	Up	i(Sg)	01 50 38.9
"	18	Gb	iP	12 51 31.8			Sk	e	01 48 51
		Mariana Islands (h = 110 km).						iSg	01 49 18.6
"	18	Up	iP	15 14 38.7			Um	i(Sg)	01 51 05.6
"	18	Um	iP	19 05 16.4			Ud	ePg	01 48 35
		ipP	19 05 24.0					iSg	01 49 45.9
		Kodiak Island.					West coast of Norway,		
		h = 30 km (Um).					61.8°N, 4.7°E.		
"	18	Ki	i(Sg)	20 34 38.4			Origin time = 01 47 08.		
"	19	Up	iSg	08 25 25.3	"	20	Up	iP	04 14 53.3 C
		microns sec					ipn	04 15 56.2	
		Sg	Z' 0.2 0.9				microns sec		
		Um	iSg	08 25 03.7			P	Z' 0.2 0.5	
		Ud	iSg	08 26 06.8			Ki	iP	04 14 37.9 C
		Gulf of Bothnia, 62.0°N,					microns sec		
		20.0°E.					P	Z' 0.3 0.7	
		Origin time = 08 24 05.					Sk	iP	04 15 09.3
		Probably underwater						ipn	04 16 26.2
		explosion.					Gb	iP	04 15 22.3
"	19	Ud	iP	10 57 52.7			Um	iP	04 14 38.2 C
		Kurile Islands (h = 30 km).						i(Pn)	04 15 13.7
"	19	Up	iP	16 10 58.8				i	04 22 50.6
"	19	Um	eP	18 22 41				i	04 23 45.4
		Ud	eP	18 22 55			Ka	iP	04 15 09.1 C
		Queen Charlotte Islands					Ud	iP	04 15 09.7 C
		(h = 30 km).						ipn	04 16 21.7
"	19	Up	iP	20 45 39.0			Kazakh SSR.		
"	19	Ki	iP	22 08 24.0			Magn. = 6.3 (Up, Ki).		
		ipP	22 08 51.6				Underground explosion.		
		(cont.)			"	20	Ki	iP	10 06 36.8
							Sk	iP	10 06 15.5
							Ud	iP	10 06 16.2
							Windward Islands		
							(h = 90 km).		
"	19	Up	iP	20 45 39.0	"	20	Um	iP	13 47 10.5
"	19	Ki	iP	22 08 24.0	"	21	Up	iP	03 16 43.3
							Greece.		

1967						1967					
Apr.	21	Up	eS	08 40 04		Apr.	22	(cont.)			
			iPS	08 42 01				Up		microns sec	
								M	N	1.1	22
			M	E 1.8 19			Ki	ePP		08 55 34	
			M	N 2.7 22				iPKS		08 59 14	
			M	Z 3.0 19				iSKS		09 01 54	
		Ki	i	08 33 02						microns sec	
			i	08 34 21				PP	Z	0.5	10
			eS	08 39 37				SKS	E	0.4	7
								M	E	0.8	18
			S	N 0.4 10				M	N	0.6	18
			M	E 5.0 23				M	Z	1.0	18
			M	N 1.7 18			Um	iPP		08 55 29	
			M	Z 2.8 19				iSKS		09 01 58	
		Um	iP	08 28 17.6				iPS		09 04 29	
			i	08 31 51.8			Banda Sea	(h = 30 km).			
			iPKP	08 32 50			Magn.	= 5.8 (Up,Ki).			
			iSKS	08 38 57		"	22	Ki	eP	12 19 12	
			iS	08 39 55				iT		12 24 18.2	
		Banda Sea	(h = 30 km).					i		12 24 33.4	
		Magn.	= 6.0 (Up,Ki).					i		12 25 00.1	
"	21	Sk	iP	10 51 49.0						microns sec	
		Um	iP	10 51 56.6				M	N	0.2	12
		Greece.						M	Z	0.4	13
"	21	Um	iP	16 40 36.9			Um	iP		12 20 05.5	
		Sumatra	(h = 70 km).					i		12 20 14.0	
"	21	Ki	eT	21 51 04				iT		12 25 57.8	
			i	21 51 33.5				i		12 27 00.0	
			i	21 51 52.7				i		12 27 14.8	
		Um	iP	21 46 46.3				i		12 27 52.3	
		Northeast of Jan Mayen.								Northeast of Jan Mayen	
		Origin time = 21 44 13.								(h = 30 km).	
"	21	Um	iP	21 53 04.5		"	22	Ki	eP	12 30 27	
"	22	Ki	eP	00 07 23				eT		12 35 40	
			eT	00 12 30				i		12 36 13.5	
			i	00 12 44.5			Um	iP		12 31 15.1	
			i	00 13 13.7						Northeast of Jan Mayen.	
		Um	iP	00 08 18.0						Origin time = 12 28.7.	
		Northeast of Jan Mayen.				"	22	Up	iP	13 19 42.8 C	
		Origin time = 00 05 46.						i		13 19 48.3	
"	22	Up	iP	07 19 49.9				iS		13 29 41	
			i	07 19 57.9						microns sec	
"	22	Up	iP	08 28 01.0				M	E	1.4	19
								M	N	1.1	19
"	22	Up	iP	08 28 01.0				M	Z	1.7	21
								D	=	8850 km = 79 1/2°.	
"	22	Up	iPP	08 55 37			Ki	iP		13 19 43.4 C	
			iPS	09 04 51				eS		13 29 42	
		(cont.)								microns sec	
								P	Z	0.5	5
								(cont.)			

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[illegible]

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1967					1967				
Apr.	23	(cont.)			Apr.	23	(cont.)		
		Ud	ipP	15 13 06.0			Ud	i(P)	22 38 05.6
		Indian Ocean.						iP	22 38 13.3
		h = 30 km (Up,Um,Ud).					Costa Rica (h = 50 km).		
		The amplitude of pP is much				24	Sk	iP	02 35 50.7
		greater than that of P,					Ud	eP	02 35 18
		which explains that P has been					Crete.		
		missed at some of our stations.							
"	23	Up	iP	17 51 52.8	"	24	Up	iP	08 58 53.3 D
								i	08 58 57.5
"	23	Up	iP	18 06 11.9				iPP	09 00 23.3
		Ki	iP	18 05 45.7 C					microns sec
		Um	iP	18 05 56.1			P	Z'	0.3 1.0
		Ud	iP	18 06 18.8			M	E	1.6 14
		Mariana Islands (h = 60 km).					M	N	4.5 15.
							M	Z	2.2 14
"	23	Ki	eP	18 26 34		Ki	iP		08 58 59.3
		Kamchatka (h = 30 km).					i		08 59 05.9
							eSS		09 08 14
"	23	Up	eP	18 37 35			iLg1		09 12 33
			i	18 37 48.8					microns sec
		Ki	iP	18 36 42.3			P	Z'	0.2 1.3
		Um	iP	18 37 02.0			M	E	1.6 11
		Ud	eP	18 37 46			M	N	2.3 15
		Kamchatka (h = 30 km).					M	Z	1.4 10
						Sk	iP		08 59 18.6
"	23	Up	iP	20 29 12.1			iPP		09 00 59.6
			ipP	20 29 31.7		Gb	iP		08 59 16.1
		Ki	eP	20 29 05			i		09 01 13.7
			ipP	20 29 24.8		Um	iP		08 58 49.7
		Sk	eP	20 29 27			i		08 58 50.8
			epP	20 29 47			iPP		09 00 22.4
		Um	iP	20 29 03.7			iS		09 04 49
			ipP	20 29 22.7			iSS		09 07 55
		Ka	eP	20 29 22			iLg1		09 12 07
			ipP	20 29 41.3		Ka	iP		08 58 59.4
		Ud	iP	20 29 25.2		Ud	iP		08 59 09.6
			ipP	20 29 45.1			i		08 59 10.6
		Burma-India.					iPP		09 00 45.8
		h = 80 km (Up,Ki,Sk,Um,Ka,					Tadzhik SSR (h = 30 km).		
		Ud).					Magn. = 6.1 (Up,Ki).		
"	23	Ka	iP	22 17 28.6	"	24	Up	iP	15 22 32.3
									microns sec
"	23	Up	iP	22 38 22.2			P	Z'	0.1 0.7
		Ki	iP	22 38 19.1		Ki	iP		15 21 54.2 D
		Sk	eP	22 38 08					microns sec
		Gb	eP	22 38 04			P	Z'	0.1 1.0
		Um	i(P)	22 38 16.9		Sk	iP		15 22 29.0
			iP	22 38 22.3		Gb	iP		15 22 55.3
		Ka	iP	22 38 15.9		Um	iP		15 22 10.6 D
			i	22 38 31.4		Ka	iP		15 22 53.0
		(cont.)				Ud	iP		15 22 36.5
						(cont.)			

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1967					1967				
Apr.	24	(cont.)			Apr.	25	(cont.)		
		Ud	i	15 22 41.4			Ud	iPKP	15 43 44.8 C
		Russia-China	(h = 520 km).				i	15 43 48.0	
		Magn.	= 5.8 (Up,Ki).				Kermadec Islands		
							(h = 210 km).		
"	24	Ud	iP	16 37 33.5	"	26	Up	iP	02 28 20.0 C
		Aleutian Islands					Ki	iP	02 27 31.6 C
		(h = 40 km).					Um	iP	02 27 53.6
							i	02 28 07.9	
"	25	Up	iP	10 38 43.1 C			Ud	eP	02 28 24
		ipP	10 38 52.4				Kurile Islands	(h = 30 km).	
		iLg1	10 53 26						
			microns sec						
		P	Z' 0.2 0.8		"	26	Ud	eP	05 07 37
		M	E 1.1 20				i	05 08 13.1	
		M	Z 1.4 18				Hindu Kush.	(h = 120 km).	
		Ki	iP	10 38 27.2 C					
		ipP	10 38 37.0		"	26	Ki	iP	10 59 31.7 D
			microns sec				Sk	iP	10 59 10.6
		P	Z' 0.1 0.9				Ud	iP	10 59 10.8
		Sk	iP	10 38 56.9			Windward Islands		
		ipP	10 39 06.3				(h = 120 km).		
		iPP	10 40 34.8						
		Gb	iP	10 39 09.2	"	26	Ki	iPg	12 55 52.6
		ipP	10 39 18.6				i	12 55 54.6	
		iPP	10 40 56.6				iSg	12 56 12.4	
		Um	iP	10 38 28.8 C			D = 170 km = 1.5°		
		ipP	10 38 37.8				Sk	i(Sg)	12 58 09.7
		Ka	iP	10 39 06.6 C			i	12 58 18.4	
		ipP	10 39 16.8				Um	iSg	12 57 55.5
		Ud	iP	10 38 58.0 C			Norway, near Lofoten, 68.3°N,		
		ipP	10 39 07.3				16.5°E.		
		Sinkiang.					Origin time = 12 55 22.		
		h = 35 km (Up,Ki,Sk,Gb,Um,			"	26	Up	iP	13 24 00.4
		Ka).					i	13 24 08.7	
		Magn. = 5.7 (Up,Ki).					Ki	iP	13 24 13.6 C
							i	13 24 47.9	
"	25	Ki	ePKP	10 55 08			Sk	iP	13 24 17.3
		Um	i(PKP)	10 54 58.6			Gb	iP	13 24 11.2
		ipPKP	10 55 06.6				Um	iP	13 23 59.8
		Ud	iPKP	10 54 58.0			Ka	eP	13 24 05
		Argentina (h = 40 km).					Ud	iP	13 24 09.8
							i	13 24 27.6	
"	25	Up	iPKP	12 47 33.7			Indian Ocean	(h = 30 km).	
		ipKS	12 50 56.4						
		Um	iPKP	12 47 26.3					
		New Hebrides Islands			"	26	Up	iSg	14 55 50.3
		(h = 50 km).						microns sec	
							Sg	Z' 0.1 0.7	
"	25	Up	iPKP	15 43 43.5			Ud	iSg	14 56 32.9
		Sk	iPKP	15 43 36.1			Probably blast near Uppsala.		
		Gb	iPKP	15 43 51.7 C					
		Um	iPKP	15 43 29.2	"	26	Ud	iPKP	22 05 48.4
		(cont.)					Fiji Islands	(h = 120 km).	

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1967					1967				
Apr.	27	Up	iP	00 03 27.3	Apr.	27	(cont.)		
			i	00 03 33.4			Ki	microns	sec
				microns sec			P	Z'	0.1 1.0
			P	Z' 0.1 0.6			M	E	0.6 13
							M	Z	1.8 12
"	27	Ki		---			Sk	iP	23 23 32.4
				microns sec			Gb	iP	23 23 40.5
			M	E 1.2 18				ipP	23 23 43.9
			M	N 0.8 17			Um	iP	23 23 03.4 C
			M	Z 1.5 18				ipP	23 23 07.4
		Um	eSS	08 42 54				iPP	23 24 35.1
		Ud	iP	08 23 56.9			Ka	iP	23 23 26.5 C
		New Guinea (h = 30 km).						iPP	23 25 14.9
"	27	Ki	iSg	11 31 35.4			Ud	iP	23 23 30.8 C
		Sk	iSg	11 31 38.6				ipP	23 23 34.8
		Um	iSg	11 32 01.3				iPP	23 25 16.5
		Ud	eSg	11 33 29			Sinkiang.		
		Nordlands Fylke, Norway.					h = 15 km (Up,Gb,Um,Ud).		
							Magn. = 5.5 (Up,Ki).		
"	27	Ud	ePn	12 40 15	"	28	Up	iPKP	01 02 24.7
			iSg	12 41 28.6				i	01 02 34.6
"	27	Ud	iPKP	12 42 47.8			Um	iPKP	01 02 14.9 C
		Tonga-Kermadec Islands					Ud	iPKP	01 02 26.3
		(h = 550 km).			"	28	Um	iPKP	08 03 30.5
"	27	Ki	iP	14 27 03.1			Santa Cruz Islands		
			i	14 27 11.6			(h = 30 km).		
"	27	Sk	iP	14 27 24.4	"	28	Um	iSg	11 52 05.0
		Um	iP	14 27 45.4			Ud	iSg	11 52 39.9
		Ka	eP	14 29 01	"	28	Ud	iP	13 11 22.3
		Ud	eP	14 28 13	"	28	Up	iP	19 46 23.2
			i	14 28 28.1			Ki	iP	19 46 51.7
		Northeast of Jan Mayen					Um	iP	19 46 24.4
		(h = 30 km).						i	19 46 31.2
"	27	Um	iP	20 55 57.3				i	19 46 48.4
		Iran (h = 40 km).					Ud	iP	19 46 36.8
							Iran (h = 25 km).		
"	27	Up	iP	23 23 14.7 C	"	29	Um	i(P)	00 10 16.7
			ipP	23 23 18.7				i	00 10 47.4
			i	23 23 24.0	"	29	Up	eP	00 15 32
			iPP	23 24 52.8				microns	sec
			iLi	23 36 08			M	E	1.2 16
			iLg1	23 37 26			M	N	4.1 22
				microns sec			M	Z	2.4 19
			P	Z' 0.1 1.0			Ki	iP	00 14 50.0
			M	E 1.0 13				microns	sec
			M	N 2.0 17			M	E	2.0 16
			M	Z 1.2 13			M	N	2.4 19
		Ki	iP	23 23 05.5 C			M	Z	3.4 19
			iLg1	23 36 39			(cont.)		
		(cont.)					(cont.)		

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1967				1967			
Apr.	29	(cont.)		Apr.	29	(cont.)	
		Um	iP 00 15 15.2			Um	iP 22 13 19.0
		Ud	iP 00 15 30.9			Ud	iP 22 13 49.5
		Queen Charlotte Islands				Japan (h = 50 km).	
		(h = 5 km).					
		Magn. = 5.6 (Up,Ki).		"	30	Um	iP 01 20 45.8
"	29	Up	iP 04 06 17.7 C			i	01 20 52.8
			microns sec			Ud	eP 01 21 14
		P	Z' 0.3 0.9			Japan.	
		M	E 1.7 18	"	30	Up	iP 06 47 39.1
		M	N 2.3 19	"	30	Up	iP 07 47 59.5
		M	Z 3.2 20			Ud	iP 07 48 00.9
		Ki	iP 04 05 24.6 C	"	30	Ud	iP 08 16 23.2
		iPcP	04 06 09.3			i	08 16 27.2
			microns sec			Iran (h = 70 km).	
		P	Z' 0.2 1.2	"	30	Ki	iPn 09 44 47.1
		Sk	iPcP 04 06 29.4			iSn	09 45 24.1
		Gb	iP 04 06 33.7 C			iSg	09 45 38.7
			iPcP 04 06 53.8			D = 330 km = 3.0°.	
		Um	iP 04 05 50.5 C	"	30	Ki	iPn 14 27 55.3
			iPcP 04 06 25.1			iSn	14 28 43.9
		Ka	iP 04 06 40.9			iLg1	14 28 59.1
			iPcP 04 07 03.2			D = 460 km = 4.1°.	
		Ud	iP 04 06 18.4 C			Sk	iSg 14 31 46.6
			iPcP 04 06 42.9			Um	iPn 14 28 33.4
		Aleutian Islands				iS ^x	14 30 06.4
		(h = 50 km).				iSg	14 30 28.0
		Magn. = 6.0 (Up,Ki).				Northwest Russia, 68.8°N,	
"	29	Ki	iP 05 04 38.7			31.4°E.	
		Ud	iP 05 04 54.7			Origin time = 14 26 50.	
		Sinkiang (h = 30 km).				Explosion?	
"	29	Ki	iP 06 37 21.0	"	30	Up	Up ---
		Mariana Islands					microns sec
		(h = 110 km).				M	E 0.6 20
"	29	Up	iP 09 36 38.3 C			M	N 1.7 21
"	29	Ki	i(Sg) 10 34 14.4			Um	i(P) 17 13 11.1
		Sk	e(Sg) 10 34 20			eSS	17 32 10
		New Guinea (h = 30 km).		"	30	Up	iP 20 33 34.7
"	29	Up	iP 12 36 29.8	"	30	Ud	iP 22 35 33.2 C
			iPcP 12 36 55.0				
		Ki	iP 12 35 36.4				
		Um	iP 12 36 02.5				
			iPcP 12 36 36.3				
		Ud	iP 12 36 30.8				
		i	12 36 50.2				
		Aleutian Islands					
		(h = 50 km).					
"	29	Up	iP 22 13 40.6				
		(cont.)					

Markus Båth
September 15, 1967

Seismological Institute
Uppsala

SEISMOLOGICAL BULLETIN

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

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
Göteborg	(Gb):	57°41.9'N,	11°58.7'E;	h = 66 m
Umeå	(Um):	63°48.9'N,	20°14.2'E;	h = 16 m
Karlskrona	(Ka):	56°09.9'N,	15°35.5'E;	h = 11 m
Uddeholm	(Ud):	60°05.4'N;	13°36.4'E;	h = 240 m

M A Y 1 - 31, 1967
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1967					1967			
May	1	Ud	iP	00 02 32.0	May	1	(cont.)	
		Aegean Sea.				Sk	iP	07 14 19.8 D
							iS	07 18 41.1
"	1	Um	iP	06 52 49.7		Gb	iP	07 13 23.7 D
		Unimak Island (h = 30 km).					i	07 13 25.3
"	1	Up	iP	07 13 37.6 D		Um	iP	07 14 16.8 D
			iS	07 17 19			i	07 15 34.4
			iLg2	07 20 12			iS	07 18 34
			microns sec			Ka	iP	07 12 57.3
		P	N	2.7 2			i	07 13 00.5
		P	Z	2.0 2		Ud	iP	07 13 43.7 D
		P	Z'	1.0 0.6			iS	07 17 36.1
		S	E	13 9				Greece (h = 15 km).
		S	N	13 8				Magn. = 6.2 (Up, Ki).
		S	Z	10 10				Clear PL-waves on long-period
		M	E	51 14				N and Z at Up and Um.
		M	N	35 10	"	1	Um	i(P)
		M	Z	33 8				07 21 35.9
		D = 2300 km = 20 1/2°.			1	Up	iP	08 20 18.9 C
Ki		iP		07 14 53.6 D		Sk	iP	08 21 01.7
		iPP		07 15 38.2		Um	iP	08 21 00.3
		iS		07 19 29				Greece (h = 50 km).
		iSa		07 20 07	"	1	Sk	iP
		iLi		07 22 36				08 33 40.0
				microns sec				Greece (h = 30 km).
		P	N	0.7 6	"	1	Up	iP
		P	Z	0.8 5				09 52 18.1
		P	Z'	0.4 1.0			iPP	09 52 46.7
		S	E	2.1 10		Sk	iP	09 53 04.1
		S	N	2.1 9		Ka	iPP	09 52 08.3
		M	E	100 17		Ud	iP	09 52 31.0
		M	N	27 10			iPP	09 52 56.6
		M	Z	31 10				Greece (h = 25 km).
		D = 3100 km = 28°.						
		(cont.)						

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1967

May 1 Up iP 09 54 43.6
eS 09 58 25
microns sec
P Z' 0.1 0.7
M E 1.4 15
M N 1.4 12
M Z 1.7 11
D = 2300 km = 20 1/2°.
Ki iP 09 56 00.6
i 09 56 24.6
microns sec
M E 1.5 14
M N 0.8 10
M Z 1.0 10
Sk iP 09 55 27.4
Um iP 09 55 24.5
i 09 55 26.9
iS 09 59 38
Ka iP 09 54 05.8
Ud iP 09 54 51.3
Greece (h = 20 km).
" 1 Up iP 14 42 40.0
Sk iP 14 43 25.5
Um eP 14 43 22
i 14 43 32.4
Ka eP 14 42 02
Ud iP 14 42 48.3
i 14 43 49.7
Greece (h = 30 km).
" 1 Up iP 16 44 42.1
Sk iP 16 45 24.8
Ka iP 16 44 03.2
Ud iP 16 44 49.1
Greece (h = 30 km).
" 1 Sk iP 18 15 21.2
Ud eP 18 14 49
Greece.
" 1 Up iP 22 51 27.6
Sk eP 22 52 09
Ud iP 22 51 34.3
Greece.
" 2 Up iP 01 31 53.4
Sk iP 01 32 36.7
Um i(P) 01 32 48.3
Ka iP 01 31 15.4
Ud iP 01 32 00.6
Greece (h = 30 km).
In several shocks in this series from Greece, Um Z' exhibits a clear phase, about 10-12 sec too late to be P, and much bigger than the proper P.

1967

May 2 Up iP 02 47 42.2
Um iP 02 47 24.4 C
Bonin Islands (h = 490 km).
" 2 Up iP 08 16 31.0
i 08 16 34.1
Sk eP 08 17 13
Ka eP 08 15 53
Greece (h = 20 km).
" 2 Ki iP 09 09 00.7
iPP 09 10 24.5
Um iP 09 08 50.6
Ka iP 09 08 56.6
Ud iP 09 09 08.5
i 09 10 16.9
iPP 09 10 31.7
Hindu Kush (h = 230 km).
" 2 Sk iP 13 56 54.0
Greece.
" 2 Um iSS 17 44 18
New Guinea (h = 150 km).
" 2 Ki iP 19 18 26.8 C
" 2 Ki e(P) 19 28 22
i 19 28 30.9
" 2 Up iP 19 34 00.3
Sk iP 19 34 44.3
Um iP 19 34 42.3
Ud iP 19 34 07.0
Greece (h = 5 km).
" 2 Up i(P) 21 34 37.7
i 21 35 04.7
" 2 Ki iP 22 07 12.7
" 3 Up iP 05 24 27.6
Ki iP 05 25 21.6
i 05 25 31.5
Gb iP 05 24 31.3
Um iP 05 24 49.4
i 05 24 58.2
Ka eP 05 24 04
Ud eP 05 24 39
i 05 24 58.2
Black Sea (h = 30 km).
There are double phases on Ki and Um Z', and it is the second of these which correspond to the P-readings at the other stations.

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
May	3	Ki	iPKP 11 08 19.6 C	May	4	Ud	eP 03 23 08
			microns sec				Greece.
			PKP Z' 0.1 0.7				
		Sk	iPKP 11 08 32.5	"		Up	iP 04 50 51.6
		Um	iPKP 11 08 27.2 C				i 04 50 55.7
			ipPKP 11 09 02.3			Ki	iP 04 52 08.3
		Ud	ePKP 11 08 38			Sk	iP 04 51 34.6
			i 11 08 56.6			Um	iP 04 51 33.2
			New Zealand (h = 105 km).				i 04 51 42.3
"	3	Up	iP 18 46 21.5			Ud	iP 04 51 00.3
			i 18 46 25.8				i 04 51 02.8
			microns sec				Greece (h = 50 km).
			P Z' 0.2 0.6	"	4	Ki	iP 05 19 06.0
		Ki	iP 18 47 37.8			Um	iP 05 19 33.1
			i 18 47 43.5			Ud	iP 05 19 58.8
			i(P) 18 47 54.8				Aleutian Islands
		Sk	iP 18 47 04.2				(h = 40 km).
			i 18 47 08.9	"	4	Um	iP 05 29 53.0
			i(P) 18 47 20.4				
		Gb	iP 18 46 09.6	"	4	Up	iPKP 08 36 19.5
			i 18 46 14.1				ipPKP 08 36 30.5
		Um	iP 18 47 03.6				microns sec
			i 18 47 07.5			M E	1.0 20
		Ka	iP 18 45 43.4			M N	1.6 20
			i 18 45 46.7			M Z	1.6 20
			i(P) 18 45 59.7			Ki	iPKP 08 36 34.8 C
		Ud	iP 18 46 29.4				ipPKP 08 36 44.8
			i(P) 18 46 46.7				i 08 39 49.2
			Greece (h = 40 km).				microns sec
			Multiple P; average difference = 4.4 sec between the first small and the second larger onset. The phase marked (P) could be P of another shock in the same area, average = 16.7 sec after the first P.				PKP Z' 0.1 1.1
						M E	0.8 19
						M N	0.8 19
						M Z	1.3 18
						Sk	ePKP 08 36 29
						Um	iPKP 08 36 27.8
							ipPKP 08 36 38.5
						Ud	iPKP 08 36 18.3
							iPP 08 37 40.8
"	3	Up	iP 23 25 54.0				South Sandwich Islands.
			i 23 26 24.4				h = 40 km (Up,Ki,Um).
		Sk	eP 23 26 40				Magn. = 5.8 (Up,Ki).
		Um	iP 23 26 40.3				
		Ud	iP 23 26 00.7				
			i 23 26 05.4	"	4	Sk	eP 08 58 28
			Greece.			Ud	eP 08 57 56
			Origin time = 23 21.3.				Greece.
							Origin time = 08 53.2.
"	4	Um	iP 00 27 13.1	"	4	Up	iP 08 58 17.1
			Aleutian Islands			Ki	eP 08 59 24
			(h = 30 km).			Sk	iP 08 59 00.7
						Um	iP 08 58 53.0
"	4	Um	iP 00 40 15.1				i 08 59 03.1
		Ud	iP 00 40 45.7			Ud	iP 08 58 23.0
			Kurile Islands				Greece.
			(h = 20 km).				Origin time = 08 53.7.

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
May	4	Up	iP	09 00 24.0	May	4	Up	---	
		Sk	iP	09 01 05.0				microns sec	
			i	09 01 09.1			M	N	1.2 20
			i	09 01 16.4		Ki	iP		23 36 23.2
		Um	eP	09 01 04				microns sec	
		Ud	iP	09 00 24.5			M	E	1.3 16
			i	09 00 32.5			M	N	1.3 17
							M	Z	0.9 17
		Greece.				Um	iP		23 36 39.1
		Origin time = 08 55.8.				Japan (h = 10 km).			
"	4	Ki	eP	12 39 24	"	4	Up	iP	23 43 53.8
			i	12 39 28.8		Ki	iP		23 43 37.0
		Ud	iP	12 40 20.0		Sk	eP		23 44 04
		Komandorsky Islands				Um	iP		23 43 40.5
		(h = 30 km).				Ud	eP		23 44 06
"	4	Sk	iP	13 15 09.3	"	5	Up	iP	00 18 34.2 C
			i	13 17 05.6			ipP		00 18 39.1
		Ud	iP	13 14 34.5				microns sec	
		Greece.					P	Z'	0.1 0.6
		Origin time = 13 09.8.				Ki	iP		00 18 17.1 C
"	4	Up	iP	13 18 06.5			ipP		00 18 22.0
		Ki	iP	13 19 22.4		Sk	iP		00 18 44.7
		Sk	iP	13 18 49.0		Gb	iP		00 18 56.4
		Um	iP	13 18 46.9		Um	iP		00 18 21.2 C
		Ud	iP	13 18 13.5			ipP		00 18 26.0
		Greece (h = 40 km).				Ud	iP		00 18 46.5 C
"	4	Up	iP	13 35 41.1 C				Szechwan, China.	
				microns sec				h = 20 km (Up, Ki, Um).	
			P	Z' 0.1 0.9	"	5	Sk	eP	03 19 34
		Ki	iP	13 36 57.6 C			Um	iP	03 19 06.3
		Sk	iP	13 36 23.8				Hindu Kush (h = 20 km).	
		Gb	iP	13 35 27.6	"	5	Up	iP	06 31 10.3 C
		Um	iP	13 36 22.1				i	06 31 16.7
			i	13 36 40.0				microns sec	
		Ud	iP	13 35 48.0 C			P	Z'	0.1 0.7
			i	13 35 53.6		Ki	iP		06 32 26.6
		Greece (h = 40 km).				Sk	iP		06 31 52.7
"	4	Up	iP	16 04 20.1			i		06 31 58.5
			i	16 04 23.6		Gb	iP		06 30 56.9
				microns sec		Um	iP		06 31 51.2
			P	Z' 0.1 0.7			i		06 31 59.8
"	4	Up	eP	17 15 41		Ka	iP		06 30 32.0
		Sk	eP	17 16 26		Ud	iP		06 31 16.3 C
		Gb	eP	17 15 30				Greece (h = 60 km).	
		Um	iP	17 16 22.0	"	5	Sk	ePKP	12 51 54
		Ud	iP	17 15 49.3			Um	iPKP	12 51 47.9
		Greece.						South of Australia	
		Origin time = 17 11.1.						(h = 30 km).	
"	4	Ki	eP	23 14 52					

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

May 5 Up iP 14 54 38.5
i 14 54 48.9
Ki eP 14 55 54
Sk iP 14 55 20.4
i 14 55 24.6
Um iP 14 55 18.7
i 14 55 27.4
Ka i(P) 14 54 06.2
Ud iP 14 54 47.0
i 14 54 54.4
Greece (h = 30 km).

" 5 Ki iP 15 17 01.6
Sk iP 15 17 28.9
Um iP 15 17 30.0
Ud iP 15 17 54.0
Alaska (h = 60 km).

" 5 Up ---
microns sec
M E 1.3 22
M N 1.6 20
M Z 3.2 24
Ki ---
microns sec
M E 1.4 22
M N 1.5 21
M Z 2.8 21
Um iPKP 15 19 11.4
Solomon Islands
(h = 40 km).
Magn. = 6.0 (Up,Ki).

" 5 Sk eP 16 03 54
Ud iP 16 03 17.5
Greece.

" 5 Up iP 17 15 47.3
i 17 15 50.8
Ki iP 17 14 48.4
i 17 14 50.7
i 17 14 58.5
Sk iP 17 15 16.4 C
Gb eP 17 15 58
Um iP 17 15 18.0
i 17 15 20.5
i 17 15 24.8
Ud iP 17 15 42.7
i 17 15 44.6
Alaska (h = 100 km).
Multiple P.

" 5 Ki ePKP 17 48 44
(cont.)

1967

May 5 (cont.)
Sk iPKP 17 48 56.9
Um iPKP 17 48 50.6
New Hebrides Islands
(h = 50 km).
" 5 Up eP 17 51 40
ipP 17 51 53.3
Ki iP 17 51 31.0 C
ipP 17 51 44.1
iSKS 18 02 02

microns sec
pP Z' 0.2 1.5
SKS E 0.4 5
M E 0.8 16
M N 0.8 19
M Z 1.8 17
Sk iP 17 51 47.0
ipP 17 52 00.2
Um iP 17 51 35.0
ipP 17 51 49.4
Ud eP 17 51 47
Java, h = 50 km
(Up,Ki,Sk,Um).

" 5 Sk iP 20 23 52.0
Um iP 20 23 49.3
i 20 24 09.2
Ud eP 20 23 19
Greece.
Origin time = 20 18.6.

" 5 Up iP 20 47 35.2

" 5 Ki iP 22 04 31.5
i 22 04 41.0
iS 22 05 56.0
eT 22 10 12
D = 900 km = 8°.
Sk iP 22 04 59.5
i(S) 22 06 37.2
Um iP 22 05 16.8
i 22 05 18.0
Ud iP 22 05 49.7
Norwegian Sea
(h = 30 km).

" 6 Ki iP 04 58 38.9
Sk eP 04 59 10
Um iP 04 59 05.5
i 04 59 09.2
Ud iP 04 59 31.3
Aleutian Islands
(h = 30 km).

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
May	6	Ki	iPKP	08 50 17.7	May	6	Ki	iP	19 58 38.9
			i	08 50 35.1				i	19 58 52.2
				microns sec					microns sec
			M	N 0.6 19				M	E 0.4 16
			M	Z 1.6 22				M	N 0.3 16
				South Sandwich Islands				M	Z 0.9 17
				(h = 30 km).			Um	iP	19 58 57.3 C
"	6	Ki	ePn	12 33 09				i	19 59 04.8
			iSn	12 33 56.4			Ud	iP	19 59 27.8 C
			iLg1	12 34 10.8					Japan (h = 30 km).
				D = 430 km = 3.9°	"	6	Um	iP	23 51 26.9
		Um	iSn	12 35 07.3				i	23 51 38.8
			iSg	12 35 44.3					
				Northwest Russia.	"	7	Ki	iP	02 19 39.4
				Origin time = 12 32 07.	"	7	Ki	iP	06 17 50.9
				Explosion?					Mariana Islands
"	6	Up	iP	14 12 11.3					(h = 190 km).
		Ki	iP	14 12 05.6	"	7	Up	iP	06 52 01.2
			ipP	14 12 12.5			Ki	iP	06 51 07.4
		Sk	iP	14 11 47.7				ipP	06 51 22.2
			ipP	14 11 54.2			Um	iP	06 51 34.4
		Gb	iP	14 11 50.1			Ud	iP	06 52 00.5
		Um	iP	14 12 08.9					Aleutian Islands.
			ipP	14 12 16.4					h = 50 km (Ki).
		Ud	iP	14 11 58.6	"	7	Um	iP	07 02 30.7
				Dominican Republic.	"	7	Ki	iP	07 50 17.8
				h = 25 km (Ki,Sk,Um).			Ud	iP	07 51 10.8
"	6	Up	iSn	14 17 08.1					Aleutian Islands
		Ki	iSg	14 19 52.9					(h = 50 km).
		Sk	eSg	14 19 12	"	7	Ud	iP	08 22 05.6
		Um	iSg	14 17 54.4					Aleutian Islands
		Ud	eSn	14 17 55					(h = 60 km).
			iSg	14 18 24.9	"	7	Ud	iP	08 26 15.4
				Gulf of Finland,					Aleutian Islands
				59.9°N, 24.3°E.					(h = 60 km).
				Origin time = 14 15 27.	"	7	Ud	iP	08 26 15.4
				Probably underwater					Aleutian Islands
				explosion.					(h = 60 km).
"	6	Up	iPKP	18 48 44.0	"	7	Ki	iPn	09 31 27.0
			i	18 48 47.5				iSn	09 32 25.7
				microns sec				iSg	09 32 51.0
				PKP Z' 0.1 0.5					D = 540 km = 4.9°
		Ki	iPKP	18 48 26.3			Um	i	09 33 20.2
		Sk	iPKP	18 48 37.6 D					Northwest Russia.
		Um	iPKP	18 48 32.3 D					Origin time = 09 30 10.
		Ka	iPKP	18 48 54.1					Explosion?
		Ud	iPKP	18 48 45.9	"	7	Um	iPKP	10 35 27.6
				Kermadec Islands					(cont.)
				(h = 290 km).					

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
May	7	(cont.)		May	8	Up	iP 14 58 44.9
		New Britain (h = 50 km).				Ki	iP 14 58 16.5
"	7	Up	iP 11 14 42.7 C			Sk	iP 14 58 46.8
		Ki	iP 11 13 49.7			Gb	eP 14 59 02
			ipP 11 14 03.8			Um	iP 14 58 30.1
		Ud	iP 11 14 44.4			Ud	iP 14 58 56.1
		Aleutian Islands.				Japan (h = 60 km).	
		h = 50 km (Ki).		"	8	Ki	iSg 18 17 46.9
"	7	Up	iSg 11 36 11.3			Sk	ePg 18 17 14
		Ki	eSg 11 38 41				iSg 18 17 52.7
		Sk	iSg 11 37 56.9				i 18 18 01.6
			i 11 38 18.5			Um	iSn 18 18 02.8
		Gb	eSg 11 37 51				iSg 18 18 15.3
		Um	iSg 11 36 42.4			Ud	eSg 18 19 42
		Ud	eSn 11 36 44			Nordlands Fylke, Norway,	
			iSg 11 37 10.8			66.5°N, 14.6°E.	
		Gulf of Finland,				Origin time = 18 16 16.	
		59.9°N, 24.3°E.		"	8	Up	iP 18 55 24.9
		Origin time = 11 34 14.					iPP 18 56 59.9
		Probably underwater					microns sec
		explosion.				P	Z' 0.2 0.6
"	7	Sk	iP 13 25 21.0			Ki	iP 18 55 34.8 C
							microns sec
"	7	Ki	ePn 13 31 17			P	Z' 0.1 1.0
			iSn 13 32 01.8			Sk	iP 18 55 51.2 C
			iLg1 13 32 15.3				iPP 18 57 32.7
			D = 410 km = 3.7°.			Gb	iP 18 55 45.8
		Sk	eSg 13 34 42				iPP 18 57 33.8
		Um	iSn 13 32 43.7			Um	iP 18 55 23.7 C
			iS ^x 13 33 02.1			Ka	iP 18 55 29.2 C
			iSg 13 33 13.9			Ud	iP 18 55 41.2 C
		Northwest Russia-Finland					iPP 18 57 21.4
		border region, 67.4°N,				Hindu Kush (h = 220 km).	
		30.0°E.				Magn. = 5.8 (Up, Ki).	
		Origin time = 13 30 18.		"	8	Up	iP 18 59 50.9
		Explosion?					i 18 59 55.4
"	8	Sk	eP 06 30 04	"	8	Up	iPKP 19 04 44.1 D
		Ud	iP 06 29 32.7				i 19 04 52.6
		Crete (h = 40 km).					iX 19 05 53.0
							microns sec
"	8	Um	iP 07 33 33.8				PKP Z' 0.3 0.9
		West Carlonine Islands				Ki	iPKP 19 04 23.0
		(h = 40 km).					microns sec
							PKP Z' 0.1 1.0
"	8	Up	i(Sg) 12 05 24.4			Sk	iPKP 19 04 38.9 D
			microns sec				i 19 04 42.9
			(Sg)Z' 0.1 0.7				i 19 05 05.1
		Ud	ePg 12 05 36				iX 19 05 45.7
			iSg 12 06 06.0			Gb	iPKP 19 04 51.4
			iRg 12 06 20.0				ipPKP 19 05 06.1
		Probably explosion.				(cont.)	

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
May	8	(cont.)		May	9	(cont.)	
		Um	iPKP 19 04 34.2 D			Um	iP 06 25 33.5 C
			ipPKP 19 04 49.3				ipP 06 25 46.0
		Ka	ePKP 19 04 52				iS 06 34 08
			ipPKP 19 05 07.0			Ka	iP 06 26 20.6 C
		Ud	iPKP 19 04 45.6 D				ipP 06 26 33.4
			i 19 04 55.6			Ud	iP 06 26 05.2
		South of Kermadec Islands.					ipP 06 26 17.1
		h = 60 km (Gb,Um,Ka).				Kurile Islands.	
		Time difference				h = 45 km (Up,Ki,Sk,Gb,Um,	
		X - PKP = 01 08 in average				Ka,Ud). Magn. = 5.8	
		(Up,Sk).				(Up,Ki).	
"	8	Ki	iP 20 43 46.6	"	9	Up	iP 07 29 38.7
		Um	iP 20 43 35.7			Sk	eP 07 30 17
		Ka	iP 20 43 42.2				i 07 30 18.3
		Ud	iP 20 43 53.5			Greece.	
		Hindu Kush (h = 110 km).		"	9	Up	iP 08 05 18.7
"	8	Ud	iP 21 27 45.4				i 08 05 21.5
"	9	Sk	iP 03 13 43.7			Ki	eP 08 06 34
		Um	iP 03 13 26.4			Sk	eP 08 06 01
		Japan (h = 170 km).					i 08 06 05.1
"	9	Up	eP 04 09 58			Um	i(P) 08 06 08.5
		Um	iP 04 10 34.9			Ka	iP 08 04 39.9
			i 04 10 48.6			Ud	iP 08 05 24.9
		Ud	eP 04 10 05				i 08 05 32.7
		Turkey (h = 30 km).		"	9	Ki	iP 08 07 53.2
"	9	Up	iP 06 25 58.1 C			Um	iP 08 08 32.2
			ipP 06 26 11.2			Ud	iP 08 08 59.7
			eS 06 34 55			Greenland (h = 30 km).	
			microns sec	"	9	Ki	iP 11 09 46.2
		P	Z' 0.1 0.7				ipP 11 10 47.0
		pP	Z' 0.2 0.6			Um	iP 11 10 03.1
		M	E 1.1 15			Ud	iP 11 10 35.0
		M	N 1.4 17				ipP 11 11 34.1
		M	Z 1.3 17			Sea of Japan.	
		D = 7600 km = 68 1/2°.				h = 260 km (Ki,Ud).	
		Ki	iP 06 25 13.3	"	9	Ud	iP 12 32 52.6
			ipP 06 25 25.5	"	9	Up	iP 12 47 06.2
			eS 06 33 28				iS 12 55 39
			microns sec			microns sec	
		P	Z' 0.2 1.0			M	E 0.3 18
		S	N 0.3 12			M	N 0.3 17
		M	E 1.7 19			M	Z 0.5 17
		M	N 1.7 18			D = 7050 km = 63 1/2°.	
		M	Z 2.3 17			Ki	iP 12 46 12.6
		D = 6850 km = 61 1/2°.					iS 12 54 01
		Sk	iP 06 25 48.1			microns sec	
			ipP 06 26 00.0			P	Z' 0.1 1.0
		Gb	iP 06 26 19.6			S	E 0.3 8
			ipP 06 26 32.3			(cont.)	
		(cont.)				(cont.)	

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

May 9

(cont.)

Ki microns sec
M E 0.5 18
M N 0.6 19
M Z 1.1 19
D = 6200 km = 56°.
Sk iP 12 46 39.8
 ipP 12 46 47.2
Gb iP 12 47 18.8
 ipP 12 47 26.1
Um iP 12 46 40.7 C
 ipP 12 46 48.1
 iS 12 54 50
 iScS 12 56 27
Ka iP 12 47 29.6
 ipP 12 47 37.0
Ud iP 12 47 03.5
 ipP 12 47 10.8
Kodiak Island. h = 25 km
(Sk, Gb, Um, Ka, Ud).
Magn. = 5.2 (Up, Ki).

" 9

Sk eSg 13 31 13
Gb iSg 13 28 43.4
 iRg 13 28 47.2
Ud iPg 13 28 54.3
 iSg 13 29 22.8
West coast of Sweden,
58.5°N, 11.3°E.
Origin time = 13 28 17.
Explosion?

" 9

Ki iPn 13 36 01.6
 iSn 13 36 50.4
 iLgl 13 37 04.7
 D = 440 km = 4.0°.
Sk eSg 13 39 56
Um iSn 13 37 49.6
 iSg 13 38 35.6
Northwest Russia,
68.8°N, 30.9°E.
Origin time = 13 34 59.
Explosion?

" 9

Ud eP 13 39 37
Greece.

" 9

Up iPg 14 43 19.0
 iSg 14 43 38.5
 microns sec
 Sg Z' 0.1 0.6
Um iLgl 14 45 30.2
Ud iPg 14 43 42.3
 eSg 14 44 20

(cont.)

1967

May 9

(cont.)

Baltic Sea.
Origin time = 14 42 46.
Probably underwater
explosion.

" 9

Up iPg 14 49 56.2
 iSg 14 50 16.5
Sk eLgl 14 52 27
Um iLgl 14 52 09.9
Ud iPg 14 50 23.2
 iSg 14 51 00.8

Baltic Sea.
Origin time = 14 49 25.
Probably underwater
explosion.

" 9

Ki iP 15 16 35.7
Sk iP 15 17 02.7 D
 ipP 15 17 10.1
Um iP 15 17 03.7
 ipP 15 17 10.5
 iS 15 25 16
Ud eP 15 17 26
Kodiak Island.
h = 25 km (Sk, Um).

" 9

Ki iP 16 10 27.8
Um iP 16 10 38.1
Ud eP 16 11 00
Mariana Islands
(h = 120 km).

" 9

Ud iP 16 44 47.2
Tadzhik SSR.

" 9

Ud eP 20 49 47
Greece.

" 9

Up eP 21 43 19
 iSKS 21 53 42
 microns sec
 M N 0.6 21
Ki iP 21 43 02.2 C
 ipP 21 43 34.2
 eSKS 21 53 19
 eS 21 53 53

 microns sec
P Z' 0.1 1.0
SKS E 0.6 5
M E 0.6 20
M N 0.5 20
M Z 0.9 19

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
May	9	Ki	(cont.)	May	10	Up	iP 17 51 52.2
			D = 10150 km			Ki	iP 17 51 28.5
			= 91 1/2°.			Sk	eP 17 51 56
		Sk	iP 21 43 23.5 C			Gb	eP 17 52 10
		Gb	iP 21 43 35.1			Um	iP 17 51 36.9
		Um	iP 21 43 07.6 C			Ud	iP 17 52 01.9
			ipPP 21 47 20			Formosa (h = 40 km).	
			iSKS 21 53 28				
			i 21 55 13	"	10	Gb	iP 18 17 07.0
		Ka	iP 21 43 29.7				
			i 21 47 26.6	"	10	Um	iP 18 55 19.9
		Ud	iP 21 43 26.8 C			Ud	eP 18 55 38
			ipP 21 43 58.9				i 18 55 41.1
		Philippine Islands.				Tadzhik SSR-Sinkiang.	
		h = 130 km (Ki,Ud).					
"	10	Ud	iP 04 46 42.8	"	10	Sk	eP 21 17 49
		Greece.				Ud	iP 21 17 14.3
						Greece.	
"	10	Gb	iPg 08 37 34.5	"	11	Ka	iP 12 22 49.3
			iSg 08 37 43.9				
			iRg 08 37 47.6	"	11	Um	iP 13 15 37.2
		Ud	iPg 08 37 55.8				
			iSg 08 38 23.9	"	11	Up	iP1 14 58 34.7
		West coast of Sweden,					iP2 14 58 37.5
		58.5°N, 11.3°E.					iP3 14 58 39.1
		Origin time = 08 37 18.					iPP 15 00 04
		Explosion?					iS 15 04 40
"	10	Ki	iP 13 51 14.9				iSa 15 07 01
		Sk	iP 13 51 23.0				iSS 15 07 45
		Um	iP 13 51 33.9 C				iLi 15 10 17
		Ka	iP 13 52 02.5				iLg1 15 12 19
		Ud	iP 13 51 41.0				
		Nevada.					microns sec
		Origin time = 13 40 00.				P3	Z' 0.5 0.9
		Underground explosion.				PP	E 0.7 4
						PP	Z 0.6 4
						PP	Z' 0.1 0.8
"	10	Up	iSg 14 30 16.9			S	N 0.5 5
		Gb	iPg 14 28 42.0			M	E 13 18
			iSg 14 28 51.5			M	N 24 19
			iRg 14 28 55.3			M	Z 10 15
		Ud	iPg 14 29 03.6			D = 4500 km = 40 1/2°.	
			iSg 14 29 32.1			Ki	iP1 14 58 37.2
		West coast of Sweden,					iP2 14 58 40.3
		58.5°N, 11.3°E.					iP3 14 58 42.2
		Origin time = 14 28 25.					iPP 15 00 13
		Explosion?					iS 15 04 47
"	10	Um	iP 15 00 43.0				iSS 15 07 44
		Ud	iP 15 00 55.6				i 15 11 41
							iLg1 15 12 04
							microns sec
"	10	Up	iP 15 10 45.3			P3	E 0.4 5
						P3	Z 0.5 5
"	10	Um	iP 15 19 01.7			P3	Z' 0.9 1.0
						(cont.)	

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
May	11	(cont.)			May	11	Ki	iP	15 34 49.1
		Ki	microns	sec				i	15 35 01.8
		PP	E	0.7 5			Sk	iP	15 35 02.7
		PP	N	0.3 5				i	15 35 20.2
		PP	Z	0.5 5			Um	iP	15 34 51.0 D
		S	N	0.4 4				i	15 35 04.4
		M	E	6.4 10			Ka	i(P)	15 35 23.8
		M	N	25 15			Ud	iP	15 35 03.3
		M	Z	9.8 11				i	15 35 22.6
		D = 4500 km							
		= 40 1/2°.			"	11	Up	i(P)	16 37 31.1
		Sk	iP1	14 58 58.7					
			iP2	14 59 00.6	"	11	Up	iSg	17 27 54.5
			iP3	14 59 02.8			Sk	e	17 30 14
			i	15 00 16.8				iSg	17 30 20.4
			iPP	15 00 40.1			Um	iSg	17 29 48.7
		Gb	iP1	14 58 58.4			Ud	iPg	17 27 38.1
			iP2	14 59 00.7				iSg	17 28 41.4
			iP3	14 59 02.7			South Baltic.		
			iPP	15 00 37.1			Origin time = 17 26 10.		
		Um	iP1	14 58 29.4 D			Probably underwater explosion.		
			iP2	14 58 32.3					
			iP3	14 58 34.2					
			i	14 58 55.3	"	12	Up	iPKP	00 09 14.0 C
			i	14 59 45.8				i	00 09 22.8
			iPP	15 00 03			Sk	iPKP	00 09 08.9
			iS	15 04 25			Um	iPKP	00 09 03.7
			iSa	15 06 27			Ud	iPKP	00 09 16.2
			iSS	15 07 21				i	00 09 26.0
		Ka	iP1	14 58 42.4					
			iP2	14 58 45.2	"	12	Up	iSKP	02 20 02.8
			iP3	14 58 46.8			Um	iPKP	02 17 24.4
			iPP	15 00 19.8			Ud	iSKP	02 20 03.1
		Ud	iP1	14 58 51.3				i	02 20 04.6
			iP2	14 58 53.6			New Hebrides Islands		
			iP3	14 58 56.1			(h = 620 km).		
			iPP	15 00 32.2					
		Tadzhik SSR-Sinkiang			"	12	Up	iP	05 28 42.9
		(h = 20 km).					Ki	iP	05 28 45.6 C
		Magn. = 6.1 (Up,Ki).						microns	sec
		P is multiple, showing three					M	E	0.4 11
		successive onsets (P1,P2,P3)					M	N	0.3 10
		with increasing amplitudes.					M	Z	0.5 12
		The average time differences					Sk	iP	05 29 06.3
		are: P2 - P1 = 2.6 sec and					Um	iP	05 28 37.9
		P3 - P1 = 4.5 sec.						iSS	05 37 31
								iRg	05 44 51
"	11	Up	iPP	15 23 40.6			Ka	iP	05 28 50.4 C
		Ki	iPP	15 24 02.8			Ud	iP	05 28 59.6 C
		Gb	iPP	15 23 14.1				i	05 29 06.2
		Um	iPP	15 23 50.4			Tadzhik SSR-Sinkiang		
		Ka	iPP	15 23 25.5			(h = 5 km).		
		Ud	iPP	15 23 28.0					
		Chile-Bolivia							
		(h = 70 km).							

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1967				1967			
May	12	Ki	iP 09 41 05.6	May	13	(cont.)	
		Sk	eP 09 40 50			Ki	microns sec
		Colombia (h = 140 km).				P	Z 0.4 5
"	12	Ki	iSg 15 35 12.5			P	Z' 0.2 1.3
		Sk	eSg 15 35 16			S	E 0.8 11
		Um	iSg 15 35 33.2			M	E 0.7 17
		Nordlands Fylke, Norway.				M	N 1.1 18
"	12	Up	iP 17 09 26.7			M	Z 1.7 19
		Ki	iP 17 08 33.8			D = 6200 km = 56°.	
		Sk	iP 17 09 04.0			Sk	iP 05 28 58.1 C
		Um	iP 17 09 00.7 C			ipP	05 29 06.0
		Ka	iP 17 09 50.6			Gb	iP 05 29 37.1
		Ud	iP 17 09 26.2 C			ipP	05 29 44.8
		Aleutian Islands				Um	iP 05 28 59.5
		(h = 30 km).				iS	05 37 04
"	12	Up	iP 17 57 07.6			Ka	iP 05 29 48.0
		Ki	e(P) 17 58 36			ipP	05 29 56.0
		i	17 58 47.5			Ud	iP 05 29 21.8 C
		Sk	iP 17 57 43.6			ipP	05 29 29.7
		i	17 57 50.6			Kodiak Island. h = 30 km	
		Um	iP 17 57 52.6			(Sk, Gb, Ka, Ud).	
		Ud	iP 17 57 04.8			Magn. = 5.7 (Up, Ki).	
		Italy (h = 40 km).		"	13	Ki	eP 07 11 02
"	12	Ki	iP 22 26 11.3			Ud	iP 07 11 39.3
		i	22 26 14.0			Talaud Islands (h = 80 km).	
		Sk	iP 22 26 39.2	"	13	Sk	iP 07 51 44.2
		i	22 26 42.5	"	13	Ki	iPn 09 59 48.4
		Um	iP 22 26 39.9			iSn	10 00 47.6
		Ud	iP 22 27 04.3			i(Sg)	10 01 11.1
		Alaska (h = 90 km).				D = 560 km = 5.0°.	
"	13	Up	iP 04 18 29.8			Um	iSg 10 01 55.8
		Ki	iP 04 18 03.2			Northwest Russia.	
		Sk	iP 04 18 28.3			Origin time = 09 58 30.	
		Mariana Islands				Explosion?	
		(h = 200 km).		"	13	Ki	iPn 10 44 15.1
"	13	Up	iP 05 29 25.0			iSn	10 45 11.1
		iS	05 37 57			iLg1	10 45 29.3
		microns sec				D = 520 km = 4.7°.	
		P	Z' 0.1 1.2			Sk	e(Sg) 10 47 59
		S	N 0.3 3			Um	iSn 10 45 56.4
		M	E 0.6 17			iSg	10 46 35.4
		M	N 0.9 18			D = 720 km = 6.5°.	
		M	Z 0.9 18			Northwest Russia,	
		D = 7050 km				67.9°N, 32.8°E.	
		= 63 1/2°.				Origin time = 10 43 01.	
		Ki	iP 05 28 30.8 C			Explosion?	
		iS	05 36 18	"	14	Ki	iP 03 06 52.2 C
		(cont.)				Sk	iP 03 07 19.3
						Um	iP 03 07 20.2
						Kodiak Island (h = 30 km).	

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1967				1967			
May	14	Up	iP 04 20 53.0 C	May	14	Up	iP 10 55 24.8
			iS 04 24 52.7			Ki	iP 10 55 07.5
			microns sec			Sk	eP 10 55 31
		P	Z' 0.3 0.7			Um	iP 10 55 09.2
		M	E 0.6 15			Ud	iP 10 55 33.8
		M	N 1.5 13			Mindoro (h = 110 km).	
		M	Z 1.6 13				
		D = 2450 km = 22°.		"	14	Up	iPKP 14 51 01.9
		Ki	iP 04 22 06.5 C			Sk	ePKP 14 50 56
			microns sec			Ud	iPKP 14 51 03.4 C
		M	E 0.6 13			Kermadec Islands	
		M	N 0.6 17			(h = 20 km).	
		M	Z 1.0 16				
		Sk	iP 04 21 32.5 C	"	14	Um	iP 16 34 54.6
		Gb	iP 04 20 39.2 C			i	16 34 58.1
		Um	iP 04 21 29.0				
			i 04 21 33.2	"	15	Up	iP 00 17 39.3
			i(pP) 04 21 45.1			Ki	iP 00 17 02.1
			iS 04 25 59			Sk	eP 00 17 33
		Ka	iP 04 20 15.4 C			Um	iP 00 17 17.5 C
			i 04 21 16.5			Ud	iP 00 17 45.3
		Ud	iP 04 20 59.4 C			South of Japan (h = 60 km).	
			i 04 21 05.7				
			i(pP) 04 21 12.4	"	15	Up	iP 00 25 24.4
			iS 04 25 08.1			i	00 25 34.6
		Greece (h = 70 km).				Ki	iP 00 24 49.6
"	14	Up	iP 05 23 02.5			i	00 24 56.7
		Ki	iP 05 22 31.1			Sk	eP 00 25 20
		Um	iP 05 22 44.3			Um	iP 00 25 01.1
		Ud	iP 05 23 09.5			i	00 25 12.1
		Bonin Islands (h = 450 km).				Ud	iP 00 25 29.2
						South of Japan (h = 60 km).	
"	14	Up	iP 09 08 30.5	"	15	Up	iP 02 39 25.5 C
			iPP 09 10 01			i	02 39 30.7
			microns sec			iS	02 49 11
		M	E 0.7 10			microns sec	
		M	N 1.8 18			P	Z' 0.1 1.0
		M	Z 0.9 11			S	E 0.2 3
		Ki	iP 09 08 31.6			M	E 0.8 21
			iLg1 09 22 19			M	N 1.0 20
			iLg2 09 22 57			M	Z 1.3 20
			microns sec			D = 8550 km = 77°.	
		M	E 2.3 14			Ki	iP 02 38 49.5 C
		M	N 0.5 14			iPa	02 43 08
		M	Z 2.9 14			iS	02 48 02
		Sk	iP 09 08 53.9 C			microns sec	
		Um	iP 09 08 25.2			P	Z 0.4 9
			i 09 09 34.5			P	Z' 0.1 1.0
			i 09 12 16			S	E 0.5 11
			iSa 09 16 37			S	N 0.2 7
			iLg1 09 21 37			M	E 1.4 19
		Ka	iP 09 08 37.9			M	N 1.2 19
		Ud	iP 09 08 46.2			M	Z 1.2 16
		Tadzhik SSR-Sinkiang				D = 7900 km = 71°.	
		(h = 30 km).				(cont.)	

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1967				1967			
May	15	(cont.)		May	15	(cont.)	
		Sk	iP 02 39 20.7 C			Ki	microns sec
			iPP 02 42 10.5			P	Z' 0.1 0.8
		Gb	eP 02 39 45			S	N 0.3 10
			i 02 39 50.1			M	E 2.7 15
		Um	iP 02 39 05.1 C			M	N 2.5 14
			i 02 39 10.0			M	Z 3.1 13
			i 02 39 15.5			D = 3700 km = 33 1/2°.	
			i 02 39 23.5			Sk	iP 08 19 05.5 C
			iPa 02 43 31			Gb	iP 08 18 22.3
			iS 02 48 35			i	08 18 27.9
		Ka	iP 02 39 43.2			Um	iP 08 18 58.1 C
			i 02 39 54.9			eS	08 23 53
		Ud	iP 02 39 32.8 C			Ka	iP 08 17 56.3
			i 02 39 37.6			i	08 18 13.6
			i 02 39 46.1			Ud	iP 08 18 34.6 C
		South of Japan (h = 40 km).				Crete (h = 30 km).	
		Magn. = 5.6 (Up,Ki).				Magn. = 5.2 (Up,Ki).	
		Multiple P; the phase					
		arriving around 5 sec after		"	15	Ki	iP 08 38 46.7
		the first P is particularly				Sk	eP 08 38 19
		clear.				Ud	iP 08 37 47.0
						Crete (h = 30 km).	
"	15	Up	iPKP 02 46 34.1				
		Fiji Islands		"	15	Sk	iP 10 07 56.1
		(h = 560 km).				Italy.	
"	15	Ki	eP 02 47 11	"	15	Ud	iP 13 43 38.7
		Sk	e(P) 02 47 47			i	13 43 56.6
		Um	iP 02 47 23.1				
			i 02 47 30.2	"	15	Up	iSn 13 56 54.6
			i 02 47 46.4			iSg	13 57 09.5
		Ud	iP 02 47 48.0			Ki	iSg 13 59 43.5
		South of Japan (h = 25 km).				Sk	e 13 58 47
						iSg	13 59 00.8
"	15	Ki	iP 02 50 01.7			Um	iSg 13 57 41.2
		Um	iP 02 50 15.1			Ka	iSg 13 58 22.0
		Ud	eP 02 50 43			Ud	iSn 13 57 38.2
		South of Japan (h = 15 km).				iSg	13 58 09.9
						Gulf of Finland,	
"	15	Up	iP 08 18 26.3 C			59.8°N, 24.3°E.	
		i	08 18 29.6			Origin time = 13 55 15.	
		eS	08 22 52			Probably underwater	
						explosion.	
			microns sec				
		P	Z' 0.1 0.7	"	15	Up	eP 15 59 13
		S	N 0.3 4			Ki	iP 15 58 40.1
		M	E 3.3 15			i	15 58 52.4
		M	N 2.8 12			Um	iP 15 58 54.8
		M	Z 2.2 14			i	15 59 00.0
		D = 2850 km = 25 1/2°.				Bonin Islands (h = 30 km).	
		Ki	eP 08 19 34 C				
		eS	08 24 47	"	15	Ki	iP 19 02 12.6
		eSS	08 26 51			Sumatra (h = 50 km).	
		(cont.)					

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1967				1967			
May	16	Sk	epP 04 17 53	May	16	Up	---
		Um	iP 04 17 27.1				microns sec
			ipP 04 17 37.4			M	N 0.8 16
		Ud	eP 04 17 55			Ki	---
		South of Japan.					microns sec
		h = 40 km (Um).				M	E 0.3 15
"	16	Um	iP 05 19 00.5			M	N 0.3 15
		Ud	iP 05 19 32.7			M	Z 0.5 15
		Kurile Islands (h = 50 km).				Um	iP 16 15 26.6
						Iceland (h = 5 km).	
"	16	Um	iP 05 32 54.3	"	16	Um	iPKP 16 33 29.6
		Japan (h = 40 km).				Tonga Islands (h = 30 km).	
"	16	Ki	iSg 12 59 10.1	"	16	Up	iP 19 36 48.9
			i 12 59 20.7			Ki	iP 19 36 12.2 C
		Um	iSg 12 57 09.1				microns sec
		Ud	iSn 12 57 11.1			M	E 0.6 20
			iSg 12 57 42.5			M	N 0.3 15
		Gulf of Finland.				M	Z 0.5 15
		Origin time = 12 54 44.				Sk	eP 19 36 44
		Probably underwater				Gb	iP 19 37 08.4
		explosion.				Um	iP 19 36 28.4 C
"	16	Up	iP 13 10 49				i 19 36 41.6
			iS 13 21 18			Ka	iP 19 37 07.2
		D = 9650 km = 87°.				Ud	iP 19 36 56.2 C
		Ki	eP 13 10 39			South of Japan (h = 40 km).	
			iS 13 21 06	"	16	Ki	iP 19 44 54.3
			microns sec			Um	iP 19 45 14.8
		P	Z 0.3 7			Kurile Islands.	
		S	E 0.4 12	"	16	Up	iP 20 47 17.5
		S	N 0.2 9				i 20 47 23.5
		M	E 1.2 21			Ud	i(P) 20 48 16.4
		M	N 0.8 20			Probably local event,	
		M	Z 1.6 20			near Uppsala.	
		D = 9450 km = 85°.		"	16	Up	iPKP 23 30 18.8
		Um	iP 13 10 43.5			Ud	iPKP 23 30 20.7
			iPP 13 14 03				i 23 30 28.1
			iS 13 21 17			Tonga-Kermadec Islands	
		Guatemala (h = 100 km).				(h = 150 km).	
		Magn. = 5.7 (Ki).		"	17	Up	iP 00 43 12.1
"	16	Sk	eSg 15 12 16				i 00 43 14.1
		Ud	iPg 15 11 15.5			Ki	iP 00 42 15.3
			iSg 15 11 38.3				i 00 42 18.6
		D = 190 km = 1.7°.					microns sec
		South Norway,				P	Z' 0.1 1.0
		61.0° N, 10.7° E.				Sk	iP 00 42 41.1
		Origin time = 15 10 42.					i 00 42 44.9
		Solution obtained by				(cont.)	
		combination with Lille-					
		hammer reading.					

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
May 17	(cont.)			May 17	Um	iP	11 31 04.0
	Gb	iP	00 43 21.7		Dominican Republic		
		i	00 43 25.4		(h = 50 km).		
	Um	iP	00 42 44.1	" 17	Ki	eSg	12 41 13
		i	00 43 08.8		Um	iSg	12 39 16.7
	Ka	iP	00 43 35.4		Gulf of Finland.		
		i	00 43 37.4		Probably underwater		
	Ud	eP	00 43 06		explosion.		
	Alaska (h = 15 km).			" 17	Ud	eP	13 20 18
" 17	Sk	iP	02 36 46.0		Greece.		
	Alaska (h = 30 km).			" 17	Ki	iPKP	16 32 32.0
" 17	Up	---			Um	iPKP	16 32 39.8
			microns sec		Fiji Islands		
	M	E	1.0 20		(h = 80 km).		
	M	N	1.1 19	" 17	Up	iP	17 58 35.4
	Ki	iP	04 35 15.9				microns sec
			microns sec		P	N	0.2 3
	M	E	1.4 15		P	Z	0.3 3
	M	N	1.1 16		M	E	0.4 15
	M	Z	0.9 13		M	N	0.5 17
	Um	iP	04 34 50.4		M	Z	0.5 16
		i(S)	04 40 11		Ki	eP	17 59 27
	Ka	iP	04 34 19.8				microns sec
		i	04 34 33.0		P	Z	0.5 5
	Ud	eP	04 34 46		P	Z'	0.2 2.0
		i	04 34 49.3		M	E	0.4 13
	Turkey-Iran (h = 40 km).				M	N	0.6 17
" 17	Ki	iPKP	08 41 12.8		M	Z	1.0 18
	Sk	ePKP	08 41 22	Sk	iP		17 59 11.0
	Um	iPKP	08 41 19.8 C		i		17 59 46.5
	New Hebrides Islands			Gb	iP		17 58 34.0
	(h = 40 km).				iX		17 58 52.4
" 17	Ki	iP	09 45 24.0	Um	iP		17 58 58.3
	Um	iP	09 45 41.9		iPP		18 00 35.9
	Ud	iP	09 46 11.5		i		18 00 53
	Japan.				iS		18 05 21
" 17	Up	iP	10 01 56.5	Ka	iP		17 58 13.1
			microns sec		iX		17 58 30.6
	M	E	1.0 20	Ud	iP		17 58 45.0
	M	N	1.6 20		Red Sea (h = 40 km).		
	Ki	iP	10 01 30.1		Magn. = 5.8 (Up, Ki).		
			microns sec		The P-phases on all the		
	M	E	0.6 17		short-period records have		
	M	N	0.5 17		unusually long periods,		
	M	Z	0.4 13		generally around 2.5-3 sec.		
	Um	iP	10 01 38.6	" 17	Ud	eP	19 34 34
	Ud	iP	10 02 04.4		Greece.		
	Formosa (h = 50 km).						

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
May	17	Um	iPKP 21 52 57.5 Easter Island Ridge (h = 30 km).	May	18	Up	iSg 08 06 19.2
						Gb	iPg 08 04 40.5
							iSg 08 04 49.9
							iRg 08 04 54.3
"	18	Up	iP 04 18 00.6 C i 04 18 35.7 iS 04 27 05 microns sec P Z' 0.1 1.0 M E 1.5 20 M N 1.2 20 M Z 1.2 15 D = 7750 km = 69 1/2°.			Ka	e(Lg1) 08 06 02
						Ud	iPg 08 05 01.6
							iSg 08 05 29.3
						West coast of Sweden, 58.5°N, 11.3°E. Origin time = 08 04 24. Explosion?	
		Ki	iP 04 17 16.3 C iS 04 25 45 microns sec P Z' 0.1 1.2 S E 0.4 5 M E 1.4 17 M N 1.4 18 M Z 0.9 15 D = 6950 km = 62 1/2°.	18	Sk	e 08 20 23	
							iSg 08 20 32.4
						Um	iSg 08 22 08.7
						Ud	iSg 08 20 10.2
						West coast of Norway, 60.5°N, 5.6°E. Origin time = 08 18 01. Solution obtained by combination with Kongsberg and Lillehammer readings.	
		Sk	iP 04 17 52.0	"	18	Up	iP 11 33 37.6
		Gb	iP 04 18 21.5			i	11 33 47.6
		Um	iP 04 17 35.8 C			iS	11 42 42
			iS 04 26 19			microns sec	
		Ud	iP 04 18 06.9			P	Z' 0.2 1.0
		Japan (h = 40 km). Magn. = 5.7 (Up,Ki).				M	E 1.7 22
						M	N 1.7 21
"	18	Ki	iP 04 49 32.7			M	Z 1.1 17
		Um	iP 04 49 51.6			D = 7750 km = 69 1/2°.	
		Ud	eP 04 50 24			Ki	iP 11 32 54.2 C
		Japan (h = 30 km).					iS 11 41 22
						microns sec	
"	18	Gb	iRg 07 43 28.0			P	Z' 0.1 1.1
		Ka	eLg1 07 44 41			S	E 0.4 12
		Ud	iPg 07 43 36.2			M	E 1.1 15
			iSg 07 44 04.4			M	N 1.1 18
		West coast of Sweden, 58.5°N, 11.3°E. Origin time = 07 42 58. Explosion?				M	Z 1.0 16
						D = 6950 km = 62 1/2°.	
						Sk	iP 11 33 28.9 C
						Um	iP 11 33 13.4 C
						i	11 33 29.9
						iS	11 41 57
"	18	Gb	iSg 07 45 12.2			Ud	iP 11 33 44.2 C
			iRg 07 45 16.0			Japan (h = 40 km). Magn. = 5.6 (Up,Ki).	
		Ka	eLg1 07 46 29				
		Ud	iPg 07 45 23.7				
			iSg 07 45 51.0				
		West coast of Sweden, 58.5°N, 11.3°E. Origin time = 07 44 46. Explosion?		"	18	Up	iLg1 11 51 26
						Ki	iP 11 38 42.6
						Um	iP 11 38 33.3
						i	11 38 40.9
						iLg1	11 50 57
						(cont.)	

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
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1967				1967			
May	18	(cont.)		May	19	(cont.)	
		Ud	iP 11 38 54.8		Sk	iPKP 05 28 58.1 C	
			i 11 39 39.7			iX 05 29 20.3	
		Tadzhik SSR (h = 15 km).				i 05 29 26.3	
"	18	Sk	iP 11 40 47.7		Um	iPKP 05 28 52.7	
						iX 05 29 15.9	
"	18	Up	iP 12 00 50.2		Ud	iPKP 05 28 57.0 C	
		Ud	iP 12 00 51.6 C			iX 05 29 18.1	
		South of Kermadec Islands (h = 40 km).			The phase X arrives about 22 sec after PKP. It is either pPKP, which suggests a focal depth of 80 km, or it is PKP of another (somewhat stronger) shock in the same location.		
"	18	Up	i(PKP) 13 12 23.7				
		Ki	iPKP 13 12 27.0				
		Um	iPKP 13 12 20.0				
			i 13 12 42.9				
		South Sandwich Islands (h = 30 km).					
"	18	Up	iP 14 12 02.3				
			microns sec				
		P	Z' 0.1 0.9	"	19	Ki	iPKP 07 59 20.8
		Ki	iP 14 11 18.4 C			West of Macquarie Islands (h = 30 km).	
			i 14 11 26.9				
			i 14 11 48.0	"	19	Ki	iP 11 46 17.0
			microns sec			Ud	i(P) 11 47 29.7
		M	E 0.7 17				
		M	N 0.7 18	"	19	Up	iPKP 12 22 05.1
		M	Z 0.5 15			Sk	iPKP 12 21 57.9
		Sk	iP 14 11 53.6				i 12 22 08.4
			i 14 12 07.8			Um	iPKP 12 21 51.8
		Um	iP 14 11 38.3 C			Ka	iPKP 12 22 13.2
		Ud	iP 14 12 09.3			Ud	iPKP 12 22 05.8
		Japan (h = 40 km).				Kermadec Islands (h = 25 km).	
"	18	Up	iP 23 50 47.9				
			microns sec				
		P	Z' 0.1 0.7	"	19	Up	iP 13 33 02.1
		Ki	iP 23 50 14.9				microns sec
			microns sec			P	Z' 0.1 0.9
		P	Z' 0.2 0.8	"	19	Up	iP 16 01 15.7
		Sk	iP 23 50 46.0			Ki	iP 16 02 04.2
		Um	iP 23 50 28.4			Sk	iP 16 01 50.5 C
		Ud	iP 23 50 56.4			Gb	iP 16 01 15.5 C
		Japan (h = 40 km).				Ud	iP 16 01 25.9
		Magn. = 6.1 (Up, Ki).				Ethiopia (h = 15 km).	
"	19	Up	iX 05 29 25.9				
			microns sec				
		X	Z' 0.1 1.0	"	19	Up	iP 16 55 03.8
		Ki	iPKP 05 28 44.2 C			Aleutian Islands (h = 50 km).	
			iX 05 29 06.4				
			microns sec	"	20	Sk	iP 00 13 14.6
		PKP	Z' 0.3 1.4			Greece.	
		X	Z' 0.3 1.2	"	20	Ki	iP 01 15 48.7
		(cont.)				(cont.)	

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
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1967					1967				
May	20	(cont.)			May	20	(cont.)		
		Ud	iP	01 16 41.4			Um	iP	21 56 24.2
		Aleutian Islands					Ud	iP	21 56 25.6
		(h = 90 km).					Iran (h = 40 km).		
"	20	Up	iP	03 04 05.7	"	20	Up	iPn	23 20 32.7
			i	03 04 18.3				i	23 20 35.7
		Ki	iP	03 03 36.1				i	23 21 46.8
				microns sec				iSn	23 22 15.9
			P	Z' 0.1 1.0				iLgl	23 23 14
		Sk	iP	03 04 04.5					microns sec
		Um	iP	03 03 55.2				Pn	Z' 0.2 0.5
		Ud	eP	03 04 15				Sn	Z' 0.4 0.5
		Mariana Islands (h = 40 km).					Ki	iPn	23 19 31.3
"	20	Up	iP	08 54 51.2				i	23 19 35.2
			iPP	08 56 21.1				i!	23 19 49.4
		Ki	iP	08 54 55.1				iSn	23 20 34.3
			i	08 54 59.9				i	23 20 53
			iPP	08 56 33.2				iLgl	23 20 59
		Sk	iP	08 55 19.6				iSg	23 21 06
			i	08 55 29.1					microns sec
		Um	iP	08 54 46.6				Pn	Z' 0.1 1.0
			i	08 54 50.1				Sn	Z' 1.9 0.8
			i	08 54 57.1				M	E 2.1 6
		Ka	iP	08 55 00.4			Sk	iPn	23 20 26.7 C
		Ud	iP	08 55 07.6 D				iSn	23 22 12.2
		Kirghiz SSR (h = 30 km).						iLgl	23 23 06.5
"	20	Sk	iP	10 34 19.9			Gb	eP	23 21 20
"	20	Ud	iPKP	13 21 22.3				i	23 21 22.3
		Drake Passage (h = 30 km).						iS	23 23 35.3
"	20	Up	iP	15 11 48.7 C				iLgl	23 25 02.9
				microns sec			Um	iPn	23 19 44.6
			P	Z' 0.2 1.0				iPg	23 20 11.2
		Ki	iP	15 11 14.4 C				iSn	23 20 53.5
				microns sec				iSg	23 21 27
			P	Z' 0.3 1.3			Ka	iP	23 21 20.9
		Sk	iP	15 11 22.5 C				iS	23 23 38.1
		Gb	iP	15 11 48.1 C				iLgl	23 25 06.9
		Um	iP	15 11 33.8 C			Ud	iP	23 20 49.2
		Ka	iP	15 12 01.9 C				iS	23 22 46.6
		Ud	iP	15 11 41.1 C				i	23 23 39.1
		Nevada.						iLgl	23 23 53.4
		Origin time = 15 00 00.					Northwest Russia (h = 15 km).		
		Magn. = 6.2 (Up, Ki).					Lgl is extremely sharp and		
		Underground explosion.			"	21	has by far the largest		
		Surface waves are recorded					amplitudes in the whole		
		on Um long-period seismograms.					records.		
"	20	Ki	iP	21 56 47.8			Ki	ePn	04 21 48
		Sk	iP	21 56 46.1				iSn	04 22 46.2
		(cont.)						iLgl	04 23 07.8
								iSg	04 23 15.0
								D = 530 km = 4.8°	
							Sk	iSg	04 25 34.3
							(cont.)		

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1967

May 21 (cont.)
Um iSn 04 23 27.1
iSg 04 23 59.5
Northwest Russia,
67.4°N, 33.0°E.
Origin time = 04 20 35.
Explosion?

" 21 Up iP 07 30 44.5
i 07 30 54.0
microns sec
M E 1.7 18
M N 1.8 15
M Z 2.2 17
Ki e(P) 07 30 22
microns sec
M E 3.4 18
M N 2.5 18
M Z 3.6 18
Ud eP 07 30 37
Gulf of California
(h = 30 km).
Magn. = 5.8 (Up,Ki).

" 21 Up iP 08 32 13.6
microns sec
P Z' 0.1 0.8

" 21 Ud iP 10 40 45.5
Greece.

" 21 Up iP 18 42 18.0
i 18 42 20.6
Ki iP 18 42 28.6
Sk eP 18 42 45
i 18 42 47.0
Um iP 18 42 18.0
i 18 42 19.6
Ka iP 18 42 24.2
Ud iP 18 42 36.2
i 18 42 37.2
Hindu Kush (h = 140 km).
Multiple P.

" 21 Up iP 18 57 41.6 C
ipP 18 58 26.1
iSKS 19 07 48.1
iS 19 08 05
ipS 19 08 59
isS 19 09 19
microns sec
P E 0.8 3
P Z 2.2 3
P Z' 0.5 0.8
SKS E 5.1 5
SKS N 1.5 3
(cont.)

1967

May 21 (cont.)
Up microns sec
S E 3.8 3
S N 11 6
M E 3.4 20
M N 6.0 24
M Z 3.9 20
D = 9900 km = 89°.
Ki iP 18 57 40.6 C
ipP 18 58 24.6
isP 18 58 41
iSKS 19 07 43
iS 19 08 03
ipS 19 09 01
isS 19 09 17
microns sec
P E 1.3 5
P Z 4.8 4
P Z' 2.5 1.4
SKS E 6.6 10
SKS N 1.4 10
S E 15 12
S N 20 10
S Z 2.3 6
M E 4.0 18
M N 3.5 15
M Z 5.6 21
D = 9800 km = 88°.
Sk iP 18 57 54.9 C
ipP 18 58 39.8
iSKS 19 08 05.0
Gb iP 18 57 54.6 C
ipP 18 58 41.2
iPP 19 01 30.5
iS 19 08 33.1
Um iP 18 57 38.1 C
ipP 18 58 20.6
i 19 01 41
i 19 07 15.1
i 19 07 30
iSKS 19 07 47
iS 19 07 58.8
Ka iP 18 57 44.9 C
ipP 18 58 31.1
iPP 19 01 18.3
iS 19 08 13.9
Ud iP 18 57 50.9 C
ipP 18 58 34.9
iSKS 19 07 57.9
iS 19 08 25.3
Sumatra. h = 180 km
(Up,Ki,Sk,Gb,Um,Ka,Ud).
Magn. = 7.0 (Up,Ki).

" 22 Up iP 02 53 39.0
Sk eP 02 53 34
(cont.)

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1967				1967			
May	22	(cont.)		May	23	Up	iP 02 03 41.7 C
		Um iP 02 53 16.8					microns sec
		Japan (h = 60 km).				P	Z' 0.1 0.5
"	22	Up iPKP 11 43 33.3				M	E 0.7 16
		Sk iPKP 11 43 22.4 C				M	N 0.9 18
		Um iPKP 11 43 17.4				M	Z 1.1 18
		Ka iPKP 11 43 38.7 C			Ki	iP 02 02 54.8 C	
		Ud iPKP 11 43 31.0					microns sec
						P	Z' 0.1 1.0
"	22	Ka iPKP 12 27 11.2				M	E 1.3 16
		Ud iPKP 12 26 47.6				M	N 0.6 15
		Fiji Islands (h = 610 km).				M	Z 1.2 16
"	22	Ki e(Pn) 12 54 32			Sk	iP 02 03 30.1	
		iPg 12 54 44.5			Gb	iP 02 04 02.4	
		iSn 12 55 21.4			Um	iP 02 03 15.8 C	
		iLg1 12 55 37.6			Ka	iP 02 04 04.5	
		Um iSg 12 56 31.6			Ud	iP 02 03 47.2	
		Northwest Russia.			Kurile Islands (h = 20 km).		
		Explosion?			Magn. = 5.8 (Up, Ki).		
"	22	Ka iP 17 48 50.7 D		"	23	Up eP 06 04 00	
		Afghanistan-USSR (h = 40 km).				i 06 04 10.7	
"	22	Ki iSg 18 26 42.9			Sk	eP 06 03 40	
		Sk iSg 18 26 47.5			Um	iP 06 03 31.2	
		Um iSg 18 27 08.5			Ud	eP 06 04 05	
		Nordlands Fylke, Norway.			Kamchatka (h = 40 km).		
"	22	Up iP 19 51 16.6		"	23	Um iP 07 31 49.9	
		Ki iP 19 52 20.8		"	23	Gb iP 07 57 43.4	
		Ud iP 19 51 26.4 C		"	23	Ki iP 08 16 22.0	
		Turkey (h = 50 km).		"	23	Up iP 08 47 28.7	
"	22	Up iP 21 03 35.0 C			Ki	iP 08 47 28.2	
		Ki iP 21 03 09.4 C				i 08 47 39.1	
		Um iP 21 03 18.7					microns sec
		Ud iP 21 03 44.3 C				P	Z' 0.1 1.0
		Ryukyu Islands (h = 130 km).			Sk	iP 08 47 42.0	
"	22	Sk eP 22 53 56			Um	iP 08 47 25.0	
		Mexico (h = 40 km).				i 08 47 39.1	
"	23	Up iP 01 33 23.2				i 08 48 08.0	
		microns sec			Ud	iP 08 47 37.4	
		P Z' 0.1 0.5			Sumatra (h = 60 km).		
		Ki iP 01 32 36.5		"	23	Gb i(P) 10 10 45.3	
		Sk iP 01 33 12.3		"	23	Ki iP 12 04 02.4	
		Um iP 01 32 57.9				iS 12 05 19.7	
		Ka iP 01 33 45.8				eT 12 09 11	
		Ud iP 01 33 28.8 C				i 12 09 32.0	
		Kurile Islands (h = 30 km).					microns sec
						M	E 0.3 13

(cont.)

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1967				1967			
May	23	(cont.)		May	23	(cont.)	
		Ki	microns sec			Um	iPKP 19 36 31.6 C
		M	N 0.5 20				ipPKP 19 37 03.4
		M	Z 1.0 20				ipPP 19 39 00.2
			D = 780 km = 7°.				i 19 39 53.6
		Sk	iP 12 04 37.8 D			Ud	iPKP 19 36 21.7
			iS 12 06 17.8				South Sandwich Islands.
		Um	iP 12 04 49.9				h = 110 km (Ki,Um).
		Ud	iP 12 05 25.8				
			Norwegian Sea (h = 30 km).	"	23	Up	iP 21 07 25.9
"	23	Gb	i(P) 12 50 38.7				i 21 07 37.2
"	23	Up	iP 14 11 48.4			Ki	iP 21 06 33.3
			i 14 12 32.1			Sk	eP 21 07 07
			microns sec				i 21 07 10.7
		P	Z' 0.1 0.6			Gb	iP 21 07 45.9
		Ki	iP 14 11 13.8			Um	iP 21 06 57.4
			microns sec			Ka	iP 21 07 50.1
		P	Z' 0.1 1.0			Ud	eP 21 07 28
		M	E 0.5 15				Kamchatka (h = 30 km).
		M	N 0.3 15	"	24	Up	iP 01 46 18.5
		M	Z 0.5 14				ipP 01 46 31.4
		Sk	iP 14 11 21.9 C			Ki	iP 01 45 27.6
		Gb	iP 14 11 48.0				ipP 01 45 40.0
		Um	iP 14 11 33.0 C			Um	ipP 01 46 04.3
			i 14 11 37.0			Ud	iP 01 46 25.0
		Ka	iP 14 12 01.2				ipP 01 46 35.4
			i 14 12 10.8				i 01 46 46.9
		Ud	iP 14 11 40.2 C				Kurile Islands.
			i 14 11 52.5				h = 40 km (Up,Ki,Ud).
			Nevada.	"	24	Sk	iP 02 28 46.0
			Origin time = 14 00 00.			Um	iP 02 28 40.8
			Magn. = 6.0 (Up,Ki).	"	24	Ki	eP 04 08 47
			Underground explosion.				Kodiak Island (h = 15 km).
"	23	Up	iPKP 15 44 56.9	"	24	Up	iP 09 16 38.6
		Um	iPKP 15 44 37.5	"	24	Um	iPg 12 05 27.0
			Kermadec Islands (h = 90 km).				iSg 12 05 45.9
"	23	Up	iPKP 19 36 23.1				D = 160 km = 1.4°.
		Ki	iPKP 19 36 38.9 C				Origin time = 12 05 00.
			ipPKP 19 37 09.5				Probably explosion.
			isPP 19 39 45.8				
			iSKP 19 40 00				
			e 19 58 21	"	24	Ki	iPn 13 57 29.9
			microns sec				iSn 13 58 20.6
		PKP	Z' 0.5 1.5				iLg1 13 58 35.5
		SKP	N 0.5 7				D = 470 km = 4.2°.
		M	E 0.7 19				Probably northwest Russia.
		M	N 0.9 19				Origin time = 13 56 24.
		M	Z 1.4 19				Explosion?
		Sk	iPKP 19 36 28.1				
			(cont.)				

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1967				1967			
May	24	Ki	iPg 16 14 32.4 C	May	26	(cont.)	
			iSg 16 14 38.0			Um	iSg 11 58 42.2
			microns sec				D = 160 km = 1.4 ⁰ .
			Sg Z' 0.3 0.6				Origin time = 11 57 55.
			D = 40 km = 0.4 ⁰ .				Explosion.
		Sk	iSg 16 17 08.2				
		Um	iLg1 16 16 16.7	"	26	Gb	iP 12 30 48.8
			Swedish Lapland,			i	12 30 52.5
			67.4 ⁰ N, 20.8 ⁰ E.				
			Origin time = 16 14 24.	"	26	Um	iPn 12 40 21.3
"	24	Up	iP 17 29 57.9			iLg1	12 40 36.6
		Ki	iP 17 30 40.0				D = 160 km = 1.4 ⁰ .
		Ud	iP 17 30 03.3				Origin time = 12 39 54.
			Lake Nyassa (h = 30 km).				Explosion.
"	24	Up	iP 22 49 02.4	"	26	Sk	ePn 14 11 41
		Ki	iP 22 48 09.8			iSg	14 12 32.7
		Sk	iP 22 48 47.6			Um	iPn 14 12 26.8
		Gb	iP 22 49 23.1			iSn	14 13 53.2
		Ud	eP 22 49 05			Ud	iSn 14 13 18.0
			Kamchatka (h = 25 km).				Probably off west coast
"	25	Ki	iP 01 31 18.2				of Norway. No satisfactory
		i	01 31 44.8				agreement between the data.
		Um	i(P) 01 32 12.8	"	26	Up	iP 15 11 49.9
"	25	Um	iP 17 14 59.8 D			i	15 12 20.7
"	25	Up	iP 19 02 26.2			i	15 14 32.6
		Ud	iP 19 02 33.8			Ki	iP 15 11 15.3
			Japan (h = 330 km).			Sk	iP 15 11 23.7
"	25	Up	iP 21 28 10.8 C			Gb	iP 15 11 49.8
"	26	Um	i(P) 10 00 13.6			Um	iP 15 11 34.8
		Ud	e(P) 10 00 18	"	26	Ud	iP 15 11 42.0
"	26	Ki	iP 10 35 35.9				Nevada.
		Sk	iP 10 35 41.8				Origin time = 15 00 00.
		i	10 35 50.2	"	26	Um	iP 15 28 12.8
		iS	10 37 30.7			Ki	eP 15 30 33
		Ud	eP 10 36 28			Sk	eP 15 30 44
			Jan Mayen (h = 30 km).			Um	iP 15 31 12.9
"	26	Up	iP 10 47 18.8			Ud	eP 15 31 22
		Um	iP 10 46 58.2				Jan Mayen.
		Ud	iP 10 47 25.7	"	26	Ki	iP 15 37 15.4
		ipP	10 47 45.5			Sk	iP 15 37 25.8
			South of Japan.			i	15 37 42.6
			h = 70 km (Ud).			Um	iP 15 37 53.2
"	26	Um	iPn 11 58 22.3			Ud	eP 15 38 06
		iLg1	11 58 38.2				Jan Mayen.
		(cont.)		"	26	Ki	iP 15 40 00.0
						(cont.)	

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1967

May 26 (cont.)
 Ki i 15 40 06.2
 Sk eP 15 40 02
 iS 15 41 54.2
 Ud eP 15 40 53
 Jan Mayen (h = 30 km).
 " 26 Ki iP 17 37 49.2
 i 17 37 56.7
 Sk eP 17 37 19
 Um iP 17 37 03.6
 i 17 37 08.4
 Ud eP 17 36 44
 Rumania (h = 130 km).
 " 26 Up iP 19 45 22.4
 Ki iP 19 44 51.7
 Um iP 19 45 05.0
 Ud iP 19 45 28.9
 Volcano Islands
 (h = 360 km).
 " 26 Ki iP 21 23 27.1
 Sk iP 21 23 33.2
 Ud eP 21 24 19
 " 26 Ki iP 21 44 31.5
 " 27 Up iP 01 50 33.0
 iPP 01 52 15.6
 iLg1 02 04 34
 microns sec
 M E 0.8 9
 M N 0.6 10
 M Z 1.1 9
 Ki iP 01 50 31.1 C
 i 01 50 37.3
 e 02 02 25
 iLg1 02 04 13
 microns sec
 M E 1.5 10
 M N 1.2 11
 M Z 1.6 10
 Sk iP 01 50 54.9
 Um iP 01 50 25.7
 i 01 50 33.3
 iPP 01 51 59
 iS 01 56 31
 iLi 02 02 30
 iLg1 02 03 56
 Ud iP 01 50 49.6 C
 Sinkiang (h = 30 km).
 Well developed higher-mode
 surface waves.

1967

May 27 Ki iP 02 01 10.1
 Gb eP 01 59 32
 Ud iP 01 59 56.4
 Algeria (h = 30 km).
 " 27 Sk iSg 02 43 52.7
 Ud iPg 02 42 11.6
 iSg 02 42 18.1
 D = 60 km = 0.5°.
 " 27 Up iP 06 37 22.1 C
 Ki iP 06 37 03.7 C
 Sk iP 06 37 31.8
 Gb iP 06 37 45.9
 Um iP 06 37 08.4
 Ud iP 06 37 34.8
 " 27 Ki i(Sg) 07 34 01.6
 " 27 Up iP 12 50 31.1
 iPP 12 52 12.8
 Ki iP 12 50 39.5
 iPP 12 52 24.1
 Sk iP 12 50 56.2
 iPP 12 52 45.2
 Um iP 12 50 29.8 C
 iPP 12 52 05.3
 Ka iP 12 50 36.2
 i 12 50 40.3
 Ud iP 12 50 47.5 C
 i 12 52 20.7
 iPP 12 52 31.1
 Hindu Kush (h = 110 km).
 " 27 Up iP 17 33 50.7 C
 iPP 17 33 59
 iS 17 42 42
 iScS 17 43 43
 iP'P' 18 02 20.4
 microns sec
 P N 0.7 2
 P Z 1.5 3
 P Z' 0.7 1.0
 S E 0.6 4
 S N 1.1 5
 M E 3.1 20
 M N 13 24
 M Z 11 24
 D = 7450 km = 67°.
 Ki iP 17 32 57.3 C
 iPP 17 33 06.8
 iPa 17 36 32
 iS 17 40 57

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

May 27 (cont.)

Ki eScS 17 42 43
iP'P' 18 02 36.0
i 18 02 44.2
microns sec
P N 0.6 8
P Z 2.2 7
P Z' 0.4 1.0
S E 1.1 8
S N 1.1 10
M E 9.5 19
M N 8.4 21
M Z 14 20
D = 6550 km = 59°.
Sk iP 17 33 30.7 C
iP'P' 18 02 31.9
Gb iP 17 34 07.9 C
ipP 17 34 18.0
Um iP 17 33 23.2 C
ipP 17 33 32.2
iPP 17 35 40
iPa 17 37 13
iS 17 41 46
iPS 17 42 02
iP'P' 18 02 17.1
i 18 02 33.7
Ka iP 17 34 13.5 C
ipP 17 34 23.8
Ud iP 17 33 52.0 C
ipP 17 34 01.8
iP'P' 18 02 17.4
Aleutian Islands. h = 35 km " 27
(Up,Ki,Gb,Um,Ka,Ud).
Magn. = 6.4 (Up,Ki).

" 27 Up iP 19 13 59.5 C
iPP 19 15 42.0
iPcP 19 15 48
iS 19 20 33
iSS 19 23 43
microns sec
P Z' 0.3 0.6
PP Z' 0.2 1.0
S E 0.3 3
S N 0.5 3
M E 2.1 14
M N 7.3 9
M Z 2.4 13
D = 4950 km = 44 1/2°.
Ki iP 19 14 00.7 C
i 19 15 19.7
ePP 19 15 46
iS 19 20 33
iSS 19 23 46
(cont.)

1967

May 27 (cont.)

Ki iLg1 19 29 28
microns sec
P E 0.4 5
P Z 0.6 4
P Z' 0.6 1.0
PP E 0.4 4
S E 1.1 13
S N 0.7 6
M E 6.3 20
M N 15 18
M Z 6.8 17
D = 4950 km = 44 1/2°.
Sk iP 19 14 22.1 C
iPP 19 16 08.2
Gb iP 19 14 22.1 C
i 19 14 24.7
i(P) 19 16 17.6
Um iP 19 13 54.2 C
iPP 19 15 34
iPcP 19 15 46.6
i 19 15 59.1
iS 19 20 18
iSS 19 23 37
Ka iP 19 14 07.2
i 19 14 09.6
Ud iP 19 14 15.8
iPP 19 16 06.1
Kashmir-Sinkiang (h = 40 km).
Magn. = 6.1 (Up,Ki).

Ki iP 20 21 26.2
Um iP 20 21 44.4
Ud iP 20 22 16.6
Japan (h = 70 km).

" 28 Up iP 01 42 45.2 C
iS 01 51 28
microns sec
P Z' 0.1 0.9
M E 0.4 20
M N 1.1 22
M Z 0.7 22
D = 7400 km = 66 1/2°.
Ki iP 01 41 51.7 C
e(S) 01 50 07
microns sec
P Z' 0.1 1.0
(S) E 0.3 7
M E 0.6 20
M N 0.5 19
M Z 0.9 19
Sk iP 01 42 25.6 C
Gb iP 01 43 02.5 C
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
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1967				1967			
May	28	(cont.)		May	28	Um	i(Sg) 09 45 46.0
		Um	iP 01 42 17.3				
			iS 01 50 42	"	28	Up	---
		Ka	iP 01 43 08.8 C				microns sec
		Ud	iP 01 42 46.7 C			M	N 1.0 17
		Aleutian Islands (h = 50 km).				Ki	eP 12 10 51
		Magn. = 5.5 (Up,Ki).					microns sec
"	28	Up	iP 03 46 41.4			M	E 0.6 16
						M	N 0.6 16
"	28	Up	iP 04 12 35.9			M	Z 0.8 16
		Ki	iP 04 12 04.6			Um	iP 12 10 43.0
		Um	iP 04 12 17.6				eSS 12 19 26
		Ud	eP 04 12 39			Ka	iP 12 10 52.6
		Japan (h = 30 km).				Ud	eP 12 11 01
						Tadzhik SSR (h = 30 km).	
"	28	Up	iP 04 14 52.5 C	"	28	Ki	iP 12 30 27.9
			iPn 04 16 00.1			Um	iP 12 29 51.9
			iLg1 04 26 32			Ka	iP 12 29 03.7
			microns sec				ipP 12 29 14.2
		P	Z' 0.2 0.7			Uganda. h = 40 km (Ka).	
		M	E 0.2 9				
		M	Z 0.4 9	"	28	Ki	iPn 13 26 44.8
		Ki	iP 04 14 37.1 C				iSn 13 27 33.8
			iPn 04 15 36.8				iLg1 13 27 47.6
			microns sec				D = 460 km = 4.1 ⁰ .
		P	Z' 0.3 0.5			Um	iSg 13 29 18.6
		Sk	iP 04 15 08.1 C			Probably northwest Russia.	
			i 04 15 19.8			Origin time = 13 25 39.	
			iPP 04 16 30.7			Explosion?	
		Gb	iP 04 15 21.1				
			iPP 04 16 46.6	"	29	Ki	iP 02 43 41.8
		Um	iP 04 14 37.2			Um	iP 02 43 58.9
			iPn 04 15 38.0				
			iPP 04 15 52.1	"	29	Up	iP 04 59 10.2
		Ka	iP 04 15 08.5 C			Ki	iP 04 58 44.3 C
			iPP 04 16 28.6				i 04 59 16.6
		Ud	iP 04 15 09.1 C				microns sec
			iPn 04 16 17.9			P	Z' 0.1 1.0
			iPP 04 16 32.9			Sk	eP 04 59 08
		Kazakh SSR.					i 04 59 39.6
		Origin time = 04 08 00.				Um	iP 04 58 54.5 C
		Magn. = 6.2 (Up,Ki).				Ud	iP 04 59 16.7
		Underground explosion.				Mariana Islands (h = 30 km).	
"	28	Ki	iSKP 06 50 52.7	"	29	Um	iPn 10 45 23.1
		Um	iSKP 06 51 03.0				iPg 10 45 25.1
		Ud	iPKP 06 48 22.3				iLg1 10 45 39.7
			eSKP 06 51 15				iSg 10 45 43.4
		Tonga-Kermadec Islands					iRg 10 45 49.4
		(h = 440 km).					D = 160 km = 1.4 ⁰ .
						Origin time = 10 44 56.	
"	28	Sk	iP 07 14 55.6			Explosion.	
						Very sharp and well-defined	
"	28	Ki	iP 07 29 10.3			phases.	
		Mariana Islands (h = 100 km).					

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
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1967					1967				
May	29	Ud	iP	11 00 20.0	May	30	(cont.)		
"	29	Um	iPg	11 20 24.5			Up	iRg	07 36 50.3
			iLg1	11 20 38.5				D = 170 km = 1.5 ⁰ .	
			iSg	11 20 42.5				Origin time = 07 35 54.	
				D = 160 km = 1.4 ⁰ .				Explosion.	
				Origin time = 11 19 56.	"	30	Up	iP	10 05 47.2
				Explosion.				i	10 05 50.3
"	29	Ki	ePKP	11 28 34			Ki	iP	10 04 54.2 D
		Um	ePKP	11 28 42					microns sec
		Ka	ePKP	11 28 53				P	Z' 0.1 1.0
		Ud	iPKP	11 28 42.2			Sk	iP	10 05 25.9
				Fiji Islands (h = 240 km).			Um	iP	10 05 19.9
"	29	Um	iP	12 34 54.4			Ud	iP	10 05 46.7
								i	10 05 50.2
									Aleutian Islands (h = 30 km).
"	29	Ki	iP	13 30 37.3	"	30	Ki	iP	10 10 31.8
			i(Sg)	13 30 54.2			Um	iP	10 10 57.0
"	29	Up	iP	21 12 39.5 C			Ud	iP	10 11 22.9
			i	21 12 45.5					Aleutian Islands (h = 30 km).
			ipP	21 13 03.3	"	30	Ki	ePn	10 53 49
			iS	21 21 33				iSn	10 54 49.5
				microns sec				iLg1	10 55 08.7
			P	Z' 0.2 0.5					D = 570 km = 5.1 ⁰ .
			M	N 0.3 14					Possibly northwest Russia.
		Ki	iP	21 11 54.7 C					Origin time = 10 52 30.
			iS	21 20 09					Explosion?
				microns sec	"	30	Ka	iP	11 15 58.1
			P	Z 0.4 4					
			P	Z' 0.3 1.2	"	30	Um	iPn	11 58 20.4
			S	E 0.4 10				iLg1	11 58 33.9
			S	N 0.3 9					D = 140 km = 1.2 ⁰ .
			M	E 0.2 15					Origin time = 11 57 56.
			M	N 0.2 15					Explosion.
			M	Z 0.5 17	"	30	Um	iPn	12 43 21.3
		Sk	iP	21 12 29.9 C				iLg1	12 43 35.9
		Gb	iP	21 13 01.0					D = 140 km = 1.2 ⁰ .
			ipP	21 13 24.5					Origin time = 12 42 57.
		Um	iP	21 12 14.7 C					Explosion.
			iS	21 20 46	"	30	Ki	iP	14 39 55.1
		Ka	iP	21 13 00.8					microns sec
			ipP	21 13 24.5				M	E 0.3 14
		Ud	iP	21 12 45.9 C				M	N 0.2 16
			ipP	21 13 08.9				M	Z 0.4 15
				Japan. h = 90 km			Um	iP	14 40 04.5
				(Up, Gb, Ka, Ud).				iS	14 50 27
				Magn. = 6.0 (Up, Ki).					Gulf of California
"	30	Um	iPg	07 36 22.6					(h = 30 km).
			iLg1	07 36 40.6					
			iSg	07 36 42.9					
				(cont.)					

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
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1967					1967				
May	30	Up	iP	23 59 08.4	May	31	Up	iP	16 39 20.9
	-31	Ki	iP	00 00 14.0 C			Ki	iP	16 39 01.3
			iX	00 00 27.8				ipP	16 39 12.0
		Sk	iP	23 59 47.7 C			Ud	iP	16 39 29.3
			iX	00 00 01.2				ipP	16 39 39.3
		Gb	iP	23 59 04.1			Samar.		
		Um	iP	23 59 39.0 C			h = 40 km (Ki,Ud).		
		Ka	iP	23 58 39.1					
		Ud	iP	23 59 17.4 C	"	31	Ud	iP	17 10 29.0
			iX	23 59 31.2					
		Eastern Mediterranean Sea			"	31	Up	iP	21 01 40.7 C
		(h = 30 km).							
"	31	Um	iP	00 13 59.3	"	31	Up	iP	21 34 15.0
"	31	Ki	e(Sg)	05 02 36	"	31	Ud	iP	21 34 00.4
"	31	Um	iPg	07 48 28.8					
			iSg	07 48 48.8					
		Explosion.							
"	31	Up	iP	10 58 00.0			Markus Båth November 17, 1967		
		Um	i(P)	10 58 01.7					
		Ud	iP	10 58 11.7					
"	31	Up	iP	11 50 04.6					
		Ki	iP	11 50 15.9					
		Sk	iP	11 49 53.5 C					
			ipP	11 50 12.0					
		Gb	iP	11 49 46.3					
		Ka	iP	11 49 56.6					
		Ud	iP	11 49 52.9					
			ipP	11 50 10.4					
		Windward Islands.							
		h = 70 km (Sk,Ud).							
"	31	Ki	i(Sn)	13 18 09.1					
			i(Lg1)	13 18 26.5					
"	31	Ki	iSg	16 17 46.4					
		Sk	eSg	16 17 51					
		Um	eSg	16 18 13					
		Nordlands Fylke, Norway.							
"	31	Up	iP	16 20 00.2					
		Ki	iP	16 20 08.5					
		Um	iP	16 19 57.8					
		Ka	iP	16 20 04.5					
		Hindu Kush (h = 270 km).							

Seismological Institute
Uppsala

SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, SKALSTUGAN, GÖTEBORG,
UMEÅ, KARLSKRONA and UDDEHOLM

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
Göteborg	(Gb):	57°41.9'N,	11°58.7'E;	h = 66 m
Umeå	(Um):	63°48.9'N,	20°14.2'E;	h = 16 m
Karlskrona	(Ka):	56°09.9'N,	15°35.5'E;	h = 11 m
Uddeholm	(Ud):	60°05.4'N,	13°36.4'E;	h = 240 m

JUNE 1 - 30, 1967
.....

1967					1967				
June	1	Um	i(P)	02 58 52.1	June	1	(cont.)		
"	1	Up	iP	03 47 04.9 C		Sk	iP'P'	04 15 40.2	
			i	03 47 06.0		Gb	iP	03 47 19.3	
			iPcP	03 47 34.4		Um	iP	03 46 38.3 C	
			iPcS	03 51 32.2			i	03 46 39.7	
			eS	03 55 47			i(pP)	03 46 54.3	
			iScS	03 56 54			iPcS	03 51 14.1	
			iP'P'	04 15 28			eS	03 54 55	
				micr sec			iScS	03 56 24	
			P Z'	0.1 1.0		Ka	iP'P'	04 15 40.2	
			P'P'Z'	0.2 2.0			iP	03 47 28.1	
			M E	0.7 23			ipP	03 47 47.2	
			M N	1.2 23			iP'P'	04 15 19.7	
			M Z	1.1 23		Ud	iP	03 47 04.0 C	
			D = 7350 km = 66°.				iPcS	03 51 31.0	
							iP'P'	04 15 30.1	
		Ki	iP	03 46 11.0 C			Aleutian Islands.		
			i	03 46 12.4			h = 70 km (Ki,Um,Ka).		
			i(pP)	03 46 33.3			Magn. = 5.8 (Up,Ki).		
			i	03 50 10			Multiple P (Up,Ki,Um).		
			iPcS	03 50 56.0			Clear core-reflected phases,		
			iS	03 54 09			also on short-period records.		
			iScS	03 55 53					
			iP'P'	04 15 50.0		"	1	Ud eP	06 09 29
				micr sec				Sumatra (h = 170 km).	
			P Z'	0.2 1.0		"	1	Up iP	10 26 33.5
			S N	0.3 9				Ki iP	10 25 39.1
			P'P'Z'	0.1 2.0				Sk iP	10 26 15.8
			M E	0.7 17				Gb iP	10 26 53.5 D
			M N	0.7 20				Um iP	10 26 04.8
			M Z	1.6 22				Ka iP	10 26 57.8
			D = 6450 km = 58°.					Ud iP	10 26 36.6
		Sk	iP	03 46 41.7 C				Kamchatka (h = 30 km).	
			iPcP	03 47 18.5					
			iPcS	03 51 15.9					
		(cont.)							

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Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

June 2

Up

iP

06 42 31.8

1967

June 3

(cont.)

Ki

iP

09 18 17.8 C

i

ipP

09 18 25.3

Ki

eP

06 42 37.1

iS

09 25 50

i

06 43 06

iScS

09 28 03

Um

iP

06 43 11.0

micr

sec

iPcP

06 42 51.2

P

N

0.3

6

iS

06 43 13.9

P

Z

0.4

7

iS

06 52 16

P

Z'

0.2

1.0

Ka

iP

06 42 09.2 C

pP

Z'

0.6

1.4

Atlantic Ocean (h = 30 km).

S

N

0.3

8

M

E

0.8

18

M

N

1.5

21

M

Z

2.5

20

"

2

Ki

eP

08 20 34

D = 6000 km = 54°.

i

08 20 46.6

Gb

iP

09 19 24.8 C

Um

iP

09 19 32.2

Um

iP

08 20 08.2

ipP

09 19 46.5 C

Possibly, these are instead Sg-phases from a regional event.

ipP

09 18 55.6

"

2

Gb

iP

18 41 55.6

iS

09 26 44

Um

iP

09 18 46.5 C

"

2

Up

iP

20 24 46.6

iP'P'

09 48 35.1

Ki

iP

20 26 00.0

Ka

iP

09 19 36.4 C

Gb

eP

20 24 27

ipP

09 19 43.8

Um

eP

20 25 25

i

09 20 00.5

Ka

iP

20 24 06.6

Ud

iP

09 19 09.3 C

i

20 24 13.5

ipP

09 19 18.4

Ud

iP

20 24 49.4

Kodiak Island. h = 30 km (Up, Ki, Gb, Um, Ka, Ud).

Sicily (h = 260 km).

Magn. = 5.6 (Up, Ki).

The amplitude ratio pP/P is on the average = 2.2 on Z'-records.

"

2

Up

iP

21 52 31.0 C

"

3

Up

iSKS

06 35 38

iS

06 36 43

iPS

06 38 24

Ki

micr

sec

M

E

0.5

18

Um

ePP

06 29 20

iS

06 36 54

i

06 38 48

Peru (h = 30 km).

"

3

Up

iP

07 36 39.5

i

07 36 56.1

"

3

Up

iP

09 55 36.3

i

09 55 39.6

Um

iP

09 55 17.2

"

3

Ki

iPn

10 31 13.0

iSn

10 32 09.1

i(Lg1)

10 32 30.2

D = 520 km = 4.7°.

Probably northwest Russia. Origin time = 10 29 59. Explosion?

"

3

Up

iP

09 19 13.1 C

ipP

09 19 21.4

iS

09 27 33

iScS

09 28 59

iP'P'

09 48 21.1

micr

sec

P

Z'

0.1

1.0

pP

Z'

0.2

1.0

M

E

0.5

19

M

N

0.8

19

M

Z

1.1

22

D = 6850 km = 61 1/2°.

(cont.)

"

3

Ki

iSg

10 38 21.9

Um

iSg

10 38 49.4

Possibly Nordlands Fylke, Norway.

"

3

Up

iP

13 21 28.7

Ki

iP

13 21 34.9 C

Gb

iP

13 21 15.2

Ud

iP

13 21 20.2

ipP

13 21 57.4

Peru-Brazil. h = 150 km (Ud).

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

June 3

Ki

eL

16 42

micr sec

M E 0.6 17

M N 0.3 11

M Z 0.3 11

Aegean Sea.

" 3 Um iP 19 41 42.2

i(Sg) 19 42 15.8

" 3 Up i(P) 20 08 06.3

Um i(P) 20 09 00.6

" 4 Up iP 05 37 25.3 C

ipP 05 37 36.1

micr sec

P Z' 0.3 1.0

M E 0.6 16

M N 0.9 17

M Z 0.7 15

Ki iP 05 36 33.2 C

ipP 05 36 43.6

micr sec

P Z' 0.2 1.0

M E 0.7 17

M N 0.6 17

M Z 1.3 18

Gb iP 05 37 45.7 C

ipP 05 37 56.5

Um iP 05 36 57.4 C

ipP 05 37 08.0

i 05 39 50.5

Ka iP 05 37 48.9 C

Ud iP 05 37 29.2 C

ipP 05 37 40.1

Kamchatka. h = 40 km

(Up,Ki,Gb,Um,Ka,Ud).

Magn. = 6.1 (Up,Ki).

" 4 Up iP 06 34 18.1 C

micr sec

P Z' 0.1 1.0

Ki iP 06 33 24.5

ipP 06 33 36.2

micr sec

P Z' 0.1 1.0

Gb iP 06 34 38.2

Um iP 06 33 50.3 C

ipP 06 34 00.9

Ka iP 06 34 41.7

Ud iP 06 34 22.0 C

ipP 06 34 32.8

Kamchatka. h = 40 km

(Ki,Um,Ud).

Magn. = 5.7 (Up,Ki).

1967

June 4

Up

iP

06 45 02.5

ipP 06 45 13.1

Ki iP 06 44 10.1 C

Gb iP 06 45 23.0

Um iP 06 44 34.8 C

ipP 06 44 45.2

Ud iP 06 45 06.5

Kamchatka. h = 40 km

(Up,Um).

According to our inter-

pretation, this shock and

the two preceding ones

have occurred at very

nearly the same depth

(40 km), which disagrees

with USCGS.

" 4 Ki ePn 13 57 43

i 13 58 06.3

iSn 13 58 32.9

iLg1 13 58 46.3

" 4 Ud iP 16 46 39.0

" 4 Up iP 18 47 57.7

" 5 Up iPKP 01 40 41.0

ePKS 01 44 24

micr sec

M N 1.0 19

M Z 0.9 18

Ki iPKP 01 40 30.2

ePKS 01 44 01

micr sec

PKS E 0.4 10

PKS N 0.4 11

PKS Z 0.5 12

M E 1.1 20

M N 1.0 20

M Z 1.3 18

Um iPKP 01 40 33.2 C

i 01 40 47.0

i 01 41 28.6

iPKS 01 44 12

Ka iPKP 01 40 49.8

i 01 41 00.1

i 01 41 10.4

Ud iPKP 01 40 43.0

Tonga Islands (h = 30 km).

Magn.= 5.8 (Up,Ki).

" 5 Ki iP 05 24 45.9

Alaska (h = 30 km).

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
June	5	Up	iP	11 21 17.9	June	6	Ud	iP	21 13 35.8 C
				micr sec					
			P	Z' 0.1 0.5	"	7	Ki	eP	03 01 47
		Ki	iP	11 20 50.1 D			Um	iP	03 01 50.3
"		Ud	eP	11 21 24			Ud	iP	03 01 32.6
		Mariana Islands					Iceland (h = 30 km).		
		(h = 410 km).							
"	5	Up	iP	13 57 50.5	"	7	Um	iP	05 17 29.3 C
		Ud	i(P)	13 57 52.5			Ud	iP	05 17 43.8 C
"	5	Up	iP	16 49 12.7 C	"	7	Ud	eP	08 26 47
			ipP	16 49 23.4	"	7	Up	iP	16 00 02.3
				micr sec			Ki	iP	16 01 09.2
			P	Z' 0.2 1.0			Um	iP	16 00 35.2
		Ki	iP	16 48 20.0 C			Ud	iP	16 00 10.4
			i(pP)	16 48 33.2			Crete (h = 10 km).		
				micr sec					
			P	Z' 0.1 1.0	"	7	Up	i(S)	16 24 41.9
		Gb	iP	16 49 32.9 C			Austria (h = 30 km).		
		Um	iP	16 48 44.6 C	"	7	Up	iP	17 09 21.8
			i	16 48 51.5			i		17 09 25.1
		Ud	iP	16 49 16.3 C					micr sec
			ipP	16 49 26.8				P	Z' 0.1 0.9
		Kamchatka.					Ki	iP	17 08 52.2
		h = 40 km (Up, Ud).					i		17 08 55.4
		Magn. = 5.8 (Up, Ki).					ipP		17 10 31.1
"	5	Um	iP	17 01 07.9			Um	iP	17 09 01.0
"	5	Up	i(P)	18 17 51.5			i		17 09 03.9
		Ud	e(P)	18 16 53			Ka	iP	17 09 41.6 C
"	5	Up	iP	22 42 26.0			Ud	iP	17 09 35.5 C
"	6	Ki	eP	07 00 55			i		17 09 38.5
		Ud	iP	07 01 22.2 C			USSR-Mongolia (h = 30 km).		
		Luzon (h = 60 km).					If the second phase (about		
"	6	Um	iP	13 05 08.5			same amplitude as P and		
		Ud	i(P)	13 05 19.9	"	7	Up	iP	18 27 27.3
"	6	Ki	iP _X	13 43 39.3			ipP		18 27 40.2
			iP _X	13 43 47.6			Ki	iP	18 26 36.9
			iSn	13 44 24.9			ipP		18 26 51.3
			iLg1	13 44 38.8			Um	iP	18 27 00.4
			D = 420 km = 3.8°.				i		18 27 04.1
		Um	iSn	13 45 07.0			ipP		18 27 13.9
			iSg	13 45 36.5			Ka	eP	18 27 49
			D = 600 km = 5.4°.				Ud	iP	18 27 32.0
		Northwest Russia-Finland					ipP		18 27 46.5
		border region.					Kurile Islands.		
		Origin time = 13 42 39.					h = 50 km (Up, Ki, Um, Ud).		
		Explosion?			"	7	Ud	iP	19 30 38.5 C

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
June	7	Ki	iP	19 50 37.2	June	8	Up	iP	20 15 21.0
"	7	Ud	iP	20 31 26.2			Ki	iP	20 16 27.7
"	7	Ud	iP	21 28 18.0 C			Ud	iP	20 15 29.0
				Crete.	"	8	Um	iPKP	23 56 19.8
"	7	Ki	iP	22 43 46.0					South of Kermadec Islands
				Iran (h = 40 km).					(h = 100 km).
"	8	Ki	iP	07 14 36.6	"	9	Ud	iP	06 39 17.2
				Mindanao (h = 160 km).					Aleutian Islands (h = 30 km).
"	8	Ki	iP	08 51 50.4	"	9	Ki	iP	11 35 01.7
				08 51 50.4				iP	11 35 21.1
				iSg 08 52 32.2			Um	iP	11 35 06.7 C
				D = 330 km = 3.0°			Ud	iP	11 35 26.2
		Um	iPg	08 51 38.1					Talaud Islands.
				iSg 08 52 07.8					h = 70 km (Ki).
				D = 260 km = 2.3°	"	9	Ki	e	12 50 24
				Probably Swedish Lapland				i(Sg)	12 50 49.7
				(by combination with Tromsö).			Um	i(Sg)	12 48 41.1
				Origin time = 08 50 52.					Probably explosion in the
				51 00					area of the Gulf of
"	8	Up	iP	12 15 15.7					Finland.
		Ki	iP	12 14 58.2	"	9	Up	iPKP	13 01 22.2
		Ud	iP	12 15 23.1 C			Ki	iPKP	13 01 02.1
				i 12 15 32.1			Um	iPKP	13 01 10.8
				Talaud Islands (h = 70 km).					West of Macquarie Islands
"	8	Um	iP	13 14 45.5					(h = 30 km).
"	8	Ki	iPKP	13 41 12.6	"	9	Um	iPKP	17 24 15.7
			iSKP	13 44 25.6			Ud	iPKP	17 24 16.8
		Um	iPKP	13 41 19.1					Fiji Islands (h = 550 km).
			iSKP	13 44 36.4	"	9	Up	iP	19 37 23.2
		Ud	iPKP	13 41 23.9			Ki	iP	19 37 07.5
				Loyalty Islands (h = 90 km).			Um	iP	19 37 11.2
"	8	Up	iP	14 04 32.8			Ud	iP	19 37 31.5
		Ki	iP	14 04 17.4					Talaud Islands (h = 120 km).
		Ud	iP	14 04 43.0	"	9	Ud	iP	20 45 38.4
				Philippine Islands					
				(h = 100 km).	"	9	Up	iP	22 58 45.3
"	8	Ki	ePg	16 19 30			Um	i(P)	22 58 12.9
			iSg	16 20 06.1	"	10	Ki	eP	04 00 01
				D = 310 km = 2.8°			Um	iP	04 00 27.6
		Um	eSn	16 20 18				i	04 00 35.3
			iSg	16 20 32.8			Ud	eP	04 00 41
		Ud	eSg	16 21 59					Aleutian Islands (h = 30 km).
				Nordlands Fylke, Norway,					
				66.4°N, 14.2°E.					
				Origin time = 16 18 34.					

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
June	10	Up	iPKP	05 45 40.2	June	10	(cont.)		
		Ki	iPKP	05 45 47.4			Ki	iPKP	14 16 56.1
		i		05 48 33.5				iSKP	14 19 24.3
				micr sec					micr sec
			PKP Z'	0.1 1.0				SKP Z'	0.2 1.0
		M	E	0.8 18			Um	i(PKP)	14 16 53.0
		M	N	0.6 18				iPKP	14 17 00.1
		M	Z	0.8 18				iSKP	14 19 36.4
		Gb	iPKP	05 45 34.3			Ka	iPKP	14 17 13.2
		Um	iPKP	05 45 45.8 C				iSKP	14 19 59.6
			iX	05 46 56.6			Ud	iPKP	14 17 03.1
			i	05 47 23.5				i	14 17 13.4
		Ka	iPKP	05 45 36.2				iSKP	14 19 50.7
		Ud	iPKP	05 45 36.3			Fiji Islands (h = 600 km).		
			iX	05 46 52.7					
		Chile (h = 40 km).			"	10	Ki	iP	14 27 52.7
"	10	Up	iP	05 56 49.4			Um	iP	14 27 59.0
			iS	06 05 48				i	14 28 05.0
			D = 7550 km = 68°.		"	10	Um	iP	16 49 52.0
		Ki	iP	05 57 34.8					
		Um	iP	05 57 14.5	"	10	Ki	eP	18 15 27
			iX	05 57 19.8			Um	eP	18 15 22
			i	05 57 24.4				eS	18 24 01
			iS	06 06 31			Ud	iP	18 14 52.9
		Ud	iP	05 56 44.4				i	18 15 00.3
			iX	05 56 49.6			North Atlantic Ocean		
		North of Ascension Island					(h = 30 km).		
		(h = 10 km).			"	11	Up	iP	05 39 58.9
"	10	Up	iP	06 40 52.2 C			Ki		---
			i	06 40 55.0					micr sec
		Ki	iP	06 40 22.5 C				M E	0.5 14
		Um	iP	06 40 31.1				M N	0.4 14
			i	06 40 49.1				M Z	0.5 14
		Ka	iP	06 41 11.7			Gb	eP	05 39 42
		Ud	iP	06 41 05.8			Um	iP	05 40 35.0
		USSR-Mongolia (h = 30 km).						i	05 40 51.0
"	10	Ki	ePn	08 09 42				eS	05 45 07
			iSn	08 10 36.8			Ud	iP	05 40 02.7
			i(Lg1)	08 10 58.4			Greece (h = 40 km).		
		Um	iSn	08 11 22.1	"	11	Um	e(Sg)	07 32 41
			iSg	08 12 02.1					
		Probably northwest Russia.			"	11	Up	iP	12 01 09.5
		Origin time = 08 08 30.					Ki	iP	12 00 20.9
		Explosion?					Um	iP	12 00 42.6
"	10	Up	iP	13 56 46.7 C			Ud	iP	12 01 13.9
							Kurile Islands (h = 40 km).		
"	10	Up	iPKP	14 17 02.6	"	11	Up	iP	13 17 55.3 C
			iSKP	14 19 49.2					
				micr sec					
			SKP Z'	0.1 1.0	"	12	Ki	iP	00 14 54.2
								i	00 15 36.1
		(cont.)							

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

June 12

Ki iP 00 15 59.0

Ud iP 00 15 17.6

i 00 15 24.3

North Atlantic Ocean
(h = 30 km).

" 12 Ud ePKP 01 08 23

i 01 08 35.5

Tonga Islands (h = 15 km).

" 12 Ki iP 01 22 33.0

Ud iP 01 23 04.1

Philippine Islands
(h = 80 km).

" 12 Up iP 01 34 00.3

micr sec

M E 0.5 18

M N 0.4 14

Ki ---

micr sec

M E 0.5 15

M N 0.3 15

M Z 0.5 14

Gb iP 01 33 46.7

i 01 34 00.7

Um iP 01 34 43.9

Ud eP 01 34 07

i 01 34 10.7

i 01 34 20.7

Greece (h = 25 km).

" 12 Ki iP 02 10 12.8

Ud iP 02 09 40.6

North Atlantic Ocean
(h = 30 km).

" 12 Up iP 02 55 58.2 C

i 02 56 01.1

iS 03 00 06

micr sec

P Z' 0.1 0.8

M E 1.8 14

M N 1.4 12

M Z 1.1 12

D = 2450 km = 22°.

Ki iP 02 57 15.8

iLg1 03 07 06

eLg2 03 07 36

micr sec

M E 1.4 12

M N 1.0 15

M Z 1.6 14

(cont.)

1967

June 12 (cont.)

Gb iP 02 55 44.3

i 02 55 56.6

Um iP 02 56 34.4

i 02 56 43.4

i(Pn) 02 56 56.7

iS 03 01 02

eLg2 03 05 03

Ud iP 02 56 04.9

i 02 56 11.0

Greece (h = 30 km).

" 12 Up iS 03 31 18

Ki iP 03 20 32.2

eS 03 31 14

micr sec

P Z' 0.1 1.0

S E 0.4 8

S N 0.4 8

M E 0.6 16

M N 0.8 22

M Z 1.0 18

D = 9900 km = 89°.

Um iP 03 20 28.6

i 03 20 35.5

i 03 21 07.5

iS 03 31 11

Ud iP 03 20 41.1

Sumatra (h = 30 km).

Magn. = 5.7 (Ki).

" 12 Ud iP 04 55 03.9 C

" 12 Up ---

micr sec

M E 1.8 19

M N 2.0 20

M Z 1.6 20

Ki ---

micr sec

M E 1.8 18

M N 1.1 18

M Z 2.3 19

Um iPP 05 40 07

eSKS 05 46 14

eS 05 47 45

iPS 05 49 33

iSS 05 55 23

Prince Edward Island
(h = 40 km).

Magn. = 6.0 (Up, Ki).

" 12 Ud iP 11 05 24.1

Greece (h = 30 km).

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
June	12	Ki	iP	12 48 34.2	June	12	(cont.)		
		Ud	e(P)	12 47 41			Ki		
							P	E	0.4 5
"	12	Up	iP	18 17 24.8			P	N	0.4 6
		Ki	iP	18 18 40.9 C			P	Z	0.8 6
		Um	iP	18 18 07.7			P	Z'	0.1 1.3
		Ka	iP	18 16 47.7			S	E	0.5 12
		Ud	iP	18 17 31.8			S	N	0.5 12
			i	18 17 34.3			M	E	7.3 18
		Greece (h = 60 km).					M	N	4.1 18
							M	Z	8.9 20
"	12	Up	iSKS	21 41 22			D = 6550 km = 59°.		
				micr sec			Um	iP	23 33 08.4 C
			SKS N	0.4 5				iPa	23 37 05
			M E	0.6 16				eS	23 41 31
			M N	1.0 19			Ka	iP	23 33 57.5
			M Z	1.1 22			Ud	iP	23 33 40.0 C
		Ki	iP	21 30 42.1			Kurile Islands (h = 60 km).		
			i	21 30 53.0			Magn. = 5.9 (Up, Ki).		
			i	21 31 31.7					
			iS	21 41 28	"	12	Ki	iP	23 45 29.1
				micr sec			Um	eP	23 45 35
			P Z'	0.2 1.3			Ud	iP	23 45 54.0
			S E	0.5 8				i	23 46 05.8
			S N	0.4 7			Mindanao (h = 60 km).		
			M E	0.6 16					
			M N	1.2 22	"	13	Ki	ePKP	00 36 21
			M Z	1.0 16			Um	iPKP	00 36 33.5
			D = 9900 km = 89°.				New Hebrides Islands		
		Um	iP	21 30 39.0			(h = 10 km).		
			iX	21 31 01.0					
			iPP	21 34 08	"	13	Ki	iP	01 22 59.6
			iSKS	21 41 06					micr sec
			iS	21 41 23			P	Z'	0.1 1.0
		Ud	iP	21 30 52.3			Um	iP	01 22 56.1
			iX	21 31 13.3				i	01 23 03.4
		Sumatra (h = 30 km).					Ud	iP	01 23 08.4
		Magn. = 5.8 (Up, Ki).					Sumatra (h = 30 km).		
"	12	Up	iP	23 33 34.9 C	"	13	Um	iP	02 53 09.9
			iS	23 42 20			Ud	iP	02 53 42.2
				micr sec			Kurile Islands (h = 30 km).		
			P N	0.3 5					
			P Z	0.6 4	"	13	Um	iPKP	03 31 10.1
			S E	0.4 8			Loyalty Islands		
			S N	1.1 14			(h = 30 km).		
			M E	2.7 18					
			M N	4.7 21	"	13	Um	i(Sg)	09 22 11.0
			M Z	5.2 20					
			D = 7400 km = 66 1/2°.						
		Ki	iP	23 32 45.0 C	13	Ki	iP	09 48 05.5	
			eS	23 40 46		Um	iP	09 49 01.3	
							i	09 49 10.1	
		(cont.)					(cont.)		

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967
June 13 (cont.)
Ud iP 09 49 40.4 C
Svalbard (h = 30 km).

" 13 Um i(Sg) 09 53 12.5

```

"      13  Ki      i(Lg1) 12 56 22.9
        Sk      iSg      12 56 07.8
        Um      iSg      12 54 48.3
        i        12 55 04.0
        Ud      eSg      12 55 14
        Esthonia.
        Origin time = 12 51 47.
        Explosion?

```

"	13	Up	iP	12 59	10.7
		Um	iP	12 59	36.5
			i	12 59	40.8
		Turkey (h = 30 km).			

```

"      13  Ki      ePg      13 45 52
              iSg      13 46 33.2
              D = 360 km = 3.2°.
      Sk      eSg      13 47 44
      Um      iPg      13 45 33.4
              iSg      13 46 01.1
              D = 240 km = 2.2°.
      Gulf of Bothnia,
      65.1°N, 24.5°E.
      Origin time = 13 44 48.
      Explosion?

```

" 13 Um iP 14 44 55.7

"	13	Up			---
					micr sec
		M	E	0.6	20
		M	N	1.1	21
	Um	ePP		15	58 12
		i		15	58 22.5
	New Britain (h = 210 km).				

" 13 Um iP 18 56 55.4

"	13	Up	iP	19 05 41.5
		Ki	iP	19 05 23.8
		Sk	iP	19 05 37.5
		Halmahera (h = 150 km).		

" 13 Ud iP 20 52 34.5

" 13 Ki iP 22 41 58.0
Um iP 22 42 03.8
Molucca Passage
(h = 60 km).

1967						
June	13	Up	iP	23	15	11.3
			i	23	15	19.7
			i(S)	23	19	41
		Ki	iP	23	15	57.5
			eIg1	23	25	11
					micr	sec

	M	E	0.6	13
	M	N	0.4	13
	M	Z	0.8	14
Um	iP		23 15	23.9
	iPn		23 15	41.5
	iPP		23 16	02.6
	iS		23 20	03
	iLg2		23 24	05

Ka	iP	23	15	11.7
Ud	iP	23	15	27.0
Caucasus (h = 30 km).				

" 13 Up iP 23 30 14.8

"	14	Up	iP	03 56 16.4	D
			iPcP	03 56 48.8	
		Ki	iP	03 55 33.8	
		Sk	iP	03 56 09.2	
			i	03 56 14.8	
		Gb	iP	03 56 39.3	
		Um	iP	03 55 52.3	D
			i	03 55 56.6	
			i	03 56 21.3	
			iPcP	03 56 33.4	
		Ka	iP	03 56 38.4	
		Ud	iP	03 56 24.3	
		Sikhota Alin (h = 360 km).			

"	14	Up	iPKP	05 25	40.0
			iY	05 25	58.3
			iPKS	05 29	15
				micr	sec
			M E	0.6	22
			M N	1.2	23
			M Z	1.4	22

Ki	iPKP	05	25	21.2
	iY	05	25	38.1
		micr	sec	

M	E	1.0	21
M	N	0.7	20
M	Z	2.4	24

Sk	iPKP	05 25 30.5
	iX	05 25 42.9

Gb	iX	05	25	58.3
Um	iPKP	05	25	28.3

iX	05	25	40.8
iY	05	25	51.0

```

iPP      05 27 51
iPKS1    05 28 50

```

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
June	14	(cont.)		June	14	Up	iP 08 23 51.8 C
		Ud	iPKP 05 25 36.1			i	08 23 56.9
			iY 05 25 59.9				micr sec
		Tonga Islands (h = 10 km).				P Z'	0.3 1.3
		Magn. = 5.7 (Up,Ki).			Ki	iP	08 23 03.5
"	14	Um	iP 05 37 51.6			i	08 23 08.7
"	14	Um	iP 05 56 43.3				micr sec
			i 05 56 58.6			P Z'	0.1 1.0
"	14	Sk	iP 07 18 41.9		Sk	iP	08 23 38.8 C
"	14	Up	iP 08 16 48.2 C		Gb	iP	08 24 12.8
			i 08 17 07.6		Um	iP	08 23 26.0
			iS 08 25 42		Ka	iP	08 24 15.1 C
			micr sec		Ud	iP	08 23 57.4 C
		P Z'	0.1 1.0		Kurile Islands (h = 50 km).		
		M E	1.9 20		Magn. = 6.0 (Up,Ki).		
		M N	5.1 18	"	14	Ud	iP 09 41 31.6
		M Z	4.5 20				
		D = 7400 km = 66 1/2°.		"	14	Um	iPn 11 02 26.0
Ki		iP	08 16 00.1			iLg1	11 02 44.8
		i	08 16 22.0			iSg	11 02 47.2
		iS	08 24 10			D = 170 km = 1.5°.	
		iPS	08 24 33			Origin time = 11 01 58.	
			micr sec			Explosion.	
		P Z	0.4 5	"	14	Ki	eSn 13 26 45
		P Z'	0.1 1.0			iSg	13 27 39.0
		S E	0.5 11		Sk	iSg	13 26 56.2
		M E	5.2 20		Um	iSg	13 25 36.6
		M N	3.0 17		Ud	iSg	13 26 05.3
		M Z	6.1 18		Gulf of Finland,		
		D = 6600 km = 59 1/2°.			59.8°N, 24.3°E.		
Sk		iP	08 16 35.0		Origin time = 13 23 07.		
		i	08 16 54.6		Probably underwater		
Gb		iP	08 17 08.9 C		explosion.		
		i	08 17 27.1	"	14	Up	i(P) 15 06 46.7
Um		iP	08 16 21.8 C		Sk	iP	15 07 00.2
		ipP	08 16 34.1	"	14	Ka	iP 15 35 47.6 C
		ePa	08 20 15				
		iS	08 24 51	"	14	Up	iP 15 46 42.2 C
Ka		iP	08 17 11.0		Ki	iP	15 45 54.4
		i	08 17 30.5		Sk	iP	15 46 30.0
Ud		iP	08 16 53.4 C		Um	iP	15 46 16.6 C
		ipP	08 17 05.8		Ud	iP	15 46 47.9
Kurile Islands.					Kurile Islands (h = 30 km).		
h = 50 km (Um,Ud).				"	14	Up	i(P) 16 31 52.6
Magn. = 5.8 (Up,Ki).					Um	iP	16 31 29.8
There is a clear phase 19.7				"	14	Um	iP 17 00 19.7
sec after P (in average at						i	17 00 46.8
Up,Ki,Sk,Gb,Ka), and with							
about the same amplitude -							
possibly another shock from							
the same region.							

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
June	14	Up	iP	17 10 56.0 C	June	15	Ka	iP	20 28 58.0
"	14	Up	iP	18 07 33.8	"	15	Um	iP	22 01 00.6 D
		Um	iP	18 07 13.7					
		Ud	iP	18 07 41.9	"	15	Sk	iPg	23 18 05.9
		South of Japan (h = 380 km).			"	15	Sk	iPg	23 34 29.5
"	14	Ud	iP	18 29 40.2				iSg	23 34 52.8
		Greece.			Nearly 60 artificial events, probably located at the Norwegian coast, were recorded at Sk on June 15-16, 19-20, and 24-25.				
"	14	Ud	eP	20 02 37					
"	14	Ud	iP	20 32 50.7					
"	15	Up	iP	00 47 14.4	"	15	Sk	iPg	23 57 20.9
		Ki	eP	00 47 22				iSg	23 57 47.5
		Sk	iP	00 47 02.6	"	16	Ki	e(Sg)	01 15 54
		Um	iP	00 47 15.4	"	16	Sk	iPg	01 32 36.3
			ipP	00 47 25.3				iSg	01 33 04.9
		Ud	iP	00 47 03.8 C	"	16	Sk	iPg	02 12 38.2
		Venezuela. h = 40 km (Um).						iSg	02 13 04.3
"	15	Ka	iP	01 33 40.0	"	16	Sk	iPg	02 42 53.4
		i		01 34 39.5					Tadzhik SSR.
"	15	Ud	iPKP	05 09 04.8	"	16	Sk	iPg	04 45 56.7
		Tonga Islands (h = 30 km).						iSg	04 46 22.0
"	15	Ki	eP	15 02 48	"	16	Sk	iPg	05 07 14.6
		i		15 02 59.3				iSg	05 07 39.9
		Sk	eP	15 02 32	"	16	Sk	iPg	05 35 23.6
		Gb	eP	15 01 51				iSg	05 35 49.2
		Um	eP	15 02 21	"	16	Up	iPKP2	06 04 09.6
		Ud	eP	15 02 11			Ki	i(PKP2)	06 04 01.6
		Cyprus (h = 60 km).					Sk	ePKP	06 04 08
"	15	Um	iP	17 08 57.8			Um	iPKP	06 03 55.5
		i		17 09 13.6				iPKP2	06 04 16.6
"	15	Ud	ePKP	17 52 29			Ka	iPKP	06 03 59.7
		South Atlantic Ocean (h = 30 km).					Ud	i(PKP)	06 04 17.6
"	15	Up	iP	18 52 45.4				iPKP2	06 04 23.3
		ipP		18 52 53.4			West of Macquarie Islands (h = 25 km).		
		Ki	iP	18 53 12.6	"	16	Sk	iPg	06 22 13.7
		Sk	iP	18 52 42.7				iSg	06 22 39.3
		Gb	iP	18 52 22.7	"	16	Ki	iPKP	06 23 12.2
		Um	iP	18 53 02.7				iPKP2	06 23 20.6
		ipP		18 53 10.2			Sk	iPKP	06 23 21.1
		Ka	iP	18 52 29.7			(cont.)		
		ipP		18 52 37.5					
		Ud	iP	18 52 34.7 D					
		ipP		18 52 42.3					
		Atlantic Ocean. h = 30 km (Up, Um, Ka, Ud).							

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
June	16	(cont.)			June	16	(cont.)		
		Um	iPKP	06 23 12.1			Ud	iPg	19 31 18.5
		Ud	e(PKP)	06 23 29				iSg	19 31 32.8
			iPKP2	06 23 34.8				iRg	19 31 37.5
		West of Macquarie Islands						D = 120 km = 1.1°	
		(h = 30 km).					South-central Sweden,		
							59.0°N, 14.4°E.		
"	16	Sk	iPg	06 46 32.2			Origin time = 19 30 56.		
			iSg	06 46 58.0			Explosion.		
		Almost the same location					as for the event on Nov. 19 (2)		
"	16	Sk	iPg	07 12 34.0			at 19 30.		
			iSg	07 12 59.7					
"	16	Ki	iPn	10 25 02.4	"	16	Ki	iPn	19 40 36.7
			iSn	10 26 02.0				iSn	19 41 35.2
			iLg1	10 26 21.4				eLg1	19 41 52
			D = 560 km = 5.0°					D = 530 km = 4.8°	
		Sk	eSg	10 28 47			Probably northwest Russia.		
		Um	iSg	10 27 13.7			Origin time = 19 39 22.		
		Northwest Russia,					Explosion?		
		67.2°N, 33.3°E.							
		Origin time = 10 23 44.			"	16	Ud	iPKP	20 31 23.0
		Explosion?					Tonga Islands (h = 90 km).		
"	16	Um	iP	12 34 43.2	"	16	Um	iP	20 35 45.6
							Panama-Colombia (h = 80 km).		
"	16	Um	iPg	12 51 58.5	"	17	Up	iP	00 27 44.1 C
			iSg	12 52 19.6				micr	sec
"	16	Ki	ePn	14 11 15			M	E	1.0 20
			iSn	14 12 05.8			M	N	1.2 20
			iLg1	14 12 16.5			M	Z	1.3 20
			D = 480 km = 4.3°				Ki	---	
		Sk	eSg	14 14 43				micr	sec
		Um	i	14 12 53.6			M	E	1.7 14
			iSg	14 13 12.8			M	N	0.9 13
		Northwest Russia,					M	Z	2.3 14
		67.3°N, 31.6°E.					Ud	iP	00 27 59.0
		Origin time = 14 10 05.					Sinkiang.		
		Explosion?					Atmospheric nuclear		
"	16	Up	iP	16 04 27.2			explosion. Clear atmospheric		
		Ka	iP	16 04 29.6			pressure waves were recorded,		
"	16	Um	iP	16 07 44.8			especially by Um LP seismo-		
							graphs. Energy calculations		
"	16	Sk	iP	16 33 28.8			suggest a low altitude,		
			i	16 33 35.9			considerably less than 1 km.		
			i	16 33 42.4	"	17	Up	iPKP	05 18 49.5 C
		Local disturbance?						ipPP	05 21 05
"	16	Up	iPg	19 31 31.0				iSKP	05 21 42.8
			iSg	19 31 54.8				iPKS	05 22 07.6
			D = 200 km = 1.8°					iSKS	05 25 31
		(cont.)						i!	05 27 10
								iPKKP	05 28 42.5
								i	05 28 44.3
							(cont.)		

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967
June 17 (cont.)

Up

micr sec

PKP Z' 0.7 0.7

PKS Z 1.3 4

PKS Z' 0.4 0.8

SKS E 0.9 5

SKS N 2.0 5

PKKP Z' 0.1 0.5

M E 4.2 20

M N 4.7 21

M Z 7.8 20

(D = 13550 km = 122°).

Ki

e(PKP) 05 18 52

iPKP 05 19 06.2

ipPKP 05 19 51.1

iSKP 05 22 11.8

iPKS 05 22 28

ipPKS 05 23 11

isPKS 05 23 27

eSKS 05 25 55

iPKKP 05 27 58

iSKSP 05 31 09

micr sec

PKP Z 3.0 5

PKP Z' 0.6 1.2

SKP E 2.1 5

SKP N 4.1 6

SKP Z 20 5

SKP Z' 8.5 2.0

PKS E 3.6 5

PKS N 2.7 6

SKS E 3.5 6

SKS N 3.8 8

PKKP E 3.7 6

PKKP N 4.6 7

M E 5.2 20

M N 3.6 19

M Z 12 18

(D = 14450 km = 130°).

Sk

i(PKP) 05 18 54.2

iPKP 05 18 56.9

iPKS 05 22 14.0

Gb

iPKP 05 18 44.2

ipPKP 05 19 29.9

iPP 05 20 01.6

i 05 20 36.1

ipPP 05 20 44.7

iPKKP 05 28 54.0

Um

i(PKP) 05 18 44.1

iPKP 05 18 58.0

ipPKP 05 19 44.1

ipPP 05 21 29

iSKP 05 21 58.4

iPKS 05 22 16.7

(cont.)

1967
June 17 (cont.)

Um

iSKS 05 25 45

i! 05 27 35

iSKSP 05 30 37

iSKKP 05 32 05.7

iSS 05 38 06

Ka

iPKP 05 18 43.0

ipPKP 05 19 29.0

iPKS 05 22 02.8

iPKKP 05 28 58.6

Ud

iPKP 05 18 48.2

iPP 05 20 20.8

iPKS 05 22 08.0

iPKKP 05 28 44.8

i 05 29 29.4

South Sandwich Islands.

h = 180 km (Ki, Gb, Um, Ka).

Our stations cover the distance range of about 119°-130°. Fore-runners of PKP appear beyond about 124°, but not at shorter distances. On the whole, our stations illustrate well the variation of amplitudes and other properties of various core phases over the distance range mentioned.

" 17

Ka iP 10 01 21.1

Ud iP 10 01 45.7

Caucasus (h = 30 km).

" 17

Um iP 12 08 55.6

" 17

Um iP 12 35 23.4

" 17

Up iP 13 24 26.4 D

ipP 13 24 55.9

Um iP 13 24 19.0

Ka iP 13 24 34.5

ipP 13 25 04.3

Ud iP 13 24 39.4

Burma-India.

h = 120 km (Up, Ka).

" 17

Up iP 15 47 10.0

i 15 47 17.2

Um iP 15 48 00.1 D

i 15 48 12.5

Italy (h = 25 km).

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
June	17	Up	iP	17 56 26.7	June	18	(cont.)		
			ipP	17 56 58.4			Um	iPKP	20 22 54.0
		Ud	iP	17 56 17.2				i	20 23 08.3
		Guatemala. h = 120 km (Up).					Ud	iPKP	20 23 03.1
		New Ireland (h = 300 km).							
"	17	Ud	iP	20 52 46.1	"	18	Um	iP	23 30 18.2
		Greenland Sea (h = 30 km).							
"	18	Ud	iP	00 56 21.4	"	19	Ki	i	02 57 48.3
								i(Sg)	02 58 05.9
"	18	Up	iP	01 29 18.8	"	19	Up	iP	10 29 56.3
				micr sec	"	19	Up	iP	11 00 36.2
		M	E	0.8 18	"	19	Um	iP	12 28 35.8
		M	N	3.0 21	"	19	Ki	iP	12 55 13.7
		Ki		---					micr sec
				micr sec			P	Z'	0.1 1.0
		M	E	0.8 14			Um	iP	12 55 18.5
		M	N	2.8 17			Ud	iP	12 55 41.2
		M	Z	1.6 14				i	12 55 57.6
		Sk	iP	01 29 35.1			Philippine Islands		
		Ud	iP	01 29 33.1			(h = 30 km).		
		Tibet (h = 30 km).			"	19	Up	iP	14 43 07.9
"	18	Up	iP	05 34 09.8			Ki	iP	14 44 01.2
		Ki	iP	05 35 14.1 C			Sk	iP	14 43 44.5
		Sk	eP	05 34 51			Gb	iP	14 43 05.8
		Um	iP	05 34 39.1			Um	iP	14 43 33.0
		Ud	iP	05 34 19.4			Ka	iP	14 42 46.5
		Turkey (h = 40 km).					Ud	iP	14 43 18.4
"	18	Um	i(P)	07 07 12.1			Red Sea (h = 40 km).		
"	18	Ki	eSn	09 36 42	"	19	Up	iPKP	15 26 18.7
			i(Lg1)	09 37 03.4				i	15 26 22.2
		Sk	eSg	09 39 33			Argentina (h = 160 km).		
		Um	iSg	09 37 57.6	"	19	Sk	iPg	15 30 54.6
		Northwest Russia.						iSg	15 31 25.0
		Explosion?			"	19	Sk	ePg	15 43 04
"	18	Um	iP	11 20 00.9				iSg	15 43 31.0
"	18	Up	iP	16 46 44.3	"	19	Sk	iPg	16 14 39.7
		Um	iP	16 46 49.0				iSg	16 15 10.2
			i	16 47 22.5	"	19	Sk	ePg	16 37 22
		Ka	iP	16 46 50.7				iSg	16 37 54.4
		Ud	iP	16 47 01.3	"	19	Sk	iPg	16 50 39.3
			i	16 47 27.5				iSg	16 51 09.9
		Pamir (h = 80 km).							
"	18	Up	iP	17 32 07.7					
"	18	Um	iP	19 31 19.8					
"	18	Up	iPKP	20 22 59.8					
		(cont.)							

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
June	19	Um	iP	16 53 34.5	June	19	Sk	iPg	18 54 40.5
		Uganda (h = 40 km).						iSg	18 55 10.6
"	19	Up	iP	16 57 33.4	"	19	Up	i(P)	18 57 30.0
			i	16 57 35.8			Ka	i(P)	18 57 56.6
		Um	iP	16 57 44.3					
		Ka	iP	16 57 27.5	"	19	Sk	iPg	19 07 42.7
		Ud	iP	16 57 49.7				iSg	19 08 10.1
"	19	Sk	iPg	17 08 27.7	"	19	Up	iPg	19 30 31.0
			iSg	17 08 58.2				iSg	19 30 54.6
"	19	Up	iP	17 18 39.3 C				D = 200 km = 1.8°.	
			iPa	17 23 16			Ki	iLg1	19 34 45.8
			iS	17 27 34			Sk	e(Lg1)	19 32 19
			i(ScS)	17 28 48			Ud	iPg	19 30 17.9
				micr sec				iSg	19 30 31.9
		P	N	0.6 4				iRg	19 30 36.9
		P	Z	0.6 4				D = 120 km = 1.1°.	
		P	Z'	0.5 1.2				South-central Sweden,	
		S	E	1.4 15				59.0° N, 14.4° E.	
		M	E	3.4 18				Origin time = 19-29-56.	
		M	N	8.0 19				Explosion.	
		M	Z	7.3 19					
		D = 7500 km = 67 1/2°.			"	19	Ki	iP	20 33 07.0
		Ki	iP	17 17 45.4 C			Um	iP	20 33 33.4
			iS	17 25 58			Ud	eP	20 33 59
				micr sec	"	19	Sk	iPg	22 28 37.0
		P	N	0.9 8				iSg	22 29 06.2
		P	Z	1.7 8	"	19	Sk	iPg	22 39 43.9
		P	Z'	0.6 1.3				iSg	22 40 13.9
		S	E	1.1 13	"	19	Sk	iPg	23 29 46.7
		S	N	1.2 10				iSg	23 30 17.0
		M	E	4.4 17	"	19	Sk	iPg	23 52 07.1
		M	N	3.6 19				iSg	23 52 35.7
		M	Z	8.1 18	"	19	Sk	iPg	23 52 07.1
		D = 6600 km = 59 1/2°.						iSg	23 52 35.7
		Sk	iP	17 18 15.8	"	20	Sk	iPg	01 41 57.8
			iPcP	17 18 55.5				iSg	01 42 28.0
		Gb	iP	17 18 54.1 C	"	20	Sk	iPg	01 56 55.2
		Um	iP	17 18 12.8 C				iSg	01 57 24.6
			iS	17 26 43	"	20	Sk	iPg	02 20 50.1
			iSS	17 30 56				iSg	02 19 56.4
			iP'P'	17 47 11.9			Um	iP	02 20 23.4 C
		Ka	iP	17 19 02.7			Ud	iP	02 20 48.8
		Ud	iP	17 18 37.6 C				Aleutian Islands	
		Aleutian Islands						(h = 10 km).	
		(h = 30 km).			"	20	Sk	iPg	02 25 19.6
		Magn. = 6.1 (Up, Ki).						iSg	02 25 50.1
"	19	Sk	iPg	17 20 49.6					
			iSg	17 21 18.6					
"	19	Sk	iPg	18 08 02.4					
			iSg	18 08 32.5					

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1967					1967				
June	20	Ud	iP	04 04 48.1	June	20	Ki	iP	07 45 46.1
"	20	Ki	iP	05 17 35.3			Um	iP	07 46 12.9
"	20	Sk	iPg	05 27 52.6				i	07 46 25.5
			iSg	05 28 18.7			Ka	iP	07 47 01.9
"	20	Up	iP	05 36 17.1 C			Ud	iP	07 46 38.3
		Ki	iP	05 35 23.9 C	"	20	Up	eP	07 49 42
				micr sec				ipP	07 49 54.9
		P	Z'	0.1 0.9				eS	07 58 39
		Sk	iP	05 35 53.3 C					micr sec
		Gb	iP	05 36 31.3 C			P	Z'	0.3 1.2
		Um	iP	05 35 50.7			M	E	2.0 18
		Ka	iP	05 36 40.0			M	N	3.4 19
		Ud	iP	05 36 15.8 C			M	Z	3.0 19
		Aleutian Islands					D = 7550 km = 68°.		
		(h = 30 km).				Ki	iP	07 48 48.6	
"	20	Sk	iPg	05 38 59.6			eS	07 56 59	
			iSg	05 39 26.3				micr sec	
"	20	Sk	iPg	05 48 26.9			P	Z'	0.3 1.2
			iSg	05 48 53.0			S	E	0.7 12
"	20	Up	iP	05 58 09.2			S	N	0.4 11
"	20	Sk	iPg	06 00 33.3			M	E	3.3 17
			iSg	06 00 59.9			M	N	2.2 18
"	20	Sk	iPg	06 17 21.3			M	Z	5.1 18
			iSg	06 17 47.1			D = 6650 km = 60°.		
"	20	Up	iP	06 31 47.5 C		Sk	iP	07 49 18.7	
		Ki	iP	06 30 53.5 C			ipP	07 49 29.8	
				micr sec			iPcP	07 49 53.1	
		P	Z'	0.1 0.7		Gb	iP	07 49 57.1	
		Sk	eP	06 31 24			ipP	07 50 08.8	
		Gb	iP	06 32 01.3		Um	i(P)	07 49 14.7	
		Um	iP	06 31 20.7 C			iP	07 49 16.8	
		Ka	iP	06 32 10.2			iS	07 57 50	
		Ud	iP	06 31 45.9 C		Ka	iP	07 50 05.2	
		Aleutian Islands					ipP	07 50 17.8	
		(h = 10 km).				Ud	i(P)	07 49 40.0	
"	20	Sk	iPg	07 28 38.5			iP	07 49 41.9	
			iSg	07 29 05.4			Aleutian Islands.		
"	20	Sk	iPg	07 37 27.4			h = 45 km (Up,Sk,Gb,Ka).		
			iSg	07 37 54.5			Magn. = 6.1 (Up,Ki).		
"	20	Sk	iPg	07 45 24.8		"	20	Um	iP
			iSg	07 45 51.8				South of Japan (h = 30 km).	
"	20	Sk	iPg	07 45 24.8			Ki	iP	11 51 25.5
			iSg	07 45 51.8			Um	eP	11 51 52
							Ud	iP	11 52 17.6
								ipP	11 52 30.1
							Aleutian Islands.		
							h = 45 km (Ud).		

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
June	20	Up	iP	11 57 01.6	June	21	Ki	iPn	10 07 59.2
		Ud	iP	11 57 14.6				iSn	10 08 57.4
		Burma (h = 140 km).						iLg1	10 09 17.8
"	20	Ki	iP	12 27 16.9				D = 530 km = 4.8°	
"	20	Up	iP	12 36 48.2			Um	i	10 09 51.9
		Ki	iP	12 35 54.2				iSg	10 10 16.0
			ipP	12 36 04.8			Northwest Russia.		
		Sk	iP	12 36 24.9			Origin time = 10 06 45.		
		Um	iP	12 36 21.5			Explosion?		
			ipP	12 36 32.0	"	21	Up	iP	15 58 05.2
		Ka	iP	12 37 10.8				i	15 58 10.4
		Ud	iP	12 36 46.7				iS	16 08 37
			ipP	12 36 57.0				ePS	16 09 41
		Aleutian Islands.							micr sec
		h = 40 km (Ki,Um,Ud).					P	Z'	0.1 1.0
"	20	Um	iP	13 11 17.8			M	E	2.7 20
		Ud	iP	13 11 20.5			M	N	7.7 20
			i	13 11 38.5			M	Z	3.4 21
"	20	Up	iP	16 42 11.8				D = 9550 km = 86°	
		Sk	iP	16 42 52.3			Ki	iP	15 57 47.0
		Um	iP	16 42 51.9				ipP	15 58 03.7
		Ka	iP	16 41 33.5				eS	16 08 03
		Ud	eP	16 42 17				iPS	16 09 05
			i	16 42 27.6					micr sec
		Greece (h = 30 km).					pP	Z'	0.3 1.5
"	20	Gb	i(P)	17 15 53.1			S	N	0.5 13
"	20	Up	iP	20 02 11.2			M	E	4.1 20
			i	20 02 19.3			M	N	5.9 21
"	20	Ki	iPg	22 15 25.1			M	Z	4.2 21
			iSn	22 15 52.8				D = 9100 km = 82°	
			iSg	22 16 07.6			Sk	ipP	15 58 24.5
			D = 360 km = 3.2°				Um	iP	15 57 53.9
			Origin time = 22 14 21.					i	15 59 21
"	21	Up	eS	07 14 21				iS	16 08 16
				micr sec				i	16 09 37
		M	E	1.5 20			Ud	iP	15 58 14.1
		M	N	2.1 25				i	15 58 19.0
		M	Z	1.9 20				Luzon. h = 60 km (Ki).	
		Ki	----					Magn. = 6.0 (Up,Ki).	
				micr sec	"	21	Ki	iPKP	16 05 54.2
		M	E	0.9 20				i	16 06 01.6
		M	N	0.8 20				iPKP2	16 06 12.1
		M	Z	1.8 21			Um	iPKP	16 05 53.6
		Um	eS	07 14 29				i	16 06 00.4
		Peru-Ecuador					West of Macquarie Islands		
		(h = 50 km).					(h = 30 km).		
					"	21	Ki	iP	17 03 11.3 C
							Um	iP	17 03 24.3
								ipP	17 03 51.9
							Volcano Islands.		
							h = 110 km (Um).		

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1967					1967				
June	21	Up	iP	18 14 21.9	June	21	(cont.)		
		Ki	iP	18 13 23.3			Um	ipP	18 33 54.4
			i	18 13 45.1			Ud	iP	18 34 14.0
			i	18 14 08.6			Alaska.		
				micr sec			h = 15 km (Ki,Um).		
		P	Z'	0.3 1.5					
		Gb	iP	18 14 34.2	"	21	Up	iPKP	19 28 55.1 C
			ipP	18 14 39.4				iSKP	19 31 46.2
		Um	iP	18 13 53.8					micr sec
			ipP	18 13 57.7				PKP	Z' 0.1 0.8
			iS	18 21 04		Ki	iPKP	19 28 36.2	
		Ka	iP	18 14 45.7			i	19 28 46.2	
		Ud	iP	18 14 16.9			iSKP	19 31 24.5	
			ipP	18 14 22.4					micr sec
			i	18 14 29.9			SKP	Z' 0.1 1.2	
		Alaska.				Sk	iPKP	19 28 47.2	
		h = 20 km (Gb,Um,Ud).					iSKP	19 31 40.2	
"	21	Up	iP	18 22 36.6		Gb	iPKP	19 29 05.2	
			i(PcP)	18 23 28.0			i	19 31 36.8	
				micr sec			iSKP	19 31 54.3	
		M	E	2.8 21		Um	iPKP	19 28 44.4	
		M	N	2.2 18			i	19 28 49.0	
		M	Z	2.6 20			iSKP	19 31 35.2	
		Ki	iP	18 21 36.8		Ka	iPKP	19 29 06.8	
			ipP	18 21 41.2			i	19 31 45.2	
			i	18 22 00.8			iSKP	19 31 55.2	
			i(PcP)	18 22 56.7		Ud	iPKP	19 28 56.6 C	
			iS	18 28 22			iSKP	19 31 47.7	
				micr sec		Tonga-Kermadec Islands			
		pP	Z'	0.6 2.0		(h = 550 km).			
		S	N	0.7 10	"	21	Up	---	
		M	E	1.9 17					micr sec
		M	N	2.7 19			M	E	3.1 23
		M	Z	6.4 21			M	N	2.1 21
		D = 5300 km = 47 1/2°.					M	Z	3.6 22
		Gb	iP	18 22 49.3		Ki	iPKP	20 28 06.0	
			i	18 23 18.7			eSKSP	20 38 50	
			i(PcP)	18 23 38.3					micr sec
		Um	iP	18 22 07.8			M	E	1.9 20
			i(PcP)	18 23 08.5			M	N	0.6 19
		Ka	iP	18 22 57.8			M	Z	1.9 20
		Ud	iP	18 22 32.6		Um	i(PKP)	20 28 14.6	
			i	18 22 59.9			iSS	20 44 55	
		Alaska.				Chile (h = 25 km).			
		h = 15 km (Ki).				Magn. = 6.0 (Up,Ki).			
		Magn. = 5.8 (Up,Ki).			"	21	Ki	ePKP	21 40 12
"	21	Up	iP	18 34 21.4		West of Macquarie Islands			
		Ki	iP	18 33 19.9		(h = 20 km).			
			ipP	18 33 24.3		"	21	Um	iP
				micr sec					22 49 58.2
		pP	Z'	0.4 2.0	"	22	Um	iP	00 53 18.4
		Um	iP	18 33 49.4					
		(cont.)							

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Ka = Karlskrona, Ud = Uddeholm

1967					1967				
June	22	Up	iP	03 56 11.5	June	22	(cont.)		
"	22	Up	iP	07 29 51.8			Sk	i	22 07 50.2
		Ki	iP	07 31 13.3				iSg	22 07 59.9
		Um	iP	07 30 21.8			Um	iPn	22 07 19.3 C
		Ud	iP	07 30 06.9				iSn	22 08 21.9
		Turkey (h = 15 km).						iLi	22 08 36.3
								iSg	22 08 58.3
"	22	Ud	iP	11 03 25.9			Ud	iSn	22 09 11.6
		Greece.						iSg	22 09 58.6
							Off west coast of Norway,		
							67.6° N, 10.4° E.		
"	22	Um	iP	11 20 32.4 C			Origin time = 22 05 52.		
		Ud	iP	11 20 01.5			Solution checked by		
		North of Ascension Island					comparison with Finnish		
		(h = 30 km).					and Norwegian readings.		
"	22	Up	iP	12 23 41.5	"	23	Ki	eP	01 23 28
		Um	iP	12 24 10.8				i	01 23 41.3
		Ud	iP	12 23 58.8				i(Sg)	01 23 49.2
		Turkey (h = 15 km).							
"	22	Up	iP	15 47 33.0	"	23	Up	iP	05 19 08.3
		Ki	iP	15 46 40.3				iPP	05 23 36.1
			iPP	15 46 55.6			Ki	iP	05 18 53.4
		Ud	iP	15 47 34.9				iPP	05 23 10.5
		Aleutian Islands.							micr sec
		h = 60 km (Ki).					P	Z'	0.1 1.2
							PP	Z'	0.1 1.5
"	22	Sk	iPg	15 53 45.1			Sk	ePP	05 23 31
			iSg	15 54 19.4				i	05 23 43.1
"	22	Sk	iPg	16 03 58.6			Um	iP	05 18 58.3
			iSg	16 04 32.5				i	05 19 05.3
"	22	Sk	iPg	16 17 04.0				iPP	05 23 12.8
			iSg	16 17 37.8				iSKS	05 29 28
"	22	Sk	iPg	16 31 45.5			Ud	iP	05 19 17.0
			iSg	16 32 18.5				iPP	05 23 48.9
"	22	Sk	iPg	16 46 40.7			Banda Sea (h = 90 km).		
			iSg	16 47 13.6			Magn. = 6.2 (Ki).		
"	22	Sk	iPg	17 01 19.0	"	23	Up	iP	10 11 43.4 C
			iSg	17 01 53.2				i	10 11 53.1
"	22	Sk	iPg	17 01 53.2				iS	10 15 39.1
			iSg	17 01 53.2				i	10 15 57
"	22	Sk	iPg	17 01 53.2					micr sec
			iSg	17 01 53.2			P	Z'	0.1 0.6
"	22	Up	iSn	22 09 33.5			M	E	0.7 15
			iSg	22 10 19.0			D = 2400 km = 21 1/2°.		
		Ki	iPn	22 06 52.4			Ki	iP	10 12 45.8
			iPg	22 07 06.5				iPn	10 13 13.4
			iSg	22 07 54.8				iSn	10 18 18.9
			i	22 08 00.2					micr sec
		Sk	iPn	22 06 59.1 C			P	Z'	0.1 1.0
			iPg	22 07 07.6			M	E	0.6 15
		(cont.)					M	N	0.6 14
							M	Z	1.0 14
							(cont.)		

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Ka = Karlskrona, Ud = Uddeholm

1967					1967				
June	23	(cont.)			June	23	(cont.)		
		Sk	iP	10 12 30.3			Ka	iPKP	14 56 59.8
			iSn	10 17 56.2			Ud	iPKP	14 56 49.8
		Gb	iP	10 11 47.3			Fiji Islands (h = 610 km).		
		Um	iP	10 12 12.1 C					
			iS	10 16 37	"	23	Up	iP	18 57 40.6
			i(Sn)	10 17 29.5			Ki	iP	18 57 49.7
			iLg1	10 19 31			Ud	iP	18 57 57.7
		Ud	iP	10 11 58.8			Pamir (h = 210 km).		
			iS	10 16 12.5					
		Turkey (h = 15 km).			"	23	Ki	iPKP	21 49 12.6 C
		Magn. = 5.5 (Up,Ki).						i	21 49 24.0
		Note the existence of					Sk	iPKP	21 49 35.5
		teleseismic Pn and Sn.					Um	iPKP	21 49 30.5
"	23	Up	iSn	11 52 33.2			Ud	iPKP	21 49 40.1
			iSg	11 52 49.6			New Hebrides Islands		
		Ki	iSg	11 55 18.4			(h = 40 km).		
		Um	iSg	11 53 19.9			The readings at Sk and Ud		
		Ud	eSn	11 53 20			probably correspond to the		
			iSg	11 53 54.3			second reading at Ki, this		
		Esthonia, 59.5° N, 25.6° E.					one having a larger		
		Origin time = 11 50 32.					amplitude than the first.		
		Explosion?			"	24	Up	iP	08 04 25.2
"	23	Ki	eP	12 03 15			Mexico (h = 90 km).		
			i	12 03 30.6	"	24	Sk	e(Sg)	08 12 36
		Sk	iP	12 03 38.0	"	24	Sk	e(Sg)	08 28 39
		Um	iP	12 03 40.3	"	24	Ki	ePn	08 44 28
			i	12 03 54.5				iSn	08 45 20.8
		Ud	iP	12 04 04.1				iLg1	08 45 33.4
		Alaska (h = 10 km).					D = 500 km = 4.5°.		
"	23	Ki	i(Sg)	12 07 02.6			Probably northwest Russia.		
"	23	Ki	i(Sg)	12 15 39.4			Origin time = 08 43 15.		
"	23	Up	eL	13 20			Explosion?		
				micr sec	"	24	Up	iP	12 06 20.6
		M	E	0.9 22	"	24	Gb	iPKP	13 46 59.0
		M	N	1.4 22			Ka	iPKP	13 47 01.2
		M	Z	1.0 20			Fiji Islands (h = 590 km).		
		Ki	eL	13 17					
				micr sec	"	24	Up	iPg	15 02 18.4
		M	E	0.8 19				iSg	15 02 39.5 v
		M	N	0.8 19			D = 180 km = 1.6°.		
		M	Z	1.5 18			Sk	iSg	15 03 21.0
"	23	Up	iPKP	14 56 48.5			Um	iSg	15 03 44.2 46
			i	14 56 57.1			Ud	iPg	15 02 07.4
		Ki	iPKP	14 56 41.1 C				iSg	15 02 21.3
			iSKP	14 59 11.9			D = 120 km = 1.1°.		
		Gb	iPKP	14 56 55.8			Central Sweden,		
		Um	iSKP	14 59 23.3			61.0° N, 15.0° E.		
		(cont.)					Origin time = 15 01 46.		
							Explosion.		

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Ka = Karlskrona, Ud = Uddeholm

1967					1967				
June	24	Um	iP	15 37 46.7	June	24	(cont.)		
			i	15 37 50.8			Ud	iP	21 16 33.6
"	24	Sk	i(Sg)	15 48 11.0				i	21 16 43.2
		Ud	i(Sg)	15 49 09.0			Samar (h = 50 km).		
"	24	Ud	iP	16 27 59.4	"	24	Sk	iPg	21 25 40.8
		Pamir.					iSg	21 26 11.2	
"	24	Ud	iP	16 55 59.7			Ud	iPg	21 26 16.9
		Pamir.					iSg	21 27 13.6	
"	24	Um	iPKP	18 25 19.8			Probably west coast of		
		Peru (h = 90 km).					Norway, near Kristiansund.		
"	24	Sk	iPg	19 19 05.3			Origin time = 21 24 55.		
			iSg	19 19 38.8	"	24	Um	iP	21 35 47.9
		Ud	iSg	19 20 41.0			Southwest of Iceland		
		Probably west coast					(h = 30 km).		
		of Norway.			"	25	Up	iP	01 05 25.0
"	24	Sk	i(Pg)	19 31 54.4				i	01 05 51.4
			eSg	19 32 29			Ki	iP	01 04 37.4
			i	19 32 41.3			Sk	eP	01 05 12
		Ud	eSg	19 33 30			Gb	iP	01 05 45.7 D
"	24	Sk	iSg	21 10 47.8			Um	iP	01 04 58.7
							Ka	iP	01 05 47.2
"	24	Up	eP	21 13 46			Ud	iP	01 05 30.4
								i	01 05 36.5
							Kurile Islands		
							(h = 30 km).		
					"	25	Up	iP	02 56 01.4
							Ud	iP	02 55 48.8
					"	25	Sk	iPg	03 36 50.9
								iSg	03 37 32.9
					"	25	Sk	iPg	03 52 16.9
								iSg	03 53 00.2
					"	25	Sk	ePg	04 17 04
								i(Sg)	04 17 49.1
					"	25	Sk	iPg	04 51 23.8
								iSg	04 52 05.2
					"	25	Ud	iP	05 04 29.6
							Formosa (h = 30 km).		
"	24	Up	iP	21 16 25.2	"	25	Sk	iPg	05 39 38.5
			i	21 16 41.6				iSg	05 40 23.1
		Ki	iP	21 16 06.6	"	25	Sk	iPg	08 05 13.1
			i	21 16 16.0				iSg	08 05 54.6
		Gb	iP	21 16 52.3	"	25	Sk	iPg	08 22 55.5
		Um	iP	21 16 22.2			(cont.)		
			i	21 16 29.9					
		Ka	eP	21 16 40					
		(cont.)							

Up = Uppsala, Ki = Kiruna, Sk = Skälstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
June	25	(cont.)			June	25	(cont.)		
		Sk	iSg	08 23 37.4			Ki		micr sec
		Ud	eSg	08 24 30			M	N	0.9 16
"	25	Sk	iPg	08 45 48.3			M	Z	3.1 22
			iSg	08 46 30.2			Sk	iP	23 31 22.7
"	25	Sk	iPg	09 01 25.1			Gb	iP	23 31 48.7
			iSg	09 02 06.5			Um	iP	23 31 07.9 C
"	25	Sk	ePg	09 21 26				ipP	23 31 18.2
			iSg	09 22 11.5				iPS	23 43 22
"	25	Sk	iPg	09 46 30.2			Ka	iP	23 31 37.7
			iSg	09 47 12.5			Ud	iP	23 31 29.9
"	25	Sk	iPg	10 07 18.0			Mariana Islands.		
			iSg	10 07 59.4			h = 40 km (Up,Um).		
"	25	Up	iP	14 37 52.3 D	"	26	Up	iP	02 35 34.0
		Ki	iP	14 37 17.5 D					micr sec
		Sk	iP	14 37 48.7			M	E	0.7 16
		Um	iP	14 37 32.0			M	N	0.8 16
		Ka	eP	14 38 11			M	Z	0.9 15
		Ud	iP	14 37 59.9 D			Ki	iS	02 45 49
		South of Japan							micr sec
		(h = 340 km).					S	E	0.4 10
"	25	Um	iP	17 53 39.9			M	E	2.2 17
							M	N	1.0 20
"	25	Up	iP	20 03 38.0			M	Z	2.3 17
		Ud	iP	20 03 36.8			Sk	eP	02 35 12
		Aleutian Islands					Um	iP	02 35 25.3
		(h = 60 km).						iS	02 46 10
"	25	Up	iP	21 39 24.4				iSS	02 51 53
		Sk	iP	21 39 29.6			Mexico (h = 50 km).		
		Um	iP	21 39 04.2			Magn. = 5.6 (Up,Ki).		
			ipP	21 39 15.4	"	26	Ud	eP	03 00 26
		Ud	iP	21 39 31.7			Formosa (h = 30 km).		
			ipP	21 39 43.6	"	26	Um	iP	03 48 22.2
		South of Japan.					Ud	eP	03 48 47
		h = 45 km (Um,Ud).					Aleutian Islands		
"	25	Up	iP	23 31 22.3			(h = 30 km).		
			ipP	23 31 32.0	"	26	Ud	iP	09 27 16.5
				micr sec			Atlantic Ocean (h = 30 km).		
		M	E	1.8 19	"	26	Ud	iP	12 38 50.5
		M	N	2.6 21			Burma-India (h = 5 km).		
		M	Z	3.0 19	"	26	Ki	ePn	13 29 16
		Ki	iP	23 30 58.1				iSn	13 30 09.0
			iPS	23 43 07				iLg1	13 30 25.3
				micr sec				D = 500 km = 4.5°	
		P	Z'	0.3 1.5			Um	iSg	13 31 15.6
		M	E	1.8 16			Probably northwest Russia.		
		(cont.)					Origin time = 13 28 04.		
							Explosion?		

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
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1967									
June	26	Ud	iP		17 50	09.5			
		Chile (h = 80 km).							
"	27	Ka	eP		12 44	23			
"	27	Sk	e(P)		13 08	50			
		Um	iP		13 07	29.2			
		Ka	iP		13 08	09.1			
"	27	Ud	iP		14 23	11.5			
"	27	Ud	iP		14 33	33.4			
"	27	Up	iP		16 03	53.6 C			
"	27	Ud	iP		17 00	03.5			
		Aleutian Islands (h = 40 km).							
"	27	Up	iP		20 43	58.4			
					micr	sec			
		P	Z'		0.1	0.8			
		Ki	iP		20 43	05.5			
					micr	sec			
		P	Z'		0.1	1.0			
		Sk	iP		20 43	38.0			
		Gb	iP		20 44	14.9			
		Um	iP		20 43	31.2 C			
		Ka	iP		20 44	21.5			
		Ud	iP		20 43	59.3 C			
		Aleutian Islands (h = 25 km). Magn. = 5.7 (Up,Ki).							
"	27	Up	iP		21 28	18.2			
		i			21 28	21.2			
"	27	Up			---				
					micr	sec			
		M	E		0.5	19			
		M	N		0.8	19			
		M	Z		0.9	19			
		Ki			---				
					micr	sec			
		M	E		0.5	18			
		M	N		0.5	17			
		M	Z		1.0	18			
		Um	eSKSP		22 08	28			
		e			22 15	08			
		eSS			22 15	33			
		Indian Ocean (h = 30 km).							
"	27	Up	iP		23 18	33.1			
		Ki	iP		23 18	10.2			
			ipP		23 18	25.1			
		Sk	iP		23 18	35.9			
		(cont.)							

1967									
June	27	(cont.)							
		Gb	iP			23	18	53.0	
		Um	iP			23	18	17.6	
			ipP			23	18	33.0	
		Ud	iP			23	18	42.1	D
		Formosa.							
		h = 60 km (Ki,Um).							
"	28	Ki				---			
						migr		sec	
		M		N		0.5		19	
		M		Z		1.0		20	
		Ud	ePKP			00	33	37	
		Solomon Islands							
		(h = 15 km).							
"	28	Up	iP			01	20	59.2	
						migr		sec	
		M		N		0.7		22	
		Ki	iP			01	20	12.0	
			ipP			01	20	25.3	
						migr		sec	
		M		E		0.9		20	
		M		N		0.7		20	
		M		Z		1.1		19	
		Sk	iP			01	20	48.9	
		Gb	iP			01	21	20.5	
		Um	iP			01	20	33.5	C
			ipP			01	20	49.0	
		Ka	iP			01	21	21.3	
		Ud	iP			01	21	04.8	
			ipP			01	21	19.2	
		Kurile Islands.							
		h = 50 km (Ki,Um,Ud).							
"	28	Um	iP			02	54	57.5	
"	28	Um	iPKP			05	53	22.5	
			ipKS			05	56	33	
		Samoa Islands (h = 40 km).							
"	28	Up	iPg			08	51	27.1	
			iSn			08	51	46.7	
			iSg			08	51	50.2	
		Sk	iSg			08	53	19.0	
		Ud	iPg			08	51	51.8	
			iSg			08	52	37.1	
		Gulf of Bothnia.							
		Origin time = 08 50 51.							
		Underwater explosion.							
"	28	Up	iPKP2			14	54	29.0	
						migr		sec	
		M		E		0.6		20	
		M		N		1.0		19	
		Ki	iPKP			14	53	57.0	C
		(cont.)							

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
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1967

June 28 (cont.)

Ki	i	14 54	27.6
		micr	sec
	PKP	Z'	0.2 1.0
	M	E	0.8 18
	M	N	0.4 17
	M	Z	1.0 20
Sk	iPKP	14 53	56.8
	i	14 54	12.1
Um	iPKP	14 54	01.6
	iPP	14 57	48
	iSS	15 17	29
Ud	iPKP2	14 54	35.3 C
	i	14 54	44.9
New Zealand (h = 40 km).			

"	28	Up	iPg	15 30	24.9
			iSg	15 30	42.5
				micr	sec
			Pg	Z'	0.1 0.5
			Sg	Z'	0.1 0.5
		Ki	eSg	15 33	39
		Sk	iPg	15 31	19.6
			iSg	15 32	17.9
		Um	iPg	15 30	52.0
			iSg	15 31	31.5
		Ka	iSg	15 32	37.2
		Ud	iPg	15 30	52.2
			iSg	15 31	34.3
			i	15 31	45.7
Gulf of Bothnia, 60.9°N, 19.7°E. Origin time = 15 29 50. Underwater explosion.					

"	28	Ki	iSg	16 21	12.9
		Sk	iSg	16 21	18.1
		Um	iSg	16 21	43.0
Nordlands Fylke, Norway.					

"	28	Um	iP	17 45	18.4
---	----	----	----	-------	------

"	28	Up	iP	19 28	38.2
---	----	----	----	-------	------

"	28	Up	iP	23 18	15.5
		Sk	eP	23 18	18
		Um	iP	23 17	59.2
		Ud	iP	23 18	24.8
Ryukyu Islands (h = 280 km).					

"	29	Up	iP	03 03	52.1 C
			iPn	03 04	57.5
			iPP	03 05	10.3
(cont.)					

1967

June 29 (cont.)

Ki	iP	03 03	36.6 C
	iPn	03 04	41.4
		micr	sec
	P	Z'	0.1 0.6
Sk	iP	03 04	07.7 C
	iPP	03 05	24.8
Um	iP	03 03	36.5 C
	iPn	03 04	37.9
	iPP	03 04	51.9
Ka	iP	03 04	08.2
	iPP	03 05	30.6
Ud	iP	03 04	08.6 C
Kazakh SSR. Origin time = 02 57 00. Underground explosion.			

"	29	Ki	i(P)	03 58	06.3
			iSg	03 58	17.4

"	29	Ki	e	04 11	15
			i(Sg)	04 11	17.2

"	29	Ud	iP	05 04	21.0
Aleutian Islands (h = 60 km).					

"	29	Up	iP	08 28	05.9
			eS	08 32	26
				micr	sec
		M	E	0.5	14
		M	N	1.1	19
		M	Z	0.9	15
D = 2700 km = 24 1/2°.					
Ki	iP			08 28	49.2 C
				micr	sec

		P	Z'	0.1	1.0
		M	E	1.0	14
		M	N	0.6	14
		M	Z	1.0	12

Um	iP	08 28	22.0
	i	08 28	34.0
	i(S)	08 33	12
Ka	iP	08 27	55.3
Ud	iP	08 28	22.2
Caucasus (h = 25 km).			

"	29	Up	iP	12 17	20.4
		Um	iP	12 16	56.4

"	29	Up	iP	16 13	14.6 C
		Gb	i(P)	16 13	11.1

"	29	Ki	iPP	16 54	21.4
(cont.)					

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967						1967					
June	29	(cont.)				June	30	Ki	iPg	21 53 07.9	
		Sk	iPP	16 54 54.9					iSg	21 53 16.9	
				Banda Sea (h = 120 km).					iRg	21 53 20.2	
										micr sec	
"	29	Ud	iP	17 10 10.7					Rg	Z' 0.3 0.9	
										D = 80 km = 0.7°.	
"	29	Up	iP	23 55 34.7						Detonation of 25 tons of	
		Sk	iP	23 55 41.5						explosives at 200 m depth	
		Ud	iP	23 55 41.0						in the iron ore mines at	
				Sinkiang (h = 30 km).						Malmberget, Sweden.	
										Origin time = 21 52 54.	
"	30	Ki	eP	00 16 57							
				micr sec							
		M	E	0.6 15							
		M	N	0.6 14							
		Ud	iP	00 17 30.4							
				Jan Mayen (h = 30 km).							
"	30	Um	iP	11 02 14.4							
			i	11 02 25.0							
"	30	Ki	ePn	13 15 27							
			iSn	13 16 12.9							
			iLg1	13 16 28.3							
				D = 420 km = 3.8°.							
		Um	iSg	13 17 22.4							
				Probably northwest Russia.							
				Origin time = 13 14 27.							
				Explosion?							
"	30	Ki	e	15 48 58							
			iSg	15 49 18.9							
		Um	iSg	15 47 56.4							
"	30	Up	iPKP	19 40 12.2							
			i	19 40 17.4							
		Ki	iPKP	19 39 52.3							
		Sk	iPKP	19 40 06.5							
		Um	iPKP	19 40 00.8 D							
				Kermadec Islands							
				(h = 260 km).							

Markus Båth
December 1, 1967

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, G Ö T E B O R G,
U M E Å, K A R L S K R O N A and U D D E H O L M

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
Göteborg	(Gb):	57°41.9'N,	11°58.7'E;	h = 66 m
Umeå	(Um):	63°48.9'N,	20°14.2'E;	h = 16 m
Karlskrona	(Ka):	56°09.9'N,	15°35.5'E;	h = 11 m
Uddeholm	(Ud):	60°05.4'N,	13°36.4'E;	h = 240 m

J U L Y 1 - 31, 1967
.....

1967					1967				
July	1	Ki	ePg	06 37 07	July	1	(cont.)		
			iSg	06 37 44.7			Ki	micr	sec
		Sk	eSg	06 38 00				Z	2.3 17
		Um	iSn ^x	06 38 06.3				D = 9600 km = 86 1/2°.	
			iS ^x	06 38 17.2			Um	iP	07 41 34.9
			iSg	06 38 27.7				iS	07 52 06
		Nordlands Fylke, Norway,					Sumatra. h = 30 km (Up,Ki).		
		66.9°N, 14.0°E.					Magn. = 5.9 (Up,Ki).		
		Origin time = 06 36 16.							
"	1	Up	iP	06 46 19.5	"	1	Up	iPn	08 49 28.9 C
		Ki	iP	06 45 44.2				iSn	08 49 50.0
		Um	iP	06 45 58.5				iSg	08 49 54.0
		Bonin Islands (h = 30 km).						micr	sec
							Pn	Z' 0.1	0.5
							Sg	Z' 0.2	0.5
"	1	Ki	iP	06 55 13.3			Ki	eLg1	08 52 24
		Sumatra (h = 30 km).						e(Sg)	08 52 34
							Sk	iLg1	08 51 18.7
"	1	Up	iP	07 41 38.0 C			Um	iPg	08 49 48.9
			ipP	07 41 44.9				iSg	08 50 26.3
			iS	07 52 09			Ka	iLg1	08 51 48.4
				micr sec			Gulf of Bothnia,		
		P	Z' 0.1	1.0			60°57'N, 20°06'E		
		S	N 1.0	10			(Helsinki).		
		M	E 1.1	20			Underwater explosion.		
		M	N 1.9	23					
		M	Z 1.6	20					
		D = 9600 km = 86 1/2°.			"	1	Up	iSn	11 43 27.2
								iSg	11 43 40.4
		Ki	iP	07 41 38.6 C			Ki	iLg1	11 46 11.5
			ipP	07 41 47.4			Sk	eLg1	11 45 26
			eS	07 52 10			Um	iSg	11 44 12.8
				micr sec			Southwest Finland,		
		P	Z' 0.2	1.0			60.1°N, 23.4°E.		
		S	N 1.3	9			Origin time = 11 42 04.		
		M	E 2.1	18			Probably explosion.		
		M	N 0.7	16					
		(cont.)							

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
July	1	Up	iP	12 01 15.3	July	1	(cont.)
			i	12 01 21.7		Ki	micr sec
"	1	Up	iSn	13 10 14.2		P	N 1.8 5
			iSg	13 10 31.3		P	Z 3.1 6
		Ki	iLg1	13 13 02.1		P	Z' 1.2 1.2
		Sk	eLg1	13 12 18		S	E 29 13
		Um	iSg	13 11 02.3		S	N 5.7 14
		Ka	iSg	13 12 03.3		P'P'	Z' 0.5 2.2
		Southwest Finland,				M	E 20 19
		60.1°N, 23.4°E.				M	N 15 20
		Origin time = 13 08 55.				M	Z 34 19
		Probably explosion.				D = 6450 km = 58°.	
"	1	Up	iP	15 50 14.4	Sk	iP	23 20 26.7 D
		Iran (h = 40 km).				iPP	23 22 52.8
"	1	Up	iP	21 32 59.1		iP'P'	23 49 43.8
			ipP	21 33 10.9	Gb	iP	23 21 04.9
			iPcP	21 33 30.9		ipP	23 21 15.7
		Ki	iP	21 32 05.5		iP'P'	23 49 29.8
			ipP	21 32 16.8	Um	iP	23 20 26.1 D
				micr sec		ipP	23 20 37.2
		P	Z'	0.1 1.2		iPa	23 24 26
Sk		iP		21 32 35.0		iS	23 28 47
Gb		iP		21 33 12.1	Ka	iP	23 21 14.4
		i		21 33 18.5		ipP	23 21 25.5
Um		iP		21 32 31.7		iP'P'	23 49 19.8
		ipP		21 32 43.9	South of Alaska.		
		South of Alaska.			h = 40 km (Gb,Um,Ka).		
		h = 40 km (Up,Ki,Um).			Magn. = 6.7 (Up,Ki).		
"	1	Up	iP	23 20 52.5 D	The dilatational P-wave		
			iPcP	23 21 27.9	motion is probably preceded		
			iS	23 29 39	by a small compression, as		
			i(P'P')	23 49 18.7	evidenced by Um records.		
			iP'P'	23 49 30.5	"	2	Um iP 01 17 18.7
				micr sec	Japan (h = 50 km).		
		P	N	1.2 4	"	2	Ki iP 01 19 29.3
		P	Z	1.9 4	South of Alaska (h = 30 km).		
		P	Z'	1.0 1.3	"	2	Ki iP 02 31 27.3 C
		S	E	19 14	South of Alaska (h = 50 km).		
		S	N	3.8 12	"	2	Up iP 02 47 04.3
		P'P'	Z'	0.2 1.7			Ki iP 02 46 10.5
		M	E	14 23			ipP 02 46 20.5
		M	N	23 20			micr sec
		M	Z	17 21			P Z' 0.1 1.0
		D = 7350 km = 66°.			Sk	eP	02 46 39
Ki		iP		23 19 59.1 D	Um	iP	02 46 38.0
		iPcP		23 20 55.6	South of Alaska.		
		i		23 22 40	h = 40 km (Ki).		
		iS		23 27 55			
		eP'P'		23 49 45			
		(cont.)					

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967
July 2

Up iP 03 12 13.5
Um iP 03 11 48.3
Japan (h = 330 km).

" 2

Up iP 07 15 32.8 D
i 07 15 35.3
iPP 07 18 20.2
iS 07 25 11
iScS 07 25 44
micr sec
P Z' 0.5 1.0
S E 1.8 9
S N 3.0 15
M E 6.0 22
M N 8.1 20
M Z 8.6 22
D = 8350 km = 75°.
Ki iP 07 15 35.0
i 07 15 36.5
iPP 07 18 26.3
iS 07 25 14
iScS 07 25 48
micr sec
P E 0.6 9
P Z 1.3 9
P Z' 0.4 1.2
S E 3.4 10
S N 2.3 15
M E 14 18
M N 7.5 17
M Z 14 18
D = 8400 km = 75 1/2°.
Sk iP 07 15 50.8
i 07 15 53.4
i 07 17 31.5
Gb iP 07 15 49.4
i 07 15 51.9
Um iP 07 15 29.9
i 07 15 32.1
i 07 17 52.3
iS 07 25 06
Ka iP 07 15 37.5
i 07 15 40.5
i(PP) 07 18 22.4
Nicobar Islands (h = 30 km).
Magn. = 6.4 (Up, Ki).
Multiple P: average
difference = 2.5 sec between
the first small and the
second large onset.

1967
July 2

(cont.)
Ki iP 07 49 25.8 C
i(PcP) 07 49 49.1
Sk eP 07 49 59
i 07 50 03.1
Gb iP 07 50 24.0
ipP 07 50 36.3
Um iP 07 49 42.1 C
Ka eP 07 50 23
South of Japan.
h = 50 km (Up, Gb).

" 2

Up iP 08 41 00.2
ipP 08 41 05.8
Ki iP 08 41 06.1
ipP 08 41 12.9
Sk iP 08 41 23.8
ipP 08 41 31.4
Gb iP 08 41 27.1
Um iP 08 40 57.4
i 08 41 20.9
i 08 41 57.8
iPP 08 42 50.1
Ka iP 08 41 04.8 C
ipP 08 41 11.0
Kashmir. h = 30 km
(Up, Ki, Sk, Ka).

" 2

Up iP 10 19 56.0
Ki iP 10 19 02.2
Sk eP 10 19 30
Um iP 10 19 29.9
South of Alaska
(h = 30 km).

" 2

Up iPn 12 17 27.8
iSn 12 17 47.5
iSg 12 17 50.1
micr sec
Pn Z' 0.1 0.5
Sg Z' 0.4 0.5
Sk ePg 12 18 17
iSg 12 19 15.7
Um iPg 12 17 48.1
iSg 12 18 24.1
Ka eLg1 12 19 42
Gulf of Bothnia,
61°20'N, 19°10'E
(Helsinki).
Underwater explosion.

" 2

Up iP 07 50 02.9 C
ipP 07 50 16.5
i! 07 50 26.8
(cont.)

" 2

Up iP 14 21 20.2
ipP 14 21 28.3
Ki eP 14 21 22
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967
July 2 (cont.)

Ki ipP 14 21 28.7
Sk eP 14 21 38
Um iP 14 21 17.2
ipP 14 21 25.2
Ka ipP 14 21 31.9
Ud iP 14 21 31.9
ipP 14 21 40.0
Nicobar Islands.
h = 30 km (Up,Um,Ud).

" 2 Up iP 14 30 56.2
Um iP 14 30 53.1
Ud iP 14 31 08.9
Nicobar Islands
(h = 30 km).

" 2 Up iP 16 27 38.8
Sk iP 16 27 33.8
Um iP 16 27 18.3
i 16 27 49.4
Ka iP 16 27 57.0
Ud iP 16 27 46.1 C
i 16 28 01.4
South of Japan (h = 20 km).

" 2 Ki iP 16 37 29.7

" 2 Up iPg 17 11 50.9
iSg 17 12 13.6
micr sec
Sg Z' 0.1 0.5
Ki eLg1 17 14 41
iSg 17 14 54.9
Sk eSn 17 13 22
iLg1 17 13 30.5
Um iPg 17 12 11.7
iSg 17 12 47.1
Ka eLg1 17 14 00
Ud ePg 17 12 14
iSg 17 12 53.6
Gulf of Bothnia,
61.0°N, 20.3°E.
Origin time = 17 11 16.
Underwater explosion.

" 2 Ud eP 18 48 12
Nicobar Islands
(h = 30 km).

" 2 Up iP 20 45 50.4 C
i 20 45 57.9
micr sec
P Z' 0.1 0.7
(cont.)

1967
July 2 (cont.)

Ki iP 20 45 18.7 C
Sk iP 20 45 49.6 C
Gb iP 20 46 10.8 C
Um iP 20 45 31.5 C
i 20 45 50.1
Ka iP 20 46 07.4
Ud iP 20 45 59.2 C
Japan (h = 180 km).

" 2 Ki eP 22 12 45
Sk eP 22 13 13
Um iP 22 13 00.0
Ud eP 22 13 24
Volcano Islands (h = 40 km).

" 3 Up eP 02 57 27
micr sec
M E 1.0 11
M N 0.5 11
Ki iP 02 58 59.9
micr sec
M E 0.8 14
M N 0.4 10
M Z 0.5 10
Sk iP 02 58 19.2
Um iP 02 58 17.2
Ka iP 02 56 50.0
Ud iP 02 57 35.7
Yugoslavia (h = 60 km).

" 3 Up iP 03 09 36.2
Ki iP 03 08 42.8
Um iP 03 09 10.1
Ud iP 03 09 33.8
South of Alaska
(h = 30 km).

" 3 Ki iP 03 55 24.2
Ud eP 03 55 55
Mariana Islands
(h = 30 km).

" 3 Up iP 05 20 30.4 C
Ki iP 05 19 45.1
Sk iP 05 20 20.8
Um iP 05 20 04.3 C
i 05 20 19.7
Ka iP 05 20 51.3
Ud iP 05 20 36.7
Kurile Islands (h = 30 km).

" 3 Ki iP 07 04 33.2
Um iP 07 05 00.4
South of Alaska
(h = 30 km).

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
July	3	Ki	iP	09 49 29.2	July	3	(cont.)		
		Um	iP	09 49 56.6		Um	i	15 13 13.2	
		Ud	eP	09 50 20			i	15 13 22.7	
		South of Alaska (h = 30 km).				Ud	eP	15 13 21	
							i	15 13 35.0	
"	3	Ki	iP	10 04 56.9	"	3	Sk	eP	15 36 58
"	3	Gb	iPKP	11 22 03.1	"	3	Um	iP	15 43 06.5
		Ud	iPKP	11 21 54.9	"	3	Up	iLg1	17 32 52.3
		South of Fiji Islands					iSg	17 32 57.9	
		(h = 690 km).				Ki	eLg1	17 34 25	
"	3	Ki	e(Sn)	11 27 00		Sk	i(Pg)	17 30 46.0	C
			i(Sg)	11 27 19.3			i(Sg)	17 31 39.5	
"	3	Up	iLg1	12 02 55.2		Gb	e	17 32 17	
		Sk	ePn	12 00 45			iSg	17 32 22.0	
			iP ^x	12 00 54.6		Um	iSn	17 32 54.1	
			iLg1	12 01 56.1			iLg1	17 33 25.6	
		Gb	iLg1	12 02 04.3		Ka	eLg1	17 33 34	
		Um	iLg1	12 03 30.9		Ud	iPn	17 30 42.7	
		Ud	iPn	12 00 42.8			iSg	17 31 54.2	
			iPg	12 00 54.5		West coast of Norway,			
			iSn	12 01 36.5		61°28.4'N, 5°06.5'E.			
			iLg1	12 01 53.3		Origin time = 17 29 36.3			
			iSg	12 02 01.8		(Bergen).			
		West coast of Norway,				Underwater explosion.			
		60°49.5'N, 4°49.8'E.			"	3	Up	iPg	17 56 42.0
		Origin time = 11 59 36.3.					iSg	17 57 10.3	
		Underwater explosion.					D = 230 km = 2.1°.		
		Source data from Bergen.				Ki	eLg1	17 59 35	
"	3	Up	iPg	12 15 31.5 C		Sk	eLg1	17 58 30	
			iSg	12 16 01.0		Um	iPg	17 56 51.1	
				micr sec			iSg	17 57 25.9	
		Pg	Z' 0.1	0.5			D = 290 km = 2.6°.		
		Sg	Z' 0.2	0.5		Ud	i	17 57 54.3	
		D = 240 km = 2.2°.					iLg1	17 58 02.7	
		Sk	ePg	12 16 06		Gulf of Bothnia,			
			iSg	12 17 03.6		61.2°N, 21.2°E.			
		Um	iPg	12 15 27.7		Origin time = 17 56 00.			
			iSg	12 15 55.8		Underwater explosion.			
		D = 230 km = 2.1°.			"	3	Up	i(P)	20 57 22.9
		Ud	iPg	12 15 57.9				micr sec	
			eSg	12 16 49			(P)	Z' 0.1	0.6
		Gulf of Bothnia,				Local disturbance?			
		61.7°N, 20.3°E.			"	3	Up	iP	22 00 09.7
		Origin time = 12 14 47.					Ki	iP	22 00 52.7
		Underwater explosion.						ipP	22 00 59.0
"	3	Um	iP	12 22 57.9			Sk	iP	22 00 22.3
"	3	Sk	eP	15 13 24				ipP	22 00 28.3
		Um	iP	15 13 09.2			Um	iP	22 00 33.2
		(cont.)				(cont.)			

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967		1967	
July	3	July	4
	(cont.)		
	Um ipP 22 00 40.2	Ki e(Sn) 16 38 34	
	iS 22 10 16	i(Sg) 16 38 54.1	
	Ud ipP 22 00 04.6	" 4 Sk ePg 17 30 55	
	ipP 22 00 10.8	eSg 17 32 07	
	Ascension Island.	Ud iSg 17 32 19.7	
	h = 25 km (Ki,Sk,Um,Ud).	Off west coast of Norway.	
"	4 Ud ipP 00 11 33.3	Underwater explosion.	
	Peru-Brazil (h = 90 km).	" 4 Ki iP 21 37 13.6	
"	4 Ki eP 02 42 14	Ud e(P) 21 36 33	
"	4 Sk eSg 05 01 00	" 4 Up iP 23 52 54.3 C	
	Ud eSg 05 01 16	i 23 54 33.0	
	West coast of Norway.	iS 00 01 36	
	Underwater explosion.	i 00 02 35	
"	4 Sk iSg 12 13 51.5	micr sec	
	Um iSg 12 12 31.6	P Z' 0.5 0.8	
	Ud eSn 12 12 34	S E 0.5 7	
	iSg 12 13 05.9	S N 0.4 5	
	Southwest Finland.	M E 0.6 11	
	Probably explosion.	M N 0.7 11	
"	4 Ki iP 12 42 48.8	M Z 1.6 20	
"	4 Up ---	(D = 7550 km = 68°).	
	micr sec	Ki iP 23 52 11.1 C	
	M E 1.5 20	i 23 54 17.1	
	M N 1.5 19	iS 00 00 16	
	M Z 1.8 19	micr sec	
Ki	iPKP 14 35 58.2	P E 0.5 6	
	iPP 14 37 43	P N 0.5 6	
	ePS 14 47 43	P Z 1.1 7	
	eSS 14 54 54	P Z' 0.4 1.0	
	micr sec	S E 1.2 8	
	PP E 0.3 7	S N 0.5 8	
	PP Z 0.4 6	M E 0.8 14	
	M E 1.2 21	M N 0.7 11	
	M N 0.7 18	M Z 0.6 12	
	M Z 0.5 23	(D = 6800 km = 61°).	
Sk	ePKP 14 35 45	Sk iP 23 52 46.1 C	
Um	iPKP 14 35 48.5	i 23 54 58.5	
	i 14 35 55.0	Gb iP 23 53 16.1 C	
	iPP 14 37 34	i 23 55 36.4	
	i 14 45 39	iPP 23 55 52.5	
	iPS 14 47 23	Um iP 23 52 30.2 C	
	eSS 14 54 25	iPP 23 53 04	
Ud	iPKP 14 35 39.9	iS 00 00 52	
	i 14 35 46.4	iScS 00 02 08	
	Chile (h = 30 km).	i 00 12 23	
	Magn. = 6.0 (Up,Ki).	Ka iP 23 53 15.6 C	
		ipP 23 53 57.8	
		Ud iP 23 53 01.1 C	
		Japan. h = 170 km (Ka).	
		Magn. = 6.0 (Up,Ki).	

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967						1967					
July	5	Up	iP	00 58	19.3	July	5	Up	iP	16 01	51.3
			i	00 59	22.5						
			eS	01 02	29	"	5	Up	iP	16 54	37.9
				migr	sec			Ki	eP	16 55	49
		S	N	0.6	7					migr	sec
		M	E	0.9	12			M	E	0.4	16
		M	N	2.8	14			M	N	0.2	11
		M	Z	2.8	15			M	Z	0.5	12
		Ki	iP	00 59	32.1			Sk	iP	16 55	17.3
				migr	sec			Um	iP	16 55	15.7
		M	E	1.1	15				eS	17 00	00
		M	N	1.2	11			Ka	iP	16 54	01.5
		M	Z	1.8	11			Ud	iP	16 54	44.3
		Sk	iP	00 58	58.3				iPP	16 55	14.1
		i		00 59	10.3			Greece (h = 40 km).			
		Um	iP	00 58	56.8						
		i		00 59	18.1	"	5	Up	iP	21 21	40.9
		iS		01 03	33			Ki	iP	21 21	24.2
		e		01 03	50			Um	iP	21 21	31.1
		Ka	iP	00 57	42.4			Ud	iP	21 21	48.7
		Ud	iP	00 58	25.8			Luzon (h = 40 km).			
		Greece (h = 20 km).				"	5	Ki	iP	21 48	18.6
"	5	Up	iP	04 13	51.1	"	6	Um	iPP	00 41	00
		Ki	iP	04 12	57.2 D				iSKKS	00 47	47
		Sk	eP	04 13	24			South Pacific Ocean			
		Um	iP	04 13	24.1			(h = 30 km).			
			ipP	04 13	33.1						
		Ud	iP	04 13	48.7	"	6	Up	iP	05 15	56.8
		South of Alaska.						Ki	iP	05 15	00.1
		h = 30 km (Um).							ipP	05 15	15.2
"	5	Ud	iPn	04 59	38.4					migr	sec
			iSg	05 01	13.9			P	Z'	0.1	1.0
		Off west coast of Norway.						Sk	iP	05 15	27.6
		Underwater explosion.							ipP	05 15	42.5
"	5	Up	iP	09 12	56.5			Gb	iP	05 16	08.7
		Ki	iP	09 12	28.5 C			Um	iP	05 15	29.7
		Ud	iP	09 13	05.4				ipP	05 15	44.4
		Ryukyu Islands (h = 30 km).						Ka	iP	05 16	20.9
"	5	Ki	i(P)	11 00	41.2			Ud	iP	05 15	52.8
			i(Sg)	11 01	40.2				ipP	05 16	08.4
"	5	Ki	iP	13 53	56.2	"	6	Ki	iPKP	05 40	14.9
		Ud	iP	13 54	36.6			South Sandwich Islands			
		South of Japan						(h = 150 km).			
		(h = 460 km).				"	6	Up	eP	08 26	56
"	5	Up	iP	14 29	49.2			Ki	iP	08 28	07.7
		Um	iP	14 29	20.8					migr	sec
"	5	Ud	iP	15 07	28.0			M	E	0.6	15
		i		15 07	35.9			M	N	0.3	10
								M	Z	0.6	10
								(cont.)			

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
July	6	(cont.)			July	6	(cont.)		
		Sk	iP	08 27 33.6			Ud	iP	13 53 19.4 C
		Um	iP	08 27 34.4			Aleutian Islands		
			eS	08 32 10			(h = 15 km).		
			i	08 32 25			Magn. = 6.2 (Up,Ki).		
		Ka	iP	08 26 17.9					
		Ud	eP	08 27 01	"	6	Ki	iP	13 56 56.2
		Greece (h = 40 km).					Um	iP	13 57 23.1
"	6	Sk	eP	13 45 20			Ud	iP	13 57 48.5
		Ka	eP	13 44 04			Aleutian Islands		
		Ud	iP	13 44 46.9			(h = 30 km).		
		Greece.			"	6	Up	iP	14 22 54.9
		Origin time = 13 39.6.			"	6	Um	iP	14 27 18.0
"	6	Up	iP	13 53 20.0 C			Ud	i(P)	14 27 44.1
			i	13 53 32.8	"	6	Up	iP	14 43 13.2
			iS	14 02 12	"	6	Up	iP	16 25 18.8
			iScS	14 03 29			Ki	iP	16 24 25.4
			iP'P'	14 21 41.4			Gb	iP	16 25 33.0
				micr sec			Um	iP	16 24 52.3 C
		P	N	0.6 5				i	16 25 05.4
		P	Z'	0.6 1.3			Ud	iP	16 25 18.0 C
		S	E	1.1 12			Aleutian Islands		
		S	N	1.2 12			(h = 30 km).		
		M	E	1.6 17	"	6	Ki	iSg	17 47 41.2
		M	N	5.1 21			Sk	iSg	17 47 45.7
		M	Z	4.5 20			Um	iSg	17 48 08.4
		D = 7550 km = 68°.					Nordlands Fylke, Norway.		
		Ki	iP	13 52 27.0 C	"	6	Up	iP	18 43 18.0
			e	13 52 44				eS	18 52 09
			iPcP	13 53 12.3					micr sec
			iPa	13 56 20				M	E 0.6 21
			iS	14 00 36				M	N 1.0 19
				micr sec				M	Z 0.9 19
		P	N	0.7 7				D = 7600 km = 68 1/2°.	
		P	Z	1.4 5			Ki	eP	18 43 21
		P	Z'	0.8 1.3				iPcP	18 43 48.9
		S	E	1.5 10				iS	18 52 30
		S	N	0.7 10					micr sec
		M	E	4.1 21				S	E 0.4 10
		M	N	3.0 19				D = 7700 km = 69 1/2°.	
		M	Z	5.1 19			Sk	iP	18 42 59.9
		D = 6650 km = 60°.					Um	iP	18 43 20.8
		Sk	iP	13 52 57.8				iS	18 52 20
			i	13 53 05.8			Ka	iP	18 43 06.8
		Gb	iP	13 53 34.6 C			Ud	eP	18 43 02
		Um	iP	13 52 54.0 C				i	18 43 06.2
			iPcP	13 53 31.0			Leeward Islands		
			i	14 00 51			(h = 60 km).		
			iS	14 01 25					
			iScS	14 02 45					
			iP'P'	14 21 47.8					
		Ka	iP	13 53 43.4 C					
		(cont.)							

1967						1967					
July	6	Up	eP	19 07 55	mic	sec	July	6	(cont.)		
			M	E	0.8	18			Gb	iP	23 27 30.1
			M	N	1.1	19			Um	iP	23 26 49.8 C
			M	Z	0.9	18				ipP	23 27 29.1
		Ki	iP		19 08 29.4				Ud	iP	23 27 17.8 C
					micr	sec			Japan. h = 160 km (Ki,Um).		
			M	E	1.0	16	"	7	Ki	iP	01 15 39.5
			M	N	0.7	16					
			M	Z	1.6	16	"	7	Up	iP	01 19 08.9
		Um	iP		19 08 12.5				Ki	iP	01 19 48.0
		Ud	eP		19 08 06						micr sec
		Gulf of Aden (h = 40 km).							M	E	0.3 15
									M	N	0.2 13
"	6	Up	iP		19 30 35.7 C				M	Z	0.7 15
			iS		19 39 28				Um	iP	01 19 29.8
					micr sec					iS	01 27 07
			S	N	0.5	5			Gulf of Aden (h = 30 km).		
			M	E	1.4	19					
			M	N	1.8	22	"	7	Sk	iP	04 47 27.6
			M	Z	2.7	21			Um	iP	04 47 11.5 D
			D = 7400 km = 66 1/2°.						Sea of Japan (h = 470 km).		
		Ki	iP		19 31 09.7						
			iS		19 40 26		"	7	Up	eSn	05 01 17
					micr sec					iLg ¹	05 01 39.4
			P	Z'	0.3	2.0			Ki	eS ²	05 03 37
			S	N	0.6	8				iLg ¹	05 04 04.3
			M	E	2.1	21			Sk	iPg	05 00 03.2
			M	N	0.8	20				iSn	05 00 46.1
			M	Z	2.1	21				iSg	05 01 13.0
			D = 8000 km = 72°.						Gb	iSg	05 00 25.2
		Sk	iP		19 30 41.3				Um	eSn	05 02 14
		Gb	iP		19 30 12.1					iLg ¹	05 02 41.9
		Um	iP		19 30 57.8				Ka	iSn	05 01 10.6
			iS		19 40 01					iLg ¹	05 01 39.6
		Ka	iP		19 30 20.3					iSg	05 01 46.7
		Ud	iP		19 30 25.1 C				Ud	iPn	04 59 34.6
		Atlantic Ocean (h = 30 km).								iSn	05 00 21.1
		Magn. = 5.8 (Up,Ki).								iLg ¹	05 00 35.3
"	6	Up	iSg		22 12 42.5				West coast of Norway, 59°29.3'N, 5°51.4'E.		
			i		22 12 53.9				Origin time = 04 58 30.3 (Bergen).		
		Sk	e(Sg)		22 14 41				Underwater explosion.		
		Ka	i(P)		22 10 19.4						
			i		22 10 22.0						
			iSg		22 10 48.4		"	7	Up	i	07 02 28.0
		Ud	eSg		22 12 43						

1967
July 7 (cont.)

Gb	iSg	07 01	25.1
Um	iSn	07 03	13.6
	iLg1	07 03	41.9
Ka	iLg1	07 02	39.6
	iSg	07 02	46.7
Ud	ePn	07 00	35
	iSn	07 01	21.1
	iLg1	07 01	35.2

West coast of Norway,
59°29.3'N, 5°51.5'E.
Origin time = 06 59 30.3
(Bergen).
Underwater explosion.
This and the preceding
case clearly demonstrate
the great significance of
the phase Lg1, also in
studies of near events.
The Sk arrivals are
apparently too early, as
compared with J.-B. tables
(cf. July 3, 17 32).

" 7 Up iPKP 10 00 26.2
Um iPKP 10 00 18.5
i 10 00 26.5
Ka iPKP 10 00 37.3
Ud iPKP 10 00 26.2
Fiji Islands (h = 540 km).

" 7 Up iP 13 41 24.0 C
Ki iP 13 41 06.2 C
micr sec
P Z' 0.2 1.5
Sk iP 13 41 28.0 C
Gb iP 13 41 39.0
Um iP 13 41 12.2 C
i 13 41 14.3
iPP 13 44 48.4
Ka iP 13 41 34.0 C
Ud iP 13 41 32.0 C
Mindanao (h = 200 km).

" 7 Ud iPg 14 13 21.9
iSg 14 13 36.1

" 7 Ki iPn 15 02 37.0
i 15 03 15.0
iSn 15 03 25.1
iLg1 15 03 37.5
D = 440 km = 4.0°
Um iSn^x 15 04 46.9
iS^x 15 05 09.0
iLg1 15 05 18.5
(cont.)

1967
July 7 (cont.)

Probably northwest Russia.
Origin time = 15 01 33.
Explosion?

" 7 Ka iP 22 04 23.4
iSg 22 05 02.8
Probably south Baltic
explosion.

" 7 Ka iP 22 48 43.9
iSg 22 49 15.8
Probably south Baltic
explosion.

" 7 Up iP 23 06 25.7
Ki eP 23 06 19
Sk iP 23 06 42.4
Um iP 23 06 17.7
Ka iP 23 06 35.5
Ud iP 23 06 39.9
India-China (h = 30 km).

" 7 Ud iP 23 12 13.5
Atlantic Ocean (h = 30 km).

" 7 Up iP 23 58 18.4
Ki iP 23 58 10.5
micr sec
M E 0.8 13
M N 1.5 17
M Z 1.0 16
Sk iP 23 58 34.6
Um iP 23 58 08.4
i 23 58 14.9
eS 00 05 21
eSS 00 08 57
Ud iP 23 58 33.9
Tibet (h = 30 km).

" 8 Up iP 00 53 35.3
Ki iP 00 52 54.5
Um iP 00 53 12.5
ipP 00 53 30.7
Ud iP 00 53 42.5
ipP 00 54 01.1
Japan. h = 70 km (Um, Ud).

" 8 Up iPKP 01 17 48.7
i 01 18 16.7
iSKP 01 21 02.1
i 01 21 12.8
micr sec
PKP Z' 0.3 1.8
SKP Z' 0.1 0.9
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
July 8 (cont.)					July 8 (cont.)				
	Ki	iPKP	01 17 36.0 C			Ki	iSn	12 37 24.1	
			micr sec				iLg1	12 37 38.7	
		PKP Z'	0.2 1.0			Sk	eSg	12 40 35	
	Sk	iPKP	01 17 46.5 C			Um	i	12 38 04.9	
		iSKP	01 20 58.1				i	12 39 21.9	
	Gb	iPKP	01 17 56.5		" 8	Sk	e(Sg)	13 06 00	
		eSKP	01 21 14		" 8	Up	iPKP	13 31 47.4	
	Um	e(PKP)	01 17 33			Fiji Islands	(h = 520 km).		
		iPKP	01 17 41.8 C		" 8	Ki	ePn	13 48 13	
		i	01 19 49.8				iSn	13 48 50.0	
		iSKP	01 20 48.3				iSg	13 49 05.8	
	Ka	iPKP	01 17 57.1 C		" 8		D = 330 km = 3.0°		
		iSKP	01 21 15.4			Sk	iSg	13 51 30.7	
	Ud	ePKP	01 17 50			Um	iSn	13 49 32.0	
	New Hebrides Islands						iSg	13 50 01.8	
	(h = 140 km).					Northern Finland, 67.2°N, 28.5°E. Origin time = 13 47 24. Explosion?			
" 8	Up	iP	01 30 09.9		" 8	Up	iP	19 29 46.9 C	
	Um	eP	01 29 47				ipP	19 30 05.4	
		i	01 30 50.3			Um	iP	19 29 24.3 C	
" 8	Um	iP	06 37 26.9 C				ipP	19 29 42.7	
" 8	Up	iPKP	06 42 06.7		" 8	Ud	iP	19 29 54.1	
		ipKS	06 45 30				ipP	19 30 12.2	
	Ki	iPKP	06 41 51.6			Japan. h = 70 km (Up,Um,Ud).			
		ipPKP	06 42 05.4		" 8	Ki	e(Sg)	20 56 58	
			micr sec		" 8	Ud	e(P)	22 08 27	
		PKP Z'	0.1 1.3				i	22 08 32.1	
	Sk	iPKP	06 42 03.9			Crete.			
		ipPKP	06 42 17.8		" 8	Um	iP	23 12 11.7	
	Um	iPKP	06 41 58.2				i	23 12 23.8	
		ipPKP	06 42 10.3			Japan (h = 70 km).			
		iPP	06 43 55		" 8	Ki	iP	23 32 00.8	
		ePKS	06 45 16			Sk	iP	23 32 24.1	
	Ud	iPKP	06 42 07.9			Um	iP	23 31 58.0	
		ipPKP	06 42 21.1			Ud	iP	23 32 19.9	
	New Hebrides Islands.					Sinkiang.			
	h = 50 km (Ki,Sk,Um,Ud).				" 9	Ki	eP	03 10 41	
" 8	Um	iP	07 09 25.6			Sk	eP	03 11 28	
" 8	Up	iP	07 56 35.9			Um	eP	03 10 46	
" 8	Up	iPKP	10 20 59.0 D				i	03 16 13.7	
			micr sec			Ud	iP	03 11 29.7	
		PKP Z'	0.1 0.8						
	Um	iPKP	10 20 54.7						
		iSKP	10 23 44.2						
	Tonga-Kermadec Islands								
	(h = 460 km).								
" 8	Ki	iPn	12 36 37.7						
	(cont.)								

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
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1967					1967				
July	9	Up	iP	03 19 51.1 C	July	9	Um	iP	20 50 20.7
				micr sec			Ud	iP	20 49 54.5
			P	Z' 0.1 0.6			Atlantic Ocean		
		Ki	iP	03 19 06.9 C			(h = 30 km).		
				micr sec					
			P	Z' 0.1 1.0	"	9	Ki	eP	21 41 50
		Sk	iP	03 19 42.3 C			Um	iP	21 41 32.5
		Gb	iP	03 20 12.7 C			Ud	iP	21 41 04.6
		Um	iP	03 19 26.8 C			Atlantic Ocean		
		Ka	iP	03 20 12.9			(h = 20 km).		
		Ud	iP	03 19 58.0 C					
		Japan (h = 100 km).			"	10	Ki	iP	03 26 24.7
		Magn. = 5.7 (Up,Ki).					Ud	iP	03 27 25.9
							Kamchatka (h = 30 km).		
"	9	Ud	iP	05 24 36.2 C	"	10	Up	iP	03 46 24.5
		i		05 24 41.7			Ki	iP	03 45 26.9
		Atlantic Ocean (h = 30 km).					Ud	iP	03 46 27.5
"	9	Um	i(P)	05 36 26.8			Kamchatka (h = 30 km).		
"	9	Ki	iP	05 46 17.5	"	10	Ud	iP	06 03 00.5
		South of Alaska					Japan (h = 30 km).		
		(h = 30 km).			"	10	Ki	iP	06 11 46.1
"	9	Ud	iP	08 00 54.7			Um	iP	06 12 13.1 D
		i		08 01 00.7			Ud	iP	06 12 39.2
		Atlantic Ocean					Aleutian Islands		
		(h = 30 km).					(h = 30 km).		
"	9	Ud	iP	09 33 50.8	"	10	Ki	iP	06 22 11.3
		Atlantic Ocean					Um	iP	06 22 36.4
		(h = 30 km).					Ud	iP	06 23 08.3
"	9	Up	iP	13 03 37.4			Kamchatka (h = 30 km).		
		iS		13 06 45.4	"	10	Ki	iPKP	06 47 35.5
		Ki	iP	13 02 28.7			Sk	iSKP	06 50 24.9
		eS		13 04 40			Um	iPKP	06 47 42.4
		Um	i	13 07 46.7			iSKP		06 50 19.6
		i		13 10 10.8			Ud	iPKP	06 47 46.4
		Ud	iP	13 03 58.4			i		06 47 52.9
		iS		13 07 21.6			iSKP		06 50 34.1
		Probably region of					Fiji Islands (h = 530 km).		
		northern Russia.			"	10	Ka	iPKP	10 36 50.6 C
"	9	Ki	iPn	13 45 35.6			Ud	iPKP	10 36 39.8
		iSn		13 46 24.2			Fiji Islands (h = 620 km).		
		iLg1		13 46 38.9	"	10	Ki	iP	10 58 28.6
		D = 440 km = 4.0°					Um	iP	10 58 55.2
		Um	iSg	13 48 02.2			Ud	iP	10 59 20.9
		Northwest Russia.					Aleutian Islands (h = 25 km).		
		Origin time = 13 44 33.							
		Explosion?							

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
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1967					1967				
July	10	Up	epP	12 16 13	July	11	Ki	eP	01 32 33
		Ki	iP	12 13 57.4			Um	iP	01 32 04.2
			ipP	12 16 05.7			Ud	eP	01 32 15
			iSKS	12 23 35			Iran.		
				micr sec					
			SKS	E 0.8 7	"	11	Up	iPKP	04 35 53.0
		Um	iP	12 13 58.7			Sk	iPKP	04 35 52.7
			epP	12 16 07			Um	iPKP	04 35 46.6
		Ud	iP	12 14 13.6			Ud	iPKP	04 35 55.7
			ipP	12 16 22.2			Solomon Islands (h = 90 km).		
		Java Sea. h = 590 km							
		(Ki,Um,Ud).			"	11	Um	iP	12 45 44.7
							i		12 45 57.7
"	10	Gb	i(P)	14 02 23.7 C			Yugoslavia.		
"	10	Up	iP	19 31 26.2	"	11	Ki	iPKP	13 36 04.4
			iS	19 42 31			Um	iPKP	13 36 15.5
				micr sec			New Zealand (h = 110 km).		
			M	E 1.2 24					
			M	N 1.1 19	"	11	Ki	e	16 18 11
			M	Z 1.7 25				iSg	16 18 33.4
		Ki	iP	19 31 08.3			Sk	e	16 18 09
			i	19 31 19.2				iSg	16 18 36.6
			eSKS	19 41 36			Um	iSg	16 18 59.7
			iS	19 42 06			Ud	eSg	16 20 22
				micr sec			Nordlands Fylke, Norway.		
			S	N 0.4 7					
			M	E 1.1 22	"	11	Ki	iP	18 56 09.5
			M	N 1.2 24					
			M	Z 2.1 25	"	11	Up	iP	19 50 20.6
		Sk	iP	19 31 30.3					
		Um	iP	19 31 15.6	"	11	Up	iP	20 03 17.0
			i	19 31 24.3					
			iS	19 42 05	"	12	Up	iP	01 58 29.0
			eSP	19 43 26			Ud	iP	01 58 28.7
		Ud	iP	19 31 32.8			Aleutian Islands		
			i	19 31 42.3			(h = 15 km).		
			i	19 31 50.8					
		Talaud Islands (h = 120 km).			"	12	Up	iP	10 42 42.9
"	10	Up	iP	19 56 30.8			Ki	iP	10 41 49.6
		Um	iP	19 56 29.1			Sk	iP	10 42 22.6
"	10	Up	iP	21 59 44.4			Gb	iP	10 43 06.6
							Um	iP	10 42 17.1
"	10	Ka	iPn	23 19 37.2			i		10 42 25.5
			iSg	23 20 16.5			Ud	iP	10 42 41.8
		Probably south					i		10 42 54.2
		Baltic explosion.					iPcP		10 43 11.3
							Alaska (h = 30 km).		
"	11	Ud	iP	00 25 11.5	"	12	Gb	iP	11 30 21.5
		Atlantic Ocean (h = 30 km).			"	12	Ud	i(Pg)	13 07 05.7
							i(Sg)		13 07 24.4

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1967				1967					
July	12	Ki	eP	15 24 21	July	13	Up	iP	02 16 00.9
			ipP	15 24 38.9					micr sec
			Alaska, h = 80 km (Ki).					M	E 0.4 13
"	12	Ki	i	19 30 05.3				M	N 0.6 13
			i(Sg)	19 30 22.4				M	Z 0.4 12
"	12	Up	iP	21 13 17.9			Ki	iP	02 17 07.8
			i	21 13 23.5				i	02 17 28.2
			eSKS	21 23 49				e	02 27 43
				micr sec				P	Z' 0.1 1.1
			SKS	E 0.9 10				M	E 1.2 12
			SKS	N 0.8 10				M	N 0.5 14
			M	E 1.9 20				M	Z 1.1 13
			M	N 2.1 21			Gb	iP	02 15 31.4
			M	Z 3.2 20			Um	iP	02 16 35.5
		Ki	eP	21 13 23				i	02 16 48.9
			i	21 13 25.6				iS	02 21 48
			iPP	21 17 05.3			Ka	iP	02 15 27.5
			eSKS	21 23 41			Ud	iP	02 15 54.8
				micr sec			Algeria (h = 15 km).		
			P	Z' 0.4 2.5	"	13	Um	iP	02 50 58.1
			PP	Z' 0.9 2.7	"	13	Ka	iP	06 31 23.1
			SKS	E 1.2 12	"	13	Um	iPKS	07 58 31
			SKS	N 0.6 12				iSP	08 07 29
			M	E 3.4 19			Fiji Islands (h = 50 km).		
			M	N 3.1 23	"	13	Ki	iPn	10 13 40.4
			M	Z 6.7 24				iSn	10 14 38.5
		Sk	iP	21 13 07.1				iSg	10 15 03.5
			i	21 13 14.3				D = 560 km = 5.0°.	
		Gb	iP	21 13 16.4			Sk	iSg	10 17 27.5
		Um	iP	21 13 21.2			Um	iSg	10 15 49.1
			i	21 13 29.2			Northwest Russia,		
			i	21 13 36.9			67.2°N, 33.4°E.		
			iSKS	21 24 01			Origin time = 10 12 21.		
			iS	21 24 15			Explosion?		
		Ka	eP	21 13 27	"	13	Ki	ePKP	10 23 20
		Ud	eP	21 13 16				i	10 23 42.3
			i	21 13 18.7					micr sec
		South of Panama (h = 30 km).						M	E 0.7 23
		Magn. = 6.1 (Up, Ki).						M	Z 0.9 23
		Multiple P (gradual beginning).					Um	iPKP	10 23 27.2
"	13	Up	iPKP	01 11 06.3				iPKS	10 26 52
		Sk	iPKP	01 10 59.8			New Hebrides Islands		
		Um	iPKP	01 10 52.7			(h = 50 km).		
		Ud	iPKP	01 11 04.6					
			i	01 11 18.0					
		South of Kermadec Islands							
		(h = 30 km).							

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1967					1967				
July	13	Up		---	July	14	Sk	iP	03 20 04.5
				micr sec			Gb	eP	03 19 24
		M	E	0.5 17			Ud	iP	03 19 43.5
		M	N	0.4 12			Red Sea (h = 30 km).		
		M	Z	1.0 20					
		Ki	iP	14 44 36.5	"	14	Ud	iP	04 31 29.5
				micr sec			Greece.		
		M	E	0.6 15					
		M	N	0.5 13	"	14	Sk	iP	11 19 00.6
		M	Z	0.8 14			Ud	eP	11 18 27
		Sk	iP	14 44 01.8			Greece.		
		Um	iP	14 43 59.6					
		i		14 44 18.7	"	14	Ki	iP	11 53 31.7
		i		14 46 29			Um	iSS	12 00 27
		iS		14 48 12			Ud	iP	11 53 04.4 C
		Ka	iP	14 42 38.7			Iran-Iraq (h = 60 km).		
			iPP	14 42 54.4					
		Ud	eP	14 43 24	"	14	Sk	e	12 27 27
		Albania (h = 25 km).					i(Sg)		12 27 50.0
							Um	i(Sg)	12 26 21.3
"	13	Sk	iP	19 48 05.3	"	14	Up	iP	14 04 09.8 C
"	13	Ud	iPg	20 08 29.3			Sk	iP	14 03 46.9
			iSn	20 08 47.2			Um	iP	14 03 43.8 C
			iSg	20 08 50.2				iPcP	14 04 23.9
"	13	Ud	iP	20 51 36.3			Ud	iP	14 04 08.8 C
							Unimak Island (h = 30 km).		
"	13	Um	iP	22 31 03.5	"	14	Up	iSn	14 53 34.5
		i		22 31 10.7			iSg		14 53 48.5
"	13	Ka	iPn	22 50 39.0			Ki	eLg1	14 56 20
			iPg	22 50 46.3			iSg		14 56 33.6
			iSg	22 51 17.7			Sk	eS ^x	14 55 17
		Probably south					iSg		14 55 41.7
		Baltic explosion.					Gb	eLg1	14 55 29
"	13	Ki	iP	23 16 31.9			Um	iSg	14 54 22.0
							i		14 54 44.4
"	13	Ki	iP	23 55 31.8			Ud	iSn	14 54 23.4
		Mariana Islands					iS ^x		14 54 36.9
		(h = 80 km).					iSg		14 54 55.1
"	14	Up	iPKP	03 06 46.6			Southwest Finland,		
				micr sec			60.1°N, 23.4°E.		
		M	N	0.6 21			Origin time = 14 52 13.		
		Ki	iPKP	03 06 32.4	"	14	Ki	iSg	16 16 57.4
		Sk	iPKP	03 06 43.5			Sk	iSg	16 17 02.4
		Um	iPKP	03 06 38.9			Um	iSg	16 17 25.3
			eSP	03 18 07			i		16 17 30.4
		Ud	iPKP	03 06 48.4			Nordlands Fylke, Norway.		
			ipPKP	03 07 06.7	"	14	Um	iP	18 14 33.8
		Santa Cruz Islands.					El Salvador (h = 150 km).		
		h = 60 km (Ud).							

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1967

July 14 Up iP 18 48 22.9 C
Ki iP 18 48 45.2
Gb iP 18 48 27.2
Ud iP 18 48 31.1
Indian Ocean (h = 30 km).

" 14 Up iP 19 35 52.4
i 19 35 58.1

" 14 Um iSS 23 11 16
Bismarck Sea (h = 30 km).

" 15 Up iP 02 17 28.2

" 15 Up iP 03 33 52.2 C
iPn 03 34 59.1
iPP 03 35 10.9
micr sec
P Z' 0.1 0.5
Ki iP 03 33 36.8 C
iPP 03 34 49.7
micr sec
P Z' 0.2 0.5
Sk iP 03 34 07.9 C
iPn 03 35 24.1
Gb eP 03 34 22
Um iP 03 33 37.3 C
iPn 03 34 35.8
iPP 03 34 50.3
i 03 37 14.4
Ka iP 03 34 08.2
iPP 03 35 31.7
i 03 36 01.0
Ud iP 03 34 09.0 C
i 03 35 06.7
iPn 03 35 22.4

Kazakh SSR.

Magn. = 6.0 (Up,Ki).

Underground explosion.

" 15 Up iP 08 25 54.7 D
i 08 25 59.8
iPcP 08 26 19.1
Ki iP 08 25 00.9
Sk eP 08 25 35
i 08 26 01.8
Um iP 08 25 26.9
i 08 25 35.8
Ud iP 08 25 57.1

Aleutian Islands
(h = 30 km).

" 15 Up i(P) 09 54 42.5
Ud i(P) 09 54 30.0

1967

July 15 Up iP 10 42 27.6
i 10 42 43.6
Um iP 10 42 14.7
Ud iP 10 42 37.0
i 10 42 49.3
Luzon (h = 30 km).

" 15 Sk eSg 12 26 05
Um iSg 12 24 48.1
Ud iSg 12 25 18.0
Southwest Finland.
Explosion?

" 15 Up iP 14 53 46.1
ipP 14 53 55.2
Sk iP 14 53 50.0 C
ipP 14 53 59.1
i 14 54 05.1
Gb eP 14 54 03
Um iP 14 53 34.8
ipP 14 53 43.8
eS 15 04 27
Ud iP 14 53 53.9
ipP 14 54 03.6
Mindanao. h = 35 km
(Up,Sk,Um,Ud).

" 15 Um iP 15 19 01.0 D
Ud eP 15 19 51
i 15 19 56.0
Norwegian Sea (h = 30 km).

" 15 Gb iPKP 17 22 40.0
Ka iPKP 17 22 42.4
Ud iPKP 17 22 31.2 C
Fiji Islands (h = 570 km).

" 16 Ud eP 00 07 52

" 16 Um iP 02 01 33.8
i 02 01 43.8
Ud eP 02 01 54

" 16 Up iP 03 50 01.3
Aleutian Islands
(h = 30 km).

" 16 Ud iP 09 24 27.7

" 16 Up iP 09 28 11.9
Ki iP 09 28 00.0
Sk iP 09 27 53.3
Um iP 09 28 08.3
Ud iP 09 28 02.2
Mexico (h = 60 km).

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1967					1967				
July	16	Up	iP	13 48 25.1	July	17	Up	iP	11 39 18.4
			i	13 48 33.6			Ki	iP	11 38 26.1 D
			iPP	13 52 38.3					micr sec
			iSKS	13 59 03			P	Z'	0.1 1.3
			iS	14 00 09			Sk	iP	11 38 56.5
			iPS	14 01 49			Gb	iP	11 39 32.5
				micr sec			Um	iP	11 38 51.6
		S	N	0.8 14			i		11 38 52.8
		M	E	9.4 22			Ka	iP	11 39 41.1 D
		M	N	11 20			Ud	iP	11 39 17.8 D
		M	Z	6.8 21			Aleutian Islands		
		D = 11450 km = 103°.					(h = 30 km).		
		Ki	iP	13 48 08.6					
			i	13 48 24.2	"	17	Up	iP	12 47 29.1 C
			iPP	13 52 06.8			Ki	iP	12 46 48.6 C
			iSKS	13 58 45				ipP	12 47 01.3
			iS	13 59 30			Sk	iP	12 47 22.5
				micr sec			Um	iP	12 47 06.6 C
		PP	E	0.6 15				ipP	12 47 18.1
		S	N	0.7 10			Ka	eP	12 48 04
		M	E	13 23			Ud	iP	12 47 36.6 C
		M	N	7.3 19			i		12 47 41.0
		M	Z	5.9 17				ipP	12 47 47.1
		D = 11000 km = 99°.					Japan, h = 40 km		
		Sk	eP	13 48 34			(Ki, Um, Ud).		
			iPP	13 52 58.7					
		Gb	iPP	13 53 18.0	"	17	Ki	iP	14 03 05.2
		Um	iP	13 48 12.5			Um	iP	14 03 31.7
			i (PP)	13 52 10.8			Ud	iP	14 03 57.2
			iPP	13 52 18			Aleutian Islands		
			iSKS	13 58 53			(h = 30 km).		
			iPS	14 01 25					
			iSS	14 06 57	"	17	Sk	iP	15 13 02.4
		Ka	iPP	13 53 05.1	"	17	Ud	iP	16 56 04.6
		Ud	iP	13 48 33.5 C	"	17	Ki	iP	17 29 18.2
			iPP	13 53 05.7			Um	iP	17 29 26.7
		New Guinea (h = 30 km).					Ud	eP	17 29 50
		Magn. = 6.2 (Up, Ki).					Formosa (h = 40 km).		
"	16	Um	iP	16 01 57.5					
		Hindu Kush (h = 250 km).			"	17	Ki	iP	22 17 05.8
"	16	Ki	iP	16 43 52.0	"	18	Up	eP	02 19 14
							i		02 19 22.7
"	16	Up	iP	21 23 44.4					
		Ki	iP	21 23 18.7	"	18	Gb	iPg	07 34 00.0
		Um	iP	21 23 28.3				iSg	07 34 17.6
		Ud	iP	21 23 53.9			Ud	iPg	07 34 18.1
		i		21 24 03.7				iSg	07 34 49.4
"	17	Um	iP	03 39 35.5			Skagerrak explosion.		
"	17	Um	iP	04 48 53.1					

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1967					1967				
July	18	Sk	iSg	07 45 02.2	July	18	Sk	eSg	09 25 33
		Gb	iPg	07 42 27.8			Gb	iSg	09 23 16.2
		Ud	iPg	07 42 44.9			Ud	iPg	09 23 21.7
			iSg	07 43 15.0				iSg	09 23 55.2
		Skagerrak explosion.					Skagerrak explosion.		
"	18	Gb	iPg	07 56 12.2	"	18	Ud	i(Sg)	12 42 05.0
		Ud	ePg	07 56 31					
			iSg	07 57 05.0	"	18	Up	iP	13 28 41.7
		i		07 58 26.0			i		13 28 44.2
		Skagerrak explosion.							
"	18	Sk	iSg	07 59 51.3	"	18	Ki	iPn	13 45 09.2
		Gb	ePg	07 57 24				iSn	13 45 57.4
			iSg	07 57 40.8				iLg1	13 46 13.2
		Skagerrak explosion.					Possibly northwest Russia.		
							Origin time = 13 44 06.		
							Explosion?		
"	18	Sk	eSg	08 10 50	"	18	Up	i(P)	16 16 27.2 C
		Gb	ePg	08 08 20			Sk	e(P)	16 16 28
		Ud	iPg	08 08 39.8					
			i	08 08 54.2	"	18	Ki	iP	16 24 33.1
			i(Sg)	08 09 21.6			South of Alaska		
		Skagerrak explosion.					(h = 30 km).		
"	18	Up	iSg	08 20 36.7	"	18	Up	iP	17 10 31.7
		Gb	iPg	08 18 55.1			Ki	iP	17 09 50.1 C
			iSg	08 19 09.6				ipP	17 10 03.3
		Ud	iPg	08 19 12.8			Sk	epP	17 10 36
			iSg	08 19 43.9			Gb	iP	17 10 53.1
		Skagerrak explosion.						ipP	17 11 06.7
"	18	Sk	i	09 06 42.0			Um	iP	17 10 08.6
			iSg	09 06 49.2				ipP	17 10 20.0
		Gb	ePg	09 04 20			Ud	iP	17 10 39.4
			iSg	09 04 38.1				ipP	17 10 51.8
		Ud	iPg	09 04 41.9			Japan. h = 50 km		
			iSg	09 05 12.2			(Ki, Gb, Um, Ud).		
		Skagerrak explosion.							
"	18	Sk	i	09 11 38.5	"	19	Um	iP	03 50 55.7
			iSg	09 11 59.0	"	19	Ki	iPn	04 36 00.2
		Gb	iSg	09 09 27.2				iP ^x	04 36 08.4
		Ud	iPg	09 09 31.9				iSn	04 36 46.5
			iSg	09 10 03.9				iLg1	04 37 01.2
		i		09 10 23.2			D = 420 km = 3.8°.		
		Skagerrak explosion.					Possibly northwest Russia.		
							Origin time = 04 35 00.		
							Explosion?		
"	18	Um	iP	09 10 50.2	"	19	Sk	iP	08 15 05.9
"	18	Sk	eSg	09 16 42	"	19	Sk	iP	08 47 28.6
		Gb	iSg	09 14 27.0					
		Ud	iPg	09 14 33.2					
			iSg	09 15 01.7					
		Skagerrak explosion.							

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1967

July 19 Up iP 09 11 22.9
eS 09 15 32
e 09 18 27
micr sec
P N 0.3 5
S E 0.5 10
S N 1.1 8
M E 1.4 19
M N 1.6 20
M Z 0.7 14
D = 2550 km = 23°.
Ki eP 09 12 30
eS 09 17 33
i 09 19 51
i(Lg1) 09 22 45
micr sec
M E 2.1 10
M N 0.8 9
M Z 0.9 9
D = 3400 km = 30 1/2°.
Sk iP 09 12 04.7
Gb eP 09 11 15
Um iP 09 11 56.7
eS 09 16 28
iLg1 09 20 05
Ka iP 09 10 56.8
Ud iP 09 11 34.9 C
Turkey (h = 30 km).
Magn. = 5.0 (Up,Ki).
" 19 Ki iPn 11 45 42.2
iSn 11 46 41.4
iSg 11 47 04.3
Possibly northwest Russia.
Origin time = 11 44 24.
Explosion?
" 19 Up iPKP 12 59 48.3
Ki iSKP 13 02 16.8
Gb i(SKP) 13 02 34.4
Ka iPKP 12 59 57.9
Ud iPKP 12 59 48.2
iSKP 13 02 42.1
Fiji Islands (h = 520 km).
" 19 Up iP 16 23 27.6
Sk eP 16 24 04
Ud eP 16 23 31
i 16 23 39.8
Greece (h = 30 km).
" 19 Up iP 17 35 51.8
Ki eP 17 36 01
iPP 17 37 42.1
(cont.)

1967

July 19 (cont.)
Sk iP 17 36 17.8
iPP 17 38 05.4
Gb iP 17 36 13.4
Um iP 17 35 50.4
Ka iP 17 35 56.7
Ud iP 17 36 08.8 C
Hindu Kush (h = 220 km).
" 19 Ki eSg 18 10 02
Sk eSg 18 10 04
Um iSg 18 10 28.3
Nordlands Fylke, Norway.
" 20 Um iP 02 59 33.4
" 20 Um iP 05 09 41.6
" 20 Ud eP 07 08 38
Kurile Islands
(h = 30 km).
" 20 Ki iP 09 12 22.6 C
i 09 12 29.3
Sk iP 09 12 49.9
Ud eP 09 13 12
i 09 13 24.0
Kodiak Island (h = 30 km).
" 20 Ki ePn 10 40 05
eSn 10 41 04
iSg 10 41 28.2
Possibly northwest Russia.
Origin time = 10 38 45.
Explosion?
" 20 Ki eP 11 54 59
Um eSS 12 15 09
New Guinea (h = 60 km).
" 20 Ki iPP 13 30 55.0
iSKS 13 36 30
eSP 13 40 13
micr sec
PP Z' 0.2 1.8
SKS E 0.4 6
Um iPKP 13 29 55.1
iSKS 13 36 25
i 13 37 32
iSP 13 40 09
Argentina (h = 160 km).

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1967					1967				
July	20	Up	iP	14 37 10.0	July	20	(cont.)		
			iPcP	14 37 36.8			Ki	iPP	15 53 19
				micr sec				iSKS	15 59 56
			P	Z' 0.2 0.9					micr sec
			M	E 0.5 18			P	E	0.3 8
			M	N 1.1 21			P	Z	1.3 9
			M	Z 0.9 18			P	Z'	0.7 1.8
		Ki	iP	14 36 18.1 C			PP	E	1.0 10
			eS	14 44 28			PP	Z	1.8 12
				micr sec			SKS	E	0.7 8
			M	E 0.8 19			SKS	N	0.5 8
			M	N 0.6 18			M	E	14 20
			M	Z 1.5 18			M	N	10 20
				D = 6650 km = 60°.			M	Z	17 19
		Sk	iP	14 36 51.2					D = 10300 km = 92 1/2°.
			iPcP	14 37 23.9			Sk	iP	15 49 53.6
		Gb	iP	14 37 28.5				iPP	15 53 49.8
		Um	iP	14 36 44.1			Gb	iP	15 50 08.4
			iPcP	14 37 19.4				i	15 53 31.6
			iS	14 45 15				iPP	15 54 20.0
		Ka	iP	14 37 34.5			Um	iP	15 49 37.4 C
		Ud	iP	14 37 12.6				i	15 49 39.3
			ipP	14 37 22.7				i	15 49 44.9
				Aleutian Islands.				i	15 52 29
				h = 40 km (Ud).				iPP	15 53 19.8
				Magn. = 5.6 (Up,Ki).				iSKS	16 00 20
								i	16 01 52
"	20	Ki	iPn	15 35 30.1			Ka	iP	15 50 02.7
			iSn	15 36 26.6				i	15 50 11.5
			iSX	15 36 40.0			Ud	iP	15 49 59.4 C
			iLg1	15 36 45.5					Caroline Islands
				D = 530 km = 4.8°.					(h = 10 km).
				Probably northwest Russia.					Magn. = 6.3 (Up,Ki).
				Origin time = 15 34 14.					Multiple P.
				Explosion?					
"	20	Up	iP	15 49 52.0 C	"	20	Um	iP	16 19 26.2
			i	15 50 09	"	20	Ki	iP	19 09 07.7
			iPP	15 53 45					micr sec
			e	15 59 42			M	E	0.5 15
			iSKS	16 00 23			M	N	0.2 12
			iS	16 01 12			M	Z	0.5 14
				micr sec			Sk	iP	19 08 32.8
			P	Z 0.4 4				i	19 08 43.6
			P	Z' 0.2 1.6			Um	iP	19 08 34.4
			SKS	E 0.9 12			Ka	iP	19 07 09.0
			M	E 10 20			Ud	iP	19 07 56.4
			M	N 14 22					Albania (h = 30 km).
			M	Z 14 20					
				D = 10850 km = 97 1/2°.	"	20	Up	eP	19 18 56
		Ki	iP	15 49 28.5 C				i	19 19 28.7
			i	15 49 30.9					
			i	15 49 38.5	"	20	Ki	iP	20 12 01.6
				(cont.)					Pamir.

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1967					1967				
July	20	Up	iPKP	23 31 21.7 D	July	22	Up	iPKP	04 17 50.0
				micr sec				i	04 17 59.4
			PKP	Z' 0.2 0.6					micr sec
		Ki	iPKP	23 31 03.3				PKP	Z' 0.2 1.0
			iSKP	23 33 45.2			M	E	0.6 21
		Sk	iPKP	23 31 14.7			M	N	1.6 20
		Gb	iPKP	23 31 31.6			M	Z	1.3 20
			i!	23 31 36.1		Ki	iPKP		04 17 31.0
		Um	iPKP	23 31 09.4			ePP		04 20 38
		Ka	iPKP	23 31 32.4			i		04 21 39
			i!	23 31 37.4				micr sec	
		Ud	iPKP	23 31 24.3			PKP	Z	0.8 10
		Tonga-Kermadec Islands					PKP	Z'	0.4 2.2
		(h = 600 km).					M	E	0.8 18
"	21	Um	iP	05 55 33.3			M	N	0.7 18
		Ud	iP	05 56 01.5			M	Z	1.9 20
		Japan (h = 290 km).				Sk	i(PKP)		04 17 45.2
"	21	Ki	iP	07 15 09.4			iPKP		04 17 47.1
				micr sec		Gb	ePKP		04 18 00
		M	E	0.3 15			i		04 18 33.2
		M	N	0.3 15		Um	i(PKP)		04 17 40.0
		M	Z	0.4 15			iPKP		04 17 40.9
		Um	eS	07 26 00			iPKS		04 21 20.2
		Ud	iP	07 15 26.9			eSKKS		04 27 57
		Sumatra (h = 30 km).				Ka	ePKP		04 17 53
"	21	Ki	iP	10 23 51.0 C		Ud	iPKP		04 17 52.2
		Sk	iP	10 24 40.3			i		04 18 03.7
		Um	iP	10 24 45.0		South of Kermadec Islands			
		Ud	iP	10 25 21.2		(h = 40 km).			
		Probably Arctic Ocean.				Magn. = 5.8 (Up,Ki).			
"	21	Up	iSn	11 46 52.5		(PKP) at Sk, Um are small-			
			iSg	11 47 05.2		amplitude precursors.			
			i	11 47 09.0	"	22	Um	iP	04 48 30.3
		Sk	eSg	11 48 59	"	22	Ki	iPKP	05 47 15.2
		Um	iSg	11 47 39.3			Sk	iPKP	05 47 25.8
		Southwest Finland.					Um	iPKP	05 47 21.3 C
		Origin time = 11 45 30.					Ud	iPKP	05 47 31.2
		Explosion?				Santa Cruz Islands			
"	21	Ki	iPKS	13 08 15		(h = 60 km).			
				micr sec	"	22	Up	iPKP	07 00 43.3
		PKS	E	0.3 7			i		07 00 51.9
		PKS	N	0.2 7			Sk	iPKP	07 00 38.8
		Fiji Islands (h = 200 km).					Um	iPKP	07 00 33.8
"	21	Gb	iP	15 22 52.9			Ud	iPKP	07 00 45.5
"	21	Ki	iP	20 55 12.5 C		South of Kermadec Islands			
		Cyprus (h = 110 km).				(h = 25 km).			
					"	22	Up	iPKP	08 08 30.7
							Um	iPKP	08 08 38.0
						(cont.)			

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1967					1967				
July	22	(cont.)			July	22	(cont.)		
		Ud	iPKP	08 08 29.5			Um	iSg	13 38 40.0
		South Sandwich Islands					i	13 38 55.9	
		(h = 30 km).					North Finland. Explosion?		
		Cf. July 8, 13 48.							
"	22	Ki	iP	08 18 04.9	"	22	Um	iP	13 43 58.9
		Sk	eP	08 18 35					
		Ud	eP	08 18 57	"	22	Um	iPKP	14 06 26.9
		Kodiak Island (h = 30 km).					Ud	iPKP	14 06 18.3 C
"	22	Up	iP	11 02 05.6 C			Argentina (h = 110 km).		
			iS	11 04 25.1					
			iSS	11 04 43.3	"	22	Ud	iP	16 10 33.1
				micr sec			Kamchatka (h = 70 km).		
		P	Z'	0.1 0.5					
		Ki	iP	11 03 31.0	"	22	Up	iP	17 01 36.4 D
		Sk	eP	11 02 25				iS	17 05 15
		Gb	iP	11 01 16.6 C					micr sec
		Um	iP	11 02 58.1			P	E	39 9
		Ka	iP	11 01 27.4 C			P	N	87 9
			e(S)	11 03 06			P	Z	120 9
		Ud	iP	11 01 48.4			P	Z'	7.0 1.5
		England.					S	E	410 14
		Chemical explosion.					S	N	140 10
							M	E	920 17
"	22	Karlskrona recorded a number					M	N	1070 17
		of explosions in the south					D = 2300 km = 20 1/2°.		
		Baltic, as follows:			Ki	iP			17 02 45.1 D
		Date	Time	Number of		i			17 02 46.9
			interval	explosions		iS			17 07 29
		22.7	12 04-16 18	9					micr sec
		23.7	08 22-16 09	17		P	E	4.9	9
		25.7	07 08-13 28	11		P	N	5.7	7
		In addition, a great number				P	Z	9.4	8
		of smaller explosions were				P	Z'	1.2	1.2
		recorded in the same intervals,				S	E	110	17
		from the same source. The				S	N	29	12
		stronger ones were recorded				M	E	290	15
		also at Göteborg, Uppsala and				M	N	270	15
		Uddeholm. The location for all				M	Z	490	16
		explosions is near to				D = 3050 km = 27 1/2°.			
		54.8°N, 13.5°E.			Sk	iP			17 02 23.3
						i			17 02 25.6
						i			17 02 27.7
"	22	Um	iP	12 59 52.5	Gb	iP			17 01 37.2 D
						i			17 01 40.1
"	22	Ki	iPn	13 36 53.5	Um	iP			17 02 09.1 D
			iSn	13 37 31.1		i			17 02 11.8
			iSg	13 37 44.4	Ka	iP			17 01 05.8
			D = 330 km = 3.0°.			i			17 01 08.4
		Sk	iSg	13 40 11.5	Ud	iP			17 01 50.6 D
		Um	e	13 38 18		i			17 01 53.2
		(cont.)				(cont.)			

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1967				1967			
July	22	(cont.)		July	22	(cont.)	
		Ud	i			Sk	iP
			17 01 56.1				17 53 33.1
		iS	17 06 02.2			Gb	iP
							17 52 47.3
		Turkey (h = 5 km).				Um	iP
		Magn. = 7.3 (Up, Ki).					17 53 19.6
		The maxima (M) and				iS	17 57 48.4
		S-amplitudes at Up are				Ka	iP
		measured on Wiechert in					17 52 17.5
		this case. Multiple P, with				Ud	iP
		gradually bigger onsets;					17 53 01.8
		particularly pronounced is				Turkey (h = 25 km).	
		the time difference of 2.5 sec		"	22	Ki	iP
		between the first onset and					17 54 15.9
		the next larger one.			22	Up	iP
							17 56 33.6
"	22	Up	eP	"	22	Ud	iP
			17 18 52				17 57 02.6
		Turkey.		"	22	Sk	iP
"	22	Up	iP				17 58 09.6
			17 22 31.2	"	22	Sk	i(P)
			micr sec				17 58 26.9
		P	Z' 0.1 1.0	"	22	Ki	iP
							17 59 21.7
"	22	Ud	iP	"	22	Up	eP
			17 23 05.1				18 09 25
						Sk	iP
"	22	Um	iP				18 10 11.7
			17 24 08.9			Um	iP
		Ud	iP				18 09 56.9
			17 23 52.8			Ud	eP
		Turkey.					18 09 41
		Origin time = 17 18.9.				Turkey.	
"	22	Ki	iP			Origin time = 18 04.7.	
			17 25 33.2	"	22	Ki	eP
"	22	Sk	iP				18 10 56
			17 26 08.5	"	22	Um	iP
"	22	Up	iP				18 12 28.3
			17 34 50.9	"	22	Up	iP
		Ki	iP				18 13 20.6
			17 35 58.1			Sk	iP
		Sk	iP				18 14 08.7
			17 35 36.9			Gb	iP
		Gb	iP				18 13 21.6
			17 34 53.1			Um	iP
		Um	iP				18 13 52.9
			17 35 23.9			i	18 14 00.3
		Ud	iP			Ka	iP
			17 35 03.9				18 12 54.6
		Turkey.				Ud	iP
		Origin time = 17 30.1.					18 13 34.8
"	22	Ki	iP			i	18 13 39.8
			17 36 35.5			Turkey.	
"	22	Sk	iP			Origin time = 18 08.6.	
			17 40 53.3	"	22	Up	iP
"	22	Up	iP				18 13 37.7
			17 52 48.4			Ki	iP
		iS	17 56 28				18 14 47.6
		iLi	17 58 29			Turkey.	
		iLg1	17 59 11			Origin time = 18 08.9.	
			micr sec	"	22	Up	iP
		P	Z' 0.1 0.8				18 14 33.6
			D = 2350 km = 21°.				micr sec
		Ki	iP			P	Z' 0.1 0.7
			17 53 55.2				18 15 41.2
		(cont.)					micr sec
						P	Z' 0.1 1.0
						(cont.)	

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1967					1967				
July	22	(cont.)			July	22	Up	iP	21 26 16.2
		Sk	iP	18 15 19.2			Ki	iP	21 27 23.6
		Gb	iP	18 14 33.2			Sk	iP	21 27 02.6
		Um	iP	18 15 04.7			Um	iP	21 26 48.5
		Ka	iP	18 14 05.3				i	21 26 53.3
		Ud	iP	18 14 47.5			Ud	iP	21 26 30.1
		Turkey (h = 30 km).					Turkey (h = 15 km).		
		Magn. = 5.4 (Up,Ki).							
"	22	Ud	iP	18 17 54.7	"	22	Up	iP	22 13 12.5
							Sk	iP	22 13 58.9
"	22	Up	iP	18 18 21.0			Um	iP	22 13 45.0
		Um	iP	18 18 48.5			Ud	iP	22 13 26.5
		Turkey.					Turkey (h = 15 km).		
		Origin time = 18 13.6.			"	22	Um	iP	22 54 08.2
"	22	Sk	iP	18 19 25.2	"	22	Up	iP	22 54 34.7
			i	18 19 35.0			Ud	iP	22 54 40.4
		Ud	eP	18 18 58	"	22	Up	iP	23 46 39.7
		Turkey.						i	23 46 43.2
		Origin time = 18 14.0.						i	23 46 47.2
"	22	Ki	iP	18 22 58.0			Ki	iP	23 47 46.9
"	22	Ki	iPg	19 23 18.7				i	23 48 10.2
			iSg	19 24 02.9			Sk	iP	23 47 24.9
		D = 390 km = 3.5°.						i	23 47 37.7
		Sk	eSg	19 25 51			Gb	iP	23 46 42.8
		Um	iSg	19 24 09.7			Um	iP	23 47 11.7 D
		Northern Finland,						i	23 47 18.5
		near 65.9°N, 27.7°E.						eS	23 51 28
		Origin time = 19 22 07.					Ka	iP	23 46 12.6
		Explosion?					Ud	iP	23 46 53.6
								iPP	23 47 15.7
								i	23 48 00.1
"	22	Up	iP	19 52 04.5			Turkey (h = 30 km).		
		Ki	iP	19 53 11.5	"	22	Up	iP	23 50 14.3
		Sk	iP	19 52 50.0 C			Um	iP	23 50 35.8
		Gb	iP	19 52 03.4				i	23 51 35.6
		Um	iP	19 52 37.3				i	23 53 35.8
		Ud	iP	19 52 18.2 C			Ud	iP	23 50 20.0
		Turkey (h = 30 km).						i	23 52 08.3
"	22	Um	iP	20 08 08.5	"	23	Up	iP	01 24 09.0
"	22	Up	iP	20 40 22.1				i	01 24 15.7
				micr sec			Um	iP	01 24 14.1
		P	Z ¹	0.1 1.0			Ka	iP	01 24 14.6 C
		Ki	iP	20 41 30.1				i	01 24 20.4
			i	20 41 49.2			Ud	iP	01 24 25.7
		Sk	iP	20 41 07.7				i	01 24 32.2
		Gb	iP	20 40 22.2			Hindu Kush (h = 180 km).		
		Um	iP	20 40 54.7 D	"	23	Up	eP	02 12 31
		Ka	eP	20 39 54			Ki	i(P)	02 13 54.9
		Ud	iP	20 40 35.9			(cont.)		
		Turkey (h = 15 km).							

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Ka = Karlskrona, Ud = Uddeholm

1967				1967					
July	23	(cont.)		July	23	Up	iP	04 53 36.4	
		Sk	eP	02 13 20			i	04 53 39.8	
			iPP	02 13 51.8			iS	04 57 16.2	
		Um	eP	02 13 03				micr sec	
			i	02 13 08.1			M	E 0.3 11	
		Ud	iP	02 12 45.1			M	N 0.4 13	
		Turkey.				Ki	iP	04 54 43.6	
		Origin time = 02 07.8.						micr sec	
"	23	Up	iP	02 16 12.8			M	E 0.3 14	
		Ud	iP	02 16 46.5			M	N 0.3 14	
							M	Z 0.5 14	
"	23	Sk	eP	02 18 09		Sk	iP	04 54 20.7	
							i	04 54 42.8	
"	23	Ud	iP	02 30 32.7		Gb	iP	04 53 35.3	
		Turkey (h = 25 km).			Um	iP		04 54 07.8	
						i		04 54 16.7	
						iS		04 58 26.8	
"	23	Up	iPKS	03 31 14.9		Ud	iP	04 53 49.2	
				micr sec		Turkey (h = 30 km).			
		M	E	0.6 21					
		M	N	0.7 23	"	23	Um	iP	04 59 51.7
		M	Z	0.7 21	"	23	Um	iP	05 44 17.2
		Ki	iPKP	03 27 38.5	"	23	Um	iP	07 44 46.2
				micr sec	"	23	Up	iP	07 47 04.1
		M	E	0.5 19			iS	07 50 44.6	
		M	N	0.2 10				micr sec	
		M	Z	0.6 19			M	E 0.3 12	
		Sk	iPKP	03 27 50.1			M	N 0.5 16	
		Um	iPKP	03 27 45.3		Ki	eP	07 48 15	
			i	03 27 54.4		Sk	iP	07 47 53.6	
		Ud	iPKP	03 27 55.2		Um	iP	07 47 37.2	
		New Hebrides Islands					eS	07 51 58	
		(h = 30 km).				Ud	iP	07 47 18.1	
"	23	Up	iP	04 08 22.2			i	07 47 24.4	
			eS	04 12 11			eS	07 51 21	
		Ki	iP	04 09 30.5			i	07 51 30.9	
			i	04 10 01.9		Turkey (h = 20 km).			
		Sk	iP	04 09 08.9	"	23	Um	iP	07 52 15.1
		Um	iP	04 08 55.9	"	23	Ki	eL	07 59
		Ud	iP	04 08 36.0				micr sec	
			i	04 08 40.5			M	E 0.2 15	
		Turkey (h = 20 km).					M	N 0.2 15	
"	23	Um	i(P)	04 13 28.5			M	Z 0.4 15	
		Ud	iP	04 13 31.6		Ryukyu Islands			
"	23	Sk	iP	04 15 30.8		(h = 50 km).			
		Um	iP	04 15 36.3	"	23	Um	iP	09 44 37.1
"	23	Ki	iP	04 18 10.7			Ud	iP	09 44 18.4

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967									
July	23	Um	iP	10	11	29.5	July	23	(cont.)				
		Ud	eP	10	11	11			Um	iP	23	24	28.1
		Turkey.							Ud	iP	23	24	13.9
		Origin time = 10	06.2.						Turkey (h = 15 km).				
"	23	Sk	iP	10	22	15.6	"	24	Up	iP	02	43	11.1 D
"	23	Ki	iP	11	00	40.8	"	24	Ud	iP	02	43	19.7
"	23	Um	iP	13	36	37.6	"	24	Um	iP	03	28	45.7
"	23	Ki	iPn	13	40	30.1	"	24	Up	iP	03	45	02.0
		eSn		13	41	17			Sk	iP	03	45	49.6
		iSg		13	41	34.6			Um	iP	03	45	37.2
		D = 430 km = 3.9°							Ud	iP	03	45	20.2
		Possibly northwest Russia.							Turkey (h = 5 km).				
		Origin time = 13	39	27.			"	24	Um	iSKS	08	03	23
		Explosion?							Flores Island				
									(h = 200 km).				
"	23	Up	ePKP	14	08	11	"	24	Ud	iP	08	12	50.1
				micr	sec								
		M	E	0.5	19		"	24	Um	iP	11	27	52.3
		M	N	1.0	20				Ud	iP	11	27	35.2
		M	Z	1.0	21				Turkey.				
		Ki	ePKP2	14	08	39			Origin time = 11	22.6.			
				micr	sec								
		M	E	1.0	21		"	24	Um	iP	12	53	20.2
		M	N	0.5	19		"	24	Um	iP	13	23	01.3
		M	Z	1.0	18				i		13	24	01.3
		Um	iPKP	14	08	10	"	24	Up	eP	15	39	35
		i		14	11	11			Ki	iP	15	38	58.7 C
		iPP		14	12	22			Sk	iP	15	39	30.3
		eSS		14	32	11			Um	iP	15	39	14.6
		Macquarie Islands							ipP		15	39	27.6
		(h = 30 km).							Ud	iP	15	39	42.7
"	23	Ki	iP	16	02	58.7			ipP		15	39	55.2
		Sk	iP	16	02	34.4			Japan. h = 50 km				
		i		16	02	39.9			(Um,Ud).				
		Um	iP	16	02	23.5	"	24	Sk	iP	18	05	33.1
		Turkey (h = 30 km).							i		18	05	42.2
"	23	Um	iP	20	19	28.6	"	25	Um	iP	00	44	30.6
		Kodiak Island							ipP		00	44	43.6
		(h = 30 km).							Ud	iP	00	44	58.3
"	23	Um	iP	23	12	11.1			Japan.	</			

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
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1967					1967				
July	25	Ki	eP	08 43 08	July	26	Ki	iP	09 20 01.8
				micr sec			Sk	iP	09 19 43.9
		M	E	0.3 10				e	09 19 49
		M	Z	0.3 14			Um	eP	09 20 00
		Sk	iP	08 42 23.3			Ud	iP	09 19 49.1
		Um	iP	08 42 13.5			Venezuela (h = 30 km).		
			iS	08 46 19					
		Greece-Bulgaria				"	26	Up	iP
		(h = 30 km).						i	09 20 49.9
"	25	Um	iP	11 36 51.5					09 20 56.0
									micr sec
"	25	Up	iP	12 36 48.5			M	E	0.3 12
			i	12 37 04.1			M	N	0.7 15
		Ki	iP	12 38 18.6			M	Z	0.7 14
			i	12 38 39.2		Ki	iP		09 21 58.7
		Sk	iP	12 37 43.8			i		09 22 16.2
		Gb	iP	12 36 52.1 C					micr sec
		Um	iP	12 37 30.8			M	E	0.6 15
		Ud	iP	12 37 04.1			M	N	0.4 14
		Rumania (h = 150 km).					M	Z	0.6 14
"	25	Um	iP	12 42 48.6			Sk	iP	09 21 33.3
							Um	iP	09 21 17.8
"	25	Up	eP	13 08 09				i	09 21 21.8
		Ki	iP	13 08 43.7			Ud	iP	09 21 01.7
		Ka	iP	13 08 02.0			Turkey (h = 30 km).		
		Ud	iP	13 08 24.8		"	26	Ki	iP
		Iran (h = 30 km).						eT	09 32 25.4
"	26	Ki	iP	02 12 12.8			Sk	iP	09 37 14
		Sk	eP	02 11 42				iS	09 33 02.6
"	26	Um	iP	06 04 22.0			Um	iP	09 34 49.0
		Ud	iP	06 04 05.3			Ud	iP	09 33 13.4
		Turkey.						i	09 33 50.5
		Origin time = 06 59.1.							09 34 04.4
"	26	Up	iPKP	06 50 55.1			Norwegian Sea		
			i	06 51 29.5			(h = 30 km).		
		Ki	iPKP	06 50 38.7		"	26	Up	iP
		Sk	iPKP	06 50 49.4 C					09 54 39.3 D
		Gb	iPKP	06 51 02.9		"	26	Um	iP
		Um	iPKP	06 50 44.1 C					12 29 48.9 D
		Ka	iPKP	06 51 03.1			Sea of Japan		
		Ud	iPKP	06 50 57.1 C			(h = 560 km).		
		Kermadec Islands							
		(h = 40 km).							
"	26	Um	iPKS	08 37 35			Um	iP	16 41 32.0
			iSS	08 54 31					
		Loyalty Islands					Up	iP	18 58 21.4 C
		(h = 30 km).						iS	19 02 43
								iSn	19 03 01
									micr sec
							P	E	1.5 5
							P	N	2.5 4
							P	Z	2.6 4
							P	Z'	0.4 1.0
							S	E	7.6 8
							S	N	10 11
							(cont.)		

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1967				1967			
July	26	(cont.)		July	27		
		Up	micr sec			Up	iP 01 47 47.6
		S Z	7.2 9			i	01 48 11.2
		M E	19 16			Ki iP	01 48 26.1
		M N	46 17			Sk iP	01 48 23.8
		M Z	19 17			Gb iP	01 47 59.0
		D = 2800 km = 25°				Um eP	01 48 02
		Ki iP	18 59 11.5 C			Ka iP	01 47 37.5
		i(P)	19 00 03			Ud iP	01 48 03.3 C
		iS	19 04 11			Iran (h = 70 km).	
		iSS	19 05 40				
			micr sec	"	27	Up	iP 05 00 22.4
		P E	0.4 5			Ki eP	05 01 32
		P N	0.7 5			iX	05 02 09.7
		P Z	0.9 5			Sk eP	05 01 02
		P Z'	0.7 1.5			iX	05 01 39.6
		(PP) E	0.9 4			Um iP	05 00 58.5
		S E	3.3 10			Ud iP	05 00 29.7
		S N	4.2 10			iX	05 01 09.1
		S Z	1.9 8			Crete (h = 50 km).	
		M E	28 11			The phase marked X	
		M N	20 12			(Ki,Sk,Ud) could be P of	
		M Z	14 14			another shock in the same	
		D = 3400 km = 30 1/2°.				area, or <u>possibly</u> pP to	
		Sk iP	18 59 01.3			the first shock.	
		iPP	18 59 45.3	"	27	Up	eP 05 22 09
		iSn	19 04 41.4			iS	05 25 39
		i	19 05 59.0				micr sec
		Gb iP	18 58 31.3			S N	1.1 9
		i	18 59 43.0			M E	0.7 12
		Um iP	18 58 41.6 C			M N	1.3 16
		iS	19 03 13			M Z	1.1 17
		Ka iP	18 58 06.3			D = 2050 km = 18 1/2°.	
		Ud iP	18 58 36.7 C			Ki iP	05 21 50.2
		iSn	19 03 37.3			eS	05 25 10
		Turkey (h = 30 km).					micr sec
		Magn. = 6.2 (Up,Ki).				P Z'	0.5 2.1
		Well developed Sn waves.				S E	0.5 7
"	26	Ki e(P)	22 03 20			S N	0.4 6
		Um iP	22 03 24.7			S Z	0.5 6
		i	22 03 39.4			M E	2.3 15
		Iceland (h = 30 km).				M N	1.0 13
						M Z	1.8 17
						D = 1900 km = 17°.	
"	27	Ki iP	00 13 26.4			Sk eP	05 21 26
			micr sec			Um iP	05 22 00.8
		M E	0.7 17			i	05 22 08.6
		M N	0.5 19			iS	05 25 19
		M Z	0.9 17			Ud iP	05 21 49.2 C
		Um iS	00 24 20			Iceland (h = 30 km).	
		Revilla Ggedo Islands				Magn. = 5.1 (Up,Ki).	
		(h = 30 km).				PZ' has an exceptionally	
						long period.	

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1967						1967					
July	27	Up	iPg	11 40 50.9		July	28	Ki	ePKP	10 06 28	
			iSg	11 41 48.7				Sk	ePKP	10 06 39	
		Ki	eSg	11 45 15				South of Australia			
		Sk	eSg	11 44 06				(h = 30 km).			
			i	11 44 19.0		"	28	Up	iPKP	14 44 02.7	
		Um	iSg	11 43 08.4					iSKP	14 46 55.6	
		Ka	iPg	11 41 05.0				Ki	iSKP	14 46 32.0	
			i	11 41 09.4				Sk	iSKP	14 46 48.8	
				11 42 03.6				Um	iSKP	14 46 44.5	
			iSg	11 42 10.7				Ka	iPKP	14 44 16.9	
		Ud	iSg	11 42 45.8					iSKP	14 47 05.9	
		Coast of Riga Bay,						Ud	iPKP	14 44 07.5	
		57.3°N, 24.4°E.							iSKP	14 46 57.4	
		Origin time = 11 39 24.						Fiji Islands (h = 560 km).			
		Explosion?						Our stations cover the			
"	27	Up	iP	21 46 30.7				distance range of about			
		Ud	iP	21 46 48.5				132°-143° and illustrate			
		Ka	iP	21 46 35.4				well the relative			
		Hindu Kush (h = 250 km).						significance of PKP and			
"	27	Ud	eP	23 22 24		"	28	Sk	iP	15 07 51.0	
"	28	Ud	iP	02 46 49.8		"	28	Up	iP	15 39 16.8	
"	28	Ki	e(P)	02 50 30					eS	15 42 48	
		Sk	eP	02 50 26						micr sec	
			i	02 50 54.7				M	E	0.5 13	
"	28	Sk	iP	03 58 56.1				M	N	0.8 13	
		Mexico (h = 60 km).						M	Z	1.0 13	
"	28	Ud	eP	06 04 05				D = 2050 km = 18 1/2°.			
"	28	Sk	eP	06 06 05			Ki	iP	15 38 59.8		
		China.							micr sec		
"	28	Ud	iP	07 13 10.7				P	Z'	0.2 1.6	
		Kurile Islands						M	E	1.3 16	
		(h = 60 km).						M	N	0.4 12	
"	28	Sk	eP	09 52 17				M	Z	1.1 15	
"	28	Up	iP	09 55 15.5			Sk	iP	15 38 33.4		
		Ki	iP	09 54 30.7			Um	iP	15 39 11.0		
		Sk	iP	09 55 05.2				i	15 39 36.4		
		Um	iP	09 54 50.1				iS	15 42 39		
			i	09 54 54.0			Ka	iP	15 39 30.4		
			i	09 54 58.7			Ud	iP	15 38 54.2		
		Ka	iP	09 55 36.5			Iceland (h = 30 km).				
		Ud	iP	09 55 21.9		"	28	Up	iP	17 40 00.2 C	
		Japan (h = 140 km).							ipP	17 40 12.2	
										micr sec	
								P	Z'	0.1 0.8	
							Ki	iP	17 40 00.8 C		
										micr sec	
								P	Z'	0.1 1.0	
							(cont.)				

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
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1967 July	28	(cont.)	1967 July	29	(cont.)
		Sk iP 17 40 15.2 C			Up isS 10 47 59
		ipP 17 40 27.6			ePKKP 10 54 52
		Um iP 17 39 57.4 C			micr sec
		ipP 17 40 10.4			P E 0.6 4
		Ka iP 17 40 03.7			P Z 3.7 6
		Ud iP 17 40 10.6 C			P Z' 0.3 0.6
		Sumatra. h = 45 km			pP Z' 0.5 0.6
		(Up,Sk,Um).			S E 2.4 5
		Magn. = 5.7 (Up,Ki).			S N 15 11
"	28	Sk iSKP 18 53 57.4			M E 1.8 19
		Fiji Islands (h = 380 km).			M N 5.7 20
"	28	Ki iP 20 43 06.3			M Z 4.0 18
					(D = 9450 km = 85°).
"	28	Up iP 22 57 05.7 C		Ki iP 10 36 43.1 C	
		Ki iP 22 56 40.5		i 10 37 09.8	
		Sk iP 22 57 08.1		ipP 10 37 26.7	
		Um iP 22 56 50.0		iS 10 46 53	
		Ud iP 22 57 15.0 C		ipS 10 47 52	
		Ryukyu Islands (h = 15 km).		esS 10 48 05	
				iP'P' 11 03 00.3	
				iSKPP' 11 06 01.3	
				micr sec	
"	29	Up eS 02 28 51			P E 2.1 6
		micr sec			P N 0.7 5
		M E 0.4 14			P Z 6.9 7
		M N 0.7 14			P Z' 8.3 2.5
		M Z 0.8 13			pP E 2.5 8
	Ki	eP 02 25 06			pP Z 4.5 7
		i 02 25 28.5			S E 4.4 6
		micr sec			S N 13 8
		P Z' 0.2 2.0			P'P' Z' 0.2 1.5
		M E 0.7 17			M E 4.2 17
		M N 0.3 13			M N 9.2 21
		M Z 0.5 15			M Z 4.6 18
		Sk eP 02 24 42			(D = 9450 km = 85°).
		Um iP 02 25 12.9		Sk iP 10 36 27.1	
		i 02 25 18.7		i 10 36 28.8	
		Ud eP 02 25 03		ipP 10 37 11.7	
		Iceland (h = 30 km).		eSKS 10 46 29	
"	29	Up iP 03 08 25.2			ipPKKP 10 54 57.4
		ipP 03 08 36.0			iP'P' 11 02 59.6
		Ki iP 03 07 40.4		Gb iP 10 36 25.9	
		Sk e(pP) 03 08 25		i 10 36 28.2	
		Ud iP 03 08 31.5		ipP 10 37 11.6	
		Japan. h = 40 km (Up).		eSKS 10 46 26	
				Um iP 10 36 44.8 C	
"	29	Up iP 10 36 39.8 C			i 10 36 46.4
		i 10 36 42.1			ipP 10 37 28.8
		ipP 10 37 25.5			i 10 46 14
		eSKS 10 46 41			iS 10 46 52
		iS 10 46 50		Ka iP 10 36 39.0	
		ipS 10 47 42		ipP 10 37 17.6	
		(cont.)		Ud iP 10 36 29.9	
				(cont.)	

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
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1967				1967			
July	29	(cont.)		July	30	(cont.)	
		Ud	ipP	10 37 11.7		Ki	
		i		11 07 21.1			micr sec
		Colombia. h = 180 km				S	N 0.7 6
		(Up,Ki,Sk,Gb,Um,Ka,Ud).				SKS	N 5.4 11
		Magn. = 6.8 (Up,Ki).				M	E 21 20
		Multiple P. Generally				M	N 6.6 18
		long-period PZ'.				M	Z 16 20
						D = 8900 km = 80°.	
"	29	Up	iP	11 31 07.1		Sk	iP 00 11 47.9 C
						i	00 11 56.0
"	29	Up	eP	14 16 14		Gb	iP 00 11 44.0
						i	00 11 52.4
"	29	Up	iP	14 19 49.6		Um	iP 00 12 07.0 C
		Ki	iP	14 19 59.8		i	00 12 14.7
		Um	iP	14 19 48.9		iPP	00 15 21
		Ud	iP	14 20 06.8		iS	00 22 04
		Hindu Kush (h = 190 km).				iSKS	00 22 21
"	29	Up	iPKP	14 37 41.7		Ka	iP 00 11 59.1
		Solomon Islands (h = 90 km).				i	00 12 06.8
						i	00 12 18.7
"	29	Ud	iP	20 12 27.6		Ud	iP 00 11 49.9 C
						i	00 11 57.9
"	29	Um	i(P)	21 27 55.9		Venezuela (h = 10 km).	
		Ud	iP	21 27 31.5		Magn. = 6.3 (Up,Ki).	
						Multiple P: the time	
						interval of about 7-8 sec	
						between the first small	
						onset and the second large	
						one is particularly	
						pronounced; this could be	
						due to a multiple shock.	
"	30	Up	iP	00 12 00.3		"	30 Up iPKP 01 21 04.3 C
		i		00 12 05.9		Sk	iPKP 01 20 59.5
		i		00 12 12.0		Um	iPKP 01 20 54.2 C
		iPP		00 15 02		Ud	iPKP 01 21 05.9 C
		iS		00 21 58		South of Kermadec Islands	
		iSKS		00 22 11		(h = 30 km).	
				micr sec		"	30 Up iP 01 24 10.9
		P	E	0.3 7		Ud	iP 01 24 24.5
		P	Z	1.1 7		Turkey (h = 30 km).	
		P	Z'	0.1 1.0		"	30 Up iP 01 35 42.1 D
		PP	E	0.7 8		i	01 35 57.6
		PP	Z	1.1 8		iS	01 39 25.5
		S	N	6.7 13		i	01 39 32
		SKS	E	1.5 8		iLg1	01 41 40
		M	E	14 21		i	01 42 53
		M	N	12 22			micr sec
		M	Z	25 21		P	E 0.8 4
		D = 8800 km = 79°.				P	N 2.9 4
		Ki	iP	00 12 06.7 C		P	Z 2.6 4
		i		00 12 14.4		P	Z' 3.2 2.0
		iS		00 22 06		(cont.)	
		iSKS		00 22 21			
				micr sec			
		P	E	0.9 6			
		P	Z	1.9 7			
		P	Z'	1.0 1.8			
		S	E	3.4 8			
		(cont.)					

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1967
July 30 (cont.)

Up			micr	sec
	S	E	1.8	6
	S	N	2.6	6
	M	E	7.3	15
	M	N	15	14
	M	Z	13	15
	D = 2300 km = 20 1/2°.			
Ki	iP		01 36	50.1 D
	i		01 36	53.4
	i(S)		01 41	51
	iSn		01 42	17.3
	iLi		01 44	55
	iLg1		01 45	58
			micr	sec
	P	N	0.5	6
	P	Z	0.8	5
	P	Z'	0.6	2.0
	(S)	N	1.3	12
	M	E	12	16
	M	N	5.1	14
	M	Z	7.6	15
	D = 3100 km = 28°.			
Sk	iP		01 36	27.9 D
	iPP		01 36	58.8
	iSn		01 41	31.7
Gb	iP		01 35	42.0 D
	iS		01 39	31.8
Um	iP		01 36	15.2 D
	iS		01 40	22
	iSn		01 40	37.0
	iSS		01 41	27
	iLg1		01 43	14
Ka	iP		01 35	10.3 D
	iS		01 38	42.5
Ud	iP		01 35	55.8 D
	iS		01 39	59.9

Turkey ($h = 15$ km).
Magn. = 6.0 (Up, Ki).
The initial PZ' is of long
period (around 2 sec) and is
followed after 3-7 sec by an
onset of much shorter period:
a possibility is that the
shock is double, with some
shift in the epicenter.--
The propagation of Sn to
some of our stations is
probably prevented by the
Carpathian mountains
(Gb, Ka, Ud), whereas for
others propagation is free
(Sk, Um, Ki).--
(cont.)

1967
July 30 (cont.)

The three Turkish earthquakes July 22, 17 01, July 26, 18 58, and July 30, 01 35, suggest an oscillation pattern, with gradually decreasing magnitudes. Note also that the magnitude of the present shock is 1.3 smaller than for the main shock, July 22, in the same area.

```

"      30  Up    iP      02 02 01.2
        Ki    iP      02 03 07.5 C
        Sk    iP      02 02 45.4
        Um    iP      02 02 32.7
        Ud    iP      02 02 13.5
        Turkey.
        Origin time = 01 57.3.

```

"	30	Up	iP	02 05 41.3
		Sk	e(P)	02 05 06

" 30 Gb iP 02 21 18.0

"	30	Up	iP	02 30	56.7
			iPP	02 31	15.9
		Ud	i(P)	02 31	06.3
			(Turkey).		

"	30	Up	iP	03	49	55.3
		Ki	iP	03	49	25.8
		Sk	iP	03	49	52.9
		Gb	iP	03	50	12.8
		Um	iP	03	49	38.8
		Ud	iP	03	50	01.8

Volcano Islands
($h = 120$ km).

30 Up iP 03 54 27.9

30	Up	iPKP	05	27	29.9	D
		i	05	27	37.0	
	Ud	iPKP	05	27	32.0	
		i	05	27	39.9	

Tonga-Kermadec Islands
(h = 120 km).

"	30	Up	eSg	05 44 56
		Ki	eSn	05 41 41
			iLg1	05 42 02.5
		Sk	eSg	05 44 29
		(cont.)		

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
July	30	(cont.)			July	30	Ki	iPn	14 10 43.3
		Um	iSg	05 42 57.3				iSn	14 11 32.1
		Ud	eSg	05 45 31				iLg1	14 11 46.9
		Northwest Russia.						D = 460 km = 4.1°	
		Explosion?					Um	iSg	14 13 16.7
		Northwest Russia.					Origin time = 14 09 38.		
"	30	Um	iP	07 10 11.8			Explosion?		
		Ud	i(P)	07 10 51.2					
"	30	Up	iP	10 29 49.4	"	30	Up	iP	14 23 16.5
		i		10 29 53.0			Ki	iP	14 22 51.3
		Ki	eP	10 30 57			Um	iP	14 22 58.4
		Sk	iP	10 30 35.5			Ud	iP	14 23 29.0 C
		Um	iP	10 30 22.5	"	30	Um	iP	15 39 42.3
		i		10 30 28.7	"	30	Up	iSKP	17 45 41.3
		Ud	iP	10 30 03.4					
		Turkey.							
		Origin time = 10 25 09.							
"	30	Up	iPKP	11 09 31.4			Ki	SKP Z'	0.1 1.1
		i		11 09 44.5					
				micr sec			Ki	iSKP	17 45 16.4
		M	E	0.9 19					micr sec
		M	N	1.2 20				SKP Z'	0.3 2.0
		M	Z	1.6 24			Sk	iSKP	17 45 33.9
		Ki	ePKP	11 09 27			Um	iPKP	17 42 52.5
				micr sec				i	17 45 20.9
		M	E	1.4 19				iSKP	17 45 28.5
		M	N	0.5 19			Ud	ePKP	17 42 51
		M	Z	1.4 19				iSKP	17 45 43.3
		Sk	e(PKP)	11 09 39			Fiji Islands (h = 560 km).		
		Um	iPKP	11 09 25.4	"	30	Up	iP	19 03 24.4
		i		11 09 28.4			i		19 03 39.5
		Ka	iPKP	11 09 31.4 D			Ki	iP	19 04 32.6
		i		11 09 40.9			i		19 04 51.9
		Ud	iPKP2	11 09 50.9			Sk	iP	19 04 10.2
		i		11 10 01.4			Gb	iP	19 03 24.5
		West of Macquarie Islands					Um	iP	19 03 57.3
		(h = 30 km).					Ka	iP	19 02 56.7
"	30	Up		---			Ud	iP	19 03 38.3
				micr sec			Turkey (h = 30 km).		
		M	E	1.1 22	"	30	Sk	iP	19 11 14.3
		M	N	1.5 19			Um	iP	19 11 01.4
		M	Z	1.4 18			Turkey.		
		Ki	ePS	14 03 38			Origin time = 19 05.8.		
				micr sec	"	30	Um	iP	19 30 30.6
		M	E	1.7 19	"	30	Up	iP	20 35 44.6
		M	N	0.8 19			Ki	iP	20 35 24.3
		M	Z	1.5 18			Sk	eP	20 35 50
		Um	iPKP	13 53 46.6			Um	iP	20 35 30.0
		i		13 54 22			Ud	iP	20 35 51.9
		iPP		13 54 34			Luzon (h = 15 km).		
		iSKS		14 00 32					
		iPS		14 04 09					
		New Ireland (h = 50 km).							

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

July 30

Ki

iPKP

22 40 35.8

ipPKP

22 41 03.6

Um

iPKP

22 40 27.0

South Sandwich Islands.

h = 100 km (Ki).

"

30

Up

iP

23 14 13.4 C

Ki

iP

23 13 25.8 C

Um

iP

23 13 47.8 C

Ud

iP

23 14 21.0

iPcP

23 14 43.0

Kurile Islands (h = 30 km).

"

31

Up

iP

01 48 42.6

Um

iP

01 48 20.9 C

Ud

iP

01 48 50.1

Japan (h = 70 km).

"

31

Ki

micr sec

M

E

0.4 12

Sk

iP

07 17 31.3

Um

eP

07 17 17

eS

07 21 37

Ud

eP

07 16 55

Turkey (h = 15 km).

"

31

Up

iPg

13 57 14.1

iSg

13 57 40.9

micr sec

Sg

Z'

0.1 0.5

Um

iPg

13 57 55.2

iSg

13 58 49.4

Ud

iSg

13 58 43.2

Southwest of Finland,

59.7°N, 21.8°E.

Origin time = 13 56 33.

Probably explosion.

"

31

Up

iPg

14 08 16.4

iSg

14 08 43.6

micr sec

Sg

Z'

0.2 0.5

Um

iPg

14 08 58.1

i

14 09 42.8

iSg

14 09 52.5

Ud

iSn

14 09 26.6

iSg

14 09 47.3

Southwest of Finland,

59.7°N, 21.8°E.

Origin time = 14 07 36.

Probably explosion.

1967

July 31

Sk

eP

15 10 43

"

31

Up

iPg

16 20 47.5

iSg

16 21 14.5

micr sec

Sg

Z'

0.2 0.5

Um

iSg

16 22 21.4

Ud

ePg

16 21 24

iSg

16 22 17.7

Southwest of Finland,

59.7°N, 21.8°E.

Origin time = 16 20 06.

Probably explosion.

"

31

Up

iPg

16 21 18.8

iSg

16 21 45.9

micr sec

Sg

Z'

0.1 0.5

Um

iSg

16 22 55.5

Southwest of Finland,

59.7°N, 21.8°E.

Origin time = 16 20 38.

Probably explosion.

"

31

Um

ePP

23 12 51

eSS

23 33 12

Macquarie Islands

(h = 30 km).

"

31

Up

eP

23 57 28

Ki

eP

23 56 55

i

23 57 07.7

Um

iP

23 57 09.4

Ud

iP

23 57 34.7

Bonin Islands

(h = 30 km).

Markus Båth

January 5, 1968

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, G Ö T E B O R G,

U M E Å, K A R L S K R O N A and U D D E H O L M

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
Göteborg	{Gb):	57°41.9'N,	11°58.7'E;	h = 66 m
Umeå	{Um):	63°48.9'N,	20°14.2'E;	h = 16 m
Karlskrona	{Ka):	56°09.9'N,	15°35.5'E;	h = 11 m
Uddeholm	{Ud):	60°05.4'N,	13°36.4'E;	h = 240 m

A U G U S T 1 - 31, 1967

1967				1967			
Aug.				Aug.			
1	Up	iP	00 18 18.7	1	Up	---	
		e	00 21 50			micr	sec
		iS	00 21 57.9		M	E	0.5 18
	Ki	eP	00 19 29		M	N	0.8 20
	Um	iP	00 18 53.2		M	Z	0.9 18
		iSn	00 23 55.3		Ki	iPKP2	09 26 27.0
	Ud	iP	00 18 28.1			micr	sec
		e	00 21 27		M	E	0.7 19
	Turkey (h = 30 km).				M	N	0.5 20
					M	Z	0.8 18
"	1	Up	iP 01 09 55.3		Um	ePKP2	09 26 30
		Ki	eP 01 11 05		Ka	iPKP	09 25 52.3
		i	01 11 16.1		Ud	iPKP2	09 26 38.8
		iPn	01 11 30.9		South of Macquarie Islands		
	Um	iP	01 10 29.5		(h = 30 km).		
		i	01 12 35.6				
	Ud	iP	01 10 04.6	"	1	Ka recorded altogether about	
	Turkey (h = 30 km).					175 stronger explosions in	
						the south Baltic area in the	
"	1	Up	iP 01 27 48.9			daytime of Aug. 1-5, 8-9,	
		Um	iSKS 01 38 17			11, 13, 19-20, 22-25, 28-31.	
		iS	01 39 31			Several of these were also	
	Peru (h = 70 km).					recorded at Up and Ud. Com-	
						pare remark on July 22, 1967.	
"	1	Um	iP 02 31 51.3				
"	1	Ki	iP 03 42 42.4 C	"	1	Up	iSg 13 23 43.5
		Um	iP 03 42 46.8			i	13 23 44.9
		Ud	iP 03 43 05.9			i	13 23 47.5
	Molucca Passage (h = 60 km).				Ki	eSg	13 26 13
					Sk	iSg	13 25 34.6
"	1	Um	iP 07 13 28.0		Um	iSg	13 24 14.6
					Ud	eSn	13 24 16
						iSg	13 24 43.9
					Gulf of Finland. Probably		
					underwater explosion.		

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Aug.	1	Up	iP	14 10 58.0	Aug.	2	(cont.)		
		Ud	iP	14 11 04.9			Up	micr	sec
		Kurile Islands (h = 50 km).					M	Z	0.9 18
"	1	Um	iP	15 44 47.2 C			Ki	---	
								micr	sec
"	1	Ki	iPn	15 46 17.3			M	E	0.4 14
			iSn	15 47 03.3			M	Z	0.7 13
			iLg1	15 47 16.5			Um	eP	06 45 50
				D = 420 km = 3.8°.				i	06 46 09.6
				Possibly northwest Russia.			Ud	iP	06 46 15.3
				Origin time = 15 45 17.			Formosa (h = 40 km).		
				Explosion?	"	2	Ka	iPKP	09 55 53.5 C
							Ud	iPKP	09 55 42.5
"	1	Up	iP	17 00 20.7			Fiji Islands (h = 590 km).		
			i	17 00 34.1	"	2	Ki	iPn	10 50 43.3
			i	17 00 45.2				iSn	10 51 42.7
			iSn	17 06 32.6				iLg1	10 52 01.7
		Ki	eP	17 00 50					D = 560 km = 5.0°.
			i	17 01 34.3			Um	iSg	10 52 43.5
			iPn	17 01 52.6			Northwest Russia.		
		Um	iP	17 00 38.2			Origin time = 10 49 25.		
			i	17 01 07.5			Explosion?		
			i	17 05 54.1	"	2	Up	iP	11 10 12.1 C
			iSn	17 06 29.9				iS	11 12 53
		Ka	eP	17 00 20				iSS	11 13 21
		Ud	iP	17 00 37.3					micr sec
		Turkmen SSR (h = 30 km).					P	N	0.3 3
"	1	Up	iPKP	19 37 28.2			P	Z'	0.1 0.7
		Sk	iPKP	19 37 23.6			S	Z'	0.1 0.6
		Um	iPKP	19 37 18.2			M	E	15 19
		Ka	ePKP	19 37 36			M	N	16 18
		Ud	iPKP	19 37 30.2 D			M	Z	15 18
		South of Kermadec Islands							D = 1650 km = 15°.
		(h = 230 km).					Ki	iP	11 09 05.3 C
"	2	Up	iP	00 55 23.1				iS	11 10 52.1
			i	00 55 49.6				iSS	11 11 06
				micr sec				eT	11 16 54
		P	Z'	0.1 0.5					micr sec
		Ki	iP	00 54 37.7			P	E	1.6 11
		Sk	iP	00 55 14.7			P	N	0.7 11
		Gb	iP	00 55 45.0			P	Z	1.6 11
		Um	iP	00 54 57.8			P	Z'	0.6 1.0
			ipP	00 55 33.5			M	E	24 18
		Ka	iP	00 55 45.5			M	N	18 18
		Ud	iP	00 55 29.8			M	Z	11 17
			i	00 55 35.2					D = 1100 km = 10°.
		Kurile Islands.					Sk	iP	11 09 11.2
		h = 150 km (Um).						iS	11 11 07.7
"	2	Up	---				Gb	iP	11 10 21.3
				micr sec			Um	iP	11 09 39.6
		M	N	1.2 20				iS	11 11 54
		(cont.)					(cont.)		

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Aug. 2 (cont.)

Ka iP 11 10 47.8
i 11 10 52.3
i 11 15 14.7
Ud iP 11 09 55.5
i 11 10 09.9
iS 11 12 27.9
Jan Mayen (h = 30 km).
Magn. = 5.0 (Up).

" 2 Up iP 14 02 26.5
Ki iP 14 03 01.7
Gb iP 14 02 39
Um iP 14 02 39.0
Ud iP 14 02 41.6
Iran (h = 30 km).

" 2 Up iP 14 09 52.7 C
iS 14 12 34.6
iSS 14 13 05
micr sec
P E 0.6 3
P Z 0.6 3
P Z' 0.3 0.8
S Z' 0.2 0.8
M E 6.4 18
M N 7.7 20
M Z 6.1 19
D = 1650 km = 15°
Ki iP 14 08 46.3
i(S) 14 10 50
e(T) 14 16 56
micr sec
P E 1.1 7
P N 0.3 9
P Z' 1.4 0.8
(S) N 1.4 10
(S) Z 0.6 7
M E 11 17
M N 6.8 16
M Z 6.5 16
Sk iP 14 08 51.3
Gb iP 14 09 59
i 14 10 06
iS 14 12 50
Um iP 14 09 20.0 C
iS 14 11 38.4
Ka eP 14 10 28
i 14 10 30.5
iS 14 13 55.9
Ud iP 14 09 35.3
iPP 14 09 46.7
(cont.)

1967

Aug. 2 (cont.)

Ud iS 14 12 09.3
Jan Mayen (h = 30 km).
Magn. = 5.1 (Up).
Comparing with the Jan Mayen earthquake about 3 hours earlier, we find that long-period waves have larger amplitudes in the first shock, whereas short-period waves have larger amplitudes in the second shock. This could be due to a different time-function of the source mechanism, or possibly a different focal depth.

" 2 Up iP 15 38 01.8
iPP 15 38 23.9
Ki iP 15 39 09.6
i 15 39 28.0
Sk iP 15 38 48.6
Gb eP 15 38 03
Um iP 15 38 34.6
Ud iP 15 38 15.3
Turkey (h = 30 km).
" 2 Ki iP 16 22 35.8
i 16 22 41.3
Sk iP 16 22 42.7
iS 16 24 39.1
Um eP 16 23 15
i 16 25 54.9
Jan Mayen, near 71°N, 8°W.
Origin time = 16 20 10.
Solution by combination with Finnish and Norwegian readings.

" 2 Ki iP 16 49 32.7
i 16 49 46.7
Sk iP 16 49 32.8
iS 16 51 28.8
Um iP 16 50 07.2
iS 16 52 25.2
i 16 52 51.6
Jan Mayen, near 71°N, 8°W.
Origin time = 16 47 03.
" 2 Up iP 18 30 31.5 D
micr sec
P Z' 0.1 0.7
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Aug.	2	(cont.)			Aug.	3	(cont.)		
		Ki	iP	18 30 30.3			Ki		micr sec
				micr sec			M	E	0.4 17
		P	Z'	0.1 1.0			M	Z	0.8 18
		Sk	eP	18 30 44			Um	iP	21 47 53.4
		Um	iP	18 30 27.8			Ud	iP	21 48 18.9
			ipP	18 30 45.3			Aleutian Islands		
		Ud	iP	18 30 40.4			(h = 30 km).		
			iPP	18 34 28.9					
		Sumatra. h = 70 km (Um).			"	3	Up	iP	23 27 43.0
		Magn. = 6.0 (Up,Ki).						ipP	23 28 28.0
"	3	Ud	ePKP	00 27 35			Ki	iP	23 26 47.1
		Tonga Islands (h = 40 km).						ipP	23 27 31.7
"	3	Ki	iP	02 07 37.4 C			Um	iP	23 27 13.1
		Um	iP	02 07 42.5				ipP	23 27 58.8
		Banda Sea (h = 160 km).					Ud	iP	23 27 38.8
"	3	Up	iP	09 05 09.2				ipP	23 28 24.3
		Ki	iP	09 04 47.5			Aleutian Islands. h = 190 km		
		Um	iP	09 04 55.1	"	4	Ki	eP	02 53 16
		Ud	iP	09 05 18.7					
		i		09 05 28.8	"	4	Ki	iPKP	04 13 04.1
"	3	Up	iP	10 16 39.2			South Sandwich Islands		
							(h = 150 km).		
"	3	Up	eP	10 44 38	"	4	Up	iP	06 11 57.8
		Ud	i(P)	10 44 27.3				iS	06 20 39
"	3	Um	iPKP	11 10 41.1					micr sec
		i		11 10 55.5			M	E	0.5 19
		Kermadec Islands					M	N	0.9 18
		(h = 50 km).					M	Z	0.9 19
"	3	Ki	e	11 41 03			D = 7400 km = 66 1/2°.		
			i(Sg)	11 41 52.7			Ki	iP	06 12 26.4
		Um	i(Sg)	11 39 41.8			Um	iP	06 12 16.0
"	3	Um	iP	12 23 58.9				eS	06 21 16
		Japan (h = 50 km).			"	4	Ud	iP	06 11 44.6
"	3	Ki	eP	14 44 05			Atlantic Ocean (h = 30 km).		
		Um	iP	14 44 50.4 D			Up	iP	07 04 53.2 C
		Norwegian Sea (h = 30 km).						i	07 05 34.6
"	3	Ki	eL	19 56				iPn	07 05 58.3
				micr sec				iRg	07 18 45
		M	E	0.3 13					micr sec
		M	Z	0.7 13			P	Z'	0.1 0.6
		Ryukyu Islands (h = 90 km).					Ki	iP	07 04 37.7 C
"	3	Ki	iP	21 47 26.0				iPn	07 05 34.2
		i		21 47 39.8					micr sec
		(cont.)					Um	iP	07 04 38.1 C
								i	07 05 25.9
								iPn	07 05 39.7
								iPP	07 05 52.9
							Ka	iP	07 05 08.7 C
								i	07 05 33.5
							(cont.)		

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
Aug.	4	(cont.)		Aug.	5	Ki	iPn 10 16 58.2
		Ud	iP 07 05 09.4 C			iP ^x	10 17 12.3
			iPn 07 06 22.1			iSn	10 17 54.3
		Kazakh SSR.				iLg1	10 18 15.1
		Origin time = 06 58 00.				D = 520 km = 4.7°	
		Magn. = 5.8 (Up,Ki).			Um	i(Sn)	10 18 40.6
		Underground explosion.				iSg	10 19 11.3
					Northwest Russia.		
"	4	Ud	iP 08 15 03.4			Origin time = 10 15 46.	
		Afghanistan (h = 30 km).				Explosion?	
"	4	Up	iP 14 58 32.2	"	5	Ki	e(Sn) 10 24 58
			i 14 58 35.2			i(Lg1)	10 25 21.5
			micr sec				
		P	Z' 0.1 1.0	"	5	Up	iPg 12 46 55.5
		Ki	iP 15 00 00.7			iSn	12 47 14.9
			micr sec			iSg	12 47 18.8
		M	E 0.4 14			D = 200 km = 1.8°	
		Um	iP 14 59 14.9		Ud	iPg	12 47 03.0
			i 14 59 18.6			iSg	12 47 29.5
		Ka	iP 14 57 46.4			D = 230 km = 2.1°	
		Ud	iP 14 58 35.6			Origin time = 12 46 20.	
		Adriatic Sea (h = 30 km).		"	5	Um	iP 13 43 12.4
"	4	Um	iP 19 01 29.6	"	5	Ki	iPn 15 11 18.5
"	4	Up	iP 20 37 44.2 C			iSn	15 11 55.8
"	4	Um	iP 21 08 21.8			iSg	15 12 09.7
						D = 330 km = 3.0°	
"	4	Um	iPKS 22 57 28		Sk	iSg	15 14 39.4
		Tonga Islands (h = 30 km).			Um	i	15 12 31.8
						iSg	15 13 09.9
"	5	Up	iP 01 55 48.5 C		Northern Finland,		
		Ki	iP 01 55 02.9		67.5° N, 28.4° E.		
		Um	iP 01 55 23.4 C		Origin time = 15 10 30.		
		Ka	iP 01 56 10.7		Explosion?		
		Ud	iP 01 55 54.3 C	"	5	Um	iP 16 12 54.9
			i 01 56 07.6	"	6	Up	iP 03 41 10.4
		Kurile Islands (h = 30 km).				i	03 42 12.3
"	5	Um	iP 02 54 28.7 C	"	6	Ki	iP 05 40 06.8
"	5	Up	iP 05 40 26.9	"	6	Up	iP 10 38 34.5
		Ki	iP 05 39 40.5			Ki	iP 10 38 37.7
			micr sec			Sk	iP 10 38 58.2
		P	Z' 0.1 1.0			Ka	iP 10 38 41.4
		Um	iP 05 40 01.8 C			Ud	iP 10 38 51.0 D
		Ka	iP 05 40 48.3		Tadzhik-Sinkiang		
		Ud	iP 05 40 32.6 C		(h = 220 km).		
			iPcP 05 40 58.2				
		Kurile Islands (h = 30 km).					

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
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1967

Aug. 6

Up iPKP2 11 38 14.7

Ki iPKP 11 37 45.3

Sk iPKP 11 38 00.6

Um iPKP 11 37 53.9

Ud iPKP 11 38 07.1

i 11 38 17.8

South of Kermadec Islands
(h = 30 km).

" 6

Ki iPn 13 53 12.5

iSn 13 54 00.7

iSg 13 54 17.5

D = 440 km = 4.0°

Possibly northwest Russia.

Origin time = 13 52 08.

Explosion?

" 6

Ki eP 20 47 17

Sk iPP 20 48 40.9

Um iP 20 46 55.7

Ud iP 20 47 04.8

Iran.

" 6

Ki iP 22 56 08.6 C

Um iP 22 56 35.8

Ud iP 22 57 01.1

Aleutian Islands (h = 40 km).

" 7

Ki iP 05 57 28.3

Um iP 05 57 18.5

Ka iP 05 57 25.0

Ud iP 05 57 39.3

Hindu Kush (h = 230 km).

" 7

Ki iP 11 24 00.7

i 11 24 21.7

Sk eP 11 24 31

Ud iP 11 24 57.2

i 11 25 34.4

Alaska (h = 40 km).

" 7

Up iPKP 17 26 47.5

Sk iPKP 17 26 40.3 C

i 17 26 50.6

" 7

Um iPKP 17 26 34.5

Ka iPKP 17 26 55.3

Ud iPKP 17 26 48.9 C

Kermadec Islands (h = 150 km).

" 7

Ki i(Sg) 18 08 41.1

" 8

Ud iP 00 38 31.7

1967

Aug. 8

Ki iP 01 51 48.6

Sk eP 01 52 00

i 01 52 05.1

Um iP 01 52 05.8

i 01 52 13.5

Ud iP 01 52 11.7

i 01 52 28.7

These phases are possibly
PKP instead.

" 8

Ki iPP 04 45 16.7

Ud iP 04 43 44.8

i 04 43 50.9

Turkey.

" 8

Up iP 14 49 41.3

Off coast of Mexico
(h = 30 km).

" 8

Ki iP 16 16 42.1

Japan (h = 50 km).

" 9

Ud iP 02 37 42.8

" 9

Up i(PKP) 08 38 19.6

iPP 08 38 30.3

Ki iP 08 33 54.4 C

Sk iPP 08 38 46.6

i 08 39 35.4

Um iP 08 33 59.1

iPP 08 38 15.5

iSKS 08 44 28

iS 08 45 34

i 08 48 04

Ud iP 08 34 18.3

iPKP 08 38 13.3

iPP 08 38 53.0

Banda Sea (h = 90 km).

" 9

Sk iPKP 10 41 24.8

Um iPKP 10 41 19.6

Ud iPKP 10 41 32.4

Kermadec Islands
(h = 330 km).

" 9

Ki iSg 10 55 38.3

Um iSg 10 56 50.3

" 9

Up iP 13 36 18.4

Ki iP 13 35 47.1

Sk iP 13 35 51.6

Um iP 13 36 06.1

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
Aug.				Aug..			
9	(cont.)			10	Up	iP	20 44 49.7 C
	Ka	iP	13 36 30.8	"	10	Up	iP 20 50 23.8
	Ud	iP	13 36 08.6	"	10	Up	iP 21 28 27.0
	Colorado (h = 5 km).			"	11	Up	iP 04 19 13.2
"	9	Um	iPP 23 08 52.9	"	11	Ki	iPn 04 35 44.2
	South of Africa						iSn 04 36 30.8
	(h = 30 km).						iSg 04 36 48.8
"	9	Ki	e(P) 23 32 57				D = 430 km = 3.9°
	Um	i(P)	23 33 44.3			Um	iSg 04 37 50.8
		i	23 33 56.9			Probably northwest Russia.	
"	10	Ud	eP 06 23 17			Origin time = 04 34 41.	
"	10	Um	iP 07 10 41.4			Explosion?	
		i	07 10 52.0	"	11	Sk	iP 10 54 06.7
"	10	Ki	iSg 10 04 09.3			Ud	iP 10 54 25.9
	Sk	eSg	10 04 13			Aleutian Islands	
		i	10 04 21.9			(h = 40 km).	
	Um	iSg	10 04 39.6	"	11	Up	iP 19 07 00.7
	Nordlands Fylke, Norway.					Ki	iP 19 06 31.4 D
"	10	Um	iP 11 10 47.2			Sk	iP 19 06 58.0
"	10	Up	iP 11 32 19.4			Gb	iP 19 07 20
		iPcP	11 32 44.7			Um	iP 19 06 44.0 D
			micr sec				iS 19 16 50
	M	E	0.9 19			Ud	iP 19 07 06.9
	M	N	2.7 22			Volcano Islands	
	M	Z	2.4 19			(h = 130 km).	
	Ki	iP	11 31 33.1	"	12	Ki	eP 03 15 46
		ipP	11 31 46.2	"	12	Um	iP 03 42 38.0
		iPcP	11 32 15.9			Ud	eP 03 42 57
		eScS	11 41 17	"	12	Up	iP 04 41 55.2
			micr sec				micr sec
	M	E	1.7 19			P	Z' 0.1 0.8
	M	N	0.9 19			Ki	iP 04 41 15.6 D
	M	Z	2.8 19				i 04 41 22.5
	Sk	iP	11 32 08.6				micr sec
		iPcP	11 32 37.9			P	Z' 0.1 1.0
	Gb	iP	11 32 40			Sk	iP 04 41 49.8
	Um	iP	11 31 54.2 C			Um	iP 04 41 33.0
		ipP	11 32 07.5				ipP 04 41 46.1
		i	11 32 44.3				iS 04 50 27
		ePa	11 35 58			Ka	eP 04 42 18
		iS	11 40 22			Ud	iP 04 42 03.0 D
	Ka	iP	11 32 41.7				i 04 42 10.0
	Ud	iP	11 32 24.9			Japan. h = 50 km (Um).	
		i	11 33 09.8			Magn. = 5.7 (Up, Ki).	
	Kurile Islands. h = 50 km						
	(Ki, Um). Magn. = 5.5						
	(Up, Ki).						

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Aug.	12	Um	iP	07 25 38.1	Aug.	12	(cont.)		
"	12	Up	iPKP	09 58 59.1 C			Ki	i	10 50 27.0
			ipPKP	09 59 36			Sk	iP	10 50 52.5
			isPKP	10 00 00.7			Um	iP	10 50 41.0
			iSKP	10 02 14.2			Ka	iP	10 51 33.7
			i!	10 08 50			Ud	iP	10 51 11.7 C
				micr sec			Kamchatka (h = 25 km).		
			PKP	N 0.6 4	"	12	Up	iP	12 05 40.9
			PKP	Z 1.9 4					
			PKP	Z' 0.4 1.0	"	12	Ud	iP	12 44 12.3
			SKP	N 0.9 5					
			SKP	Z 1.6 5	"	12	Up	iPKP	12 50 09.4
			SKP	Z' 0.8 1.8				iPKS	12 53 29.2
			M	E 1.6 21					micr sec
			M	N 5.0 22			M	N	0.9 18
			M	Z 3.9 20			M	Z	1.4 21
			(D = 15800 km = 142°).				Ki	iPKP	12 49 50.0
Ki			e(PKP)	09 58 37			Sk	iPKP	12 50 01.8
			iPKP	09 58 48.6			Um	iPKP	12 49 56.0
			ipPKP	09 59 28.9			Ud	ePKP	12 50 14
			iPP	10 01 25.5			New Hebrides Islands		
			iSKP	10 02 06.5			(h = 25 km).		
				micr sec					
			PKP	Z' 1.3 2.5	"	12	Ki	i(Sg)	13 45 16.5
			SKP	Z' 4.6 3.0				i	13 45 30.4
Sk			i(PKP)	09 58 52.2			Um	i(Sg)	13 45 58.5
			ipPKP	09 58 58.1					
			ipPKP	09 59 38.8	"	12	Ud	eP	14 07 32
			i	10 01 57.2				i	14 07 35.7
Gb			iPKP	09 59 08					
			i	09 59 09	"	12	Up	iP	14 55 40.2
			ipPKP	09 59 47					
			iSKP	10 02 31	"	12	Up	iLg1	15 57 18.9
Um			i(PKP)	09 58 48.0 C			Gb	iPg	15 55 46
			ipPKP	09 58 57.2				iSg	15 56 07
			i!	10 01 43			Um	iLg1	15 58 52.0
			iSKP	10 02 18.7			Ud	iPg	15 55 58.9
			i!	10 08 23				iSg	15 56 24.0
Ka			iPKP	09 59 09.0 C			South coast of Norway,		
			ipPKP	09 59 49.7			59.1°N, 10.3°E.		
			iSKP	10 02 35.3			Origin time = 15 55 21.		
Ud			iPKP	09 59 00.8 C					
			ipPKP	09 59 41.2	"	12	Up	iP	17 04 11.5
			iSKP	10 02 18.4				iS	17 08 02.0
South of Fiji Islands.							Ki	iP	17 05 10.2 C
h = 150 km (Up, Ki, Sk, Gb, Ka,								i	17 05 32.4
Ud). (PKP) is a small-								i	17 06 17.6
amplitude precursor, which							Um	iP	17 04 36.5
in this case appears at								iS	17 08 58
distances short of 141°.							Ud	eP	17 04 30
								iPn	17 04 43.2
								iS	17 08 31.0
"	12	Up	iP	10 51 09.3			Turkey (h = 30 km).		
		Ki	iP	10 50 15.0					
		(cont.)							

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1967						1967					
Aug.	12	Up	iP	17 23 46.1		Aug.	13	Um	iP	09 17 40.3	
"	12	Up	eP	19 10 42		"	13	Ud	e(P)	09 17 51	
		Um	iP	19 10 19.9				Up	iP	14 43 21.0 C	
			i	19 10 29.9					eRg	14 43 42	
		Ud	iP	19 10 40.1				Ud	iRg	14 43 27.4	
									Probably blast.		
"	12	Um	iPP	19 12 12.4		"	13	Up	iLg1	15 15 35.3	
			i	19 12 22.0				Ki	iPn	15 12 02.9	
		Ud	iPP	19 12 23.9					iSn	15 12 51.3	
				California (h = 10 km).					iLg1	15 13 04.8	
				These phases could be P of					D = 440 km = 4.0°		
				a different earthquake.				Sk	ePn	15 12 10	
"	12	Up	iPKP	20 23 46.5					iP ^x	15 12 17.5	
			iPKP2	20 24 06.5					iSn	15 12 59.2	
		Um	iPKP	20 23 35.5 C					iLg1	15 13 14.5	
		Ud	iPKP	20 23 48.1				Um	iPn	15 12 29.0	
			i	20 23 53.9					iSn	15 13 43.8	
				South of Kermadec Islands					iLg1	15 14 08.4	
				(h = 60 km).					Norwegian Sea, 68°N, 10°E.		
									Origin time = 15 11 00.		
"	12	Up	iP	23 02 08.7 C		"	13	Up	iP	16 55 57.1	
			ipP	23 02 31.4					ePa	17 01 43	
				micr sec						micr sec	
			P	Z' 0.1 0.5				M	E	0.9 19	
		Ki	iP	23 02 16.0				M	N	2.0 20	
			ipP	23 02 41.2				M	Z	1.3 20	
		Sk	iP	23 02 34.1 C				Ki	iP	16 55 17.1	
		Um	iP	23 02 06.3 C						micr sec	
			ipP	23 02 30.4				M	E	1.6 21	
		Ka	iP	23 02 14.3 C				M	N	0.5 17	
			i!	23 02 47.4				M	Z	2.0 18	
		Ud	iP	23 02 25.5 C				Um	i(P)	16 55 30.0	
			ipP	23 02 49.9					i	16 55 40.1	
				Hindu Kush. h = 120 km				Ud	iP	16 55 43.6	
				(Up, Ki, Um, Ud).					i	16 55 57.5	
"	12	Ki	ePKP	23 49 42						Off coast of Oregon	
				New Hebrides Islands						(h = 30 km). Magn. = 5.5 (Up,	
				(h = 50 km).						Ki). P at Ki probably corre-	
"	13	Up	iP	01 54 23.5						sponds to the second readings	
		Um	iP	01 54 05.4						at Um and Ud.	
			i	01 54 17.9		"	13	Um	i(PS)	17 02 22	
		Ud	iP	01 54 30.2						South of Africa (h = 30 km).	
"	13	Up	i(P)	02 04 47.4		"	13	Up	i(P ^x)	17 56 02.9	
			i	02 04 52.5					i(S ^x)	17 57 10.7	
		Um	iP	02 04 37.6					iSg	17 57 23.1	
			i	02 04 51.0				Ki	iSg	17 57 09.8	
		Ud	iP	02 04 49.3				Sk	iPg	17 54 48.5	
			i	02 04 57.6					iSg	17 54 57.7	
									iSn	17 55 03.6	
"	13	Up	iP	06 27 42.8					(cont.)		

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1967				1967			
Aug.	13	(cont.)		Aug.	13	(cont.)	
		Um	ePg 17 55 43			Gb	iP 20 17 53 C
			eSn 17 56 17				ipP 20 19 12
			iSg 17 56 32.0				isP 20 19 47
		Ud	iSg 17 56 51.0				iPP 20 20 47
		Tröndelags Fylke, Norway,				Um	iP 20 17 17.5 C
		64.4° N, 12.0° E.					i 20 18 18.4
		Origin time = 17 54 32.					ipP 20 18 41
"	13	Um	iP 20 14 23.9				iPP 20 19 55
"	13	Up	iP 20 17 38.0 C				iS 20 25 50.1
			ipP 20 18 58.5				iP'P' 20 45 20.7
			iPP 20 20 22.5			Ka	iP 20 17 56.4 C
			iS 20 26 27				ipP 20 19 19.4
			iScS 20 26 57				iPP 20 20 45.7
			iP'P' 20 45 11.6			Ud	iP 20 17 45.9 C
			micr sec				ipP 20 19 07.9
		P	Z 1.9 2				iPP 20 20 36.5
		P	Z' 0.9 0.8				iS 20 26 43.9
		S	E 2.3 8			Japan. h = 360 km (Up, Ki, Sk,	
		S	N 1.7 7			Gb, Um, Ka, Ud). Magn. = 6.6	
		S	Z 1.3 7			(Up, Ki).	
		P'P'	Z' 0.2 1.5	"	13	Up	iP 22 12 23.7 C
		M	E 1.4 18				i 22 12 33.2
		M	N 2.2 18				iS 22 16 06
		M	Z 1.9 15				iSS 22 16 35.7
		(D = 8100 km = 73°).					micr sec
		Ki	iP 20 17 02.5 C			S	N 0.9 9
			ipP 20 18 22.6			M	E 1.5 7
			iPP 20 19 28			M	N 2.3 6
			iS 20 25 22			M	Z 2.4 13
			iScS 20 26 19			D = 2300 km = 20 1/2°.	
			iP'P' 20 45 28.4			Ki	iP 22 13 29.6 C
			micr sec				i 22 13 38.4
		P	E 1.5 3				eSa 22 18 27
		P	N 0.5 5				eLi 22 20 41
		P	Z 1.7 6				iLg2 22 22 43
		P	Z' 1.8 1.0				micr sec
		PP	E 1.5 7			M	E 3.1 14
		PP	N 0.9 7			M	N 2.0 11
		PP	Z 2.0 6			M	Z 3.0 11
		PP	Z' 0.5 1.5			Sk	iP 22 12 42.7
		S	E 7.0 9				i 22 12 53.4
		S	N 1.4 9				i 22 13 39.7
		S	Z 2.6 9			Gb	iP 22 11 37
		P'P'	Z' 0.7 2.0				i 22 11 47
		M	E 2.8 16				i 22 15 23
		M	N 1.3 14			Um	iP 22 13 01.4 C
		M	Z 2.7 17				iS 22 17 18
		(D = 7450 km = 67°).					iSS 22 18 19.0
		Sk	iP 20 17 34.8 C				iLg2 22 21 02
			ipP 20 18 56.1			Ka	iP 22 11 45.1
			iPP 20 20 16.4				iLi 22 15 54.5
		(cont.)					iLg1 22 16 36.6
						(cont.)	

1967				1967			
Aug.				Aug.			
13	(cont.)			14	(cont.)		
	Ud	iP	22 12 09.3		Sk	i	10 20 27.2
		i	22 12 14.2		Um	iP	10 20 38.7
		iS	22 15 31.8		Ud	iP	10 19 29.8
		iRg	22 19 18.7			Italy (h = 20 km).	
	Pyrenees (h = 15 km).						
	Multiple P; noteworthy is a phase following P after about 10 sec (Up, Ki, Sk, Gb).			"	14	Sk	iPg 11 32 00.2
							11 32 50.6
					Um	iSg	11 34 31.1
					Ud	iSg	11 32 30.6
"	13	Up	eL 23 05		Southwest Norway, 60.7°N, 6.9°E.		
			micr sec		Origin time = 11 30 40.		
		M	E 2.8 21				
		M	N 2.5 18	"	14	Ki	iP 12 56 18.0
		M	Z 5.2 20			Sk	iP 12 56 12.5
	Ki	eL	23 03			Gb	iP 12 56 24
			micr sec		Mexico (h = 120 km).		
		M	E 4.8 20	"	14	Sk	iP 19 31 35.1
		M	N 3.1 23			Um	iP 19 31 26.3
		M	Z 6.4 21	"	14	Up	iP 20 14 04.6
	New Britain (h = 30 km).					Ki	iP 20 15 12.6 C
	Magn. = 6.2 (Up, Ki).						micr sec
"	13	Up	iP 23 55 26.1			P	Z' 0.1 1.2
		Ki	iP 23 56 08.6		Sk	iP	20 14 50.8
		ipP	23 56 17.5		Gb	iP	20 14 (01)
	Sk	iP	23 55 38.9		Um	iP	20 14 37.5
		ipP	23 55 46.5			eS	20 18 55
	Gb	iP	23 55 12		Ud	iP	20 14 18.8
	Um	iP	23 55 50.1 D			i	20 14 21.3
		i	23 55 53.7		Turkey (h = 30 km).		
		ipP	23 55 57.6	"	14	Ki	i(P) 21 31 03.1
	Ka	iP	23 55 10.2			Um	iP 21 31 14.3
	Ud	iP	23 55 20.7 D	"	15	Um	iP 02 49 53.0
		ipP	23 55 28.0	"	15	Sk	iP 03 34 55.6
	Ascension Island. h = 30 km (Ki, Sk, Um, Ud).					Um	iP 03 35 16.4 C
"	14	Ud	iP 01 50 49.9		North Atlantic Ocean (h = 40 km).		
"	14	Um	eP 05 42 13	"	15	Up	iP 04 40 59.0 C
"	14	Up	iP 06 53 51.6				micr sec
		Ki	iP 06 53 52.2 C			P	Z' 0.1 0.5
		Sk	iP 06 54 07.4		Sk	iP	04 41 37.0
		Um	iP 06 53 48.2 C		Gb	iP	04 40 50
		i	06 53 54.2		Um	iP	04 41 40.9
	Ud	iP	06 54 02.9		Ka	iP	04 40 20.9
	Sumatra (h = 30 km).				Ud	iP	04 41 03.7
"	14	Ki	eP 10 21 07			i	04 41 50.5
			micr sec		Ionian Sea (h = 30 km).		
		M	E 0.5 8				
	Sk	eP	10 20 16				
	(cont.)						

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Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Aug.	15	Up	i(P)	05 32 22.1	Aug.	15	(cont.)		
		Ud	iP	05 33 04.1			Gb	i	09 32 21
"	15	Up	iP	07 11 19.9			Um	iP	09 30 34.1 C
			i	07 11 27.3				i	09 30 37.0
		Ki		---				iPcP	09 31 37.1
				micr sec				iS	09 38 17
			M	E 1.0 14				eSS	09 42 13
			M	N 0.3 13			Ka	iP	09 30 56.2
			M	Z 0.5 12				i	09 30 57.9
		Sk	eP	07 11 55			Ud	iP	09 30 58.1 C
		Um	iP	07 11 59.4				i	09 31 01.9
			i	07 12 15.3			Tibet (h = 30 km).		
			eS	07 16 22			Multiple P: the records show		
			iSS	07 17 17			a small P followed after		
		Ka	iP	07 10 37.7			about 3 sec by a much larger		
			i	07 10 57.1			phase.		
		Ud	iP	07 11 17.1	"	15	Um	iP	11 32 19.8
			i	07 11 31.3			Peru (h = 30 km).		
		Tyrrhenian Sea (h = 30 km).			"	15	Up	iP	15 46 30.0 C
"	15	Ka	iP	07 24 16.5				iPcP	15 47 07.4
"	15	Up	iP	07 47 53.2				micr sec	
				micr sec			P	Z'	0.1 0.5
			P	Z' 0.1 0.5			Ki		---
		Sk	iP	07 48 19.1				micr sec	
		Gb	iP	07 48 14			M	E	0.6 15
		Um	iP	07 47 51.7 C			M	N	0.4 15
		Ka	iP	07 47 57.5 C			M	Z	0.6 14
			ipP	07 48 38.1			Sk	iP	15 46 24.9 C
		Ud	iP	07 48 09.7 C			Gb	iP	15 46 56
		Hindu Kush, h = 200 km (Ka).					Um	iP	15 46 06.3 C
								i	15 46 47.7
"	15	Up	eP	09 30 44			Russia-China (h = 30 km).		
			i	09 30 48.0	"	15	Up	iP	20 21 50.7
			iS	09 38 35			Sk	iP	20 21 47.5
				micr sec			Um	iP	20 21 31.8
			P	Z' 0.6 1.0			Ud	iP	20 21 57.6
			M	E 1.2 13			Bonin Islands (h = 350 km).		
			M	N 1.9 14					
			M	Z 2.0 13	"	16	Ki	iP	10 20 22.0 C
			D = 6300 km = 56 1/2°.		"	16	Ud	iP	10 37 09.9
		Ki	iS	09 38 20					
				micr sec			Ki	iPn	14 12 52.2
			S	E 0.4 7				iSn	14 13 41.2
			S	N 0.3 7				iLg1	14 13 52.7
			M	E 1.9 14				D = 460 km = 4.1°.	
			M	N 1.0 11			Possibly northwest Russia.		
			M	Z 2.9 15			Origin time = 14 11 46.		
		Sk	iP	09 30 58.8 C			Explosion?		
			i	09 31 02.0					
		Gb	iP	09 31 09					
			i	09 31 12					
		(cont.)							

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Aug.	16	Ki	iPKP	18 01 48.8 C	Aug.	16	(cont.)		
			ipPKP	18 02 16.3			Um	iLg1	22 47 42.4
		Um	iPKP	18 01 41.8			Ka	iSg	22 46 35.7
		South Sandwich Islands.					Ud	ePn ¹	22 45 06
		h = 100 km (Ki).						iSg	22 45 16.8
"	16	Up	iP	19 31 30.7 D			Lake Vener, Sweden,		
			ipP	19 31 53.7			59.1°N, 13.3°E.		
			iSKS	19 41 50			Origin time = 22 44 45.		
				micr sec			Felt in Värmland, Sweden.		
			pP	Z' 0.1 0.6	"	17	Ki	iP	00 16 37.0
		Ki	iP	19 31 31.4			Kamchatka (h = 30 km).		
			ipP	19 31 50.5			"	17	Ki
			iSKS	19 41 47					---
			ipSKS	19 42 25					micr sec
				micr sec				M	E 0.3 15
			pP	Z' 0.1 0.8				M	Z 0.5 14
			SKS	E 0.4 9			Um	iS	13 09 43
			SKS	N 0.7 8			Ud	iP	12 59 56.0
		Sk	eP	19 31 46			Atlantic Ocean (h = 40 km).		
			i	19 31 46.9			"	17	Um
			ipP	19 32 06.7					iP
		Gb	ipP	19 32 07					13 16 51.1
		Um	iP	19 31 27.7 D	"	17	Ki	iP	14 42 25.6
			ipP	19 31 47.3				i	14 42 38.0
			iSKS	19 41 42			Sk	eP	14 42 57
		Ka	iP	19 31 34.4			Um	iP	14 42 43.5
			ipP	19 31 54.7			Japan (h = 80 km).		
		Ud	iP	19 31 41.2 D	"	17	Up	iPg	15 29 10.8
			ipP	19 32 00.7				iSg	15 29 38.9
			i	19 34 49.3				D = 230 km = 2.1°.	
		Sumatra. h = 80 km					Sk	iSg	15 31 55.9
		(Up, Ki, Sk, Um, Ka, Ud).					Ka	iPg	15 29 10.6
		An alternative but less						iSg	15 29 39.4
		likely interpretation is					Baltic Sea, west of Gotland,		
		that pP instead is P of					57.7°N, 18.2°E.		
		another shock in the same					Origin time = 15 28 30.		
		place, occurring about 20					Probably underwater		
		sec after the first one					explosion.		
		and being somewhat bigger.							
"	16	Ki	iP	19 46 11.9	"	17	Up	iPg	15 29 21.4
"	16	Ki	iP	21 49 19.3				iSg	15 29 50.1
"	16	Up	iPg	22 45 31.7 C				D = 230 km = 2.1°.	
			iSn	22 45 55.7			Sk	iSg	15 32 07.4
			iS ^x	22 45 58.1			Ka	iSg	15 29 51.2
			iSg	22 46 01.4			Baltic Sea, west of Gotland,		
				micr sec			57.7°N, 18.2°E.		
			Sg	Z' 0.1 0.5			Origin time = 15 28 41.		
			D = 260 km = 2.3°.				Probably underwater		
		Sk	iLg1	22 47 07.2	"	17	Ki	iSg	18 20 52.3
		Gb	i	22 45 51			Sk	iSg	18 20 58.4
		(cont.)					(cont.)		

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Aug.	17	(cont.)			Aug.	18	(cont.)		
		Um	iSg	18 21 20.9			Ka	iP	06 00 48.8
		Nordlands Fylke, Norway.						ipP	06 00 55.3
"	17	Up	iPKP	20 47 21.3			Alaska. h = 25 km		
			i	20 47 36.7			(Up, Ki, Sk, Um, Ka).		
		Ki	iPKP	20 47 35.5	"	18	Ud	iP	08 34 14.4
			iPKS	20 51 01.7					
		Sk	iPKP	20 47 25.9	"	18	Ki	iP	09 49 25.5
		Um	iPKP	20 47 28.9 C			Mindanao (h = 160 km).		
		Ud	iPKP	20 47 20.9	"	18	Ud	iP	10 15 26.5
			i	20 47 33.9					
		South Sandwich Islands			"	18	Up	iSg	14 25 48.2
		(h = 100 km).						micr sec	
"	17	Up	iP	22 52 15.9				Sg	Z' 0.2 0.7
			i	22 52 26.0			Ud	iSg	14 26 30.8
		Ki	iP	22 51 20.5			Probably blast near Uppsala.		
				micr sec	"	18	Up	iP	16 04 50.4
			P	Z' 0.1 1.0				i	16 04 52.9
		Sk	iP	22 51 47.8					micr sec
		Gb	iP	22 52 32				P	Z' 0.1 0.8
		Um	iP	22 51 49.6 C	"	19	Up	iP	01 42 14.0
		Ka	iP	22 52 39.2			Ki	iP	01 42 22.5
		Ud	iP	22 52 13.0			Sk	iP	01 42 40.4
		Alaska (h = 60 km).					Um	iP	01 42 12.1
"	18	Up	iP	03 47 14.9				iPP	01 43 48.9
			iPcP	03 47 27.7			Ka	iP	01 42 20.5
		Ki	iP	03 46 48.0			Ud	iP	01 42 31.4 D
			iPcP	03 47 06.6				iPP	01 44 12.5
		Sk	iP	03 47 17.0			Hindu Kush (h = 130 km).		
		Gb	iP	03 47 41	"	19	Up	iP	07 07 46.6
		Um	iP	03 46 59.3			Ki	iPn	07 06 01.6
			iPcP	03 47 13.7				iPg	07 06 09.2
		Ud	iP	03 47 25.0				iSn	07 06 42.1
			iPcP	03 47 34.5				iSg	07 06 50.6
		Ryukyu Islands (h = 90 km).					Sk	eS	07 08 22
"	18	Ki	iP	03 50 34.2 C			Um	iP	07 06 55.8
			i	03 50 41.3				iS	07 08 11.5
		Um	eP	03 50 47			Norwegian Sea.		
		Ud	iP	03 51 05.6			Origin time = 07 05 09.		
"	18	Up	iP	06 00 25.1			Foreshock to the following.		
			ipP	06 00 31.5	"	19	Up	iP	07 17 35.3
		Ki	iP	05 59 28.3 C				iS	07 19 30.0
			ipP	05 59 34.3				iLg1	07 20 47.4
		Sk	iP	05 59 56.0			Ki	iPn	07 15 52.4
			ipP	06 00 01.9				iPg	07 15 59.7
		Um	iP	05 59 57.3				iSn	07 16 33.3
			ipP	06 00 03.6				iSg	07 16 41.2
		(cont.)					(cont.)		

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Aug. 19 (cont.)
Ki micr sec
Sg Z' 0.1 0.5
Sk iP 07 16 48.2
iS 07 18 10.3
i 07 18 29.0
Um iP 07 16 45.5
iS 07 18 01.7
Ka iP 07 18 40.9
Ud iP 07 17 33.5
iS 07 19 29.1
Norwegian Sea (h = 30 km).

" 19 Up iPKP 08 41 08.0 C
Ud iPKP 08 41 10.0 C
i 08 41 21.1

Kermadec Islands
(h = 30 km).

" 19 Up iP 12 25 30.6 C
iPcP 12 25 54.8
Ki iP 12 24 56.1
i 12 25 02.4
e 12 28 28
Um iP 12 25 14.6
Ud iP 12 25 37.3
iPP 12 28 26.6
Japan (h = 50 km).

" 19 Ki ePn 13 05 34
iSn 13 06 21.6
iLg1 13 06 36.7
D = 440 km = 4.0°.
Possibly northwest Russia.
Origin time = 13 04 31.
Explosion?

" 19 Up iP 13 49 37.0 C
Ki iP 13 48 58.3 C
Sk iP 13 49 32.5
Um iP 13 49 15.3 C
Ud iP 13 49 44.0 C
Japan (h = 100 km).

" 19 Up iP 15 41 01.4 C
iPP 15 44 42.2
iSKS 15 51 26
iS 15 51 41
micr sec
P E 0.2 5
P Z' 0.1 0.7
SKS E 0.4 9
M E 2.8 21
(cont.)

1967

Aug. 19 (cont.)
Up micr sec
M N 3.6 22
M Z 4.3 19
D = 9900 km = 89°.
Ki iP 15 40 43.2 C
i 15 40 53.5
iPP 15 44 08.6
iS 15 51 13

micr sec
P E 0.5 6
P Z 1.2 6
P Z' 1.1 3.0
S E 0.8 8
S N 1.0 7
M E 3.1 18
M N 0.9 16
M Z 5.7 19

Sk iP 15 41 05.9
iPP 15 44 49.1

Gb iP 15 41 18
i 15 41 28
Um iP 15 40 49.2 C
iPP 15 44 17
iSKS 15 51 08
eS 15 51 21
Ka iP 15 41 12.6 C
i 15 41 21.2
Ud iP 15 41 10.0
i 15 41 17.4
i 15 41 42.7

Philippine Islands
(h = 60 km). Magn. = 6.4
(Up, Ki).

" 19 Up iPKP 16 00 47.3
ipPKP 16 01 13.0
Ki iPKP 16 00 34.4 C
iPKKP 16 10 41.0

micr sec
PKP Z' 0.1 1.0
Sk iPKP 16 00 44.9 C
Gb iPKP 16 00 56
Um iPKP 16 00 40.2 C
ipPKP 16 01 04.1
iPKKP 16 10 29.1
i 16 10 35.5
Ud iPKP 16 00 49.8
ipPKP 16 01 15.3

Santa Cruz Islands.
h = 90 km (Up, Um, Ud).

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Aug. 19 Ki iP 16 30 16.7
iS 16 32 02.7
iSg 16 33 16.9
D = 1060 km = 9.5°.

Arctic Ocean,
near 77°N, 32°E.
Origin time = 16 27 58.
By combination with
Finnish readings.

" 19 Ki iP 23 41 36.4
micr sec
M E 0.3 13
M Z 0.3 14
Sk iP 23 42 10.3
Um iP 23 41 46.5
Ud iP 23 42 12.3
Szechwan, China (h = 40 km).

" 20 Ki iP 00 17 01.6
iPcP 00 18 03.2
Sk iP 00 17 29.5
Um iP 00 17 28.7
ipP 00 18 09.8
iPcP 00 18 18.1
Ud iP 00 17 53.3
Alaska. h = 170 km (Um).

" 20 Up iP 02 09 31.1
i 02 09 36.0
i 02 09 48.8
iS 02 15 27
iSa 02 17 42
iX 02 19 57
iLg1 02 22 14
i 02 22 22
micr sec
P Z' 0.2 1.2
M E 3.8 10
M N 4.1 10
M Z 7.1 10
D = 4350 km = 39°.
Ki iP 02 09 18.8
i 02 09 22.7
iPP 02 10 39.1
iS 02 15 07
iX 02 18 47
iLg1 02 21 31
micr sec
P Z' 0.2 1.3
M E 6.3 13
M N 4.0 10
M Z 7.7 12
D = 4200 km = 38°.

(cont.)

1967

Aug. 20 (cont.)
Sk eP 02 09 48
i 02 09 51.5
iPP 02 11 21.3
iScS 02 19 41.7
iX 02 21 29.0
iLg1 02 23 30.4
Gb eP 02 10 08
iPP 02 11 43
iX 02 21 24
iLg1 02 24 15
Um iP 02 09 19.5
i 02 10 11.7
iPP 02 10 42.5
iS 02 14 58
iSa 02 16 57
i 02 17 47
iLg1 02 21 43
Ka eP 02 09 43
i 02 12 50.7
iX 02 20 15.1
iLi 02 21 51.0
eLg1 02 23 04
Ud iP 02 09 46.7
i 02 09 50.9
i 02 11 46.5
iX 02 21 22.6
iLg1 02 23 26.8
Kazakh-Sinkiang (h = 30 km).
Magn. = 5.8 (Up, Ki).
Multiple P: a small phase is
followed after about 4-5 sec
by a much larger phase. The
phase marked X corresponds
to an average group velocity
of 4.06 km/sec, an integral
part of the well developed
higher mode wave train.

" 20 Ki iPn 04 58 22.4
i 04 58 36.8
iSn 04 59 22.8
iLg1 04 59 43.4
D = 570 km = 5.1°.
Sk eSg 05 02 11
Um iSn 05 00 00.4
iSg 05 00 36.7
Northwest Russia,
67.3°N, 33.7°E.
Origin time = 04 57 03.
Explosion?

" 20 Ud iP 12 03 17.1

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Aug.	20	Sk	iSKP	13 46 55.0	Aug.	21	(cont.)		
			Fiji Islands (h = 510 km).				Ki	micr	sec
"	20	Um	iPKP	15 21 58.6 D			M	E	28 18
			iPP	15 22 27.6			M	N	18 18
			iSP	15 32 07			M	Z	47 18
			iSS	15 38 17			D	= 9000 km = 81°.	
			Chile (h = 110 km).				Sk	iP	07 45 28.0 C
							i		07 46 36.7
"	20	Up	iP	17 28 50.2 D			Gb	iP	07 45 24 C
			i	17 28 54.7			iX		07 45 46
		Sk	eP	17 29 02			Um	iP	07 45 09.5 C
			i	17 29 06.8			iPP		07 48 15
		Um	iP	17 28 40.6			iS		07 55 10
		Ud	iP	17 29 04.2			Ka	iP	07 45 15.2 C
			i	17 29 08.6			iX		07 45 38.5
			Tsinghai, China (h = 30 km).				Ud	iP	07 45 23.3 C
"	20	Ki		---			i		07 48 20.9
				micr sec			Sumatra (h = 30 km).		
		M	E	0.9 22	"	21	Up	iP	13 43 34.9 C
		M	N	0.5 21			iX		13 43 41.4
		M	Z	2.0 22			iS		13 44 52.0
		Um	iPS	20 27 33			i		13 45 19
			iPPS	20 28 47			iLg1		13 45 41
			Pacific Ocean (h = 30 km).				P	Z'	0.3 0.5
"	21	Ki	iP	06 38 02.6			S	Z'	0.5 0.5
			i	06 38 12.6			D	= 830 km = 7.5°.	
			Japan (h = 50 km).				Ki	iP	13 44 49.9
"	21	Up	iP	07 45 12.2 C			iS		13 47 05.1
			iS	07 55 14			iLi		13 48 09.8
			iScS	07 55 37			iLg1		13 48 20
				micr sec					micr sec
		P	E	0.7 6			M	E	0.4 9
		P	Z	3.0 7			M	N	0.4 8
		P	Z'	1.0 1.0			D	= 1410 km = 12.7°.	
		S	E	1.8 8			Sk	iS	13 44 55.0
		S	N	7.6 9			iLg1		13 45 39.2
		M	E	8.1 23			Gb	iP	13 42 49 C
		M	N	27 21			iX		13 42 56
		M	Z	14 22			iS		13 43 30
			D = 8950 km = 80 1/2°.				i		13 44 05
		Ki	iP	07 45 13.9 C			Um	iP	13 44 12.2
			iS	07 55 20			iS		13 45 55.2
				micr sec			iLg1		13 47 09.0
		P	E	2.7 8			Ka	iP	13 43 17.6
		P	N	1.0 9			iS		13 44 22.4
		P	Z	5.6 7			i		13 44 36.0
		P	Z'	1.0 1.3			Ud	iP	13 43 09.7 C
		S	E	4.0 7			iX		13 43 17.1
		S	n	11 8			iS		13 44 08.7
			(cont.)				iLg1		13 44 36.9
							North Sea (h = 30 km).		

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Aug. 21 Sk i 14 21 30.0
iSg 14 21 35.2
Ud iSg 14 22 05.0
West coast of Norway,
62.1°N, 5.5°E.
Origin time = 14 19 35.
By combination with
Norwegian readings.

" 22 Up iP 06 35 47.6 D
Ud iP 06 35 51.1
Kamchatka (h = 30 km).

" 22 Ka iPg 10 09 38.2
iSg 10 09 54.2

" 22 Um iP 11 45 53.6 D

" 22 Up iSg 12 32 13.1
Sk eLg1 12 33 32.1
Gb iPg 12 31 19
iSg 12 31 35
Ud iPg 12 31 22.7
iSg 12 31 43.4
i 12 31 46.7

Västergötland, Sweden,
58.5°N, 13.8°E.
Origin time = 12 30 54.
By combination with
Norwegian data.

" 22 Up iPKP 13 21 02.0
i 13 21 07.7
iPP 13 22 47
iSKS 13 28 05
iSKSP 13 32 54
micr sec
PKP Z' 0.1 0.8
PP E 0.4 9
PP N 1.3 8
PP Z 3.7 8
M E 7.3 21
M N 17 18
M Z 18 18
(D = 13900 km = 125°).
Ki iPKP 13 21 17.6
iPP 13 23 38.2
iPKS1 13 24 38
iPKS2 13 24 45
micr sec
PKP N 0.3 8
PKP Z 1.7 8
PKP Z' 0.3 1.5
PP E 0.5 8
(cont.)

1967

Aug. 22 (cont.)
Ki micr sec
PP N 1.2 8
PP Z 3.0 9
PKS1 Z 5.6 10
PKS2 E 5.6 9
PKS2 N 7.1 9
M E 18 19
M N 12 17
M Z 39 18
(D = 14700 km =
= 132 1/2°).

Sk iPKP 13 21 05.6
i 13 21 12.0
iPP 13 23 14.3

Gb iPKP 13 20 59
ePP 13 22 38

Um iP 13 18 04
iPKP 13 21 08.3
iPP 13 23 08.9
iPKS 13 24 28
iSS 13 40 31

Ka iPKP 13 20 55.9
ePP 13 22 19
Ud iPKP 13 20 59.9
iPP 13 22 42.0

South Sandwich Islands
(h = 30 km).
Magn. = 6.9 (Up, Ki).

" 22 Up iPKP 13 35 57.8
i 13 35 59.3
micr sec
PKP Z' 0.1 0.6
Ki iPKP 13 36 13.4
micr sec
PKP Z' 0.1 1.7
Sk iPKP 13 36 03.8
Gb ePKP 13 35 53
Um iPKP 13 36 07.4 C
iPP 13 38 11.3
Ud iPKP 13 35 57.7
South Sandwich Islands
(h = 20 km).

" 22 Um iP 14 12 34.9 C
" 22 Um iP 14 17 13.5
i 14 17 35.8

" 22 Up iP 23 20 43.7
micr sec
M E 0.5 17
M N 0.6 14
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Aug.	22	(cont.)			Aug.	24	Ki	iPKP	05 48 04.7
		Up		micr sec			Ka	iPKP	05 48 24.7 C
		M	Z	0.8 16			Ud	iPKP	05 48 14.2
		Ki	iP	23 19 58.1			Fiji Islands (h = 670 km).		
		iPP		23 21 26.4					
				micr sec	"	24	Ud	ePg	10 47 36
		M	E	0.8 13				iSg	10 47 56.1
		M	N	0.4 13					
		M	Z	1.1 17		24	Up		---
		Sk	iP	23 20 39.5					micr sec
		Um	iP	23 20 16.8 C			M	E	1.0 21
		i		23 20 22.2			M	N	1.8 22
		iPP		23 22 08			M	Z	1.7 21
		eS		23 26 40			Ki	iPKP	10 51 47.0 C
		eSS		23 29 46					micr sec
		Ka	iP	23 21 08.1			M	E	0.7 20
		Lake Baikal	(h = 20 km).				M	N	0.5 20
"	23	Sk	iSg	01 33 09.0			M	Z	1.6 20
"	23	Gb	iPKP	17 27 17 D			Sk	ePKP	10 51 57
		Ka	iPKP	17 27 18.5			Um	iPKP	10 51 53.4
		Ud	iPKP	17 27 05.1				ePP	10 53 42
		South of Fiji Islands					Ud	iPKP	10 52 04.5
		(h = 640 km).					New Hebrides Islands		
							(h = 25 km).		
							Magn. = 5.8 (Up,Ki).		
"	23	Up	iSg	20 49 47.5	"	24	Up	iP	10 55 29.0
		i		20 49 51.2			Ki	iP	10 56 03.5
				micr sec			i		10 56 12.2
		Sg	Z'	0.1 0.5			Sk	iP	10 55 50.9
		Ud	iSg	20 50 39.3			i		10 56 01.3
		Probably blast near Uppsala.					Um	iP	10 55 43.8
"	24	Ki	iP	01 25 57.8			i		10 55 55.0
				micr sec			Ud	iP	10 55 32.2
		M	E	0.3 12			i		10 55 38.1
		M	N	0.4 15			Mozambique Channel		
		M	Z	0.6 16			(h = 30 km).		
		Sk	iP	01 26 22.5	"	24	Up	iSn	12 38 46.0
		Ud	iP	01 26 20.6				iSg	12 39 00.1
		Tibet (h = 30 km).					Ki	i	12 41 34.0
"	24	Up	iP	03 32 16.6 C				iSg	12 41 41.6
				micr sec			Sk	eS ^x	12 40 33
		P	Z'	0.3 0.7				iSg	12 40 52.1
		Ki	iP	03 31 31.0			Gb	iSg	12 40 41
		i		03 31 42.5			Um	iSg	12 39 32.9
				micr sec			Ud	eSn	12 39 34
		P	Z'	0.2 1.0				iSg	12 40 01.3
		Sk	iP	03 32 06.6 C			Gulf of Finland. Origin		
		Um	iP	03 31 51.1 C			time = 12 37 05. Probably		
		Ka	iP	03 32 38.4 C			underwater explosion.		
		Ud	iP	03 32 22.9 C	"	24	Ki	iPKP	13 52 47.0
		Kurile Islands (h = 70 km).						iSKP	13 55 43.8
		Magn. = 6.2 (Up,Ki).					(cont.)		

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Aug.	24	(cont.)			Aug.	25	Ud	iP	13 22 52.8
		Gb	iPKP	13 53 06 C					
		Ka	iPKP	13 53 06.7	"	25	Up	iP	15 14 19.0
		Ud	iPKP	13 52 55.5				i	15 14 39.6
		South of Fiji Islands					Ki	iP	15 13 25.3 D
		(h = 330 km).					Um	iP	15 13 51.6
"	24	Up	i(P)	17 21 12.4			Ud	iP	15 14 23.3
		Um	i(P)	17 21 35.2			Aleutian Islands (h = 40 km).		
"	24	Ki	iP	17 26 13.9	"	25	Ki	i	16 16 55.5
			ipP	17 26 57.6				iSg	16 17 16.1
		Sk	iP	17 26 39.5			Sk	eSn	16 17 19
		Mariana Islands.						iSg	16 17 28.2
		h = 170 km (Ki).					Um	iSg	16 17 41.6
"	24	Ki	iSn	23 13 19.4			Ud	eLg1	16 19 16
			iSg	23 13 27.6			Norway-Sweden border region,		
		Sk	eSg	23 14 02			66.4° N, 15.2° E.		
		Um	iPg	23 12 14.1	"	25	Um	iP	17 01 01.4 C
			iSg	23 12 28.3	"	25	Um	iP	17 28 15.7
		D = 120 km = 1.1°.						i	17 28 19.5
		North Sweden, 65.0° N,					Ud	iP	17 28 42.3
		21.0° E.					Unimak Island (h = 40 km).		
		Origin time = 23 11 52.							
"	24	Up	iP	23 26 00.5 C	"	25	Ki	iP	20 40 28.5
		Ki	iP	23 26 44.4	"	25	Up	eP	21 31 12
		Um	iP	23 26 22.9	"	25	Ki	iP	23 07 13.1
		Ud	iP	23 26 04.1			Um	iP	23 07 22.8 D
		Congo (h = 20 km).					Caroline Islands (h = 30 km).		
"	24	Um	iP	23 48 50.7	"	25	Ki	iP	23 11 42.2
"	25	Ki	i(Sg)	05 14 54.2				i	23 11 52.2
"	25	Um	iP	06 12 18.0			Sk	iP	23 12 06.6
"	25	Up	i(P)	12 01 53.5			Um	iP	23 11 53.1 C
		Caroline Islands (h = 30 km).							
"	25	Ki	iP	12 33 49.4	"	26	Up	iP	00 50 00.9 D
			iPP	12 35 12.4				iX	00 53 00
		Sk	iP	12 33 46.8 C				iPP	00 53 53.8
		Um	iP	12 33 24.1				iSKS	01 00 34
		Ud	iP	12 33 26.1					micr sec
		Iran (h = 40 km).					P	Z'	0.4 1.3
"	25	Ki	i(Sn)	12 37 06.2			SKS	E	0.7 8
			i(Lg1)	12 37 29.4			SKS	N	1.3 8
		Sk	iSg	12 40 01.6			M	E	4.5 25
		Probably northwest Russia.					M	N	7.0 24
		Explosion?					M	Z	10 27
							(D = 10550 km = 95°).		
							(cont.)		

Up = Uppsala, Ki = Kiruna, Sk = Skälstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Aug.	26	(cont.)			Aug.	26	Up	eSKS	02 31 01
		Ki	iP	00 49 36.4 D					micr sec
			iPP	00 53 14.2				M E	1.0 21
			iSKS	00 59 58				M N	1.6 20
			iPS	01 01 31				M Z	1.6 20
				micr sec			Ki	iP	02 20 04.0
		P	E	0.9 7					micr sec
		P	N	0.5 7				M E	1.1 17
		P	Z	2.9 7				M N	0.6 15
		P	Z'	0.9 1.4				M Z	2.3 19
		SKS	E	1.7 7			Sk	eP	02 20 28
		SKS	N	1.6 7			Um	iP	02 20 14.0 D
		M	E	11 22			Ud	eP	02 20 36
		M	N	6.0 20			Caroline Islands (h = 30 km).		
		M	Z	8.2 17					
		(D = 9900 km = 89°).			"	26	Ki	iP	02 42 45.9
		Sk	iP	00 50 00.3 D			Caroline Islands (h = 30 km).		
		Gb	iP	00 50 17.8					
		Um	iP	00 49 46.7 D	"	26	Ki	eP	03 42 54
			iX	00 52 28			Um	iP	03 43 03.9
			i	00 53 24			Caroline Islands (h = 30 km).		
			iPP	00 53 41.1					
			iSKS	01 00 21	"	26	Ki	iP	05 59 45.2
			iSKKS	01 00 31				i	05 59 48.7
			iPS	01 01 59			Caroline Islands (h = 30 km).		
		Ka	iP	00 50 14.4					
			iX	00 53 30.0	"	26	Ki	eP	10 38 08
		Ud	iP	00 50 08.0 D			Caroline Islands (h = 30 km).		
		Caroline Islands			"	26	Ki	iP	11 24 19.1
		(h = 30 km).					Caroline Islands (h = 30 km).		
		Magn. = 6.6 (Up, Ki).					Ki is no doubt our most		
		The wave marked X at Up,					sensitive station for this		
		Um, Ka could represent an					series of Caroline Islands		
		unidentified phase; it					shocks.		
		precedes PP and has a			"	26	Ki	e(Sn)	12 36 53
		different slope of its						i(Lg1)	12 37 16.8
		travel-time curve. A few			"	26	Ki	iPn	14 22 06.1
		similar observations have						iP ^X	14 22 14.0
		been made in other cases.						iSn	14 22 51.3
"	26	Up	iP	01 06 43.1				iSg	14 23 07.2
		Ki	iP	01 06 15.1				D = 410 km = 3.7°	
			ipP	01 06 20.1			Sk	iSg	14 25 31.9
				micr sec			Um	eSg	14 24 00
		P	Z'	0.1 1.2			Russia-Finland border region,		
		Sk	iP	01 06 39.2 C			67.4° N, 30.1° E.		
		Um	iP	01 06 25.0			Origin time = 14 21 06.		
			ipP	01 06 29.1			Explosion?		
		Ud	iP	01 06 46.5					
		Caroline Islands.			"	26	Up	iS	14 27 30
		h = 15 km (Ki, Um).					Sk	eP	14 23 51
"	26	Um	iP	01 54 53.9			Ud	eP	14 23 22
		Caroline Islands					Turkey (h = 30 km).		
		(h = 30 km).							

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1967					1967				
Aug.	26	Sk	ePKP	18 39 06	Aug.	27	(cont.)		
		Ud	iPKP	18 39 17.8			Ki	iSg	10 00 47.7
			i	18 39 25.8				D = 400 km = 3.6°.	
		Samoa Islands (h = 40 km).					Sk	eSg	10 03 12
"	26	Ki	iPn	19 01 00.7			Um	iSn	10 01 15.7
			iP ^x	19 01 08.6				iSg	10 01 45.7
			iSn	19 01 47.1			Russia-Finland border region,		
			iLg1	19 02 01.7			67.5°N, 29.8°E. Origin		
			D = 420 km = 3.8°.				time = 09 58 50. Explosion?		
		Sk	eSg	19 04 50	"	27	Ki	iP	11 22 17.4
		Um	iSg	19 03 34.9			Sk	iP	11 22 38.7
		Northwest Russia,					Um	iP	11 22 15.6
		69.1°N, 30.3°E.					Ud	iP	11 22 35.7
		Origin time = 19 00 00.					Burma-India (h = 60 km).		
		Explosion?							
"	26	Ki	iP	21 54 40.2	"	27	Up	iP	13 21 18.2
			ipP	21 54 54.7				i	13 21 19.4
		Sk	iP	21 55 09.2				iX	13 21 39.5
		Um	iP	21 55 08.1				ipP	13 22 01.4
		Ud	iP	21 55 32.6				iPP	13 24 41
		Alaska. h = 60 km (Ki).						eSKS	13 31 26
								eS	13 31 34
"	26	Um	iP	22 15 40.6				ipS	13 32 44
			i	22 15 53.6					micr sec
"	27	Ki	iP	02 08 13.2 C			PP	Z	0.6 5
		Java (h = 180 km).					M	E	0.9 19
							M	N	1.0 25
"	27	Up	iP	02 28 53.9			M	Z	1.0 20
		Ki	iP	02 28 00.7			(D = 9650 km = 87°).		
		Ud	iP	02 28 53.1			Ki	iP	13 21 10.2 C
		Aleutian Islands						iX	13 21 32.9
		(h = 30 km).						ipP	13 21 54.6
"	27	Up	iP	04 57 23.9				iPP	13 24 30.5
		Ki	iP	04 57 32.4				iSKS	13 31 15
		Sk	iP	04 57 49.3				iS	13 31 21
		Um	iP	04 57 22.0				ipS	13 32 21
		Ka	iP	04 57 28.7				isS	13 32 41
		Ud	iP	04 57 40.4					micr sec
		Hindu Kush (h = 230 km).					P	E	0.3 6
"	27	Ki	eSn	09 47 40			P	Z	0.5 6
			iSg	09 48 02.7			P	Z'	0.2 1.8
		Sk	eSg	09 50 28			pP	Z'	0.8 2.5
		Probably Russia-Finland					PP	Z'	0.3 2.0
		border region. Explosion?					SKS	E	0.8 9
							S	N	0.5 8
"	27	Ki	iPn	09 59 48.5			M	E	0.7 19
			iSn	10 00 33.4			M	Z	0.9 17
		(cont.)					(D = 9450 km = 85°).		
							Sk	iP	13 21 00.3 C
								iX	13 21 22.8
								ipP	13 21 45.0
								iPP	13 24 16.3
							(cont.)		

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
Aug.	27	(cont.)		Aug.	27	(cont.)	
		Um	iP 13 21 16.5 C			Ki	i 16 47 31.5
		i	13 21 19.6			Ud	eP 16 47 56
		iX	13 21 39.2			Luzon (h = 130 km).	
		ipP	13 22 01.0				
		iPP	13 24 41.9	"	27	Ki	iP 17 18 24.4
		iSKS	13 31 21			Caroline Islands (h = 30 km).	
		ipS	13 32 41				
		Ka	iP 13 21 17.0 C	"	27	Ki	iP 18 39 12.3
		i	13 21 19.7			Sk	iP 18 39 30.0
		iX	13 21 40.3			Ud	iP 18 39 51.9
		ipP	13 22 01.8			Vancouver Island (h = 30 km).	
		Ud	iP 13 21 07.1				
		ipP	13 21 50.7	"	28	Ki	iP 01 09 32.8
		Nicaragua. h = 180 km (Up, Ki, Sk, Um, Ka, Ud).				Sk	iP 01 09 16.0 C
		Magn. = 5.9 (Up, Ki). The phase marked X is probably P of another shock in the same place, occurring 22.5 sec later and with about the same magnitude.				Peru-Brazil (h = 610 km).	
"	27	Up	iP 13 45 45.6	"	28	Um	iP 02 54 37.5
		Ki	iP 13 44 58.5	"	28	Sk	iP 03 44 37.2
		i	13 45 03.6			Ud	iP 03 44 03.6
		Sk	eP 13 45 17			Aegean Sea (h = 25 km).	
		Um	iP 13 45 24.1	"	28	Sk	eP 12 49 44
		Ka	iP 13 46 00.6			Vancouver Island (h = 40 km).	
		iPcP	13 46 25.5	"	28	Um	eP 13 14 31
		Ud	iP 13 45 38.9	"	28	Up	eP 15 30 29
		Vancouver Island (h = 25 km).				Ud	iP 15 31 11.2
"	27	Ki	iPn 13 59 04.3 D	"	28	Up	iP 15 36 43.5
		iSn	13 59 53.2				micr sec
		iLg1	14 00 08.4			M	N 0.9 17
		D = 460 km = 4.1°.				M	Z 1.1 23
		Sk	eSg 14 02 53			Ki	---
		Probably northwest Russia.					micr sec
		Origin time = 13 57 59.				M	E 0.7 17
		Explosion?				M	N 0.8 22
"	27	Up	iP 14 30 29.5			M	Z 2.0 22
		Ki	iP 14 30 14.1			Sk	iP 15 36 14.4
		ipP	14 30 30.2			Gb	iP 15 36 49.5
		Sk	eP 14 30 38			Um	iP 15 36 22.4
		Um	iP 14 30 20.5	"	28	Ud	iP 15 36 36.7
		Ud	eP 14 30 37			Vancouver Island (h = 30 km).	
		i	14 30 43.7			Magn. = 5.2 (Up, Ki).	
		Molucca Passage. h = 60 km (Ki).					
"	27	Up	eP 16 47 45				
		Ki	eP 16 47 27				
		(cont.)					

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
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1967

Aug. 28 (cont.)

Ki			micr	sec
	M	N	0.9	23
	M	Z	2.4	24
Sk	eP		16 30	28
Ud	iP		16 30	52.3
Vancouver Island (h = 30 km).				
Magn. = 5.4 (Up,Ki).				

"	28	Up	iP	17 41	39.3	C
			i	17 42	06.2	
		Sk	iP	17 42	18.3	
			iPP	17 43	12.4	
		Um	eP	17 42	11	
			i	17 42	22.0	
		Ka	iP	17 41	07.9	
			iS	17 44	41.1	
			e	17 44	48	
		Ud	iP	17 41	47.5	
Dodecanese Islands						
(h = 170 km).						

"	28	Ud	iP	17 46	53.7	
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"	28	Sk	eP	18 43	43	
		Um	iP	18 43	05.0	
			i	18 43	12.7	
		Ud	eP	18 43	16	
West Pakistan.						

"	28	Up	iP	21 14	10.7	D
		Sk	iP	21 14	30.9	
		Gb	iP	21 14	33.6	
		Um	iP	21 14	03.1	
		Ud	iP	21 14	26.4	D
Sinkiang (h = 30 km).						

"	28	Sk	iP	21 22	19.9	
		Um	iP	21 22	37.0	
		Ud	iP	21 21	55.0	
Morocco (h = 30 km).						

"	29	Up	iP	03 55	50.4	
		Sk	iP	03 55	46.3	
		Um	iP	03 55	29.9	D
Japan (h = 350 km).						

"	29	Ki	i(P)	06 58	14.4	
			i	06 58	16.3	

"	29	Up	ePP	07 46	05	
(cont.)						

1967

Aug. 29 (cont.)

Up			micr	sec
	M	E	1.0	20
	M	N	2.7	22
	M	Z	1.9	20
Ki	iP		07 41	27.4
	i		07 41	33.3
	eSKS		07 51	54

			micr	sec
	SKS	E	0.4	9
	M	E	1.8	18
	M	N	0.8	20
	M	Z	2.3	22
Sk	eP		07 41	47
	i		07 45	36.9
	iPP		07 46	17.9
Um	iP		07 41	30.0
	i		07 41	36.3
	iPP		07 45	45.2
	i		07 45	50.2
	iSKS		07 52	06
	iS		07 53	00
	iPS		07 54	42
	iSS		08 00	17
Ka	ePP		07 46	12
Ud	eP		07 41	47
	e		07 45	45
	iPKP		07 45	58.1
	iPP		07 46	11.4

Banda Sea. Magn. = 5.9
(Up,Ki).

"	29	Ki	iP	08 42	52.2	
---	----	----	----	-------	------	--

"	29	Sk	iP	09 21	08.4	
		Um	iP	09 20	39.3	
Japan (h = 40 km).						

"	29	Ki	eL	11 49		
				micr	sec	
		M	E	0.7	20	
		M	Z	1.6	22	
New Guinea (h = 40 km).						

"	29	Um	iP	19 10	33.4	
---	----	----	----	-------	------	--

"	29	Ki	iPn	20 38	34.0	
			iSn	20 39	21.4	
			iLg1	20 39	34.7	
D = 430 km = 3.9°						

Sk	iSg	20 42	19.2
(cont.)			

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Aug. 29 (cont.)
Um iSn 20 40 31.7
iSg 20 41 09.2
Northwest Russia. Origin
time = 20 37 32. Explosion?

" 29 Ki eP 21 54 19
Sk iP 21 54 50.6
Um iP 21 54 14.3
i 21 54 25.1
Ud iP 21 54 39.0
Tien-Shan.

" 29 Up iP 22 03 55.5 C
i 22 04 01.5
Sk iP 22 04 36.6
Um iP 22 04 32.5
i 22 04 34.6
Ud iP 22 04 02.1
Greece.

" 29 Um iP 22 29 12.3

" 30 Up iP 02 17 37.8
Ki iP 02 16 59.3
iPP 02 17 19.0
Sk iP 02 17 32.5
Um iP 02 17 16.0
iPP 02 17 34.4
iPcP 02 17 40.9
Ud iP 02 17 45.0
Japan. h = 70 km (Ki, Um)

" 30 Up iP 04 32 07.7 D
i 04 32 10.8
iPP 04 34 21
iPa 04 35 37
iS 04 40 14
micr sec
P E 2.4 4
P N 1.8 7
P Z 7.3 4
P Z' 0.8 0.7
PP E 1.9 7
PP Z 3.9 7
S E 5.5 10
S N 4.3 11
M E 45 19
M N 95 19
M Z 80 19
D = 6650 km = 60°.
Ki iP 04 31 51.1 D
i 04 31 55.0
iPP 04 34 02
(cont.)

1967

Aug. 30 (cont.)
Ki iPa 04 35 05
iS 04 39 46
micr sec
P E 7.3 7
P N 1.1 7
P Z 11 7
P Z' 3.3 2.0
PP E 4.8 7
PP Z 7.2 8
S E 11 11
S N 2.7 9
M E 49 15
M N 97 20
M Z 61 17

D = 6400 km = 57 1/2°.

Sk iP 04 32 18.9 D
iPP 04 34 36.8
Um iP 04 31 54.2 D
i 04 31 58.0
iPP 04 34 04
iS 04 39 44
Ka iP 04 32 19.7
i 04 32 23.5
i 04 32 54.0
Ud iP 04 32 19.9 D
i 04 32 23.8

Szechwan, China (h = 5 km).
Magn. = 7.0 (Up, Ki). Multiple
P: in average 3.7 sec between
the first small and the
second larger onset.

" 30 Up iP 05 07 44.5
i 05 07 48.5
micr sec
P Z' 0.1 0.5
Ki iP 05 07 28.3
Sk iP 05 07 56.1
Um iP 05 07 31.6
i 05 07 37.0
Ka iP 05 07 57.0
Ud iP 05 07 58.3
Szechwan, China (h = 30 km).

" 30 Ki eP 05 33 38
i 05 33 40.5

" 30 Up iP 08 21 04.0
Ki iP 08 20 26.0 C
Sk iP 08 20 58.7
Um iP 08 20 42.5
Ud iP 08 21 11.3
Japan (h = 80 km).

[illegible]

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
Aug.	30	Up	iP	20 14 31.4	Aug.	31	(cont.)
		Ki	iP	20 13 44.7		Um	iPKP 19 12 06.5
		Um	iP	20 14 05.9 D			iX 19 12 28.7
		Ud	iP	20 14 36.6			iSKP 19 15 12.3
		Kurile Islands (h = 30 km).			Ud	e(PKP)	19 12 03
"	30	Um	iP	20 43 42.0			iPKP 19 12 15.4
		Japan (h = 40 km).					iSKP 19 15 25.5
"	30	Ud	iP	23 13 17.7		Tonga Islands (h = 280 km).	
"	30	Um	iP	23 30 00.4			
"	31	Ud	eP	05 25 14		Markus Båth	
			i	05 25 26.9		February 2, 1968	
"	31	Um	iP	07 01 33.3			
			i	07 01 40.5			
"	31	Up	iLg1	13 40 02.4			
		Sk	iLg1	13 40 44.7			
		Um	iLg1	13 41 44.0			
		Ka	eSg	13 39 47			
			i	13 39 51.8			
		Ud	iPg	13 38 38.4			
			iSg	13 39 13.6			
		D = 300 km = 2.7°					
		Skagerrak, 58.1°N, 9.8°E.					
		Origin time = 13 37 45.					
"	31	Ki	iP	13 50 34.5			
		Um	iP	13 50 41.4			
		Ud	iP	13 51 03.9			
		Luzon (h = 100 km).					
"	31	Um	iP	15 18 45.4			
"	31	Ki	iP	15 28 47.3			
		Mariana Islands (h = 590 km).					
"	31	Um	iP	18 40 42.4			
		Ud	iP	18 40 58.5			
		Volcano Islands (h = 80 km).					
"	31	Ki	iPKP	19 11 59.7			
			iX	19 12 22.2			
			iSKP	19 14 58.5			
		Sk	e(PKP)	19 11 57			
			iPKP	19 12 09.2			
			iSKP	19 15 17.3			
		(cont.)					

Seismological Institute
Uppsala

SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, SKALSTUGAN, GÖTEBORG,
UMEÅ, KARLSKRONA and UDDEHOLM

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
Göteborg	(Gb):	57°41.9'N,	11°58.7'E;	h = 66 m
Umeå	(Um):	63°48.9'N,	20°14.2'E;	h = 16 m
Karlskrona	(Ka):	56°09.9'N,	15°35.5'E;	h = 11 m
Uddeholm	(Ud):	60°05.4'N,	13°36.4'E;	h = 240 m

SEPTEMBER 1 - 30, 1967
.....

1967					1967				
Sep.					Sep.				
1	Ud	eP	01 16 47		1	Ud	eP	14 05 20	
"	1	Um	iP	02 03 40.1	"		i	14 05 39.8	
"	1	Ki	iP	03 01 37.8	"	1	Ud	iP	17 41 48.4
"		Sk	iP	03 01 22.8	"		Aleutian Islands		
"		Um	i(pP)	03 02 21.7	"		(h = 30 km).		
"		Colombia (h = 150 km).			"	1	Up	iP	22 52 44.4
"	1	Ud	iP	03 30 09.7	"		ipP	22 53 11.7	
"	1	Ud	iP	03 46 18.0	"		iS	23 01 30	
"	1	Ki	iPKP	03 49 17.0	"			micr sec	
"		Sk	iPKP	03 49 27.2	"		P	Z' 0.1 0.5	
"		Um	iPKP	03 49 21.3	"		D = 7350 km = 66°		
"		Ud	iPKP	03 49 31.4	"	Ki	iP	22 51 58.8	
"		New Guinea (h = 180 km).			"		i	22 52 10.3	
"	1	Up	iSg	05 47 11.9	"		iX	22 53 23.4	
"				micr sec	"		eScS	23 01 26	
"		Sg	Z' 0.1 0.7		"			micr sec	
"		Ud	eSg	05 47 55	"		P	Z' 0.1 1.0	
"		Probably blast near			"		M	E 0.8 19	
"		Uppsala.			"		M	N 0.4 17	
"	1	Sk	ePKP	07 25 54	"	Sk	iP	22 52 34.7 C	
"		Um	iPKP	07 25 49.2	"		i	22 52 54.1	
"		Ud	iPKP	07 26 01.9	"	Um	iP	22 52 19.7	
"		i		07 26 20.1	"		iX	22 53 52.5	
"		South of Kermadec Islands			"		iS	23 00 42	
"		(h = 30 km).			"		iScS	23 01 58	
"					"	Ud	iP	22 52 50.5	
"					"		Kurile Islands.		
"					"		h = 110 km (Up).		
"					"		Magn. = 6.0 (Up, Ki).		

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
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1967

Sep. 1 Up ePKP 23 58 42
Sk ePKP 23 58 37
Um iPKP 23 58 31.5
Ud iPKP 23 58 43.9
South of Kermadec Islands
(h = 25 km).

" 2 Ka recorded altogether
about 101 stronger ex-
plosions in the south
Baltic area in the
daytime of Sep. 2, 4-6,
8, 10-11. Several of these
were also recorded at Up
and Ud. Compare remarks on
July 22 and Aug. 1, 1967.

" 2 Up iPKP 01 43 58.0
i 01 44 11.1
Ki ePKP 01 43 40
Sk iPKP 01 43 55.0
Um iPKP 01 43 50.6
Ud iPKP 01 44 02.1
South of Kermadec Islands
(h = 130 km).

" 2 Up i(S) 03 53 20.6
Ki iP 03 48 43.2
i 03 48 54.6
i(S) 03 50 49.4
Sk iP 03 48 48.9
i 03 48 50.9
iS 03 50 47.5
Um eP 03 49 27
i(S) 03 52 08.8
Ud eP 03 49 37
i(S) 03 52 45.7
Jan Mayen (h = 30 km).
The phases marked (S) are
too late compared to S by
varying amounts; the de-
lay seems to increase with
epicentral distance, and
there is almost better
agreement with SS.

" 2 Ki iPn 04 41 13.3
iP^x 04 41 21.4
iSn 04 41 59.7
iLg1 04 42 12.1
D = 430 km = 3.9°
Sk eSn 04 44 06
iSg 04 45 02.2
(cont.)

1967

Sep. 2 (cont.)
Um iSg 04 43 48.9
Northwest Russia, 69.1°N,
30.6°E. Origin time =
04 40 11. Explosion?

" 2 Up iPKP 05 56 54.7
i 05 56 58.2
PKP Z' 0.1 0.8
Ki ePKP 05 56 38
Sk iPKP 05 56 48.2 D
Um iPKP 05 56 42.4
Ud iPKP 05 56 53.8
i 05 56 56.6
Kermadec Islands
(h = 310 km).

" 2 Sk iPKP 07 16 37.8
Um iPKP 07 16 25.7
i 07 16 37.8
Ud iPKP 07 16 41.3
South of Kermadec Islands
(h = 100 km).

" 2 Ki iP 08 09 13.2
iPP 08 10 27.1
Sk eP 08 09 18
iPP 08 10 38.2
Ud eP 08 09 00
Iran (h = 30 km).

" 2 Ki iP 08 28 38.0 C

" 3 Ki iP 00 29 22.2
Formosa (h = 50 km).

" 3 Ud iP 04 57 22.7
Japan (h = 170 km).

" 3 Sk iP 07 51 50.8 C
Ud iP 07 51 12.8
Greece (h = 50 km).

" 3 Ki eP 09 25 59
Sk iP 09 25 17.7
Ud iP 09 24 46.6
Greece (h = 40 km).

" 3 Up iP 11 40 48.4
iPP 11 41 07.4
Ki iP 11 39 51.5
iPP 11 40 11.0
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
Sep.	3	(cont.)		Sep.	3	(cont.)	
		Sk	eP 11 40 23			Um	iPP 21 25 42
		Um	ipP 11 40 40.2				iSKS 21 32 15
		Ud	iP 11 40 46.8				iS 21 33 11
		Alaska. h = 80 km (Up,Ki).					i 21 34 52.3
"	3	Ki	iPn 13 57 37.1			Ka	eP 21 21 19
			iSn 13 58 26.0				i 21 24 05.7
			iLg1 13 58 37.4			Ud	iP 21 21 18.1
			D = 460 km = 4.1°				iPP 21 25 21.5
		Possibly northwest Russia.				Peru (h = 40 km).	
		Origin time = 13 56 30.				Magn. = 6.9 (Up,Ki).	
		Explosion?				X is an unidentified phase,	
						which precedes PP. See re-	
"	3	Sk	iP 14 44 57.1			mark on Aug. 26, 1967,	
		Colombia (h = 190 km).				00 50, concerning another	
						observation of probably	
						the same phenomenon.	
"	3	Up	iP 21 21 20.1				
			i 21 21 28.1	"	4	Um	iPKP 01 00 41.7 C
			iX 21 25 16.6				i 01 00 57.8
			iPP 21 25 35			Ud	ePKP 01 00 54
			iSKS 21 32 07			Kermadec Islands	
			micr sec			(h = 30 km).	
		P	E 0.5 4				
		P	Z 1.6 5	"	4	Up	iPKP 01 02 01.7
		P	Z' 0.1 1.0			Sk	iPKP 01 01 51.6
		PP	E 1.7 7			Um	iPKP 01 01 45.0
		PP	Z 4.7 8			Ud	iPKP 01 02 03.9
		SKS	E 4.1 13			Kermadec Islands. Origin	
		M	E 24 23			time = 00 42.2.	
		M	N 20 22				
		M	Z 53 23	"	4	Ki	eP 03 30 39
		Ki	iP 21 21 28.1			Sk	eP 03 30 12
			i 21 21 31.9			Ud	iP 03 29 56.7
			iX 21 24 35.8			Atlantic Ocean	
			i 21 24 53			(h = 30 km).	
			iPP 21 25 44				
			iSKS 21 32 15	"	4	Up	iPKP 04 11 19.0
			iPKKP 21 37 23.1				i 04 11 24.9
			micr sec				ipPKP 04 12 20.7
		P	E 1.5 13				micr sec
		P	Z' 0.1 1.1				PKP Z' 0.4 0.8
		PP	E 6.0 8			Ki	iPKP 04 10 56.3
		PP	N 1.6 7				i 04 11 01.8
		SKS	E 9.2 15				ipPKP 04 12 01.4
		M	E 30 21				iSKP 04 14 16.2
		M	N 13 22				ipPP 04 15 02.7
		Sk	iP 21 21 17.5 C				micr sec
			i 21 22 08.8				PKP Z' 0.1 1.1
			iX 21 24 31.3			Sk	iPKP 04 11 11.1 C
			iPKKP 21 37 32.9				i 04 11 13.1
		Um	iP 21 21 31.5				ipPKP 04 12 12.5
			iX 21 25 13.0				iSKP 04 14 29.2
		(cont.)				(cont.)	

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
Sep.	4	(cont.)		Sep.	5	(cont.)	
		Um	iPKP 04 11 07.5 C			Um	iSg 12 56 53.7
			ipPKP 04 12 07.0				Northern Esthonia or Gulf
			iSKP 04 14 24.2				of Finland. Probably ex-
			ipPP 04 15 22.0				plosion.
			iSS 04 32 53				
		Ka	iPKP 04 11 28.3 C	"	5	Ki	iSg 17 44 28.7
			i 04 11 41.3			Sk	eSg 17 44 31
			ipPKP 04 12 27.2				Probably Nordlands Fylke,
		Ud	iPKP 04 11 20.4				Norway.
			i 04 11 27.9				
			ipPKP 04 12 21.1	"	6	Up	iP 01 53 48.3
			ipPP 04 15 54.5				i 01 53 58.2
			Kermadec Islands.				i 01 54 05.7
			h = 240 km (Up,Ki,Sk,Um,			Ki	eP 01 53 44
			Ka,Ud).				i 01 53 54.0
"	4	Ud	eP 04 21 45			Sk	iP 01 54 03.0
"	4	Um	iP 07 29 37.4				i 01 54 14.8
"	4	Up	iP 16 33 16.9			Um	iP 01 53 41.7
"	4	Ka	i(P) 16 34 10.9				i 01 53 51.1
"	4	Sk	eP 17 59 57			Ka	iP 01 53 55.1
			Japan (h = 25 km).				i 01 54 05.6
"	4	Up	iP 19 06 25.4			Ud	iP 01 54 01.7
		Sk	iP 19 07 05.7				i 01 54 10.9
		Ud	iP 19 06 32.6				India-East Pakistan
			Ionian Islands.				(h = 20 km). Multiple P:
"	4	Up	iP 19 40 12.8	"	6	Sk	iP 02 08 57.9
			i 19 40 22.9			Um	i(P) 02 08 40.6
		Ki	iP 19 39 18.8	"	6	Up	iP 03 30 08.4
		Sk	eP 19 39 56				micr sec
		Um	iP 19 39 44.3 C			P	Z' 0.2 1.3
		Ka	iP 19 40 37.4			Ki	iP 03 29 19.9 C
		Ud	iP 19 40 16.6 C			Sk	iP 03 29 56.2
			ipP 19 40 54.1			Um	iP 03 29 42.6 C
			Kamchatka. h = 160 km (Ud).				i 03 29 46.2
"	4	Ka	iP 20 11 23.8				ipP 03 29 53.4
"	5	Ki	iP 08 37 23.7			Ud	iP 03 30 13.6
			micr sec				Kurile Islands.
		M	E 0.7 12				h = 40 km (Um).
		Ud	iP 08 36 29.0	"	6	Up	iP 05 04 45.6
			Turkey (h = 25 km).				i 05 04 48.4
"	5	Ki	eSg 12 58 53				iS 05 09 07.4
		Sk	eSg 12 58 14				micr sec
		(cont.)				S	N 1.3 13
						M	E 1.0 20
						(cont.)	

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
Sep.	6	(cont.)		Sep.	6	(cont.)	
		Up	micr sec			Ka	iP 07 41 28.3
		M N	0.9 17				ipP 07 41 38.9
		M Z	1.3 17			Ud	iP 07 41 34.5 D
		D = 2800 km = 25°					ipP 07 41 45.8
		Ki	iP 05 05 55.0				i 07 43 45.3
		i	05 05 58.6			Andaman Islands. h = 40 km	
			micr sec			(Up, Ki, Sk, Um, Ka, Ud).	
		M E	1.0 12			Magn. = 5.8 (Up, Ki). (P)	
		M N	0.4 12			at Up and Ki are small-	
		M Z	0.9 13			amplitude phases.	
		Sk	iP 05 05 24.0				
		i	05 05 26.5	"	6	Ki	eP 08 12 07
		Um	iP 05 05 23.0			Um	iP 08 12 24.5
		iS	05 10 04			Ud	iP 08 12 52.2
		Ka	iP 05 04 10.3			Japan (h = 70 km).	
		i	05 04 13.9				
		iS	05 08 05.9	"	6	Ud	iP 09 36 28.8
		Ud	iP 05 04 51.8			Aleutian Islands	
		i	05 04 55.2			(h = 40 km).	
		Crete (h = 30 km).					
		Multiple P: in average 3.2		"	6	Up	iP 14 59 48.1
		sec between the first small					
		and the second larger onset.		"	6	Up	iP 17 35 36.0
"	6	Up	i(P) 07 41 18.4			Ki	iP 17 34 42.6 C
		iP	07 41 22.5				micr sec
		ipP	07 41 33.5			P	Z' 0.1 0.9
			micr sec			Sk	iP 17 35 12.7 C
		P	Z' 0.3 0.7			Um	iP 17 35 09.6 C
		M E	1.3 17				ipP 17 35 20.8
		M N	2.6 21			Ud	iP 17 35 35.0 C
		M Z	1.5 19			Aleutian Islands.	
		Ki	iP 07 41 21.2			h = 40 km (Um).	
		ipP	07 41 32.5	"	7	Sk	eP 00 37 29
		e	07 50 11			Um	eP 00 37 32
		eS	07 50 28			Ka	iP 00 36 06.2
			micr sec			Ud	iP 00 36 53.1
		P	Z' 0.1 1.0			Albania (h = 30 km).	
		S N	0.4 9				
		M E	3.0 20	"	7	Ki	iP 02 11 44.1
		M N	1.6 22			Gulf of California	
		M Z	4.4 20			(h = 10 km).	
		D = 7800 km = 70°		"	7	Ud	iP 06 18 38.0
		Sk	e(P) 07 41 37				
		iP	07 41 39.8	"	7	Up	iP 07 25 32.3
		ipP	07 41 49.9			i	07 28 21.2
		Um	iP 07 41 17.5 D			iSKS	07 35 36
		ipP	07 41 29.5			iS	07 36 15
		e	07 50 10				micr sec
		iS	07 50 20			S	N 0.6 3
		(cont.)				M	N 1.6 16
						(cont.)	

Sep. 7

Ki	iP	07 25 17.0
	epP	07 26 21
	i	07 26 27.2
	epPP	07 30 08
	iSKS	07 35 20
	iS	07 35 51
	ipS	07 37 09
	isS	07 37 37

P Z' 0.3 1.7

$$(D = 10200 \text{ km} = 92^\circ).$$
$$\{Up, Ki\}.$$
 $(h = 40 \text{ km})$.

(cont.)

Sep. 7

(h = 25 km).

Kermadec Islands.
h = 470 km (Ki,Sk).

Possibly blast.

(cont.)

(Contd.)

Up = Uppsala, Ki = Kiruna, Sk = Skälstugan, Gb = Göteborg, Um = Umeå,
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1967
Sep. 7

(cont.)

Ki

micr sec

M E 0.4 14

M N 0.4 13

M Z 0.8 14

Sk iP 14 14 29.3

Um iP 14 14 38.5

Ka iP 14 13 22.4

Ud eP 14 13 55

Sicily (h = 50 km).

" 7

Ki iP 16 04 35.3

Aleutian Islands
(h = 40 km).

" 8

Up iP 00 33 35.3

micr sec

P Z' 0.1 0.5

Ki iP 00 33 42.6

Sk iP 00 34 00.4

Gb iP 00 33 57.2

Um iP 00 33 33.0 C

Ka iP 00 33 41.1 C

Ud iP 00 33 52.2 C

ipP 00 34 20.0

Hindu Kush. h = 130 km (Ud).

" 8

Um iP 02 05 38.6

i 02 05 45.9

Ud iP 02 04 59.9

Greece-Albania.

" 8

Up iP 02 09 13.8 C

i 02 09 26.7

iS 02 12 55

micr sec

M E 1.3 17

M N 0.6 12

M Z 0.7 12

D = 2150 km = 19 1/2°.

Ki eP 02 10 32

micr sec

M E 1.6 15

M N 0.3 10

M Z 0.8 14

Sk eP 02 09 56

Gb eP 02 08 59

iPP 02 09 16.9

Um iP 02 09 55.1 C

i 02 10 00.4

iPcP 02 13 54

iS 02 14 06.5

(cont.)

1967
Sep. 8

(cont.)

Ka iP 02 08 32.8 C

iPP 02 08 47.5

Ud iP 02 09 18.9

i 02 09 22.0

Greece-Albania (h = 30 km).

" 8

Um iP 03 50 06.3

Banda Sea (h = 110 km).

" 8

Ud iP 05 17 01.9

Dodecanese Islands.

" 8

Ki iP 05 31 19.0

Um iP 05 31 06.8

Ka iP 05 31 14.8

Ud iP 05 31 26.6

Pamir (h = 15 km).

" 8

Up iP 09 56 22.4 D

Ki iP 09 57 38.5

Sk iP 09 57 02.1

Gb iP 09 56 10.1

Um iP 09 57 04.9

Ud iP 09 56 31.3

i 09 56 33.1

Greece (h = 50 km).

" 8

Sk eSg 11 50 41

Um iSg 11 49 19.7

Probably northern Esthonia
or Gulf of Finland.
Explosion?

" 8

Ki iP 12 50 37.9

Arctic Ocean (h = 30 km).

" 8

Ki iPg 13 54 06.3 C

iSg 13 54 23.6

iRg 13 54 29.7

D = 140 km = 1.3°.

Um iSg 13 55 26.6

Probably Swedish Lapland.
Origin time = 13 53 40.
Explosion?

" 8

Up iP 15 53 20.2

i 15 53 24.8

" 8

Up iP 20 25 44.0

i 20 25 47.6

micr sec

P Z' 0.1 0.7

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
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1967					1967				
Sep.	8	Up	iP	22 04 17.1	Sep.	9	Um	iP	06 28 06.8
		Ki	iP	22 03 23.9 C			Caroline Islands		
		Ud	iP	22 04 17.6			(h = 25 km).		
		Aleutian Islands							
		(h = 250 km).			"	9	Up	iP	08 50 28.7
"	8	Up	iP	22 50 59.6			Ki	iP	08 50 00.6
			iX	22 54 38			Um	iP	08 50 13.6 C
			eSKS	23 01 29			Mariana Islands		
				micr sec			(h = 240 km).		
		SKS	E	0.7 9	"	9	Up	eP	09 03 24
		SKS	N	0.8 10			Ki	iP	09 03 57.5
		M	E	1.8 19			Um	iP	09 03 38.0
		M	N	3.1 19			Ud	eP	09 03 39
		M	Z	3.4 21	"	9	Up	iP	10 20 07
		Ki	iP	22 50 34.8			iPKP		10 24 08.3
		i		22 50 43.9			iPP		10 24 44.1
		iSKS		23 00 56			iPPP		10 26 35.9
				micr sec			i		10 27 21.6
		P	E	0.3 8			iSKS		10 29 49
		P	Z	1.1 5			iS		10 31 25
		P	Z'	0.2 1.1			iPKKP		10 35 18.4
		SKS	E	1.3 13			i		10 35 32.6
		SKS	N	0.7 11					micr sec
		M	E	3.0 19			P	Z	0.5 5
		M	N	1.3 17			PP	Z	0.7 6
		M	Z	6.3 20			PP	Z'	0.2 1.5
		Sk	iP	22 50 59.5			S	N	0.7 7
		Gb	iP	22 51 15.3			(D = 12200 km = 110°).		
		Um	iP	22 50 43.6			Ki	iP	10 20 26
		i		22 50 49.1			iPKP		10 24 16.0
		i		22 50 54.5			iPP		10 25 07
		iX		22 54 04			iS		10 32 01
		iPP		22 54 30			iSP		10 33 52
		iSKS		23 01 14			ipS		10 35 01
		Ud	iP	22 51 06.5			iPKKP		10 35 15.9
		Caroline Islands							micr sec
		(h = 25 km). Magn. = 6.0					PKP	Z'	0.1 1.0
		(Up,Ki). X is an unidenti-					PP	E	1.2 7
		fied phase, preceding PP.					PP	N	0.6 7
		Cf similar remark to Sep.					PP	Z	2.2 8
		3, 21 21.					PP	Z'	0.2 1.2
"	9	Up	iP	04 37 30.9 C			S	N	1.0 7
		i		04 37 42.0			M	E	2.6 20
"	9	Ki	iPn	05 01 22.9			M	N	2.4 22
			iSn	05 02 11.7			M	Z	4.4 20
			iLg1	05 02 24.8			(D = 12650 km = 114°).		
				D = 460 km = 4.1°			Sk	eP	10 20 10
		Um	iSg	05 03 55.8			iPKP		10 24 08.0
		Probably northwest Russia.					iPP		10 24 39.7
		Origin time = 05 00 17.					Gb	iP	10 19 55.1
		Explosion?					iPKP		10 23 52.9
							(cont.)		

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
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1967

Sep. 9 (cont.)
Um iP 10 20 19 D
iPKP 10 24 13.5
isP 10 23 25
iPP 10 24 57.0
i 10 25 40.5
isPP 10 27 58
i 10 28 26.5
iSKS 10 30 02
iS 10 31 48
iSP 10 33 33
iPKKP 10 35 20.9
i 10 35 30.8
Ud iP 10 20 03.2
iPKP 10 24 04.0
iPP 10 24 33.4
iPKKP 10 35 40.3
Argentina (h = 580 km).
Magn. = 6.4 (Up,Ki).

" 9 Up iP 10 37 29.1
i 10 37 37.2
Um iP 10 37 25.9
i 10 37 47.6
Ud iP 10 37 44.9

" 9 Ki ePn 13 34 06
iSn 13 34 50.9
eLg1 13 35 05
D = 410 km = 3.7°
Sk eSg 13 37 29
Um iSn 13 35 32.0
iSg 13 36 03.0
Russia-Finland border
region, 67.5°N, 30.0°E.
Origin time = 13 33 06.
Explosion?

" 9 Up iSg 13 39 40.9
Ki iLg1 13 36 38.9
Sk iSg 13 39 01.7
Um iSn 13 37 03.8
iSg 13 37 32.4
Russia-Finland border
region, 67.5°N, 30.0°E.
Origin time = 13 34 38.
Explosion?

" 9 Ud iP 14 54 25.4

" 9 Up iSKS 15 08 00
i 15 08 11
iSS 15 15 05
(cont.)

1967

Sep. 9 (cont.)
Up micr sec
M E 1.4 19
M N 2.3 19
M Z 2.4 19
Ki eP 14 56 51
iPP 15 00 38
eSKS 15 07 24
micr sec
P Z' 0.1 1.8
PP Z 0.6 10
SKS E 0.5 8
SKS N 0.4 9
M E 2.5 21
M N 1.0 17
M Z 3.2 20
Um iP 14 57 02.3
i 14 57 11.5
iPP 15 00 46
iSKS 15 07 40
iPS 15 09 17
Ud eP 14 57 18
Caroline Islands
(h = 30 km). Magn. = 5.8
(Up,Ki).

" 9 Up iPKP2 17 13 00
i 17 22 48
micr sec
M E 2.8 21
M N 4.1 20
M Z 7.1 20
Ki ePKP2 17 12 51
eSS 17 36 52
micr sec
M E 4.1 20
M N 1.3 20
M Z 6.4 21
Sk ePKP2 17 12 53
Um iPKP 17 12 04
i 17 12 19.5
iPKP2 17 13 17.0
i 17 16 15
iPPS 17 30 28
iSS 17 37 14
South Pacific Ocean
(h = 30 km).
Magn. = 6.3 (Up,Ki).

" 9 Um iP 17 27 39.0 C

" 9 Ki iPn 18 38 42.0
iSn 18 39 28.7
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Sep. 9 (cont.)
Ki iLg1 18 39 43.5
D = 430 km = 3.9°
Sk iSg 18 42 38.8
Um eSg 18 41 15
i 18 41 18.8
Northwest Russia. Origin
time = 18 37 39. Explosion?

" 9 Um iP 21 25 17.0 D
Ud iP 21 25 46.0
Japan (h = 330 km).

" 9 Ki iP 23 52 48.8
Um iX 23 53 50.0
Ud iP 23 53 38.6
iX 23 54 04.5
Alaska (h = 30 km).

" 10 Ki iPg 00 36 12.9
iSg 00 36 31.9
Um i 00 37 53.4
i 00 38 34.4

" 10 Um iP 04 57 29.9

" 10 Up iPKP 06 32 51.5
Sk iPKP 06 32 45.2
Gb iPKP 06 33 00.7
Um iPKP 06 32. 40.4 D
i 06 32 56.6
Ka iPKP 06 33 02.5
Ud iPKP 06 32 54.4
i 06 32 58.3

" 10 Ki iP 13 05 15.9
Um iP 13 05 13.7
Ud iP 13 05 38.4

" 10 Um iP 16 00 22.7

" 10 Um iP 17 00 19.8 C

" 10 Up iP 18 01 46.8
Ki iP 18 01 28.3
Sk iP 18 01 52.1
Um iP 18 01 34.3
Ud iP 18 01 55.3
Luzon (h = 20 km).

" 11 Ki iPn 04 43 15.6 C
iSn 04 44 14.6
iS^x 04 44 27.5
(cont.)

1967

Sep. 11 (cont.)
Ki iLg1 04 44 35.0
D = 560 km = 5.0°
Sk eSg 04 47 24
Um iSn 04 45 15.7
iSg 04 46 02.5
Northwest Russia, 69.1° N,
33.8° E. Origin time =
04 41 58. Explosion?

" 11 Ki iPKP 04 56 24.1
Sk iPKP 04 56 34.7
Um iPKP 04 56 30.2
iPKS 04 59 55
Loyalty Islands
(h = 10 km).

" 11 Up i(P) 06 20 14.4
iP 06 20 23.2
Ki iP 06 20 45.6
micr sec
M E 0.5 13
M N 0.2 11
M Z 0.7 15
Sk i(P) 06 20 50.5
iP 06 20 55.8
Gb eP 06 20 41
Um iP 06 20 31.5
Ud i(P) 06 20 32.1
iP 06 20 46.2
West Pakistan (h = 40 km).
(P) are small-amplitude
precursors, possibly be-
longing to a different
shock.

" 11 Ki iP 07 07 02.6
Gb iP 07 05 22.6 C
Um iP 07 06 31.0
Ud eP 07 05 48
i 07 05 59.2
Algeria (h = 30 km).

" 11 Up eL 08 00
micr sec
M N 0.6 20
M Z 1.0 20
Ki eL 07 55
micr sec
M E 0.7 23
M N 0.5 24
M Z 1.6 22
New Hebrides Islands
(h = 15 km).

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

[illegible]

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Sep. 12 (cont.)
 Ka i 02 55 09.1
 Ud iP 02 54 40.7
 Kurile Islands
 (h = 25 km).

" 12 Sk eP 08 26 04

" 12 Sk iP 09 09 44.8

" 12 Ki iP 11 23 17.5 C

	P	Z'	0.1	1.2
Sk	iP	11 22	45.0	
	i	11 22	54.3	
Um	iP	11 22	57.3	
Ud	iP	11 22	27.2	

Ascension Island
($h = 30$ km).

" 12 Up iSg 12 05 59.2

Gb	iPg	12 04 26.3
----	-----	------------

"	i	12 04 31.4
---	---	------------

iSg 12 04 35.0

Ka eSg 12 05 49

Ud iPn 12 04 45.0

eSg 12 05 13

Southwest Sweden,

58.4°N, 12.2°E.

Origin time = 12 04 13.

" 12 Up iP 12 55 37.7

Ki	iP	12 55 57.9
----	----	------------

" 12 Up iSg 14 37 04.2

$i(R_g)$	14	37	30.2
----------	----	----	------

Sk	eSg	14	39	14
----	-----	----	----	----

i	14	39	40.9
---	----	----	------

Ka	iSg	14	38	23.1
----	-----	----	----	------

Ud iSg 14 38 11.5

Baltic Sea, at the entrance
to the Gulf of Finland.

Origin time = 14 35 48.

Probably underwater explosion.

" 12 Up 15g 14 38 59.0

$i(R_g)$	14	39	21.8
----------	----	----	------

Ud iSg 14 40 04.6

Baltic Sea, probably same location as for the previous event. Origin time = 14 37 41. Probably underwater explosion.

1967

Sep.	12	Up	iP	14	51	21.7
		Ki	iP	14	52	38.0 C
		Um	iP	14	52	04.7
			iS	14	56	27
		Ud	iP	14	51	28.9
			i	14	51	32.5
		Greece (h = 15 km).				

```
"      12  Up    iSg      18 07 54.6
                                micr sec
```

Sg Z' 0.1 0.5
Probably near blast.

"	12	Up	iPP	22 09 24
				micr sec
		M	E	0.9 19
		M	N	2.1 21
		M	Z	2.9 22

Ki			---	
			micr	sec
M	E	2.0	19	
M	N	1.2	22	
M	Z	4.2	21	

Sk ePKP 22 08 25
Um iPKP 22 08 18.2
iPP 22 09 06
iSKS 22 15 12
iPS 22 18 34
Ud ePKP 22 08 28
New Britain (h = 50 km).
Magn. = 5.9 (Up,Ki).

" 13 Up iP 05 32 36.9

Um	iP	05	32	30.1
	i	05	32	50.3
Ud	iP	05	32	49.6
	i	05	33	13.7

" 13 Um iP 09 02 43.8 C

"	13	Up	i(Sg)	15	11	29.7
		Sk	e(Pg)	15	09	03
			iSg	15	09	23.2

```
"      13  Ud    eP      16 43 02
          i      16 44 06.7
```

"	13	Gb	$e(P)$	17 07 47
		Ka	$i(P)$	17 07 26.8

"	13	Up	eP	18	20	36
			i	18	20	38.8
		Ud	iP	18	20	50.3

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Sep.	13	Up	iP	18 51 58.6 C	Sep.	14	Um	iPKP	01 04 02.1
				micr sec			Ud	ePKP	01 04 14
			P	Z' 0.4 1.0			South of Kermadec Islands.		
			M	E 0.9 19			Origin time = 00 44 25.		
			M	N 1.1 18					
			M	Z 1.2 19	"	14	Up	iPKP	02 04 01.3
		Ki	iP	18 51 05.2 C			i		02 04 04.9
			i	18 51 31.4			Sk	ePKP	02 03 54
				micr sec			Um	iPKP	02 03 49.1
			P	Z' 0.3 1.0			Ud	iPKP	02 04 02.5
			M	E 1.6 21			Kermadec Islands		
			M	N 1.8 21			(h = 340 km).		
			M	Z 3.5 21					
		Sk	iP	18 51 39.5	"	14	Um	iP	07 57 10.5
			i	18 52 28.7			i		07 57 17.6
		Gb	iP	18 52 17.1 C			Ud	iP	07 57 23.1
		Um	iP	18 51 31.2 C					
			i	18 51 47.8	"	14	Ki		---
			iPcP	18 52 11.9					micr sec
		Ka	iP	18 52 22.7 C			M	E	1.1 17
		Ud	iP	18 52 00.2 C			M	N	1.1 18
			i	18 52 11.6			Um	iP	10 49 38.1
			iPP	18 54 32.1			Ud	eP	10 50 08
		Aleutian Islands							
		(h = 30 km).							
		Magn. = 5.9 (Up,Ki).			"	14	Ki	iP	13 38 52.6
							Ud	iP	13 39 06.5
							Pamir.		
"	13	Up	iPKP	20 16 21.7					
		Ki	iPKP	20 16 36.4	"	14	Up	iSg	14 11 38.2
			ipPKP	20 17 08.5			Ud	i	14 11 07.5
				micr sec				iSg	14 11 11.5
			PKP	Z' 0.2 1.2					
		Sk	iPKP	20 16 26.2	"	14	Up	iP	14 37 39.4
		Um	iPKP	20 16 29.7			Sk	eP	14 38 13
		Ud	iPKP	20 16 20.0			Um	i(P)	14 38 35.7
			iPKKP	20 26 27.0				iRg	14 50 17
		South Sandwich Islands.					Ka	iP	14 37 03.6
		h = 120 km (Ki).					i		14 37 10.7
"	13	Ud	iP	21 59 05.7			Ud	iP	14 37 40.7
							i		14 37 50.9
							Greece (h = 100 km).		
"	13	Up	iPn	23 10 29.8					
			iSn	23 11 27.8	"	14	Up	iP	14 57 25.4
			iLg1	23 11 44.4			Ki	iP	14 57 54.8
			D = 530 km = 4.8°				Sk	iP	14 57 58.3
		Origin time = 23 09 14.					i		14 58 09.4
							Ud	iP	14 57 40.2
							Iran (h = 30 km).		
"	14	Up	iPKP	01 01 28.5					
		Sk	iPKP	01 01 24.1					
		Um	iPKP	01 01 18.2	"	14	Ki	iPKP	15 53 56.8
			i	01 01 26.9			Sk	ePKP	15 54 07
		Ud	iPKP	01 01 30.1			Um	iPKP	15 54 03.5
		South of Kermadec Islands					New Hebrides Islands		
		(h = 40 km).					(h = 140 km).		

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Sep. 14 Ki iSg 16 18 35.4
Sk iSg 16 18 40.3
Um iSg 16 19 03.3
i 16 19 09.0
Nordlands Fylke, Norway.

" 14 Up iP 19 03 31.5
Sk eP 19 04 10
Gb iP 19 03 21.2
Um iP 19 04 15.9
Ka iP 19 02 54.7
Ud iP 19 03 37.3
i 19 03 46.6
Greece.

" 14 Up iP 21 05 11.2

" 14 Ki iP 22 39 15.1

" 15 Up iP 00 40 08.4
iPP 00 42 52.8
iS 00 49 34
micr sec
P Z' 0.1 1.0
M E 1.2 16
M N 1.4 17
M Z 1.9 23
D = 8100 km = 73°.
Ki iP 00 39 30.5
iS 00 48 23
iSS 00 53 03
micr sec
P Z' 0.1 1.0
S E 0.7 8
S N 0.6 8
M E 1.5 16
M N 1.7 20
M Z 3.8 20
D = 7450 km = 67°.
Sk iP 00 40 03.4
ipP 00 40 17.1
Gb iP 00 40 28.7
Um iP 00 39 47.1
i 00 39 54.9
ipP 00 40 01.4
iS 00 48 53
i 00 52 55
iSS 00 53 35
Ka iP 00 40 27.7
Ud iP 00 40 15.9 C
i 00 40 22.9
Japan. h = 50 km (Sk,Um).
Magn. = 5.9 (Up,Ki).

1967

Sep. 15 Up iP 08 15 27.6
i 08 15 48.2
micr sec
P Z' 0.2 0.5
Ki iP 08 14 56.1 D
micr sec
P Z' 0.1 0.7
Sk iP 08 15 24.6 D
Gb iP 08 15 45.6
Um iP 08 15 09.5
Ka iP 08 15 44.1
Ud iP 08 15 34.7 D
Bonin Islands (h = 440 km).
Magn. = 5.8 (Up,Ki).

" 15 Up iP 10 42 42.5
ipP 10 42 47.6
i 10 43 20.0
micr sec
P Z' 0.4 0.8
M E 3.1 14
M N 2.7 15
M Z 6.1 14
Ki iP 10 42 36.1 C
ipP 10 42 41.8
iPP 10 44 44.4
eLg2 11 04 08
micr sec
P Z' 0.4 1.3
PP Z' 0.1 1.3
M E 9.4 14
M N 1.5 14
M Z 11 14
Sk iP 10 42 58.8 C
ipP 10 43 04.2
i 10 43 14.6
iPcP 10 43 47.1
Gb iP 10 43 03.0 C
ipP 10 43 08.4
Um iP 10 42 34.5 C
ipP 10 42 40.0
iS 10 50 23
iSS 10 54 24
Ka iP 10 42 51.0 C
ipP 10 42 56.7
Ud iP 10 42 56.1 C
ipP 10 43 02.1
Bhutan. h = 20 km (Up,Ki,
Sk,Gb,Um,Ka,Ud).
Magn. = 6.1 (Up,Ki).

" 15 Up iP 13 47 06.6

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967						1967					
Sep.	15	Up	iP	14 56	15.9	Sep.	16	(cont.)			
"	15	Ki	iPg	17 10	16.9		Ki	iP	04 10	34.8	C
			iSg	17 10	32.2			iPcP	04 13	19.0	
		Sk	iSg	17 12	11.6			P	Z'	0.2	0.5
		Um	iSg	17 11	33.6		Sk	iP	04 11	06.4	C
		i		17 11	37.4			iPP	04 12	28.0	
		Swedish Lapland, 66.8°N,					Gb	iP	04 11	19.9	
		19.0°E. Origin time =						iPn	04 12	37.8	
		17 09 52. Explosion?					Um	iP	04 10	35.4	C
								iPP	04 11	49.8	
"	15	Sk	iP	22 11	21.9		Ka	iP	04 11	06.4	
		Um	iP	22 11	10.5		Ud	iP	04 11	07.0	C
		Ud	iP	22 10	57.1		Kazakh SSR. Magn. = 6.0				
"	15	Um	iP	22 33	31.5		(Up,Ki). Underground explosion.				
"	16	Up	iP	00 09	11.4	"	16	Ki	iPn	05 30	16.9
			ipP	00 09	21.6			iSn	05 31	05.5	
					micr sec			iLg1	05 31	21.9	
		P	Z'	0.1	1.0			D = 460 km = 4.1°			
		Ki	iP	00 08	48.0		Um	iSg	05 32	51.9	
			ipP	00 08	57.7			i	05 32	58.9	
					micr sec		Probably northwest Russia.				
		P	Z'	0.1	1.0		Origin time = 05 29 12.				
		M	E	0.6	15		Explosion?				
		M	Z	1.0	16		"	16	Up	iP	06 26 27.9
		Sk	iP	00 09	15.4		"	16	Up	iP	08 42 51.5
		Gb	iP	00 09	32.1				ipP	08 43	05.5
			ipP	00 09	41.5					micr sec	
		Um	iP	00 08	56.3			M	N	1.1	21
			ipP	00 09	05.5			M	Z	1.0	20
		Ud	iP	00 09	21.6		Ki	iP	08 41	59.8	
			ipP	00 09	31.1			ipP	08 42	16.5	
		Formosa. h = 35 km (Up,Ki,					Um	iP	08 42	28.5	
		Gb,Um,Ud). Magn. = 5.7						ipP	08 42	39.5	
		(Up,Ki).					Ud	iP	08 42	50.5	
"	16	Up	iP	03 54	45.7		Aleutian Islands.				
		Ki	iP	03 54	30.2		h = 50 km (Up,Ki,Um).				
			ePS	04 07	25		"	16	Um	iP	10 31 53.1
					micr sec				i	10 31	59.5
		M	E	0.8	18		"	16	Ud	iP	10 49 02.2
		Um	iP	03 54	34.4		"	16	Um	iP	11 05 10.1
			ipP	03 54	50.3				e(P)	11 05	32
			iPS	04 07	39		"	16	Ud	iP	15 30 05.7 C
		Ud	iP	03 54	54.1						
		Ceram Sea. h = 60 km (Um).					Sk	ePKP	15 30	16	
"	16	Up	iP	04 10	50.5 C		Um	iPKP	15 30	11.3	
			iPn	04 11	50.5			i	15 30	16.8	
					micr sec		New Hebrides Islands				
		P	Z'	0.1	0.5		(h = 70 km).				
		(cont.)									

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
Sep.	16	Up	iP	16 02 34.1 D	Sep.	17	(cont.)
"	16	Sk	iP	18 37 35.0		Ud	eP 08 08 45
		Um	iP	18 37 50.3			ipP 08 08 56.1
		South of Panama (h = 30 km).				Mexico. h = 50 km	
						(Up,Ki,Sk,Um).	
"	16	Um	iPKP	19 30 59.2	"	17	Up iP 09 59 04.0
			i	19 31 15.6		Um	iP 09 58 43.6
		Solomon Islands (h = 30 km).					ipP 09 58 55.8
"	16	Up	iPKP	23 50 29.0		Ud	iP 09 59 11.5
			i	23 50 35.8			ipP 09 59 23.6
		Sk	ePKP	23 50 24		Japan. h = 45 km (Um,Ud).	
		Um	iPKP	23 50 18.8 D	"	17	Ka iP 10 30 21.0
		Ud	iPKP	23 50 31.5	"	17	Ki iP 10 58 35.5
			i	23 50 38.4			i 10 59 16.3
		Kermadec Islands				Um	iP 10 58 46.0
		(h = 380 km).					i 10 59 32.2
"	17	Up	iP	01 21 26.3	"	17	Up iP 18 17 15.6
			i	01 21 40.6	"	17	Sk iP 19 29 27.5
		Ki	eP	01 20 51		Um	iP 19 29 44.8
			i	01 20 58.1		Panama-Colombia (h = 30 km).	
		Um	iP	01 21 07.7 C	"	18	Up eP 02 11 27
		Ud	iP	01 21 30.0			i 02 11 31.5
			i	01 21 48.6		Ki	iP 02 12 18.2
		Bonin Islands (h = 30 km).					i 02 12 21.9
"	17	Um	iP	04 01 24.9		Sk	iP 02 12 02.4
"	17	Up	iP	08 08 57.6			i 02 12 05.4
			ipP	08 09 11.2		Um	iP 02 11 51.0
			iSKS	08 19 17			i 02 11 53.7
				micr sec		Ud	iP 02 11 36.7
			pP	Z' 0.1 0.5		Ethiopia (h = 30 km).	
		Ki	iP	08 08 44.3		Multiple P: the two phases	
			ipP	08 08 58.1		are of about equal ampli-	
			iPP	08 12 05.6		tude.	
			eS	08 19 00			
				micr sec	"	18	Ki iP 07 07 16.6
		M	E	0.8 19		Um	iP 07 07 30.4
		M	Z	1.0 20		Gulf of California	
		D = 9150 km = 82 1/2°.				(h = 30 km).	
		Sk	iP	08 08 38.5	"	18	Up iP 08 34 07.7
			ipP	08 08 52.1			i 08 34 13.3
			iPP	08 11 57.9		Ki	iP 08 34 17.7 C
		Gb	iP	08 08 49.9		Sk	iP 08 34 37.1
		Um	iP	08 08 53.8		Um	eP 08 34 07
			ipP	08 09 07.1		Ka	iP 08 34 12.6
			i	08 09 23.4		Ud	iP 08 34 24.8
			iPP	08 12 20.9		Hindu Kush (h = 140 km).	
			iS	08 19 14			
		(cont.)					

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967						1967					
Sep.	18	Up	iP	09 45 49.9		Sep.	19	(cont.)			
"	18	Up	iPP	15 52 38			Um	iPKP	01 04 42.9		
				micr sec			Ka	iPKP	01 04 56.9		
			M	E 0.5 19			Ud	iPKP	01 04 47.3		
			M	N 1.1 21			Tonga-Kermadec Islands.				
			M	Z 1.6 20			h = 140 km (Gb).				
		Ki	eP	15 47 25		"	19	Up	iP	03 40 21.1	
			i	15 52 33.6			Ki	eP	03 39 41		
				micr sec					micr sec		
			M	E 1.2 18				M	E 0.4 16		
			M	N 1.1 23			Sk	eP	03 40 15		
			M	Z 2.5 20			Um	iP	03 39 58.8 C		
		Sk	i	15 52 17.8			Ud	iP	03 40 27.8		
			iPP	15 52 38.0				ipP	03 40 40.8		
		Um	iPP	15 52 07			Japan. h = 50 km (Ud).				
			iPS	16 01 27							
		Ud	i	15 52 18.6		"	19	Up	iP	11 07 04.8 C	
			iPP	15 52 47.6				ipP	11 07 28.0		
		New Guinea (h = 40 km).						iS	11 15 56		
"	18	Up	iP	16 12 19.8				iP'P'	11 35 11		
			i	16 12 27.7				i	11 35 37		
		Ka	i(P)	16 12 56.2					micr sec		
"	18	Sk	iP	19 09 48.9				P	N 2.0 3		
			ipP	19 09 57.3				P	Z 4.4 3		
		Um	iP	19 10 04.8				P	Z' 0.5 0.8		
			ipP	19 10 13.2				S	E 2.8 6		
		Ud	iP	19 09 54.2				S	N 4.1 7		
			ipP	19 10 04.7				P'P'	Z 0.6 4		
		South of Panama.						M	E 3.3 15		
		h = 30 km (Sk,Um,Ud).						M	N 5.7 19		
								M	Z 5.7 18		
"	18	Up	iP	20 49 23.1 D				D = 7550 km = 68°.			
		Gb	iP	20 50 41.4			Ki	iP	11 06 20.7 C		
"	18	Up	eP	23 44 11				ipP	11 06 43.7		
		Ki	iP	23 45 18.7				iS	11 14 37		
		Sk	eP	23 44 58				iP'P'	11 35 33.1		
		Gb	iP	23 44 12.0					micr sec		
		Um	iP	23 44 44.9				P	E 1.6 7		
		Ka	iP	23 43 40.0				P	N 1.6 6		
		Ud	iP	23 44 26.7				P	Z 4.8 7		
		Turkey (h = 30 km).						P	Z' 2.0 1.5		
"	19	Up	iPKP	01 04 45.2				S	E 7.0 9		
				micr sec				S	N 5.2 9		
			PKP	Z' 0.1 0.9				S	Z 3.2 8		
		Sk	iPKP	01 04 39.5				M	E 3.0 16		
		Gb	iPKP	01 04 54.8				M	N 2.5 15		
			ipPKP	01 05 32.3				M	Z 6.8 17		
		(cont.)						D = 6900 km = 62°.			
							Sk	iP	11 06 55.2 C		
								i	11 07 12.8		
								isP	11 07 34.1		
								ipP	11 09 21.7		
							(cont.)				

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Sep. 19 (cont.)
Gb iP 11 07 26.1 C
i 11 07 28.8
ipP 11 07 48.7
iS 11 16 41.6
Um iP 11 06 40.3 C
ipP 11 07 01.7
isP 11 07 18.7
iPP 11 09 02
iS 11 15 09
Ka iP 11 07 26.5 C
i 11 07 30.1
ipP 11 07 48.4
iS 11 16 40.1
Ud iP 11 07 11.5 C
ipP 11 07 37.1
iS 11 16 14.0
eP'P' 11 35 11
Japan. h = 90 km (Up,Ki,
Gb,Um,Ka,Ud). Magn. = 7.0
(Up,Ki).

" 19 Up iPKP 13 04 24.8
ipPKP 13 04 35.6
micr sec
pPKP Z' 0.1 0.6
Ki iPKP 13 04 40.1 C
ipPKP 13 04 50.5
i 13 05 09.1
iPKS 13 08 01
iPKS2 13 08 22.5
micr sec
PKP Z' 0.3 1.5
PKS N 0.4 5
M E 0.9 18
M N 0.6 17
M Z 1.5 18
Sk iPKP 13 04 30.3 C
Um iPKP 13 04 32.2
ipPKP 13 04 43.2
Ka iPKP 13 04 18.4
Ud iPKP 13 04 23.8
ipPKP 13 04 33.9
iPKKP 13 14 27.3
South Sandwich Islands.
h = 40 km (Up,Ki,Um,Ud).

" 19 Up eP 14 36 17
micr sec
P Z' 0.2 0.7

" 19 Up iP 15 10 26.6

1967

Sep. 19 Ki ePg 17 33 29
iSg 17 34 06.6
Sk ePg 17 33 30
iSg 17 34 07.6
i 17 34 16.7
Um ePg 17 33 43
iS^x 17 34 20.6
iSg 17 34 30.2
Ud e 17 35 57
iSg 17 36 04.5
Nordlands Fylke, Norway,
66.3°N, 14.7°E.
Origin time = 17 32 37.

" 19 Up iP 19 14 26.6
i 19 14 40.9
micr sec
P Z' 0.1 0.5
Ki iP 19 14 28.3 C
i 19 14 46.5
micr sec
P Z' 0.2 1.3
Sk iP 19 14 41.6
ipP 19 15 02.8
Um iP 19 14 24.7 C
i 19 14 41.2
iS 19 24 59
i 19 25 11
Ka iP 19 14 31.9
ipP 19 14 52.9
Ud iP 19 14 38.1
ipP 19 14 58.2
Sumatra. h = 80 km
(Sk,Ka,Ud). Magn. = 6.2
(Up,Ki).

" 20 Sk eP 00 31 08
Ka iP 00 29 51.8
Ud iP 00 30 35.2
Ionian Sea.

" 20 Up iP 00 44 06.5
Ki iP 00 43 28.8 C
Sk iP 00 44 01.4
Um iP 00 43 45.3 C
Ud iP 00 44 13.7 C
ipP 00 44 35.7
Japan. h = 80 km (Ud).

" 20 Ki iP 01 42 52.9 C
Sk iP 01 43 21.0
Ud iP 01 43 28.8
Formosa (h = 100 km).

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
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1967

Sep. 20 Ki iP 09 47 20.4
ipP 09 47 55.7
Peru-Brazil. h = 140 km
(Ki).

" 20 Up iPKP 09 59 18.9
i 09 59 45.1
iPKP2 09 59 54
i 10 03 07
iPP 10 03 26
micr sec
PKP Z 0.9 4
PKP2 Z 1.9 6
PP Z 3.7 13
M E 5.8 23
M N 17 23
M Z 11 23

Ki iPKP 09 59 06.4
i 09 59 13.1
iPP 10 03 09.3
i 10 08 24.6
micr sec
PKP E 0.8 6
PKP Z 3.7 9
PKP Z' 0.8 1.7
PP Z 2.7 10
M E 11 21
M N 4.4 22
M Z 19 24

Sk ePKP 09 59 10
iPKP2 09 59 57.1
i(PP) 10 03 50.2
Gb iPKP 09 59 16.1
iPKP2 09 59 55.8
Um iPKP 09 59 08.7
i 09 59 14.5
iPP 10 03 12
iSKKS 10 09 58
iSS 10 22 57

Ka ePKP 09 59 08
iPKP2 09 59 51.5
iPP 10 03 46.9
Ud ePKP 09 59 15
e 09 59 41
iPKP2 09 59 51.3

Auckland Islands
(h = 30 km). Magn. = 6.7
(Up, Ki). PKP exhibits an
unusually long period on
our Z'-records, generally
around 3-4 sec.

1967

Sep. 20 Up i 10 51 18.8
Ki ePKP 10 50 40
i 10 50 51.3
iPP 10 54 42.8
micr sec
PKP Z 0.8 5
PKP Z' 0.8 2.3
Sk ePKP 10 50 49
Gb iPKP 10 50 51.8
iPKP2 10 51 39.7
Um iPKP 10 50 45.7
i 10 50 55.8
iPKP2 10 51 13.0
Ka ePKP 10 50 49
Ud iPKP2 10 51 29.1
i 10 51 31.1

Auckland Islands
(h = 20 km).

" 20 Up iSKP 10 59 45.6
micr sec
SKP Z' 0.1 1.0
Ki iPKP 10 56 12.1 C
ipPKP 10 56 42.1
iSKP 10 59 21.9
micr sec
PKP Z' 0.1 1.0
Sk iPKP 10 56 21.6
iSKP 10 59 40.0
Gb iSKP 10 59 54.7
Um iPKP 10 56 18.1
i 10 56 28.4
iSKP 10 59 32.2
Ka iSKP 10 59 56.0
Ud iPKP 10 56 22.4
i 10 56 27.4
iSKP 10 59 47.5

New Hebrides Islands.
h = 110 km (Ki).

" 20 Ki ePKP 11 32 30
i 11 32 43.9
Um ePKP 11 32 33

Auckland Islands
(h = 30 km).

" 20 Ki iPn 11 33 47.6
iSn 11 34 46.2
iLg1 11 35 07.2
D = 530 km = 4.8°
Sk eSg 11 37 54
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
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1967				1967			
Sep.	20	(cont.)		Sep.	21	Um	IP show microseisms of long period, 16-18 sec.
		Um	iSg 11 36 35.6				
		Northwest Russia, 69.2°N,					
		33.1°E. Origin time =					
		11 32 34. Explosion?					
"	20	Ki	ePKP 12 26 56	"	21	Sk	ePKP2 00 12 06
			i 12 27 10.4			Ud	iPKP2 00 11 58.4
		Um	iPKP2 12 27 17.3			West of Macquarie Islands	
		Ud	ePKP2 12 27 29			(h = 30 km).	
			i 12 27 32.9	"	21	Ki	iP 01 05 16.9
			i 12 27 46.5	"	21	Ki	iP 08 24 16.9
		Auckland Islands		"	21	Up	iSg 14 56 19.5
		(h = 30 km).					iRg 14 56 35.6
						Ki	e 14 58 37.0
"	20	Um	iP 13 38 56.8				iSg 14 59 18.8
"	20	Ki	eP 13 41 04			Sk	iPn 14 56 24.8
"	20	Ki	i(PKP) 14 24 29.7				iSg 14 58 25.4
		Auckland Islands				Um	iSg 14 57 05.6
		(h = 30 km).				Ka	iSg 14 57 47.7
"	20	Ki	i(PKP) 15 18 31.7			Ud	iPn 14 56 03.4
		Auckland Islands					iSn 14 57 07.7
		(h = 30 km).					iSg 14 57 32.2
"	20	Ud	eP 17 24 00			Southwest Finland,	
		Atlantic Ocean				59.8°N, 23.4°E. Origin	
		(h = 30 km).				time = 14 54 46.	
"	20	Up	iPKP 18 58 03.9	"	21	Up	iP 15 10 26.8
			i 18 58 28.0	"	21	Ki	eP 18 05 39
		Sk	iPKP 18 57 56.5	"	21	Ki	iP 18 45 30.5
		Ud	ePKP 18 58 05			Sk	iP 18 45 14.3
			i 18 58 08.7			Ud	iP 18 44 52.1
			i 18 58 22.9			Red Sea (h = 15 km).	
		Kermadec Islands		"	21	Ud	iP 21 27 01.9
		(h = 40 km).				Alaska (h = 30 km).	
"	20	Sk	iP 20 33 53.3	"	22	Up	iP 00 08 13.9
		Ud	iP 20 33 44.5	"	22	Ud	eP 00 40 32
		Kashmir-India (h = 60 km).		"	22	Ki	iP 01 05 26.1
"	20	Ki	ePKP 20 36 47	"	22	Up	iP 05 10 49.8
		Auckland Islands					iPn 05 11 53.8
		(h = 30 km).					micr sec
"	20	Ki	iP 21 48 29.1			P	Z' 0.1 0.5
		Sk	iP 21 49 05.1			Ki	iP 05 10 34.5 C
			i 21 49 09.7				micr sec
		Um	iP 21 48 39.3			P	Z' 0.2 0.5
		Ud	eP 21 49 12			Sk	iP 05 11 05.7 C
		Mongolia (h = 30 km).				(cont.)	

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
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1967

Sep. 22 (cont.)
Sk iPn 05 12 08.9
iPP 05 12 27.6
Um iP 05 10 34.8 C
iPP 05 11 47.6
Ka eP 05 11 06
Ud iP 05 11 06.5 C
iPn 05 12 16.1
iPP 05 12 28.3
Kazakh SSR. Magn. = 6.0
(Up,Ki). Underground
explosion.

" 22 Up iP 08 18 55.1
micr sec
P Z' 0.1 0.6
Ki iP 08 19 38.0
i 08 19 44.3
iS 08 29 11
micr sec
P Z' 0.2 1.5
S E 0.3 7
M E 0.5 19
M N 0.4 17
M Z 0.8 16
D = 8200 km = 74°.
Sk iP 08 19 04.7 C
Gb iP 08 18 33.5
Um iP 08 19 19.5 C
iS 08 28 37
Ud iP 08 18 48.0
Atlantic Ocean (h = 30 km).
Magn. = 5.9 (Up,Ki).

" 22 Up iP 10 28 57.9
eS 10 37 53
micr sec
P Z' 0.2 0.6
M E 3.2 19
M N 12 19
M Z 11 20
D = 7550 km = 68°.
Ki iP 10 28 09.8 C
ipP 10 28 26.3
i 10 28 42.0
iPa 10 32 01
iS 10 36 28
iScS 10 37 58
micr sec
P E 0.3 7
P N 0.5 7
P Z 1.0 7
P Z' 0.1 1.0
S E 1.6 15
(cont.)

1967

Sep. 22 (cont.)
Ki micr sec
S N 0.3 10
S Z 1.0 14
M E 13 20
M N 4.8 22
M Z 17 23
D = 6700 km = 60 1/2°.
Sk iP 10 28 47.0
ipP 10 29 06.3
Gb iP 10 29 19.5
Um iP 10 28 32.5 C
i 10 29 27.9
iS 10 37 07
Ka iP 10 29 20.9
i 10 29 25.4
Ud iP 10 29 03.0 C
Kurile Islands. h = 70 km
(Ki,Sk). Magn. = 6.1
(Up,Ki).

" 22 Ud iP 11 30 28.2
ipP 11 30 43.2
Kurile Islands.
h = 60 km (Ud).

" 22 Ki eSg 11 52 36
Sk eSg 11 51 53
Um iSg 11 50 39.6
Ud eSg 11 51 09
Southwest Finland.
Probably explosion.

" 22 Up iP 12 45 51.8
micr sec
P Z' 0.1 0.5
Ki iP 12 45 04.2
Sk iP 12 45 40.6
Um iP 12 45 24.0
Ud iP 12 45 56.4
Kurile Islands
(h = 50 km).

" 22 Um iP 13 14 16.0
i 13 14 29.6

" 22 Um iP 15 14 23.7
Ud i(P) 15 14 32.8

" 22 Up iP 19 53 12.5

" 22 Up iP 20 18 55.8
Ki iP 20 18 41.3
Sk iP 20 19 07.2
Um iP 20 18 41.7
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
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1967						1967					
Sep.	22	(cont.)				Sep.	23	(cont.)			
		Ud	iP	20 19 07.0				Sk	ePKP2	07 22 37	
		Tibet	(h = 30 km).					Um	ePKP	07 21 53	
"	22	Up	iP	20 41 28.7					iPKP2	07 22 22.9	
									iPP	07 25 55	
"	22	Ud	iP	22 16 16.4				Ud	iPKP2	07 22 41.5	
		Kurile Islands						Auckland Islands			
		(h = 30 km).						(h = 15 km).			
"	22	Up	iP	22 19 22.7		"	23	Ki	iSKP	08 00 28.1	
								Sk	ePKP	07 57 57	
		i		22 19 39.1					iSKP	08 00 44.6	
		i		22 19 53.7				Gb	iPKP	07 58 13.3	
		Ki	iP	22 19 31.5				Fiji Islands			
		Sk	iP	22 19 48.2				(h = 600 km).			
		Um	iP	22 19 21.0							
		Ud	iP	22 19 39.9		"	23	Ki	iP	09 23 07.4	
		Hindu Kush						Aleutian Islands			
		(h = 130 km).						(h = 50 km).			
"	23	Up	iP	00 37 42.3		"	23	Up	iPKP	23 02 18.9	
"	23	Up	iP	03 31 43.8				Sk	iPKP	23 02 12.8	D
				micr sec				Gb	iPKP	23 02 27.5	
		P	Z'	0.1 0.7				Um	iPKP	23 02 06.7	
"	23	Ki	iPn	04 42 52.5				Ud	iPKP	23 02 21.0	
		iSn		04 43 56.4				ipPKP	23 03 50.5		
		iLg1		04 44 10.9				Kermadec Islands.			
		iSg		04 44 28.5				h = 380 km (Ud).			
		Possibly northwest Russia.				"	24	Up	iP	01 10 35.6	
		Explosion?						Ki	iP	01 10 17.9	
"	23	Ki	iPKP	07 14 49.1				ipP	01 10 28.1		
		iSKP		07 17 24.1				Um	iP	01 10 21.8	
				micr sec				Ud	iP	01 10 43.6	
		SKP	Z'	0.1 1.0				ipP	01 10 53.6		
		Sk	iPKP	07 14 51.9	C			North of Halmahera.			
		iSKP		07 17 41.0				h = 40 km (Ki,Ud).			
		Gb	iPKP	07 15 08.7		"	24	Up	iPKP	01 29 49.4	
		Um	iPKP	07 14 50.7					micr sec		
		i		07 14 58.5				PKP	Z'	0.1 0.6	
		iSKP		07 17 35.2				Ki	iPKP	01 29 33.9	
		Ka	iPKP	07 15 09.7				Sk	iPKP	01 29 42.5	C
		Ud	iPKP	07 15 00.2				Gb	iPKP	01 29 57.4	
		iSKP		07 17 47.8				Um	iPKP	01 29 36.9	C
		Fiji Islands						Ud	iPKP	01 29 50.9	C
		(h = 600 km).						Kermadec Islands			
"	23	Ki	iPKP	07 22 02.7				(h = 90 km).			
		i		07 22 15.6		"	24	Sk	eP	06 23 31	
				micr sec				Halmahera	(h = 230 km).		
		PKP	Z'	0.2 2.0		"	24	Up	iP	20 30 00.8	
		(cont.)						Ki	iP	20 29 29.1	
								(cont.)			

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
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1967

Sep. 24 (cont.)
Um iP 20 29 42.5
Ud iP 20 30 07.9
i 20 30 23.8
Bonin Islands
(h = 30 km).
" 24 Up iP 22 15 41.8
Ki iP 22 16 59.2
Sk iP 22 16 23.7 C
i 22 16 27.9
Um iP 22 16 22.3
Ka iP 22 15 00.3
i 22 15 08.7
Ud iP 22 15 46.6
i 22 15 50.5
Albania (h = 15 km).
" 25 Um e 02 58 18
i(Sg) 02 58 42.0
" 25 Ki eP 07 13 28
Sk eP 07 13 50
Um iP 07 13 33.8
Ud iP 07 13 54.1
i 07 13 59.1
Mindanao (h = 30 km).
" 25 Ki iP 08 21 21.4
Sk iP 08 20 59.3
Um iP 08 21 20.3
Ud iP 08 21 00.8
Leeward Islands
(h = 30 km).
" 25 Ki iP 09 03 02.2
Sk iP 09 02 40.7
Um iP 09 03 02.3
iS 09 12 12
Ud iP 09 02 42.2
Leeward Islands
(h = 50 km).
" 25 Up iP 09 24 20.0
Ki iP 09 23 52.1
P Z' 0.1 1.0
Sk iP 09 24 16.3
Um iP 09 24 03.7
Ud iP 09 24 26.2
Mariana Islands
(h = 250 km).

1967

Sep. 25 Sk eSg 11 13 03
i 11 13 11.1
Um iSg 11 11 43.5
Ud iSg 11 12 13.4
Southwest Finland.
Probably explosion.
" 25 Um i(P) 12 18 42.0
Ud iP 12 19 18.2
" 25 Ki iP 13 16 11.4
Ud iP 13 16 35.9
Talaud Islands
(h = 80 km).
" 25 Up iP 17 17 08.4
Ki iP 17 16 52.4
P Z' 0.1 1.0
Sk iP 17 17 13.8
Um iP 17 16 57.5
Ud iP 17 17 16.6
Talaud Islands
(h = 120 km).
" 25 Um iP 17 59 51.4
South of Japan
(h = 30 km).
" 25 Ki iP 19 54 41.1
Um iP 19 55 11.2 C
Alaska (h = 70 km).
" 26 Up iP 05 09 50.4
Sk iP 05 10 37.3
Um iP 05 10 33.3
i 05 10 43.8
Ka iP 05 09 10.9
i 05 09 14.3
Ud eP 05 09 56
i 05 10 00.9
Yugoslavia (h = 40 km).
" 26 Up iP 06 57 48.4
iPcP 06 58 16.7
Ki iP 06 57 00.9
iPcP 06 57 43.9
P Z' 0.1 1.0
Sk iP 06 57 37.4
Um iP 06 57 22.2
i 06 57 29.6
iPcP 06 58 00.1
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Sep.	26	(cont.)			Sep.	26	(cont.)		
		Um	i	06 58 06.6			Ka	ePKP	16 29 56
		Ud	iP	06 57 53.9				ePKKP	16 40 45
			iPcP	06 58 20.5			Ud	iPKKP	16 40 47.1
		Kurile Islands					Chile (h = 60 km).		
		(h = 140 km).							
"	26	Ud	eP	07 16 03	"	26	Gb	eP	17 01 13
"	26	Ud	eP	07 17 56	"	26	Up	iPKP	17 24 32.6 C
			i	07 18 16.4				iPKKP	17 34 50.5
								PKP	micr sec
								Z'	0.1 0.5
"	26	Um	iP	07 29 53.1			Sk	iPKP	17 24 31.3 C
		Ud	eP	07 29 28			Gb	iPKP	17 24 40.1
			i	07 30 09.3			Um	iPKP	17 24 25.9
"	26	Um	e(P)	07 33 32			Ka	iPKP	17 24 39.0 C
		Ud	iP	07 33 58.2			Ud	iPKP	17 24 35.0 C
			e	07 34 29			Solomon Islands		
							(h = 90 km).		
"	26	Ud	iP	09 14 18.6	"	26	Ki	iSg	17 41 46.2
							Sk	iSg	17 41 50.3
"	26	Um	iPKP	11 30 05.3			Um	iSg	17 42 13.7
			ipPKP	11 30 28.1			Nordlands Fylke, Norway.		
		Ud	iPKP	11 29 56.1	"	26	Up	i(P)	21 36 30.2
		Chile-Argentina.			"	27	Um	iP	00 36 13.9
		h = 80 km (Um).					Ud	iP	00 36 43.1
"	26	Ki	iP	15 04 07.0			Aleutian Islands		
		Um	iP	15 04 23.9			(h = 30 km).		
		Japan (h = 50 km).			"	27	Up	iP	07 30 02.3
"	26	Up	iP	16 15 51.0			Ki	iP	07 31 09.8
"	26	Up	iPP	16 31 03.6					micr sec
			eS	16 38 39				P	Z' 0.1 1.0
			iPKKP	16 40 40.0			Sk	iP	07 30 42.3
				micr sec				i	07 30 46.7
		M	E	2.9 19			Um	iP	07 30 35.6
		M	N	3.2 20				i	07 30 44.1
		M	Z	5.5 19				i	07 31 10.4
		Ki	iPKP	16 30 13.7			Ka	eP	07 29 32
			iSKS	16 36 55			Ud	iP	07 30 10.8
			iPS	16 41 10			Crete (h = 20 km).		
				micr sec	"	27	Up	i(P)	15 08 20.0
		M	E	3.3 20	"	27	Up	iPg	15 16 43.2
		M	N	0.8 20				iSg	15 16 58.5
		M	Z	6.3 22				i	15 17 10.5
		Gb	e(PP)	16 30 34					micr sec
			iPKKP	16 40 56.3				Pg	Z' 0.1 0.5
		Um	iPKP	16 30 03.4			Sk	eSg	15 19 18
			iPP	16 31 16			Um	iSg	15 19 00.1
			iS	16 38 59			(cont.)		
			iPS	16 40 53					
			iSS	16 47 23					
		(cont.)							

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Sep. 27 (cont.)
Ka iPn 15 17 04.2
iSg 15 17 51.0
Ud iPg 15 17 11.6
iSg 15 17 46.0
Baltic Sea. Origin time =
15 16 12. Probably ex-
plosion.

" 27 Up iP 17 11 48.5 C
micr sec
P Z' 0.3 1.2
Ki iP 17 11 14.5 C
micr sec
P Z' 0.4 1.5
Sk iP 17 11 22.5 C
Gb iP 17 11 48.4 C
Um iP 17 11 34.0 C
Ka iP 17 12 02.0 C
Ud iP 17 11 40.8 C
Nevada. Origin time =
17 00 00. Magn. = 6.3 (Up,
Ki). Underground explosion.

" 27 Up iPg 19 20 34.5
iSg 19 20 48.3
Sk eSg 19 23 02
Ka iPn 19 21 13.1
iSg 19 21 58.2
Baltic Sea. Probably
explosion.

" 28 Ka iP 00 34 16.1
i(Sg) 00 34 47.9

" 28 Up eP 03 01 30
i 03 01 39.0
i 03 02 24.8
iLg1 03 15 15
micr sec
M E 0.9 10
M N 7.6 18
M Z 1.5 12
Ki iP 03 01 22.9
micr sec
M E 2.7 10
M N 7.9 13
M Z 2.3 10
Sk iP 03 01 49.1
Um iP 03 01 29.5
i 03 01 44.6
Ud eP 03 01 46
i 03 01 51.1
Alma-Ata (h = 30 km).

1967

Sep. 28 Ki iP 03 02 49.6
California (h = 2 km).

" 28 Up iP 03 11 26.7
i 03 11 44.9
Ki iP 03 10 32.2
Sk iP 03 11 03.6
iPcP 03 11 31.6
i 03 16 34.5
Um iP 03 10 59.7
Ud eP 03 11 25
Aleutian Islands
(h = 50 km).

" 28 Up iPKP 05 15 37.1
i 05 15 42.2
iPP 05 16 43
micr sec
PP Z 1.5 7
M E 2.6 22
M N 3.2 22
M Z 4.0 24
Ki eP 05 11 25
iPKP 05 15 26.3
i 05 15 51.9
micr sec
M E 4.1 20
M N 2.4 22
M Z 6.9 23
Sk iPKP 05 15 37.4
Gb iPKP 05 15 45.9
Um iPKP 05 15 30.9
iPP 05 16 23.0
iSKS 05 22 19
iSKKS 05 23 20
iPS 05 25 59
Ka iPKP 05 15 43.6
Ud iPKP 05 15 40.2
iPP 05 16 54.4
New Britain (h = 40 km).
Magn. = 6.4 (Up, Ki).

" 28 Up iP 15 55 02.6
micr sec
M E 1.6 21
M N 4.3 21
M Z 4.1 21
Ki iP 15 54 07.8
i 15 54 26.6
i(S) 16 01 46
micr sec
(S) N 1.6 6
M E 3.3 20
M N 3.2 22
M Z 3.4 19
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
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1967					1967				
Sep.	28	(cont.)			Sep.	30	Up	iP	09 24 49.7 C
		Sk	eP	15 54 37				i	09 24 54.7
		Gb	iP	15 55 14.5					micr sec
		Um	iP	15 54 36.6 C				P	Z' 0.1 0.5
			iS	16 02 25					
			i	16 04 13	"	30	Up	iP	19 32 45.4 C
		Ka	eP	15 55 21					
		Ud	iP	15 54 59.1 C					
		Alaska (h = 30 km).							
		Magn. = 5.9 (Up,Ki).							
"	29	Up	iP	05 31 41.4					Markus Båth
			i	05 31 49.2					February 23, 1968
		Sk	iP	05 31 24.0					
		Gb	iP	05 31 31.9					
		Um	iP	05 31 38.5					
		Ud	iP	05 31 31.9 C					
		Central America (h = 30 km).							
"	29	Um	i(P)	09 44 07.4					
		Ud	eP	09 44 45					
			i	09 44 53.5					
"	29	Ki	iP	11 17 31.8					
"	30	Ud	iP	02 38 43.4					
			i	02 38 54.5					
		Iceland (h = 30 km).							
"	30	Up	iP	08 09 01.7					
				micr sec					
		P	Z'	0.1 0.8					
		M	E	2.4 16					
		M	N	2.7 17					
		M	Z	3.8 15					
		Ki	iP	08 08 31.9					
			i	08 08 50.0					
				micr sec					
		M	E	3.9 15					
		M	N	2.3 14					
		M	Z	6.8 17					
		Sk	iP	08 09 01.5					
		Gb	iP	08 09 22.1					
		Um	iP	08 08 44.4 D					
		Ka	eP	08 09 18					
		Ud	iP	08 09 10.4					
		Ryukyu Islands (h = 30 km).							
		Magn. = 5.9 (Up,Ki).							

SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, SKALSTUGAN, GÖTEBORG,
UMEÅ, KARLSKRONA and UDDEHOLM

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
Göteborg	(Gb):	57°41.9'N,	11°58.7'E;	h = 66 m
Umeå	(Um):	63°48.9'N,	20°14.2'E;	h = 16 m
Karlskrona	(Ka):	56°09.9'N,	15°35.5'E;	h = 11 m
Uddeholm	(Ud):	60°05.4'N,	13°36.4'E;	h = 240 m

NOTE: Skalstugan: the pendulum clock has been replaced by a quartz clock. Uddeholm: the Grenet seismometer was replaced on Oct. 20, 1967, by a portable Benioff seismometer with variable reluctance ($T_0 = 1.0$ sec, $T_g = 0.7$ sec, $V_{max} = 50'000$). At the same time, the marine chronometer was replaced by a quartz clock.

OCTOBER 1 - 31, 1967
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1967					1967				
Oct.	1	Up	eP	06 06 42	Oct.	2	(cont.)		
			i	06 06 49.4			Ki	iPKP	00 30 46.2
		Ki	i(P)	06 07 31.6				i	00 30 57.3
			i	06 07 34.6				iSKP	00 33 30.3
		Ud	iP	06 07 05.5					micr sec
							SKP	Z'	0.2 1.6
"	1	Ki	e(Sn)	06 44 24			Sk	iPKP	00 30 57.2
			i(Lg1)	06 44 46.5				i	00 31 08.0
								iSKP	00 33 47.1
"	1	Up	iSg	07 02 42.4			Gb	iPKP	00 31 14.7 D
		Ki	ePn	06 58 32			Um	iPKP	00 30 51.2
			iSn	06 59 28.7				i	00 30 59.2
			iLg1	06 59 50.5				iSKP	00 33 41.9
			D = 530 km = 4.8°.				Ka	iPKP	00 31 17.0
		Sk	eSg	07 02 18			Fiji Islands (h = 600 km).		
		Um	i	07 00 31.3			Multiple PKP: the second		
			iSg	07 00 41.0			phases appearing at Ki,		
		Northwest Russia, 67.2°N,					Sk, Um around 10 sec after		
		32.8°E. Origin time =					the first onset are bigger.		
		06 57 18. Explosion?					Clear, large-amplitude		
							SKP at all stations,		
"	2	Up	iPKP	00 31 04.3			except at Gb and Ka, where		
			iSKP	00 33 53.3			they are absent.		
				micr sec					
			SKP	Z' 0.1 1.0					
		(cont.)							

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1967				1967			
Oct.	2	Um	iPKP	11 47 54.0	Oct.	3	(cont.)
		South of Kermadec Islands				Ki	M E 11 18
		(h = 30 km).					M N 3.6 19
							M Z 17 18
"	2	Up	eP	17 37 31			D = 9550 km = 86°.
		Ki	eP	17 37 29	Sk	eP	18 28 33
			i	17 37 41.4		iX	18 28 56.3
		Ud	iP	17 37 42.0		iPP	18 31 51.1
		Sunda Strait (h = 30 km).			Um	iP	18 28 50.7 C
"	2	Up	i(P)	20 59 24.4		i	18 28 55.4
						i(PP)	18 32 07.2
"	3	Up	eL	03 46		iPP	18 32 15
				micr sec		iSKS	18 39 15
		M	N	0.9 15		iS	18 39 25
		Ki	eL	03 43	Ud	iP	18 28 40.4
				micr sec		iX	18 28 58.4
		M	E	0.8 16	Costa Rica (h = 20 km).		
		M	Z	1.4 15	Magn. = 6.5 (Ki).		
"	3	Ud	iPKP	15 05 07.3	"	3	Sk eP 21 30 43
		Fiji Islands (h = 550 km).				Kodiak Island (h = 40 km).	
"	3	Sk	iPKP	16 43 43.8	"	4	Up iP 00 37 44.6
		Um	iPKP	16 43 38.8 C		Ki	eP 00 37 34
		Ud	i(PKP)	16 43 52.1	"	4	Ki e(Sn) 04 53 21
			iPKP	16 43 56.9			i(Lg1) 04 53 39.8
		Kermadec Islands			"	4	Ki eP 04 58 38
		(h = 360 km).				Ud	iP 04 58 11.1
"	3	Ki	iSg	17 36 06.3		Turkey (h = 40 km).	
		Sk	iSg	17 36 11.1	"	4	Up iP 10 31 46.1
			i	17 36 19.9		Ki	iP 10 31 13.1
		Um	eSg	17 36 34			i 10 31 18.2
		Nordlands Fylke, Norway.				Um	iP 10 31 31.9
"	3	Up	iX	18 29 12.0		Ud	iP 10 31 37.9
			iS	18 39 20		Utah (h = 20 km).	
				micr sec	"	4	Up iPKP 17 40 03.8
		P	Z'	0.1 1.3			iPP 17 41 06.4
		M	E	3.1 20			iPKKP 17 50 27.4
		M	N	4.1 20			i 17 50 32.8
		M	Z	6.1 21			micr sec
		Ki	eP	18 28 41		M	E 11 25
			iX	18 29 07.1		M	N 15 25
			i(PP)	18 31 52		M	Z 25 25
			iPP	18 32 12.3	Ki	ePKP	17 39 56
			iS	18 39 11		i	17 40 26.2
				micr sec		iPP	17 40 34.4
		P	Z	2.1 10		iSKS	17 46 23
		(PP)	E	0.7 10		iPS	17 49 47
		(PP)	Z	2.0 13		i(PKKP)	17 50 52.9
		PP	Z'	0.2 1.7	(cont.)		
		S	E	2.9 13			
(cont.)							

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1967					1967				
Oct.	4	(cont.)			Oct.	5	(cont.)		
		Ki		micr sec		Ki	iP	12 07 01.4	
		M	E	23 23		i		12 07 13.3	
		M	N	13 23				micr sec	
		M	Z	38 23		P	Z'	0.1 1.5	
		Sk	iPKP	17 40 02.2		M	E	1.5 16	
		i		17 40 39.9		M	N	0.6 16	
		ePKKP		17 50 35		M	Z	1.2 16	
		i		17 50 42.2		Sk	iP	12 06 27.2	
		Um	iP	17 36 02		i		12 06 35.1	
		iPKP		17 40 03.6		Gb	iP	12 05 33.3 C	
		iPP		17 40 43.7		Um	iP	12 06 26.9	
		iSKS		17 46 33		iS		12 11 05	
		iPS		17 50 21		iSS		12 12 33	
		iSS		17 56 27		Ka	iP	12 05 10.6 C	
		Ka	iPKP	17 40 15.8		Ud	iP	12 05 53.8	
		Ud	iPKP	17 40 08.3		i		12 06 01.3	
		i(PP)		17 41 08.8		Ionian Sea (h = 15 km).			
		i		17 41 52.5		Magn. = 5.5 (Up, Ki).			
		iPKKP		17 50 24.8					
		New Ireland (h = 50 km).			"	5	Up	i(P)	12 34 01.1
		Magn. = 6.8 (Up, Ki).					Sk	i(P)	12 34 54.6
		The surface waves have a					Ud	i(P)	12 34 16.1
		pronounced long-period							
		character.			"	5	Ki	iP	13 23 50.8
"	4	Ud	iP	21 30 57.6			Ud	iP	13 23 25.0
							Iran.		
"	4	Up	iP	21 52 13.4	"	5	Up	iPg	14 26 05.5
		Ki		---			iSg		14 26 26.3
				micr sec		Sk	eLg1		14 28 47
		M	E	2.3 16		Ka	iPg		14 26 35.7
		M	N	1.0 17			iSg		14 27 14.2
		M	Z	1.6 16		Ud	iPg		14 26 31.3
		Um	iP	21 51 55.1			iSg		14 27 08.9
		Iceland (h = 30 km).				Baltic Sea, 58.5°N, 18.6°E.			
"	5	Ki	iP	02 25 14.8		Origin time = 14 25 36.			
		Sk	iP	02 25 36.6		Probably underwater ex-			
		Mindanao (h = 60 km).				plosion.			
"	5	Sk	iP	09 39 23.5	"	5	Up	iP	16 06 00.2
		Ud	iP	09 39 32.0			Ki	iP	16 05 13.8
"	5	Ud	eP	09 49 36			Ud	iP	16 06 05.4
		Ionian Sea.					i		16 06 08.7
							i		16 06 26.0
						Kurile Islands (h = 30 km).			
"	5	Up	iP	12 05 47.4 C	"	5	Sk	iP	17 32 26.7
		iS		12 09 47					
				micr sec	"	5	Ud	iPKP	18 46 36.8
		P	Z'	0.2 0.6		Tonga Islands (h = 210 km).			
		M	N	2.8 14					
		M	Z	2.2 14	"	5	Ki	eP	19 17 02
		D = 2500 km = 22 1/2°.					i		19 17 32.2
		(cont.)				(cont.)			

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1967					1967				
Oct.	5	(cont.)			Oct.	6	(cont.)		
		Um	iP	19 17 52.7			Ud	e	11 34 09
		Norwegian Sea (h = 30 km).						iSg	11 34 58.2
"	6	Up	iP	04 11 58.4 C			Lake Ladoga. Origin time =		
				micr sec			11 29 55. Explosion?		
			P	Z' 0.1 1.0	"	6	Up	iP	14 26 23.7 C
		Ki	iP	04 12 22.2			Ki	i(P)	14 26 13.4
				micr sec			Um	i(P)	14 26 17.5
			P	Z' 0.1 1.0					
		Sk	iP	04 12 21.3 C	"	6	Um	iP	17 49 57.4
		Gb	iP	04 12 04.4 C				i	17 50 07.3
		Um	iP	04 12 07.4 C					
		Ud	iP	04 12 08.1 C	"	6	Up	i(P)	20 13 09.5
			iScS	04 22 41.7				i	20 13 39.2
		Indian Ocean (h = 30 km).							
		Magn. = 5.6 (Up,Ki).			"	7	Up	iPP	01 33 34.6
		On Ki Z' a small-amplitude					Chile (h = 40 km).		
		precursor appears already							
		at 04 12 14.5.			"	7	Um	iPKP	02 57 45.3
							Samoa Islands (h = 30 km).		
"	6	Up	iP	07 05 19.1					
			iPn	07 05 25.8	"	7	Ud	iP	06 42 07.4
				micr sec					
			Pn	Z' 0.1 0.6	"	7	Up	iP	08 38 45.9
		Ki	iP	07 04 57.8				ipP	08 38 56.7
			iPP	07 05 23.0					micr sec
				micr sec				P	Z' 0.1 1.0
			P	Z' 0.1 0.8				M	E 0.7 16
		Sk	eP	07 05 34				M	N 2.2 18
			iPn	07 05 44.6				M	Z 2.2 17
		Um	iP	07 04 58.3			Ki	eP	08 37 54
			i(S)	07 09 18.5					micr sec
		Ka	iP	07 05 39.2				M	E 0.9 15
			iPn	07 05 52.7				M	N 0.9 16
		Ud	iP	07 05 34.9				M	Z 1.8 17
			iPn	07 05 48.2			Sk	iP	08 38 31.8
			e	07 11 26			Um	iP	08 38 19.4 C
		Central Russia. Magn. =						i	08 38 40.6
		5.5 (Up,Ki). Artificial?					Ud	iP	08 38 50.8
		Clear Pn, corresponding						ipP	08 39 00.6
		to the homogeneous paths;					Kurile Islands. h = 40 km		
		average group velocity =					(Up,Ud). Magn. = 5.5		
		8.27 km/sec.					(Up,Ki).		
"	6	Ud	iP	10 23 48.6	"	7	Up	iP	09 17 37.4
									micr sec
"	6	Ud	iP	10 38 18.2				M	E 0.8 17
								M	N 1.7 17
"	6	Up	iSg	11 33 54.9				M	Z 1.4 18
		Ki	iSg	11 34 29.5			Ki	eP	09 16 47
		Sk	eS ^x	11 34 48				ipP	09 16 56.6
			iSg	11 35 11.7					micr sec
		Um	iSg	11 33 14.4				M	E 0.6 15
		(cont.)					(cont.)		

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Ka = Karlskrona, Ud = Uddeholm

1967				1967			
Oct. 7 (cont.)				Oct. 8 (cont.)			
	Ki		micr sec	Up	iLg1	05 03 02.2	
	M	N	0.6 16	Ki	ePn	04 58 48	
	M	Z	1.1 15		iSn	04 59 39.8	
Ud	iP		09 17 41.8		iSg	05 00 01.2	
	i		09 19 30.0		D = 490 km = 4.4 .		
Kurile Islands.				Um	iLg1	05 00 54.8	
h = 40 km (Ki).					iSg	05 01 07.4	
				Northwest Russia. Origin time = 04 57 37. Explosion?			
"	7	Up	iPg 10 09 55.4				
			iSg 10 10 23.2				
			D = 230 km = 2.1 .	"	8	Ki	iPn 10 51 13.4
		Ka	iSg 10 10 38.5				iSn 10 52 12.9
		Ud	iSg 10 11 15.0				iSg 10 52 36.8
Baltic Sea, near Fårö, Gotland. Explosion?							D = 560 km = 5.0 .
				Probably northwest Russia. Origin time = 10 49 54. Explosion?			
"	7	Up	ePKP 10 51 13				
		Ki	iPKP 10 51 10.3				
			eSKP 10 53 38	"	8	Up	iP 11 34 26.1
		Sk	ePKP 10 51 09			Sk	i(P) 11 35 15.5
			i 10 51 21.8				
		Um	iPKP 10 51 12.0	"	8	Ki	iPn 13 55 06.4
			i 10 51 18.2				iSn 13 55 52.1
			iSKP 10 53 30.1				iSg 13 56 07.9
		Ud	iPKP 10 51 14.8				D = 420 km = 3.8 .
			i 10 51 25.7	Probably northwest Russia. Origin time = 13 54 04. Explosion?			
			iSKP 10 54 07.8				
Fiji Islands (h = 560 km).				"	8	Ki	---
"	7	Ki	i(Sn) 14 05 48.6				micr sec
			i(Lg1) 14 06 08.4				
"	7	Up	iP 14 47 33.1			M	E 0.8 18
		Ki	iP 14 46 39.9			M	Z 1.3 20
			ipP 14 46 51.5			Sk	iPKP 17 18 20.9
			micr sec	New Guinea (h = 15 km).			
		M	E 0.5 14				
		M	Z 0.6 13	"	8	Ki	eL 19 00
Sk	eP		14 47 14				micr sec
Um	iP		14 47 07.0			M	E 1.8 22
Ud	iP		14 47 37.2			M	N 1.2 22
Kamchatka.						M	Z 2.3 22
h = 40 km (Ki).				Solomon Islands (h = 70 km).			
"	7	Up	iP 17 41 31.5				
		Sk	iP 17 42 13.7	"	8	Up	iP 21 19 57.5
		Ud	iP 17 41 42.0			Ki	eP 21 19 06
Greece.							ipP 21 19 16.3
"	7	Ki	iP 21 48 31.5			Ud	iP 21 20 03.9
			i 21 48 52.8	Kurile Islands. h = 40 km (Ki).			
"	8	Up	i 05 02 56.1	"	8	Ud	iP 23 25 04.9
(cont.)							

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Ka = Karlskrona, Ud = Uddeholm

[illegible]

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå
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1967				1967			
Oct.	9	(cont.)		Oct.	9	(cont.)	
		Sk	i(PKP) 17 39 48.0			Gb	iPKP 18 51 28.9 D
			i 17 39 49.0			Um	ePKP 18 51 11
			iPKP 17 39 50.2				iSKP 18 53 53.0
			iX 17 40 00.1			Ka	iPKP 18 51 31.1 D
			i(SKP) 17 42 29.9			Ud	iPKP 18 51 20.3
			iSKP 17 42 35.2			Fiji Islands	(h = 620 km).
		Gb	iPKP 17 40 06.6				
			iSKP 17 42 49.8	"	10	Up	iP 01 33 10.3
			iSKKP 17 51 05.5			Sk	eP 01 33 53
		Um	iP 17 37 04				i 01 34 03.4
			i(PKP) 17 39 42.5			Ud	iP 01 33 17.7
			iPKP 17 39 44.9				i 01 33 21.4
			iX 17 39 51.0			Greece.	
			iSKP 17 42 26				
			iPKS 17 43 27	"	10	Ki	iPKP 06 45 43.5 C
			e 17 48 22			Um	iPKP 06 45 51.4
			iSKKP 17 51 31.5			Ud	ePKP 06 45 55
		Ka	iPKP 17 40 09.1 D			New Hebrides Islands	
			iSKP 17 42 50.9			(h = 60 km).	
			iPP 17 43 32.4				
			i 17 46 44.8	"	10	Up	iP 06 58 26.2
			iSKKP 17 51 01.2			Ki	iP 06 57 47.3
		Ud	i(PKP) 17 39 58.2			Sk	eP 06 58 20
			iPKP 17 39 59.8				iP 06 58 31.6
			iSKP 17 42 42.8			Um	iP 06 58 03.2
			iPP 17 43 09.8				i 06 58 04.4
			iSKKP 17 51 14.2				iP 06 58 16.7
		Fiji Islands (h = 650 km).				Ud	iP 06 58 33.6
		Multiple PKP at stations					i 06 59 01.0
		at less than 140° distance				Japan. h = 50 km (Sk, Um).	
		(Up, Ki, Sk, Um, Ud), but not		"	10	Ki	iP 06 59 46.4
		at greater distances (Gb,				Sk	iP 07 00 15.9
		Ka): (PKP) are small-				(Japan).	
		amplitude precursors, the		"	10	Up	iPn 08 13 47.3
		interval PKP-(PKP) decreasing					iSn 08 14 58.3
		by 0.3 sec/degree;					iS ^x 08 15 15.9
		X is a following large-					iLg1 08 15 30.4
		amplitude phase.				Ki	ePn 08 14 05
"	9	Up	iP 18 16 13.5 C				eSn 08 15 30
			micr sec				i 08 15 46.8
		P	Z' 0.1 0.6				iLg1 08 16 05.8
		Ki	iP 18 15 38.5			Sk	iPn 08 14 17.5
			micr sec				iSg 08 16 40.2
		P	Z' 0.1 1.3			Um	ePn 08 13 35
		Sk	iP 18 16 02.2 C				iSn 08 14 29.7
		Gb	iP 18 16 27.6				iLg1 08 14 49.0
		Um	iP 18 15 55.2 C			Ka	iPn 08 14 25.3
		Ud	iP 18 16 14.9 C				iSn 08 16 04.9
							iSg 08 17 03.5
"	9	Up	iPKP 18 51 18.6			(cont.)	
		Ki	iPKP 18 51 12.5				
		Sk	iPKP 18 51 12.9				
		(cont.)					

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Oct.	10	(cont.)			Oct.	11	(cont.)		
		Ud	ePn	08 14 12			Ki	iP	16 03 44.9
			iSn	08 15 43.6				eS	16 13 10
			eSg	08 16 33					micr sec
		West of Lake Ladoga,					P	Z'	0.1 1.4
		61.4°N, 29.4°E. Origin					S	E	0.3 8
		time = 08 12 15.					S	N	0.4 11
		Explosion?					M	E	0.8 16
							M	N	0.5 14
"	10	Ki	i(P)	08 23 47.3			M	Z	0.5 14
		Um	i(P)	08 25 38.9			D = 8100 km = 73°.		
"	10	Um	iP	12 23 53.0			Sk	iP	16 04 15.6
"	10	Ki	iPg	14 37 34.5			Gb	iP	16 04 38.5
			iSn	14 37 55.3			Um	iP	16 04 00.3 D
			iSg	14 37 58.6				ipP	16 04 10.2
				D = 200 km = 1.8°.				iS	16 13 41
		Sk	eSg	14 39 51			Ka	iP	16 04 37.0
		Origin time = 14 36 59.					South of Japan. h = 40 km		
							(Um). Magn. = 6.0 (Up, Ki).		
"	10	Ki	iPg	15 11 49.6	"	11	Up	iP	16 37 03.8
			iSn	15 12 10.8			Ki	iP	16 36 28.1
			iSg	15 12 13.8			Um	iP	16 36 44.1 C
				D = 200 km = 1.8°.			South of Japan. (h = 30 km).		
		Sk	eSg	15 14 02	"	11	Up	iP	19 31 20.7
		Origin time = 15 11 14.					Gb	i(P)	19 31 26.3
		Same location as for the			"	11	Ki	iP	20 40 54.4
		preceding event.					Sk	iP	20 40 38.1
"	11	Up	iP	07 44 58.7			Peru-Brazil. (h = 590 km).		
"	11	Up	iP	07 54 01.7	"	11	Sk	iP	23 51 26.9
		Ki	iP	07 55 09.0	"	11	Up	iP	23 55 10.3
		i		07 55 17.6	"	12	Up	iP	04 01 19.3
				micr sec			Ki	iP	04 00 51.0
		M	E	0.4 12			China Sea (h = 230 km).		
		Dodecanese Islands			"	12	Up	i(PKP)	06 53 15.9 D
		(h = 40 km).					iPKP		06 53 23.3
"	11	Sk	iPg	09 22 26.8			iSKP		06 56 00.4
			iSg	09 22 28.8			i		06 56 15
"	11	Up	iSg	12 05 43.1			iPP		06 56 24.4
		Ki	iSg	12 06 11.0					micr sec
		Um	iSg	12 04 52.1			PKP	Z'	0.1 0.5
		Lake Ladoga region.					SKP	Z'	0.3 1.3
		Explosion?					PP	Z'	0.4 1.5
"	11	Up	iP	16 04 20.1 D			Ki	i(PKP)	06 52 56.1
			iS	16 14 18			iPKP		06 53 08.8
				micr sec			iSKP		06 55 37.2
		P	Z'	0.2 1.0			iPKS		06 56 44.9
		D = 8800 km = 79°.					(cont.)		
		(cont.)							

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1967					1967				
Oct.	12	(cont.)			Oct.	12	(cont.)		
		Ki		micr sec			Ka	iP	13 03 46.7 D
		PKP	Z'	0.1 1.0				i(PcP)	13 04 08.5
		SKP	Z'	1.9 1.5				i	13 06 09.2
		Sk	e(PKP)	06 53 08			Ud	iP	13 03 28.2 D
			i	06 53 09.6				i	13 03 42.9
			iPKP	06 53 19.1				ipP	13 05 02.5
			iSKP	06 55 53.3				i	13 05 37.8
		Gb	iPKP	06 53 25.5 D				iS	13 11 09.8
			iSKP	06 56 08.6				i	13 11 22.5
			iPP	06 56 36.4			Okhotsk Sea. h = 480 km		
		Um	i(PKP)	06 53 04.0			(Up, Um, Ud).		
			i	06 53 10.5			Magn. = 5.9 (Up, Ki).		
			iPKP	06 53 15.2					
			iSKP	06 55 48.6	"	12	Sk	iP	15 01 15.0
			iPKS	06 56 48					
			ipPKS	06 59 12	"	12	Up	iP	18 45 49.9
			isPKS	07 00 14				i	18 46 20.8
		Ka	iPKP	06 53 28.0 D				iPKP	18 49 58.1
			iSKP	06 56 09.7				iPP	18 50 17.5
			iPP	06 56 48.1				iSKS	18 56 18
		Fiji Islands (h = 640 km).						micr sec	
		Multiple PKP: compare					M	E	0.6 16
		remark to Oct. 9, 17 39.					M	N	1.2 20
							M	Z	1.8 22
"	12	Up	iP	13 03 23.4 D			Ki	iP	18 45 34.0 C
			iPcP	13 03 56.2				i	18 45 46.5
			ipP	13 05 03.8				iX	18 49 29.7
			iPP	13 05 45.8				iPP	18 49 54.9
			i	13 06 34.0				iSKS	18 55 59
				micr sec				i	18 56 45
		P	Z'	2.0 1.3				ePS	18 59 02
		Ki	iP	13 02 31.9 D				micr sec	
			i	13 02 32.9			P	Z'	0.3 1.5
			i	13 03 03.6			PP	Z'	0.5 1.8
			iPP	13 04 36.9			SKS	E	0.8 6
			iS	13 09 38			M	E	1.9 20
				micr sec			M	N	0.5 19
		P	N	0.4 7			M	Z	1.4 19
		P	Z	0.9 5			Sk	iP	18 45 55.7
		P	Z'	1.6 1.2				iPKP	18 50 01.9
		PP	Z'	0.3 1.3			Gb	iPKP	18 50 05.1
		S	E	0.7 6				iX	18 50 23.2
		Sk	iP	13 03 09.2 D			Um	iP	18 45 39.3 C
			i	13 03 19.0				i	18 46 01.4
			i	13 03 32.0				i	18 49 19.8
		Gb	iP	13 03 44.3 D				iPKP	18 49 54.9
			i	13 03 56.7				i	18 50 39.7
			i	13 06 10.6				iSKS	18 56 10
		Um	iP	13 02 56.2 D				iPKKP	19 01 22.4
			ipP	13 04 28.9			Ka	iP	18 46 06.8
			iPP	13 05 12				iPKP	18 50 03.9
			iS	13 10 18			Ud	iP	18 45 57.4
			iScS	13 11 49				i	18 46 12.1
			isS	13 13 12			(cont.)		
		(cont.)							

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1967

Oct. 12 (cont.)

Ud iPKP 18 50 02.8

iX 18 50 13.5

iPP 18 50 32.6

iPKKP 19 01 10.1

Banda Sea (h = 50 km).

Magn. = 6.5 (Up,Ki).

The phases marked X (Ki, Gb,Ud) form a continuation of the apparently early PP-phases mentioned in remarks to Aug. 26, 1967, 00 50, and Sep. 3, 1967, 21 21.

" 12 Um iP 20 44 17.8

Ud iP 20 44 57.3

" 12 Up iP 20 56 38.0

Ud iP 20 56 39.6

" 12 Um iP 22 50 32.5

Ud iP 22 50 07.0

i 22 50 13.7

South Atlantic Ocean (h = 30 km).

" 13 Up iP 03 32 21.7

Ki iP 03 32 24.3 D

Sk iP 03 32 48.4

Gb iP 03 32 46.4

Um iP 03 32 17.2 D

Ka iP 03 32 30.7

Ud iP 03 32 39.0 D

Sinkiang (h = 30 km).

The dilatation at Ud is preceded by a small compression.

" 13 Gb iP 10 41 28.1

" 13 Up iSg 11 21 00.7

micr sec

Sg Z' 0.1 0.5

Ud iSg 11 21 47.2

Probably blast near Uppsala.

" 13 Up i(P) 15 13 55.2

Um iP 15 14 34.0

" 13 Ka eP 19 10 22

" 13 Up iP 19 33 44.4

Greece (h = 60 km).

1967

Oct. 13 Ki iP 19 59 32.0

micr sec

M E 1.3 16

M N 0.5 15

Sk iP 20 00 09.3

Um iP 19 59 49.0 D

Japan (h = 30 km).

" 13 Up iPg 20 30 51.5

iSg 20 30 55.8

micr sec

Sg Z' 0.1 0.5

Ud i 20 31 45.7

Dannemora, Sweden. Origin time = 20 30 46. Explosion of 4 ton explosives in the Dannemora mines.

" 14 Up iP 00 24 27.8

i 00 25 15.2

" 14 Ki iP 03 42 21.3

ipP 03 42 31.4

micr sec

pP Z' 0.1 0.9

M E 1.0 19

Sk iP 03 41 56.2

ipP 03 42 09.3

i 03 42 27.3

Ud iP 03 41 59.4 C

ipP 03 42 11.1

Leeward Islands.

h = 40 km (Ki,Sk,Ud).

" 14 Ki iPn 04 51 12.3

iP^X 04 51 21.2

iSn 04 52 01.5

iLg1 04 52 13.9

D = 470 km = 4.2°.

Possibly northwest Russia.

Origin time = 04 50 05.

Explosion?

" 14 Up iP 05 19 58.6

" 14 Ki iPKP 16 27 11.5

New Hebrides Islands (h = 15 km).

" 14 Ki eP 23 40 55

Ud eP 23 40 23

Kenya (h = 30 km).

" 15 Ki iP 03 39 07.0

Kamchatka (h = 40 km).

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1967				1967			
Oct.	15	Up		Oct.	15		
		iP	08 13 16.1 C			(cont.)	
		ipP	08 13 52.4			Sk iP'P'	08 39 20.1
		iX	08 16 16.6			Gb iP	08 13 04.5 C
		iPP	08 16 41.3			ipP	08 13 43.7
		iSKS	08 23 21			iX	08 15 55.9
		iS	08 23 27			iPP	08 16 18.1
		ipS	08 24 36			iPKKP	08 31 17.3
		i	08 30 59.1			i	08 31 31.6
		iPKKP	08 31 11.7			Um iP	08 13 14 C
		iP'P'	08 39 15.1			ipP	08 13 51
			micr sec			iX	08 16 08.9
		P E	0.9 4			iPP	08 16 37.2
		P Z	4.7 5			i	08 18 39
		PP Z'	2.9 1.7			Ka iP	08 13 16.7 C
		S E	10 16			ipP	08 13 54.8
		S N	4.8 7			iPP	08 16 37.8
		PKKP Z'	0.1 1.3			Ud i(P)	08 13 04.5 C
		P'P' Z'	0.2 1.3			iP	08 13 06.6
		M E	8.0 20			ipP	08 13 45.0
		M N	9.5 22			i(sP)	08 14 10.8
		M Z	13 20			iPP	08 16 25.1
		(D = 9550 km = 86°).				i	08 30 52.4
Ki		i(P)	08 13 08.1			iPKKP	08 31 17.2
		iP	08 13 10.1 C			Nicaragua. h = 150 km	
		ipP	08 13 49.1			(Up, Ki, Sk, Gb, Um, Ka, Ud).	
		iX	08 16 05.9			Magn. = 7.0 (Up, Ki).	
		iPP	08 16 27.9			Multiple P: small-ampli-	
		iS	08 23 14.4			tude precursors about	
		ipS	08 24 19			2 sec before the major	
		i	08 30 31.7			P at Ki, Ud. - X at Up,	
		iP'P'	08 39 15.0			Ki, Gb, Um is an uniden-	
		iSKPP'	08 42 23.2			tified phase arriving	
			micr sec			before PP; compare re-	
		P E	3.2 6			mark to Oct. 12, 18 45.	
		P N	1.4 6	"	15	Ki iP	17 48 47.9
		P Z	8.6 6			Um iP	17 49 14.1
		P Z'	2.9 1.5			Ud eP	17 49 40
		PP E	3.7 6			Aleutian Islands	
		PP N	1.8 6			(h = 30 km).	
		PP Z	5.4 6				
		PP Z'	6.0 2.2				
		S E	21 15	"	15	Ud iP	18 01 18.5
		S N	6.2 8			Japan (h = 140 km).	
		P'P' Z'	1.0 2.5				
		M E	6.4 18	"	15	Ki iP	18 48 34.4
		M N	4.4 18			Mexico (h = 80 km).	
		M Z	8.1 18				
		(D = 9450 km = 85°).		"	15	Up iP	21 53 43.7 C
Sk		iP	08 12 59.3				micr sec
		ipP	08 13 37.3			P Z'	0.1 0.6
		i(sP)	08 13 58.8			Ki iP	21 53 19.8 C
		iPP	08 16 15.6			Um iP	21 53 27.0 C
		iPKKP	08 31 20.1			(cont.)	
		(cont.)					

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Oct.	15	(cont.)			Oct.	17	(cont.)		
		Ka	iP	21 53 58.9 C			Ud	iP	05 11 09.1 C
		Ud	iP	21 53 56.0 C				iPP	05 12 23.8
		China (h = 30 km).					Kazakh SSR. Magn. = 6.1		
		(Up, Ki). Underground					explosion.		
"	16	Ud	iP	13 38 30.9	"	17	Gb	iP	07 10 39.6
		Vancouver Island							
		(h = 30 km).							
"	16	Um	iP	13 59 34.8	"	17	Up	iPKP	14 27 07.0
"	16	Ki	iP	17 11 09.3			Ki	ePKP	14 27 00
		i		17 11 31.0			Sk	ePKP	14 27 05
		ipP		17 11 45.6			Gb	iPKP	14 27 17.7
				micr sec			Um	iPKP	14 27 01.5
		P	Z'	0.1 1.2			i		14 27 06.7
		Ud	iP	17 11 40.5			Ka	iPKP	14 27 19.3
		ipP		17 12 13.1			Ud	iPKP	14 27 09.2 C
		Halmahera. h = 140 km					Fiji Islands (h = 640 km).		
		(Ki, Ud).			"	17	Up	iP	21 17 41.6
"	16	Um	iP	17 37 32.2			ipP		21 17 56.7
		Ud	iP	17 38 01.1					micr sec
		Japan (h = 140 km).					P	Z'	0.1 0.9
"	16	Um	iP	21 20 54.6			Ki	iP	21 17 22.0
		Ud	iP	21 21 15.8			Sk	iP	21 17 45.4
		Philippine Islands					Gb	iP	21 18 01.0
		(h = 40 km).					Um	iP	21 17 26.1
"	16	Up	iP	23 42 03.8			ipP		21 17 40.1
		Ud	iP	23 42 09.3			Luzon. h = 50 km (Up, Um).		
		Kurile Islands			"	18	Up	iP	01 05 34.8 C
		(h = 30 km).					ipP		01 05 50.6
"	17	Up	iP	05 10 52.7 C					micr sec
		i		05 11 41.8			P	Z'	0.1 0.5
		iPn		05 12 00.2			Ki	iP	01 05 28.5 C
				micr sec			Sk	iP	01 05 50.4 C
		P	Z'	0.1 0.5			Gb	iP	01 05 54.6
		Ki	iP	05 10 37.1 C			Um	iP	01 05 27.4
		iPn		05 11 37.3			Burma-India. h = 60 km		
		iPP		05 11 50.5			(Up).		
				micr sec	"	18	Up	iP	01 16 20.7 D
		P	Z'	0.4 0.5			i		01 16 25.3
		Sk	iP	05 11 08.4 C			iS		01 19 58
		iPn		05 12 08.9			iLg2		01 23 14
		iPP		05 12 29.5					micr sec
		Gb	iP	05 11 21.9			P	N	8.3 7
		iPn		05 12 44.0			P	Z	3.1 5
		Um	iP	05 10 37.6 C			P	Z'	0.4 1.0
		iPn		05 11 38.7			S	E	32 22
		Ka	iP	05 11 08.9 C			S	N	14 16
		iPP		05 12 30.2			M	E	6.8 18
		(cont.)					M	N	25 19
							M	Z	24 19
							D = 2300 km = 20 1/2°.		
							(cont.)		

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1967					1967				
Oct.	18	(cont.)			Oct.	18	(cont.)		
		Ki	iP	01 14 46.1 D			Sk	iPKP	22 26 09.1 D
			i	01 15 36			Gb	iPKP	22 26 13.7
			iS	01 17 20				i	22 26 20.7
				micr sec			Um	i(PKP)	22 26 00.9
		P	N	8.8 7				iPKP	22 26 04.0
		P	Z	6.4 5			Ka	iPKP	22 26 22.8
		P	Z'	2.6 1.5				i	22 26 34.6
		M	E	24 20			South of Kermadec Islands		
		M	N	15 19			(h = 25 km).		
		M	Z	32 20					
		D = 1450 km = 13°			"	18	Ki	iPKP	23 53 53.8
		Sk	iP	01 15 34.6			Sk	ePKP	23 54 07
		Gb	iP	01 16 42.0			Um	iPKP	23 54 00.4
		Um	iP	01 15 36.7 D			New Hebrides Islands		
			iS	01 18 36			(h = 90 km).		
			iSS	01 18 56.5					
			i	01 19 27	"	19	Up	iSg	08 56 54.9 ✓
		Ka	iP	01 16 56.8			Sk	iSg	08 56 53.2 ✓
		Greenland Sea (h = 30 km).					Um	iPg	08 56 11.7 ✓
		Magn. = 6.1 (Up).						iSg	08 56 37.5 ✓
"	18	Up	iP	03 19 00.2			Medelpad, Sweden, 62.4° N,		
		Ki	iP	03 18 37.2			17.0° E. Origin time =		
		Sk	iP	03 19 05.1			08 55 32.		
		Gb	iP	03 19 21.6			38		
		Formosa (h = 40 km).			"	19	Up	iPg	10 49 10.6
								iSg	10 49 36.6
"	18	Up	iP	14 41 48.6	"	19	Ki	eP	10 51 47
			i	14 42 36.1				i	10 51 55.9
				micr sec			Tanganyika (h = 30 km).		
		P	Z'	0.1 0.8					
		Ki	iP	14 41 14.5	"	20	Up	iPKP	01 21 38.9
			iPcP	14 41 32.9				micr sec	
				micr sec			M	N	1.9 19
		P	Z'	0.4 1.5			Ki	iPKP	01 21 55.1 C
		Sk	iP	14 41 22.4 C				micr sec	
		Gb	iP	14 41 48.5				PKP	Z' 0.2 1.5
		Um	iP	14 41 33.7			Sk	iPKP	01 21 43.4
			i	14 41 43.2			Um	ePKP	01 21 47
		Ka	iP	14 42 01.7 C			South Sandwich Islands		
		Nevada. Origin time =					(h = 10 km).		
		14 30 00. Magn. = 6.1			"	20	Up	iP	02 02 37.0
		(Up, Ki). Underground					Ki	i(P)	02 02 25.8
		explosion.							
"	18	Ka	iP	16 13 59.5	"	20	Up	eP	02 10 16
"	18	Up	i(PKP)	22 26 08.1	"	20	Up	iP	06 53 02.8
			iPKP	22 26 13.7 D			Ki	eP	06 53 56
				micr sec			Um	iP	06 53 33.1
			PKP	Z' 0.2 0.5				i	06 54 02.1
		Ki	iPKP	22 25 53.7			Turkey (h = 30 km).		
				micr sec					
			PKP	Z' 0.2 1.5	"	20	Up	i(Sg)	11 57 48.0
		(cont.)						i	11 58 14.0

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1967					1967				
Oct.	21	Up	iP	20 16 14.2	Oct.	23	(cont.)		
		Ki	iP	20 15 46.4		Up		micr	sec
		Ud	iP	20 16 21.9		P	Z'	0.1	0.8
		Mariana Islands				Ki	iP	03 03	48.3
		(h = 320 km).						micr	sec
"	22	Up	iP	05 43 11.6		P	Z'	0.1	1.2
		Ki	eP	05 44 25		Um	iP	03 04	08.7
		Sk	iP	05 43 51.3		ipP		03 04	20.1
		Ka	iP	05 42 35.9		Ud	iP	03 04	39.7
		Ud	iP	05 43 19.3		i		03 05	00.4
		Greece.				Kurile Islands.			
"	22	Up	iSg	07 44 31.0 ²¹		h = 40 km (Um). Magn. =			
		Sk	iSg	07 44 15.7 ²¹	"	23	Up	iP	08 38 23.3 D
		Um	iSg	07 44 59.2		i		08 38	28.7
		Ud	iPg	07 43 45.0 C		iS		08 47	40
		iSg		07 44 09.3 ²¹		eSS		08 52	56
		Härjedalen, Sweden,						micr	sec
		61.8° N, 14.4° E. Origin				P	Z'	0.8	0.7
		time = 07 43 06.				S	N	1.2	4
"	22	Up	i(Sg)	08 59 54.2		M	E	0.6	15
		Ud	i(Sg)	08 59 56.8		M	N	0.6	14
"	22	Ud	iP	14 27 11.0		M	Z	0.9	18
"	22	Up	ePKP	15 15 18		(D = 8800 km = 79°).			
		Um	iPKP	15 15 09.1		Ki	iP	08 37	51.2 D
		i		15 15 13.0		ipP		08 39	44.2
		Ud	iPKP	15 15 21.3		iS		08 46	39
		South of Kermadec Islands				esS		08 49	40
		(h = 10 km).				eSS		08 51	26
"	22	Up	iP	22 49 36.6 D				micr	sec
		Um	iP	22 49 14.3		P	Z'	0.5	1.0
		i		22 49 22.1		S	N	2.2	7
"	22	Up	iP	23 16 00.1 C		S	Z	0.6	7
				micr sec		M	E	0.6	16
		P	Z'	0.1 0.7		M	N	0.5	17
		Ki	iP	23 15 30.7		M	Z	1.0	16
		iPcP		23 15 50.9		(D = 8100 km = 73°).			
		Gb	iP	23 16 20.0		Gb	iP	08 38	41.5 D
		Um	iP	23 15 42.2		Um	iP	08 38	01.8
		i		23 16 08.6		i		08 38	04.4
		Ka	iP	23 16 15.6 C		ipP		08 39	54.2
		Ud	iP	23 16 08.6 C		i		08 43	19
		i(PcP)		23 16 20.8		iS		08 47	12.7
		Ryukyu Islands				Ka	iP	08 38	40
		(h = 30 km).				Ud	iP	08 38	30.0 D
"	23	Ud	iP	02 54 39.3	"	ipP		08 40	16.9
"	23	Up	iP	03 04 32.9	"	iS		08 47	56.4
		(cont.)				Bonin Islands. h = 510 km			
						(Ki, Um, Ud). Magn. = 6.2			
						(Up, Ki).			
"	23	Um	iP	08 54 27.1	"	23	Ki	iP	10 05 38.0
"	23				"	23	(cont.)		

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Oct.	23	(cont.)			Oct.	24	(cont.)		
		Ki		micr sec			Ud	iP	11 04 16.3 C
		P	Z'	0.1 1.8				ipP	11 04 30.2
								Sumatra. h = 50 km (Ki, Sk, Ud).	
"	23	Um	iP	12 54 15.1					
"	23	Um	iP	18 55 20.8	"	24	Um	iP	11 52 00.9
"	23	Ki	iP	19 57 56.5	"	24	Up	iP	19 16 34.1
"	24	Long-period microseisms (periods around 15 sec) on Um LP records, especially on the N component.					i		19 17 44.2
							i		19 18 36.9
							Regional?		
"	24	Up	iPKP	03 32 43.5	"	24	Up	i(P)	19 43 00.9
		i		03 32 49.5			i		19 43 16.9
				micr sec			i		19 43 26.7
		PKP	Z'	0.2 0.6			i		19 43 36.7
		Ki	iPKP	03 32 20.7	"	25	Ki	iP	00 47 00.3
		Sk	iPKP	03 32 37.8 D			Mindanao (h = 100 km).		
		Gb	iPKP	03 32 51.9	"	25	Up	iP	01 11 03.4 C
		Um	iPKP	03 32 33.0			i		01 11 06.4
		Ka	iPKP	03 32 53			iPP		01 13 56.0
		i		03 33 05			iPa		01 15 54
		Ud	iPKP	03 32 45.2 D			iS		01 20 40
		i		03 32 52.7				micr sec	
		Kermadec Islands (h = 250 km).					P	E	1.7 6
							P	N	1.3 6
							P	Z	4.9 6
							P	Z'	0.3 0.5
"	24	Up	iP	06 19 25.9			PP	Z'	0.2 1.0
		Sk	iP	06 20 08.6			S	E	7.8 14
		i		06 20 10.4			S	N	12 15
		Ud	iP	06 19 34.2			M	E	60 18
		Greece (h = 30 km).					M	N	240 25
							M	Z	130 20
"	24	Ki	iSg	08 25 04.8			D = 8350 km = 75°.		
		Sk	iS _n	08 25 06			Ki	iP	01 10 39.2 C
			iS ^x	08 25 11.1			i		01 10 41.7
			iSg	08 25 18.2			iPP		01 13 21.8
		Um	iSg	08 25 33.1			iPa		01 15 01
		Ud	i	08 26 58.4			iS		01 19 54
			iSg	08 27 09.0			iPS		01 20 37
		Nordlands Fylke, Norway.					iLg		01 37 49
								micr sec	
"	24	Up	iP	11 04 06.7 C			P	E	4.8 7
		Ki	iP	11 04 06.5 C			P	N	1.2 8
			ipP	11 04 21.4			P	Z	10 7
				micr sec			P	Z'	0.8 1.0
		P	Z'	0.2 1.0			S	E	7.8 12
		Sk	iP	11 04 20.2			S	N	7.3 10
			ipP	11 04 35.4			M	E	91 22
		Um	iP	11 04 04.0			M	N	28 17
		(cont.)					(cont.)		

[illegible]

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Oct.	25	Up	iSg	20 31 26.6	Oct.	26	Um	iP	08 04 16.0
				micr sec					
			Sg	Z' 0.1 0.7	"	26	Ki	eP	12 32 50
		Ud	iSg	20 32 18.9					Leeward Islands (h = 30 km).
				Probably blast near	"	26	Ki	iP	13 00 09.9
				Uppsala.					Japan (h = 30 km).
"	25	Ud	iP	23 33 47.9	"	26	Ki	eP	13 56 00
"	26	Up	iP	00 34 03.7				iPcP	13 56 23.0
				micr sec					micr sec
			P	Z' 0.1 1.0			M	E	1.2 18
			M	E 1.7 18			M	Z	1.5 18
			M	N 3.7 20					Leeward Islands (h = 40 km).
			M	Z 3.0 19	"	26	Ki	eP	17 35 25
		Ki	iP	00 33 38.6					micr sec
				micr sec			P	Z'	0.1 1.3
			P	Z' 0.3 1.5			M	E	1.2 18
			M	E 1.0 13			M	Z	1.3 18
			M	N 1.0 15			Sk	eP	17 35 52
			M	Z 1.4 13			Um	iP	17 35 34.6
		Sk	iP	00 34 07.1			Ud	iP	17 35 48.1
		Gb	eP	00 34 22					Molucca Sea (h = 40 km).
		Um	iP	00 33 47.5 C	"	27	Up	iP	08 03 19.6
			i	00 33 54.0				i	08 03 29.4
			i	00 34 20.0				iS	08 05 57.4
			iS	00 43 10			Ki	iP	08 04 46.2
		Ud	iP	00 34 13.3			Sk	iP	08 04 22.2
				Formosa (h = 60 km).			Ud	iP	08 03 37.3
				Magn. = 6.0 (Up, Ki).				iS	08 06 28.0
"	26	Ud	iP	01 46 48.1					Carpathian Mountains.
"	26	Up	iP	05 00 47.9	"	27	Ki	iP	08 12 17.6
			i	05 00 54.0				i	08 12 24.9
				micr sec			Sk	iP	08 12 11.8
			M	E 4.5 16			Ud	iP	08 11 45.9
			M	N 2.6 13					Iran (h = 70 km).
			M	Z 3.1 14	"	27	Ud	iP	20 53 24.0
		Ki	iP	05 01 54.2					Formosa (h = 70 km).
				micr sec	"	28	Ud	iP	07 02 16.8
			P	Z' 0.2 1.2					Hindu Kush.
			M	E 1.6 11	"	28	Ud	iP	18 51 34.9
			M	N 0.7 11					Atlantic Ocean
			M	Z 1.8 11					(h = 30 km).
		Sk	iP	05 01 29.4	"	29	Ud	iPKP	03 17 46.7
		Gb	iP	05 00 44.3					Tonga-Kermadec Islands
			i	05 00 56.8					(h = 550 km).
		Um	iP	05 01 18.4					
			i	05 01 22.6					
			iSa	05 06 11					
		Ud	iP	05 00 59.3 D					
			i	05 01 04.2					
				Turkey (h = 40 km).					

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Oct.	29	Up	iPKP	12 56 17.3	Oct.	31	(cont.)		
			i	12 56 25.8			Ki i(P)	19 22 17.1	
		Ki		---					
				micr sec		"	31 Up	iP	21 12 57.9 C
		M	E	0.7 17				i	21 13 01.3
		M	N	0.7 18				iS	21 17 01
		M	Z	1.4 17					micr sec
		South Sandwich Islands					P	N	0.5 5
		(h = 30 km).					P	Z'	0.3 0.8
"	29	Ki	i(Sn)	16 18 26.9			S	E	0.6 7
			i(Lg1)	16 18 43.3			S	N	3.6 12
"	30	Up	iP	06 10 52.4 C			M	E	2.0 15
			i	06 11 53.0			M	N	5.9 13
			iPn	06 11 59.7			M	Z	5.7 13
				micr sec			D = 2450	km = 22 ⁰	
		P	Z'	0.1 0.5		Ki	iP		21 14 15.4
		Ki	iP	06 10 36.9 C			eS		21 19 17
			iPn	06 11 37.1			iSS		21 21 00
				micr sec			eLg2		21 24 33
		P	Z'	0.2 0.5					micr sec
		Sk	iP	06 11 08.1 C			P	Z'	0.2 1.6
			iPn	06 12 03.5			S	N	0.9 13
			i	06 12 18.0			M	E	2.9 13
		Um	iP	06 10 37.4 C			M	N	3.2 12
			i	06 11 20.2			M	Z	4.8 12
			iPn	06 11 38.7			D = 3350	km = 30 ⁰	
		Ka	iP	06 11 08.6 C		Sk	iP		21 13 35.6
		Ud	iP	06 11 08.7 C			i		21 13 42.3
			iPP	06 12 31.0		Gb	iP		21 12 38.3
		Kazakh SSR. Magn. = 6.0					i		21 12 39.8
		(Up, Ki). Underground				Um	iP		21 13 38.8
		explosion.					i		21 13 40.8
"	30	Ki	iLg1	12 37 04.0			i		21 15 40.8
		Sk	iPn	12 35 15.2			iS		21 18 08
			iLg1	12 37 36.8		Ka	iP		21 12 18.6
		Um	iSg	12 35 47.0			i		21 12 21.8
		Ud	iSn	12 36 42.6			i		21 12 28.3
			iSg	12 37 31.1		Ud	iP		21 12 59.7
		Lake Ladoga region.					i		21 13 01.7
		Origin time = 12 33 09.				Sicily (h = 30 km).			
		Explosion?				Magn. = 5.5 (Up, Ki).			
"	31	Um	iP	01 02 44.6		Multiple P.			
		Ud	iP	01 03 16.0					
		Japan.							
"	31	Um	iPKP	10 33 53.4					
		Fiji Islands (h = 40 km).							
"	31	Up	i(P)	19 22 18.4					
			i	19 22 23.3					
		(cont.)							

Markus Båth
March 15, 1968

Seismological Institute
Uppsala

SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, SKALSTUGAN, GÖTEBORG,
UMEÅ, KARLSKRONA and UDDEHOLM

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
Göteborg	(Gb):	57°41.9'N,	11°58.7'E;	h = 66 m
Umeå	(Um):	63°48.9'N,	20°14.2'E;	h = 16 m
Karlskrona	(Ka):	56°09.9'N,	15°35.5'E;	h = 11 m
Uddeholm	(Ud):	60°05.4'N,	13°36.4'E;	h = 240 m

NOVEMBER 1 - 30, 1967
.....

1967					1967				
Nov.	1	Ki	iPn	12 47 59.6	Nov.	1	(cont.)		
			iSn	12 48 46.3			Um	iP	16 19 36.9
			iLg1	12 49 01.3			Ud	iP	16 20 08.5
			D = 420 km = 3.8°					iPcP	16 20 36.0
		Um	iSg	12 50 39.4			Kurile Islands (h = 50 km).		
		Probably northwest Russia.							
		Origin time = 12 47 00.			"	1	Up	iP	16 41 43.6
		Explosion?						iPcP	16 42 12.5
"	1	Up	iSg	12 50 50.2					
		Ki	eSg	12 54 00			P	Z'	0.1 0.5
		Um	iSg	12 51 55.8			Ki	iP	16 40 55.2
		Esthonia. Explosion?					Sk	iP	16 41 31.0
"	1	Up	i(P)	15 05 15.0			Gb	iP	16 42 04.7
		Ki	e(P)	15 05 07			Um	iP	16 41 16.8
"	1	Up	iPKP	15 19 08.2				i	16 41 18.3
		Ki	iPKP	15 18 59.7				ipP	16 41 29.5
		Gb	iPKP	15 19 17.7				i	16 41 51.5
		Um	iPKP	15 19 07.7			Ka	iP	16 42 07.4
			i	15 19 15.6			Ud	iP	16 41 48.7
			iSKP	15 22 28.5				i	16 42 08.1
		Ka	iPKP	15 19 20.5			Kurile Islands.		
		Tonga Islands (h = 140 km).					h = 40 km (Um).		
"	1	Up	iP	16 20 03.9	"	1	Ud	iPg	17 39 24.1
		Ki	iP	16 19 15.3				iSg	17 39 31.7
				micr sec				i	17 39 37.0
		M	E	1.2 21					
		M	N	0.8 20			Up	iSKP	17 41 13.6
		M	Z	1.9 20			Ki	iSKP	17 40 50.3
		Sk	eP	16 19 51			Sk	eSKP	17 41 10
		Gb	iP	16 20 25.1 C			Um	iSKP	17 41 01.8
		(cont.)					Ud	iSKP	17 41 15.2
							Fiji Islands		
							(h = 660 km).		

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Nov. 1

Ki iP 19 10 55.7

New Guinea (h = 15 km).

" 1

Up ipP 19 28 59.6

Ki eP 19 28 07

ipP 19 28 20.0

micr sec

M E 1.5 20

M Z 1.9 20

Sk ipP 19 28 53.2

i 19 29 03.7

Um iP 19 28 24.5 C

ipP 19 28 37.3

Ud iP 19 28 54.0

ipP 19 29 06.1

Japan. h = 50 km (Ki,Um,
Ud). In cases like this
where the pP-amplitude
is much larger than the
P-amplitude, there is
great risk that pP is
misread as P (at least
at less sensitive stations).

" 1

Sk e(Sn) 21 34 19

i(Sg) 21 34 59.7

Ud i(Pg) 21 33 29.7

i(Sn) 21 34 23.3

i(Sg) 21 35 02.5

" 1

Ki iP 23 06 14.8

i 23 06 33.5

iS 23 07 30.2

iT 23 11 18.9

i 23 11 44.9

D = 730 km = 6.6°

Sk iP 23 06 53.6

iS 23 08 38.0

D = 1030 km = 9.3°

Norwegian Sea, 73.2°N,
7.7°E. Origin time =
23 04 35.

" 1

Up iP 23 59 57.2

" 2

Ki iP 03 07 31.1

iS 03 08 44.9

iT 03 12 22.6

micr sec

M E 1.0 21

M Z 1.1 17

D = 730 km = 6.6°

Sk iP 03 08 10.5

iS 03 09 54.1

(cont.)

1967

Nov. 2

(cont.)

Um iP 03 08 19.7

iS 03 10 10.8

i 03 10 38.4

Ud iP 03 08 59.9

eS 03 11 20

Norwegian Sea (h = 30 km).
Clear T phase at Ki.

" 2

Ki iPn 04 55 37.8

iSn 04 56 26.7

iLg1 04 56 41.3

D = 460 km = 4.1°

Sk iSg 04 59 32.3

Probably northwest Russia.
Origin time = 04 54 32.
Explosion?

" 2

Up iP 06 53 56.1

" 2

Up iPKP 07 11 35.5

i 07 11 40.0

Sk i(PKP) 07 11 25.2

iPKP 07 11 31.3

Um iPKP 07 11 24.7 D

Ka iPKP 07 11 40.9

Ud i(PKP) 07 11 32.8

iPKP 07 11 38.8

Kermadec Islands
(h = 80 km).

" 2

Ki iP 12 58 25.8

" 2

Up iSg 13 09 44.7

Sk iSg 13 09 56.8

Gb iSg 13 08 57.4

Ka eSg 13 10 10

Ud iPg 13 08 19.8

iSg 13 08 43.0

D = 190 km = 1.7°

South Norway, near the
Oslo Fjord, 59.8°N,
10.3°E. Origin time =
13 07 47.

" 2

Ki iP 17 43 21.0

" 2

Ki iP 18 50 15.9

i 18 50 20.7

Ud iP 18 50 17.8

" 2

Up iSg 20 30 26.6

micr sec

Sg Z' 0.1 0.5

(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Nov. 2 (cont.)
Ud iSg 20 31 18.9
Probably blast near
Uppsala.

" 3 Up iP 04 41 48.1
Um iP 04 41 27.2
Ud iP 04 41 55.5
i 04 42 20.5
South of Japan (h =
150 km).

" 3 Up iSKP 07 54 48.3
i 07 54 54.0
micr sec
SKP Z' 0.1 0.6
Ki iPKP 07 51 26.0
Sk iPKP 07 51 37.9
iSKP 07 54 47.4
Um iPKP 07 51 32.4
iSKP 07 54 36.7
Ka i(PKP) 07 51 53.0
Ud iPKP 07 51 44.6
i 07 51 58.2
i 07 53 45.4
New Hebrides Islands
(h = 230 km).

" 3 Ki iP 12 27 21.2

" 3 Sk e(Sg) 12 44 19
Ud i(Sg) 12 44 19.1

" 3 Ka iPg 18 21 54.1
iSg 18 22 24.5
Ud iSg 18 24 37.5
Probably explosion in the
South Baltic region.

" 3 Up i 20 30 56.5
iSg 20 30 59.1
micr sec
Sg Z' 0.1 0.5
Ud iSg 20 31 47.9
Probably blast near
Uppsala.

" 3 Up iP 21 28 07.8
Gb i(P) 21 28 13.8

" 3 Up iPKP 22 56 22.6
iPKKP 23 06 26.6
Ki iPKP 22 56 38.3
micr sec
PKP Z' 0.2 1.0
(cont.)

1967

Nov. 3 (cont.)
Sk ePKP 22 56 28
Um iPKP 22 56 30.4
Ka iPKP 22 56 16.5
Ud iPKP 22 56 21.6
iPKKP 23 06 28.9
South Sandwich Islands
(h = 160 km).

" 4 Up iP 00 49 54.0
Um iP 00 49 35.3
Ryukyu Islands (h = 40 km).

" 4 Up iP 02 32 08.9
Ki iP 02 31 59.4
Ud iP 02 32 21.1

" 4 Up iP 05 18 59.0
micr sec
P Z' 0.1 0.9
Ki iP 05 18 35.1
micr sec
P Z' 0.1 1.1
Sk iP 05 19 02.5
Um iP 05 18 43.3 D
i 05 18 51.0
Ka iP 05 19 08.6
Ud iP 05 19 08.7 D
Formosa (h = 80 km).
Magn. = 5.8 (Up, Ki).

" 4 Up i(PKP) 10 35 21.5 C
iSKP 10 38 14.0
micr sec
SKP Z' 0.3 1.2
Ki iPKP 10 35 17.6 C
iSKP 10 37 48.9
micr sec
PKP Z' 0.1 1.0
SKP Z' 0.4 1.5
Sk i(PKP) 10 35 16.9
iPKP 10 35 27.5
iSKP 10 38 05.9
Gb i(PKP) 10 35 30.5
iPKP 10 35 41.2
iSKP 10 38 23.8
Um i(PKP) 10 35 22.1
iPKP 10 35 24.7
iSKP 10 38 00.7
Ka i(PKP) 10 35 32.7 C
iSKP 10 38 25.3
Ud i(PKP) 10 35 21.9
iPKP 10 35 35.2
iSKP 10 38 15.7
Fiji Islands (h = 570 km).
(PKP) is generally used to
denote small-amplitude pre-
cursors.

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967						
Nov.	4	Up	iP	13 38 11.8 C	Nov.	4	(cont.)			
			ipP	13 38 23		Ki	iScS	14 50 44		
			i	13 39 56.1				micr sec		
			eS	13 47 23			P	Z'	0.4 1.8	
				micr sec			S	E	2.8 9	
			P	Z	0.6 5		S	N	3.2 10	
			P	Z'	0.4 1.5		M	E	68 17	
			M	E	2.4 18		M	N	29 17	
			M	N	3.2 20		M	Z	27 20	
			M	Z	4.5 20				D = 6800 km = 61°	
				D = 8050 km = 72 1/2°		Gb	iP	14 41 56.5		
		Ki	iP	13 37 32.1 C			ipP	14 42 12.7		
			iS	13 46 16		Um	iP	14 41 09.8 C		
			iPS	13 46 38			iS	14 49 47		
				micr sec		Ka	iP	14 41 56.1 C		
			P	Z'	0.2 1.5		ipP	14 42 12.4		
			S	E	0.8 6		Ud	iP	14 41 41.1	
			S	N	1.3 9				Japan. h = 60 km (Up, Ki,	
			M	E	6.2 21				Gb, Um, Ka). Magn. = 6.4	
			M	N	2.4 19				(Up, Ki).	
			M	Z	9.4 22					
				D = 7350 km = 66°		"	4	Up	iP	14 56 58.9
		Gb	iP	13 38 32.4					micr sec	
			ipP	13 38 44.5			P	Z'	0.1 1.0	
		Um	iP	13 37 49.5 C		Ki	iP	14 56 14.5		
			ipP	13 38 01.5				micr sec		
			iS	13 46 52			P	Z'	0.4 1.9	
			iPS	13 47 14		Gb	iP	14 57 21.4		
			iSS	13 50 55		Um	iP	14 56 33.7		
		Ka	iP	13 38 30.1		Ka	iP	14 57 21.3		
			ipP	13 38 43.6		Ud	iP	14 57 05.1		
		Ud	iP	13 38 19.1 C						Japan (h = 30 km).
			ipP	13 38 31.6						Magn. = 6.0 (Up, Ki).
				Japan. h = 45 km (Up, Gb,		"	4	Ki	eP	16 11 35
				Um, Ka, Ud). Magn. = 6.0				i	16 11 42.2	
				(Up, Ki).			Ud	iP	16 12 26.2	
										Gulf of Alaska (h = 30 km).
"	4	Up	iP	14 41 34.5 C		"	4	Up	iP	16 14 26.1
			ipP	14 41 50.7				Ud	iP	16 14 33.1
			iS	14 50 31						Japan (h = 30 km).
				micr sec		"	4	Up	iP	16 40 00.9
			P	E	0.5 5			iSKS	16 50 22	
			P	N	0.5 4		Ki	iP	16 40 02.9	
			P	Z	0.6 4			iSKS	16 50 32	
			P	Z'	0.8 1.5			iSP	16 52 32	
			S	E	1.8 10				micr sec	
			S	N	2.4 10			P	Z'	0.2 2.0
			M	E	29 16			SKS	E	1.5 7
			M	N	31 16		Gb	iP	16 39 47.4	
			M	Z	17 17		Um	iP	16 40 04.5	
				D = 7550 km = 68°				iSKS	16 50 30	
		Ki	iP	14 40 50.4						(cont.)
			ipP	14 41 06.0						
			i	14 42 16.7						
			iS	14 49 11						
				(cont.)						

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
Nov.	4	(cont.)		Nov.	6	(cont.)	
		Um iSP	16 52 28			Ud ePKP	21 51 11
		Ud iP	16 39 52.0			Fiji Islands (h = 550 km).	
		ipP	16 40 14.4				
		Peru-Ecuador. h = 90 km					
		(Ud).		"	7	Ki ePKP	04 08 14
"	4	Ud e(P)	20 23 19			Um iPKP	04 08 24.2
		i(Sg)	20 23 41.9			Samoa Islands (h = 40 km).	
"	5	Up iP	00 31 03.8	"	7	Ki ePg	06 33 12
		Ud iP	00 31 11.1			iSg	06 33 52.4
		Greece (h = 30 km).				Um iSg	06 34 05.7
"	5	Up eP	08 56 41			Northern Finland.	
		i	08 56 54.2	"	7	Up i(Sg)	13 57 55.8
		Ud eP	08 56 50			i	13 57 56.8
		South of Japan (h = 30 km).				Local blast?	
"	5	Ki eP	14 36 58	"	7	Ki iSg	17 31 47.0
		Colombia (h = 40 km).				Um iSg	17 32 14.3
"	6	Up i(P)	03 44 40.1			Probably Nordlands Fylke,	
		i	03 44 47.7			Norway.	
"	6	Ki iP	04 15 01.9	"	7	Up iP	20 04 57.4 C
		Um iP	04 15 18.8				micr sec
		Iceland (h = 40 km).				P Z'	0.1 0.5
"	6	Ki iP	05 53 18.8			Ki iP	20 05 04.2
		Um iP	05 53 37.0			Gb iP	20 05 18.9 C
		Ud iP	05 53 34.9			Um iP	20 04 54.3 C
		Iceland (h = 30 km).				Ka iP	20 05 02.8 C
"	6	Um iP	08 21 21.9			Ud iP	20 05 13.9 C
"	6	Up iP	10 37 40.9			Hindu Kush (h = 140 km).	
		i	10 37 45.2	"	8	Um iP	02 07 24.2
		Ki	---			Japan (h = 60 km).	
			micr sec	"	8	Ki iP	02 50 50.8
		M E	1.4 17			Alaska (h = 30 km).	
		Um i(P)	10 38 30.2	"	8	Up iP	03 23 12.5
		Ud eP	10 37 48			ipP	03 23 25.1
		i	10 37 50.8			i	03 23 42.1
		Greece-Albania (h = 40 km).				Ki iP	03 23 03.8 D
"	6	Um iP	12 14 27.1			ipP	03 23 17.2
"	6	Ki iP	19 14 56.9			iS	03 33 16
"	6	Ki iP	21 47 38.1				micr sec
		Alaska (h = 30 km).				P Z'	0.1 1.2
"	6	Um iSKP	21 53 45.0			pP Z'	0.2 1.5
		(cont.)				S N	0.3 10
						M E	0.8 17
						M Z	1.1 17
						D = 9000 km = 81°.	
						Um iP	03 23 11.7
						ipP	03 23 25.7
						Ud iP	03 23 01.6
						(cont.)	

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Nov. 8 (cont.)
Ud iP 03 23 12.3
Caribbean Sea. h = 50 km
(Up,Ki,Um,Ud). Magn. =
5.6 (Ki).

" 8 Ud iP 15 11 41.0 C
Nevada. Origin time =
15 00 00. Underground
explosion.

" 8 Up iP 17 14 03.0
Ki iP 17 13 09.5
Ud iP 17 14 03.5
Aleutian Islands
(h = 40 km).

" 8 Up iP 17 20 25.0
iS 17 29 19
micr sec
P Z' 0.3 1.0
M E 1.4 19
M N 2.2 18
M Z 2.2 17
D = 7550 km = 68°.
Ki iP 17 19 33.2
i 17 19 40.0
micr sec
P Z' 0.1 1.0
M E 3.4 18
M N 2.0 17
M Z 2.3 19
Gb iP 17 20 44.2
Um iP 17 19 59.3
i 17 20 17.1
iS 17 28 31
Ka iP 17 20 48.2
Ud iP 17 20 27.0 C
Aleutian Islands
(h = 30 km). Magn. = 5.8
(Up,Ki).

" 8 Up iP 17 33 34.5
ipP 17 33 47.5
micr sec
P Z' 0.2 1.0
Ki iP 17 32 41.4
micr sec
P Z' 0.1 1.0
Gb iP 17 33 51.4
ipP 17 34 05.4
Um eP 17 33 06
ipP 17 33 18.4
Ka iP 17 33 57.5
(cont.)

1967

Nov. 8 (cont.)
Ud iP 17 33 35.6
i 17 33 53.2
Aleutian Islands. h =
50 km (Up,Gb,Um). Magn. =
5.8 (Up,Ki).

" 8 Up iP 20 04 54.4
ipP 20 05 01.4
Ki eP 20 04 01
Ud iP 20 04 55.7
Aleutian Islands. h =
25 km (Up).

" 8 Up i(P) 20 47 46.2
i 20 48 16.4
Gb i(P) 20 48 38.4

" 9 Ki iP 02 31 37.5 D
iPP 02 35 57.8
ipS 02 45 11
micr sec
P Z' 0.2 1.0
Um iP 02 31 40.5
iPP 02 35 59.4
iSKS 02 41 23
Ud iP 02 31 57.4
isP 02 35 13.8
iPP 02 36 33.0
ipPP 02 38 22.0
Banda Sea (h = 560 km).

" 9 Up eP 07 57 55
i 07 58 19.6
Ki iP 07 57 03.3
Um iP 07 57 31.1
Ud iP 07 57 55.8 D
i 07 58 14.8
Alaska (h = 40 km).

" 9 Ud iP 09 03 58.8

" 9 Gb iSg 09 43 36.4
Ud iSg 09 44 52.8
An event probably near Gb.

" 9 Ud i(P) 10 55 59.4

" 9 Ki iP_n 12 35 08.0
iP^x 12 35 16.7
iSn 12 35 54.8
iLg1 12 36 09.8
D = 430 km = 3.9°.
Possibly northwest Russia.
Origin time = 12 34 06.
Explosion?

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Nov.	9	Ud	iP	13 01 29.8	Nov.	10	(cont.)		
"	9	Ud	iP	14 54 13.6			Ki	i	05 57 10.7
		Dodecanese Islands					North Atlantic Ocean		
		(h = 50 km).					(h = 30 km).		
"	9	Ud	e	17 16 48	"	10	Up	iP	06 14 13.5 D
			i(Sg)	17 17 08.1			Ki	iP	06 14 08.3
"	9	Up	iP	18 31 02.9 C			Um	iP	06 14 06.6 D
			ipP	18 31 18.2			Ka	iP	06 14 21.0
				micr sec			Ud	iP	06 14 27.7 D
		P	Z'	0.1 0.7			India-East Pakistan		
							(h = 60 km).		
		Ki	iP	18 30 25.0 C	"	10	Gb	iSg	07 42 40.0
				micr sec			Ud	eSg	07 44 05
		P	Z'	0.1 1.0			An event probably near Gb;		
		Gb	iP	18 31 23.0			resembles Nov. 9, 09 43.		
		Um	iP	18 30 41.3 C	"	10	Ud	iP	08 05 58.8
			i	18 30 51.7	"	10	Gb	iSg	08 25 38.9
		Ka	iP	18 31 21.1 C	"	10	Up	iPg	09 39 28.9
		Ud	iP	18 31 10.0 C				i	09 39 43.5
		Japan. h = 60 km (Up).						iSg	09 39 56.0
		Magn. = 5.8 (Up, Ki).							micr sec
"	9	Ud	iP	19 30 09.8				Sg	Z' 0.1 0.5
		Philippine Islands					Ki	iSg	09 43 14.8
		(h = 40 km).					Um	ePg	09 40 14
"	9	Ud	iP	22 22 24.4				iSg	09 41 06.5
"	10	Ud	iP	00 14 26.1 D				i	09 41 09.9
			i	00 14 38.3			Ka	ePn	09 39 58
"	10	Ud	iP	00 34 17.9				i	09 40 29.3
"	10	Up	iPP	02 58 39.2				iSg	09 41 20.4
		Ki	ePP	02 59 24			Ud	ePg	09 40 06
				micr sec				iSg	09 40 58.2
		M	E	0.6 13			Central Baltic, 59.5°N,		
		M	N	0.6 14			21.4°E. Origin time =		
		M	Z	0.8 12			09 38 47. Probably under-		
		Ud	iP	02 57 47.7	"	10	Ud	eP	10 28 27
		Iran (h = 30 km).						i	10 28 37.8
"	10	Ki	eP	04 46 57	"	10	Ki	iP	11 42 29.0
		North Atlantic Ocean					Ud	iP	11 42 56.2
		(h = 30 km).					Philippine Islands		
"	10	Ki	eP	05 18 40			(h = 40 km).		
			i	05 18 43.5	"	10	Ki	iPKP	13 29 18.1
		North Atlantic Ocean					Sk	iPKP	13 29 24.3
		(h = 30 km).					Um	i(PKP)	13 29 25.0
"	10	Ki	eP	05 57 07			Fiji Islands (h = 590 km).		
		(cont.)							

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Nov.	10	Ki	iP	18 38 42.7 C	Nov.	11	Up	iP	11 54 40.8
			Alaska (h = 90 km).				Ki	eP	11 54 24
"	10	Up	iP	18 50 34.3				Philippine Islands	
			ipP	18 50 42.1				(h = 50 km).	
			iS	19 00 25	"	11	Up	iP	12 07 51.5
			D = 8650 km = 78°				i		12 07 57.4
		Ki	iP	18 50 54.2			Ki	iP	12 08 11.5
			micr sec					micr sec	
		P	Z'	0.4 2.0			P	Z'	0.2 1.5
		M	E	0.9 15			Sk	eP	12 08 19
		M	N	0.7 18			Um	eS	12 17 53
		M	Z	1.4 19				iScS	12 18 21
		Sk	iP	18 50 56.7				iSS	12 23 09
			i	18 51 00.4				Chagos Islands (h = 40 km).	
		Gb	iP	18 50 41.6	"	11	Up	eP	12 14 47
			ipP	18 50 49.9			i		12 14 49.5
		Um	iP	18 50 45.0	"	11	Up	iP	12 26 52.8 D
			iS	19 00 45			eSKS		12 37 02
			iSS	19 05 58				micr sec	
		Ka	e(P)	18 50 36			M	E	3.2 19
			ipP	18 50 39.9			M	N	4.3 21
			Chagos Islands. h =				M	Z	6.5 20
			30 km (Up,Gb).			Ki	iP		12 27 14.5
"	10	Up	iP	20 59 15.4				micr sec	
			micr sec				P	Z'	0.3 1.5
		P	Z'	0.1 0.5			M	E	3.0 20
		Ki	eP	20 58 26			M	N	2.4 19
		Sk	eP	20 59 03			M	Z	3.2 17
		Um	iP	20 58 50.1			Sk	iP	12 27 15.3
			Kurile Islands (h = 100 km).				Um	iP	12 27 04
"	11	Up	iP	00 32 49.2 C			Ud	iP	12 27 03.5
			micr sec				i		12 27 42.6
		P	Z'	0.1 0.5				Chagos Islands (h = 30 km).	
		Ki	iP	00 32 18.4 C				Magn. = 6.0 (Up,Ki).	
			micr sec		"	11	Ud	iP	12 46 04.1
		P	Z'	0.1 1.0					
		Sk	iP	00 32 47.1 C	"	11	Up	iP	13 44 20.7
		Gb	iP	00 33 07.9				Aleutian Islands	
		Um	iP	00 32 31.6 C				(h = 50 km).	
			Bonin Islands (h = 530 km).		"	11	Sk	i(Sg)	14 36 18.4
			Magn. = 5.7 (Up,Ki).		"	11	Ki	iP	15 17 28.2
"	11	Ki	iP	02 39 29.5			Sk	iP	15 17 29.9
		Um	iP	02 39 05.6				Chagos Islands (h = 30 km).	
			Uganda (h = 30 km).		"	11	Ud	iP	16 20 19.7
"	11	Up	i(Sg)	03 48 29.6	"	11	Up		---
"	11	Gb	iPKP	06 58 19.0				micr sec	
			Tonga-Kermadec Islands				M	E	1.8 19
			(h = 470 km).				(cont.)		

[illegible]

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Nov. 14 (cont.)
 Ki iPKP 05 46 40.7
 Sk iPKP 05 46 52.4
 Gb iPKP 05 47 00.2
 Um iPKP 05 46 44.8
 Ka iPKP 05 46 57.3
 Ud iPKP 05 46 53.5
 New Guinea (h = 200 km).
 " 14 Ka iPg 12 37 14.9
 iSg 12 37 47.7
 Ud iSg 12 39 56.9
 Probably explosion in the
 South Baltic region;
 cf Nov. 3, 18 21.
 " 14 Ki iP 13 47 57.9
 Aleutian Islands
 (h = 120 km).
 " 15 Ki iPn 04 32 45.2
 eSn 04 33 33
 iLg1 04 33 47.4
 D = 440 km = 4.0°.
 Possibly northwest Russia.
 Origin time = 04 31 41.
 Explosion?
 " 15 Ki iP 07 48 32.4
 Sk iP 07 48 53.6
 Um iP 07 48 37.2
 Ud iP 07 48 56.5
 Mindanao (h = 570 km).
 " 15 Ud iP 09 49 47.8
 " 15 Ud iP 10 11 41.0
 " 15 Ki iPn 12 36 49.2
 iSn 12 37 35.4
 iSg 12 37 50.5
 D = 420 km = 3.8°.
 Possibly northwest Russia.
 Origin time = 12 35 47.
 Explosion?
 " 15 Up iP 19 43 02.3
 Ki eP 19 43 33
 Ud iP 19 43 10.2
 Iran (h = 10 km).
 " 15 Up ePP 21 51 34
 iPS 22 01 05
 iPKKP 22 01 18.5
 (cont.)

1967

Nov. 15 (cont.)
 Up i 22 01 52.5
 micr sec
 M E 6.5 19
 M N 5.7 23
 M Z 8.9 21
 Ki iPKP 21 50 35.4
 i 21 50 51.3
 i(PP) 21 51 35.5
 eSKS 21 57 19
 iPKKP 22 01 01.1
 ePS 22 01 20
 eSKSP 22 01 32
 micr sec
 SKS E 1.0 11
 M E 6.6 21
 M N 1.8 19
 M Z 10 23
 Sk iPKKP 22 01 19.6
 Um iPKP 21 50 34.9
 ePP 21 51 45
 iSKS 21 57 12
 iPKKP 22 01 04.8
 iPS 22 01 17
 eSKSP 22 01 29
 Ud iPKP 21 50 30.3
 iPKKP 22 01 26.8
 i 22 01 45.4
 Chile (h = 15 km). Magn.
 = 6.4 (Up, Ki).
 " 16 Up iP 00 48 57.4
 Ud eP 00 49 10
 Hindu Kush (h = 30 km).
 " 16 Ki iP 02 31 27.5
 micr sec
 P Z' 0.1 1.2
 Sk iP 02 31 11.4
 Gb iP 02 30 35.5
 Ud iP 02 30 46.1
 Ethiopia (h = 30 km).
 " 16 Ki iP 03 56 31.6
 " 16 Up iP 06 23 19.9
 i 06 23 23.4
 Ud iP 06 23 25.6
 " 16 Up iP 07 52 24.7
 i(Sg) 07 53 33.8
 " 16 Ud iP 11 53 47.0

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Ka = Karlskrona, Ud = Uddeholm

1967

Nov. 16 Up i(Sg) 12 01 49.0
micr sec
(Sg) Z' 0.1 0.5
Local blast?

" 16 Ud i(Sg) 12 20 58.7

" 16 Ud iP 15 13 11.7
Aleutian Islands
(h = 40 km).

" 17 Up iP 05 08 08
iS 05 15 22
micr sec

$\Delta = 20.5^\circ$

$\begin{array}{r} 5.37 \\ - 0.80 \\ \hline 4.5 \end{array}$

S E 0.6 7
S N 0.7 6
M E 0.8 14
M N 0.9 12
M Z 2.0 16
D = 5800 km = 52° .

Ki eP 05 08 29
iS 05 15 59
micr sec

S N 0.6 8
M E 1.1 20
M N 0.7 16
M Z 2.0 18
D = 6050 km = $54 \frac{1}{2}^\circ$.

Um iP 05 08 17
iS 05 15 44

North Atlantic Ocean
(h = 30 km). Magn. =
5.3 (Up, Ki). It is
noteworthy that this
earthquake was not re-
corded on any of the
short-period instruments,
the probable reason being
absence of short-period
components in the P-wave
spectrum.

" 17 Ud iP 08 23 30.8

" 17 Ki iPKP 10 28 33.5 D
iPP 10 30 12.5
Sk iPKP 10 28 44.6
Um iPKP 10 28 39.5 D
Ud iPKP 10 28 49.6
New Hebrides Islands
(h = 220 km).

" 17 Ud ePg 11 27 35
iSn 11 27 54.7
(cont.)

1967

Nov. 17 (cont.)
Ud iSg 11 27 57.9
D = 190 km = 1.7° .
Origin time = 11 27 00.

" 17 Up iP 14 10 22.7
micr sec
M E 1.4 18
M N 1.1 19
M Z 1.7 18

Ki iP 14 09 58.6
Sk eP 14 10 26
Ud iP 14 10 31.7
Formosa (h = 40 km).

" 17 Ki iP 14 59 23.1 C
Formosa (h = 50 km).

" 17 Up iP 15 16 22.2
i 15 16 25.1
Um iP 15 16 09.2
Ka iP 15 16 30.5
Ud iP 15 16 23.9
These could be PKP phases
instead.

" 17 Ud iP 20 30 52.9

" 17 Up iP 20 38 58.5
Ud iP 20 39 12.0

" 18 Ki iP 01 18 58.4
Molucca Passage
(h = 80 km).

" 18 Up iP 02 36 55.5 C
iS 02 41 16
micr sec
M E 2.2 17
M N 2.1 15
M Z 2.0 16
D = 2800 km = 25° .

Ki eP 02 38 04
micr sec
M E 2.4 18
M N 0.9 14
M Z 1.7 13

Sk iP 02 37 32.9
Um iS 02 42 16
Ka iP 02 36 20.4
iPP 02 36 41.1
Ud iP 02 37 01.0
Crete (h = 40 km).

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Nov. 18 Up iP 03 38 55.5

Ki eP 03 40 04

Ud iP 03 39 00.8

Crete (h = 30 km).

" 18 Um iP 05 19 03.3

Talaud Islands (h = 130 km).

" 18 Ki eP 14 44 08

e 14 45 52

" 18 Ki iPn 20 42 19.4

iSn 20 43 05.4

iSg 20 43 22.8

D = 420 km = 3.8°.

Possibly northwest Russia.

Origin time = 20 41 18.

Explosion?

" 18 Gb iPKP 22 00 27.4

Ud iPKP 22 00 18.4

iSKP 22 03 06.8

South of Fiji Islands

(h = 550 km).

" 19 Ud iP 01 34 50.0

Albania (h = 30 km).

" 19 Um iP 02 21 42.3 C

i 02 21 46.0

Ud iP 02 21 56.0

" 19 Ki eSn 05 48 10

iLg1 05 48 33.0

Um iSg 05 49 26.2

Probably northwest Russia.

Explosion?

" 19 Up eP 08 36 15

Ki iP 08 36 06.9

Sk eP 08 36 35

i 08 36 38.4

Um iP 08 36 01.7

i 08 36 09.3

Ud iP 08 36 31.1 C

Sinkiang (h = 30 km).

" 19 Um iP 10 49 05.7

" 19 Up iP 12 18 27.8 C

ipP 12 18 39.4

iPP 12 21 05.8

iS 12 27 50

(cont.)

1967

Nov. 19 (cont.)

Up micr sec

P Z' 0.4 1.0

M E 1.8 16

M N 3.3 23

M Z 2.3 18

D = 8100 km = 73°.

Ki iP 12 17 49.0 C

ipP 12 18 00.8

iPP 12 20 11.8

iS 12 26 40

micr sec

P Z' 0.3 1.1

PP Z' 0.3 1.5

S N 0.7 7

M E 4.9 18

M N 2.3 20

M Z 5.6 18

D = 7400 km = 66 1/2°.

Sk iP 12 18 22.1 C

iPP 12 20 57.4

Gb iP 12 18 48.4 C

ipP 12 18 58.7

iPP 12 21 34.6

Um iP 12 18 06.0 C

ipP 12 18 18.4

i 12 18 39.0

iS 12 27 10

Ka iP 12 18 45.1 C

ipP 12 18 55.6

Ud iP 12 18 35.2 C

ipP 12 18 46.6

Japan. h = 40 km (Up, Ki, Gb, Um, Ka, Ud). Magn. = 6.2 (Up, Ki).

Every recorded PP (Up, Ki, Sk, Gb) exhibits multiplicity; the phases listed here are the initial ones and they are 5-7 sec too early by the JB travel time tables. They are followed after 5-7 sec by clear phases, which correspond to the proper PP.

" 19 Up eP 15 33 12

Ud iP 15 33 26.3

Samar (h = 70 km).

" 19 Gb iPKP 15 59 33.5

Ud iPKP 15 59 25.1

Fiji Islands

(h = 590 km).

Up = Uppsala, Ki = ~~Kiruna~~, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Nov.	19	Up	e(PKP)	17 48 40	Nov.	20	(cont.)		
			iPKP	17 48 47.3			Ka iP	10 25 51.1 D	
			iPP	17 51 41			i	10 26 02.5	
			iPKS	17 52 15			Ud iP	10 25 33.3 D	
			iSKSP	18 01 32			i	10 25 38.9	
				micr sec			Sea of Okhotsk		
			PP N	0.4 5			(h = 430 km).		
			PKS E	0.9 7					
			PKS N	1.5 7	"	20	Ka iP	10 33 10.9 C	
			M E	4.7 22					
			M N	9.5 22	"	20	Up iP	11 00 19.7 D	
			M Z	7.9 22			ipP	11 00 38.2	
		Ki	iPKP	17 48 30.9				micr sec	
			iPP	17 50 45			P Z'	0.1 0.9	
			iPKS	17 51 54			Ki iP	10 59 44.3	
				micr sec				micr sec	
			PP Z	1.3 9			P Z'	0.1 1.0	
			PKS E	1.8 9			Sk iP	11 00 15.6	
			PKS N	2.1 10			Gb iP	11 00 38.6	
			M E	5.7 21			Um iP	10 59 59.2	
			M N	3.3 20			ipP	11 00 16.8	
			M Z	6.3 20			Ud eP	11 00 28	
		Sk	e(PKP)	17 48 37			South of Japan. h = 70 km		
			iPKP	17 48 42.1			(Up,Um). Magn. = 5.8 (Up,		
		Gb	e(PKP)	17 48 45			Ki).		
			iPKP	17 48 49.5					
		Um	e(PKP)	17 48 35	"	20	Ud i(Sg)	12 35 09.2	
			iPKP	17 48 40.6					
			iPP	17 50 59	"	20	Ka iPg	15 04 40.4	
			iPKS	17 52 06			iSg	15 05 17.7	
			iSKSP	18 01 10			Ud eSg	15 07 21	
		Ud	e(PKP)	17 48 37			i	15 07 33.6	
			iPKP	17 48 49.1			Probably explosion in the		
		Loyalty Islands					South Baltic area; cf		
		(h = 30 km). Magn. =					Nov. 3, 18 21, and Nov. 14,		
		6.6 (Up,Ki).					12 37.		
"	19	Ki	eP	20 45 51	"	21	Ud iP	07 47 19.3	
"	19	Ud	iP	21 49 23.7	"	21	Up eP	09 04 03	
"	19	Ud	i(Sg)	22 27 19.3			Ki iP	09 04 46.6 C	
"	20	Ud	iP	06 50 20.8			ipP	09 04 57.5	
		Greece.					Sk iP	09 04 13.8	
							ipP	09 04 24.5	
							Um iP	09 04 27.6 C	
							ipP	09 04 38.2	
"	20	Up	iP	10 25 28.2 D			Ud iP	09 03 55.5 C	
			i	10 25 36.6			ipP	09 04 07.8	
				micr sec			North of Ascension Island.		
			P Z'	0.1 0.5			h = 40 km (Ki,Sk,Um,Ud).		
		Sk	iP	10 25 14.7 D					
		Gb	iP	10 25 49.1 D	"	21	Ka iP	14 22 14.2	
		Um	iP	10 25 01.5 D					
			i	10 25 13.0	"	21	Up iP	15 11 59.3	
		(cont.)					(cont.)		

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967
Nov. 21 (cont.)
Ud iP 15 12 10.9
Iran (h = 30 km).
" 21 ✓ Up eP 17 05 30
i 17 05 31.9
i! 17 08 42.7
iT 17 12 45.6
micr sec
P Z' 0.1 0.5
M E 5.7 17
M N 12 18
M Z 9.1 19
Ki iP 17 03 56.6
i 17 03 57.7
iS 17 04 59.2
iT 17 09 10.7
micr sec
P E 2.6 7
P N 2.3 9
P Z 2.1 7
P Z' 0.5 0.7
M E 4.6 11
M N 6.6 15
M Z 8.9 16
D = 700 km = 6 1/2°.
Sk iP 17 04 37.1
i 17 04 38.2
iS 17 06 13.5
Gb iP 17 05 54.9
iS 17 08 34.9
i 17 09 30.9
Um iP 17 04 44.5 D
iS 17 06 31.2
iT 17 11 02.6
Ka iP 17 06 17.5
iS 17 09 14.8
i 17 10 23.3
Ud iP 17 05 24.4
i 17 05 39.3
iSS 17 08 12.9
iT 17 13 00.3
Norwegian Sea (h = 30 km).
Remarkably strong T phases,
especially at Ki and Um.
T phases or traces of them
were recorded at all our
stations. - Multiple P
phases (Up, Ki, Sk).
" 21 Ki iP 19 21 07.1
" 21 Ki iP 19 45 22.7 C
Sk eP 19 46 04
(cont.)

1967
Nov. 21 (cont.)
Sk iS 19 47 41.1
Um iP 19 46 11.0
Norwegian Sea (h = 30 km).
" 22 Up eP 04 10 51
Ki iP 04 10 35.0
Kazakh SSR. Underground
explosion.
" 22 Um iP 06 01 23.0
Ud iP 06 01 54.1
i 06 02 07.1
Kurile Islands.
" 22 Up ---
micr sec
M N 2.6 21
M Z 3.4 21
Um iPKP 15 38 44.2
ePKS 15 42 14
Loyalty Islands (h = 40 km).
" 23 Um iP 02 14 19.5 C
Ud eP 02 14 30
" 23 Ud iP 02 32 26.4
" 23 Up iP 08 21 14.3
" 23 Up iP1 08 44 59.2
iP2 08 45 03.6
iP3 08 45 10.7
i 08 45 24
iS 08 52 15
i 08 52 27
micr sec
P3 E 1.3 5
P3 N 2.5 5
P3 Z 3.9 5
P3 Z' 1.0 1.0
S E 6.4 7
S N 9.9 7
S Z 8.4 10
M E 39 16
M N 56 16
M Z 64 16
D = 5800 km = 52°.
Ki iP1 08 45 38.5
iP2 08 45 40.3
iP3 08 45 47.2
iS 08 53 37
micr sec
P3 N 3.0 5
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Nov. 23 (cont.)

Ki			micr	sec
	P3	Z	4.6	5
	P3	Z'	1.5	1.8
	S	E	10	7
	S	N	7.1	10
	S	Z	11	13
	M	E	100	17
	M	N	92	15
	M	Z	130	16
	D = 6400 km = 57 1/2°.			
Sk	iP1		08 45	32.6
	iP2		08 45	35.6
	iP3		08 45	41.5
	iP4		08 45	52.7
Gb	iP1		08 45	04.6
	iP2		08 45	07.3
	iP3		08 45	13.7
	iP4		08 45	27.3
Um	iP1		08 45	11.3
	iP2		08 45	14.2
	i		08 45	18.5
	iP3		08 45	20.8
	iPa		08 48	28
	iS		08 52	31
Ka	iP1		08 44	46.6
	iP2		08 44	49.9
	iP3		08 44	57.1
Ud	iP1		08 45	09.4
	iP2		08 45	12.9
	iP3		08 45	18.6
	iPcP		08 46	27.7
	iPP		08 47	07.5

Gulf of Aden (h = 5 km).
Magn. = 6.8 (Up, Ki).
This is a pronounced case
with multiple P phases,
with successively larger
amplitudes. Corresponding
phases have been marked
P1, P2, P3, P4. The
average time differences
are: P2 - P1 = 3.1 sec,
P3 - P1 = 9.6 sec,
P4 - P1 = 21 sec. P4 has
a longer period than
P1-P3.

" 23 Um eP 13 21 00
i 13 21 02.9

" 23 Up iP1 13 46 46.2
i 13 46 47.7
(cont.)

1967

Nov. 23 (cont.)

Up	iP2		13 46 54.5
	i		13 48 53
	iS		13 50 40
		micr sec	
	P2	N	4.2 3
	P2	Z	2.6 3
	P2	Z'	0.9 1.5
	S	E	10 10
	S	N	15 11
	S	Z	1.9 5
	M	E	7.5 18
	M	N	29 18
	M	Z	35 21
	D = 2350 km = 21°.		
Ki	iP1		13 45 16.0 D
	iP2		13 45 23.0
	i		13 45 51.2
	iS		13 47 54
	iSS		13 48 12
		micr sec	
	P2	E	3.1 8
	P2	N	9.1 5
	P2	Z	11 5
	P2	Z'	11 2.3
	S	E	23 13
	M	E	15 18
	M	N	20 20
	M	Z	55 20
	D = 1500 km = 13 1/2°.		
Sk	iP		13 46 01.1 D
Gb	iP1		13 47 05.8 D
	iP2		13 47 15.3
Um	iP		13 46 04.9 D
	iS		13 49 15
	iSS		13 49 56
Ka	iP		13 47 22.2
	i		13 47 45.4
Ud	iP		13 46 41.6 D

Svalbard-Greenland
(h = 10 km). Magn. = 6.2
(Up). Multiple P: two
phases P1 and P2 can be
distinguished on all short-
period records; Average
time difference P2 - P1 is
equal to 8.3 sec. The
periods on Z' are long
everywhere. - The initial
dilatation (D) for P is
probably preceded by a
small compressional motion,
as evidenced by Um and Ud.

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Nov.	23	Ki	e(P) i(Sg)	13 58 08 13 59 53.6	Nov.	24	(cont.) Ki iP	18 59 44.0 micr sec	
"	23	Gb	i(Sg)	14 59 34.0			P Z'	0.1 1.0	
		Ud	ePg	14 59 15		Um	eP	18 59 49	
			iSn	14 59 35.4			i	18 59 52.9	
			iSg	14 59 38.9		Ud	iP	19 00 09.1	
			D = 200 km = 1.8°			Mindanao (h = 110 km).			
			Origin time = 14 58 39.						
"	23	Ud	iP	18 40 03.8 D	"	24	Ud iP	21 12 51.9	
"	24	Up	i(Sg)	02 34 03.7	"	24	Up iP	21 50 11.1 C	
		Ud	i(Sg)	02 33 38.7	"	24	Up iPKP	22 24 42.9 micr sec	
			Probably blast.				PKP Z'	0.1 0.6	
"	24	Um	iP	03 37 48.2		Ud	iPKP	22 24 45.3	
			Japan (h = 50 km).			Tonga Islands.			
"	24	Sk	iSKP	06 03 28.1	"	24	Ud eP	23 32 05	
		Um	iPKP	06 00 35.7	"	25	Ki iP	08 57 53.5	
			iSKP	06 03 22.6	"	25	Ki ePn	10 34 41	
		Ud	i(PKP)	06 00 35.5			iSn	10 35 39.0	
			iPKP	06 00 46.5			iLg1	10 35 58.0	
			Fiji Islands (h = 430 km).				D = 530 km = 4.8°		
"	24	Ki	iPn	11 26 45.7			Possibly northwest Russia.		
			iPg	11 26 54.5			Origin time = 10 33 26.		
			iSn	11 27 16.0			Explosion?		
			iSg	11 27 22.4	"	25	Ud iPKP	10 51 01.7	
			D = 260 km = 2.3°				Tonga-Kermadec Islands		
		Sk	iSg	11 29 04.3			(h = 570 km).		
		Um	iSg	11 29 01.4	"	25	Ki eP	14 34 19	
			Northwest coast of Norway,				i	14 34 23.5	
			near Lofoten, 69°N, 15°E.		"	25	Up iP	16 10 51.8 C	
			Origin time = 11 26 07.			Ki eP	16 11 31		
"	24	Ud	eP	11 27 10		Um	iP	16 11 07.3	
			Samar (h = 100 km).			Ud	iP	16 11 03.6 C	
"	24	Ud	iP	12 26 04.5			Gulf of Aden (h = 40 km).		
"	24	Ka	iPg	15 38 04.3	"	25	Ki iP	20 36 33.1 C	
			eSg	15 38 35	"	25	Ud iP	22 52 44.1	
		Ud	iSg	15 40 42.0			Ryukyu Islands (h = 30 km).		
			Probably explosion in the		"	26	Up iP	00 19 53.0	
			South Baltic area; cf				i	00 19 55.1	
			Nov. 3, 18 21, Nov. 14,				e(S)	00 29 41	
			12 37, and Nov. 20, 15 04.				micr sec		
"	24	Ud	iP	18 43 25.2			P Z'	0.1 0.6	
			Aleutian Islands			(cont.)			
			(h = 30 km).						
"	24	Up	iP	19 00 00.8					
			(cont.)						

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Nov. 26 (cont.)

Up			micr	sec
M	E	3.8	20	
M	N	6.2	18	
M	Z	7.5	17	
D = 8450 km = 76°.				
Ki	iP	00 19	23.8	
			micr	sec
P	Z'	0.1	1.0	
M	E	5.4	19	
M	N	3.6	19	
M	Z	9.7	18	
Gb	iP	00 20	13.7	
	i	00 20	15.7	
Um	iP	00 19	35.4	
	eS	00 29	07	
	eSS	00 34	05	
Ka	iP	00 20	10.3	
Ud	iP	00 20	02.6	
	i	00 20	09.0	
Ryukyu Islands (h = 30 km).				
Magn. = 6.0 (Up,Ki).				

" 26 Up iP 03 07 32.8
eX 03 10 42
i 03 11 21.6
iPP 03 11 31.1
Ki iP 03 07 25.7 C
iPP 03 11 18.9
Um iP 03 07 27.3
iSKS 03 17 45
Ud iP 03 07 41.7
iX 03 10 53.5
iPP 03 11 41.1
Java (h = 80 km).
X at Up,Ud is another
instance of the unidenti-
fied phase arriving before
PP, which has been mention-
ed a number of times in
earlier bulletins.

" 26 Up iP 03 29 33.7 C
micr sec
P Z' 0.2 0.5
Ki iP 03 30 51.0
Um iP 03 30 13.8
Ud iP 03 29 40.0
Greece-Albania (h = 40 km).

" 26 Up iSg 05 09 50.9
Ki ePn 05 05 37
iSn 05 06 34.4
iLg1 05 06 53.9
(cont.)

1967

Nov. 26 (cont.)

Ki	iSg	05 06 58.3
D = 520 km = 4.7°.		
Um	e	05 07 27
	iSg	05 07 52.4
Northwest Russia, 67.6°N,		
32.8°E. Origin time =		
05 04 24. Explosion?		

" 26 Ki e(Sn) 06 39 24
i(Sg) 06 39 49.5

" 26 Up iP 08 21 35.1
ipP 08 21 42.2
Ki iP 08 20 42.1
ipP 08 20 49.2

		micr	sec
P	Z'	0.1	1.0
Gb	iP	08 21	47.3 C
	ipP	08 21	55.6
Um	iP	08 21	09.3
	ipP	08 21	17.4
Ka	iP	08 21	56.7
Ud	iP	08 21	31.7
Kodiak Island. h = 30 km (Up,Ki,Gb,Um).			

" 26 Ki iP 11 06 59.6
Ud iP 11 07 23.5
Halmahera (h = 10 km).

" 26 Ki eP 11 34 58
i 11 35 21.0
Svalbard-Greenland
(h = 30 km).

" 26 Ki iP 22 11 38.4

" 27 Up iP 04 37 01.7
Ki iP 04 36 07.6

		micr	sec
P	Z'	0.1	1.3
Sk	iP	04 36	32.2 C
	i	04 36	37.8
Um	iP	04 36	35.6
Ka	iP	04 37	24.5
Ud	iP	04 36	57.0
Alaska (h = 15 km).			

" 27 Up iP 05 20 35.5
Ki iP 05 20 04.5 C
Ud iP 05 20 25.6
Colorado (h = 5 km).

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Nov.	27	Ud	iP	06 05 48.7	Nov.	28	Ki	iP	03 06 39.1
"	27	Up	iP	09 26 47.1	"	28	Turkey.		
		Ud	iP	09 26 50.6	"	28	Up	iP	04 24 07.8
		Kamchatka (h = 30 km).					Um	iP	04 23 49.3
"	27	Up	iP	13 13 24.3			Ud	iP	04 24 15.2 D
			ipP	13 13 32.7	"	28	South of Japan.		
		Ki	eP	13 14 02			(h = 500 km).		
			ipP	13 14 09.9	"	28	Ki	iP	13 00 41.8 C
		Sk	eP	13 13 56	"	28	Ki	iP	20 29 13.0 C
			ipP	13 14 04.8			Sk	iP	20 29 40.0
		Um	iP	13 13 38.7			Kodiak Island (h = 15 km).		
			ipP	13 13 46.5	"	29	Ud	iP	05 26 38.4
		Ud	iP	13 13 34.0			Hindu Kush (h = 230 km).		
			ipP	13 13 44.1	"	29	Ud	iP	07 32 14.9
		Gulf of Aden. h = 35 km					Kurile Islands		
		(Up, Ki, Sk, Um, Ud).					(h = 290 km).		
"	27	Up	eP	18 28 35	"	29	Up	iPg	09 25 39.5
		Um	iP	18 28 16.5			i		09 25 42.6 v
		Ud	eP	18 28 29			iSg		09 25 48.5 v
"	27	Ki	eP	21 06 13			iSn		09 25 51.5 v
		Ud	eP	21 06 16			D = 100 km = 0.9°.		
"	27	Up	iP	21 57 47.6			Sk	eSn	09 27 11 v
		Ki	iP	21 57 17.4			iSg		09 27 28.7 v
		Sk	iP	21 57 53.5			Um	iSg	09 27 06.3 v
		Gb	iP	21 58 08.4			Ka	iSg	09 27 50.4 v
		Um	iP	21 57 29.9			Ud	iPg	09 26 02.2 v
		Ud	iP	21 57 57.0			iSn		09 26 22.6 v
		Ryukyu Islands (h = 15 km).					iSg		09 26 29.4 v
"	27	Ud	iP	22 02 40.4			D = 230 km = 2.1°.		
"	28	Up	iP	02 48 11.3 C			Off northern Baltic coast		
			ipP	02 48 44.1			of Uppland, Sweden, 60.7° N,		
				micr sec			17.8° E. Origin time =		
		P	Z'	0.3 0.9			09 25 18. Felt at Skutskär.		
		Ki	iP	02 47 38.3 C	"	29	Ud	iPKP	13 43 14.4
			ipP	02 48 10.7			Tonga-Kermadec Islands		
				micr sec			(h = 530 km).		
		P	Z'	0.2 1.3	"	29	Up	iSg	20 30 15.8
		Sk	iP	02 48 10.0 C			Ud	iSg	20 31 08.3
			ipP	02 48 45.6			Probably blast near		
		Gb	iP	02 48 32.1 C			Uppsala.		
			ipP	02 49 05.1	"	30	Ud	i(Sg)	03 11 27.8
		Um	iP	02 47 51.7 C	"	30	Up	iP	07 28 06.8
			ipP	02 48 27.6			iS		07 31 29
		Ud	iP	02 48 19.2 C			iSS		07 31 53
		i		02 48 32.8			(cont.)		
			ipP	02 48 52.6					
		Japan. h = 140 km (Up, Ki,							
		Sk, Gb, Um, Ud). Magn = 5.9							
		(Up, Ki).							

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967

Nov. 30 (cont.)

Up	iLg1	07 33 38	
	i	07 34 40	
		micr sec	
P	E	2.0	5
P	N	19	5
P	Z	19	6
P	Z'	0.5	0.5
S	E	10	7
S	N	8.9	10
S	Z	32	12
M	E	85	9
M	N	140	9
M	Z	130	9
		D = 2050 km = 18 1/2°.	
Ki	iP	07 29 26.4	C
	iS	07 33 54	
	i	07 36 10	
	iLg2	07 38 12	
		micr sec	
P	N	3.2	9
P	Z	4.5	10
P	Z'	0.7	1.0
S	E	8.0	9
S	N	4.9	9
S	Z	18	13
M	E	160	12
M	N	92	10
M	Z	84	10
		D = 2900 km = 26°.	
Sk	iP	07 28 50.7	
	i(S)	07 33 01.2	
Gb	iP	07 27 49.6	
	i	07 27 52.4	
Um	iP	07 28 48.5	C
	iS	07 32 51	
Ka	iP	07 27 23.7	
	i	07 27 27.1	
	iS	07 30 21.5	
	i	07 30 28.2	
Ud	iP	07 28 12.7	
	i	07 28 15.7	
	iS	07 31 29.5	

Albania-Yugoslavia
(h = 30 km). Magn. = 6.5
(Up,Ki). Multiple P:
about 3 sec between the
first small and the second
large onset; the second
onset has generally
shorter periods than the
first one. Ka exhibits
the same features also
for S. -
(cont.)

1967

Nov. 30 (cont.)

- A consequence is that
in small aftershocks
with the same character-
istics, the first small
motion may be missed
as being too small to be
recorded.

"	30	Up	iP	07 47 08.2
			i	07 47 15.9
		Sk	eP	07 47 53
		Gb	iP	07 46 54.3
		Um	iP	07 47 50.2
		Ka	iP	07 46 29.1
		Ud	iP	07 47 16.0
		Albania-Yugoslavia (h = 30 km).		
"	30	Sk	iP	07 58 48.7
		Ka	iP	07 57 25.3
		Ud	iP	07 58 12.7
		Albania-Yugoslavia (h = 30 km).		
"	30	Sk	iP	08 16 31.8
		Ud	iP	08 15 55.5
		Albania-Yugoslavia. Origin time = 08 11 33.		
"	30	Up	iP	08 17 33.8
		Sk	iP	08 18 19.3
		Um	iP	08 18 16.0
			i	08 18 20.9
		Ka	iP	08 16 55.2
		Ud	iP	08 17 41.7
		Albania-Yugoslavia (h = 30 km).		
"	30	Ud	iP	09 25 09.2
		Albania-Yugoslavia.		
"	30	Ud	iP	09 55 47.7
		Albania-Yugoslavia.		
"	30	Ud	iP	09 59 52.8
		Albania-Yugoslavia.		
"	30	Ka	iP	10 17 28.2
		Ud	iP	10 18 15.1
		Albania-Yugoslavia (h = 30 km).		

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

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Nov. 30 Up iPg 11 47 55.2

i 11 47 58.6

iSn 11 48 17.9

iSg 11 48 20.9

micr sec

Sg Z' 0.1 0.5

D = 230 km = 2.1°

Sk i 11 49 15.1

iLg1 11 49 35.8

Gb i(PKP) 11 47 43.5

iPg 11 47 46.8

i 11 47 59.2

iSg 11 48 03.9

D = 180 km = 1.6°

Um iLg1 11 50 08.9

Ka i 11 48 45.6

eSg 11 48 48

Ud iPg 11 47 33.2 D

iSg 11 47 46.7

D = 120 km = 1.1°

Lake Vener, Sweden, 59.0°N,

13.9°E. Origin time =

11 47 12.

" 30 Ki iP 11 52 08.7

Sk iP 11 52 29.6

Ud iP 11 52 25.7

Alma Ata (h = 20 km).

" 30 Ud iP 12 01 54.3

Albania-Yugoslavia.

" 30 Gb iP 12 36 25.8

" 30 Um iP 13 20 43.4

" 30 Ud iP 13 23 12.9

" 30 Up i(PKP) 16 05 48.6

Ki ePKP 16 05 39

iSKP 16 08 06.0

Um iSKP 16 08 18.3

Ud iPKP 16 05 47.4

Fiji Islands

(h = 630 km).

1967

Nov. 30 Ud iP 17 11 24.7

" 30 Ud iP 22 57 33.2

" 30 Ud iP 23 46 23.0

Markus Båth

April 9, 1968

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Seismological Institute
Uppsala

SEISMOLOGICAL BULLETIN
UPPSALA, KIRUNA, SKALSTUGAN, GÖTEBORG,
UMEÅ, KARLSKRONA and UDDEHOLM

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
Göteborg	(Gb):	57°41.9'N,	11°58.7'E;	h = 66 m
Umeå	(Um):	63°48.9'N,	20°14.2'E;	h = 16 m
Karlskrona	(Ka):	56°09.9'N,	15°35.5'E;	h = 11 m
Uddeholm	(Ud):	60°05.4'N,	13°36.4'E;	h = 240 m

DECEMBER 1 - 31, 1967
.....

1967					1967				
Dec.	1	Ud	iP	08 43 04.9	Dec.	1	Ud	iP	16 50 08.0
		Albania.					Sunda Strait	(h = 30 km).	
"	1	Ki	iPn	12 38 03.0	"	1	Ud	iP	17 02 10.0
			iSn	12 38 40.6			North Atlantic Ocean		
			iSg	12 38 54.3			(h = 30 km).		
			D = 330 km = 3.0°.		"	1	Ud	eP	18 35 24
			Origin time = 12 37 14.				Ka	iP	18 34 36.8
"	1	Up	iP	14 07 31.5 C			Albania-Yugoslavia.		
			iPcP	14 07 59.8	"	1	Up	iP	20 12 08.0
			iS	14 16 03			Um	iP	20 12 49.0
			i	14 16 41				i	20 12 55.3
			i	14 17 09			Ka	iP	20 11 28.8
				micr sec			Ud	iP	20 12 16.2
		P	Z	2.2 3			Albania-Yugoslavia		
		P	Z'	0.4 0.5			(h = 30 km).		
		M	E	5.7 26	"	1	Um	iP	20 27 56.6
		M	N	7.1 26	"	1	Up	iPg	20 43 53.1
		M	Z	9.2 25			iSg		20 43 57.3
		Ki	iP	14 06 41.5 C				micr sec	
			ipP	14 07 21.3			Sg	Z'	0.2 0.6
				micr sec			Ud	iSg	20 44 45.6
		P	Z'	1.6 1.5			Probably blast near		
		M	Z	7.1 18			Uppsala.		
		Sk	iP	14 07 17.5	"	2	Up	eP	00 28 32
		Gb	iP	14 07 53.0			Um	iP	00 29 14.2
			iPcP	14 08 16.2				i	00 29 19.5
		Um	iP	14 07 04.6 C			Ka	iP	00 27 53.4 C
			ipP	14 07 44.2			Ud	iP	00 28 40.5
			iS	14 15 11			Albania-Yugoslavia		
		Ka	iP	14 07 54.4 C			(h = 30 km).		
		Ud	iP	14 07 36.1 C					
		Kurile Islands.		h = 160 km					
		(Ki,Um).		Magn. = 6.5 (Up,Ki).					

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Dec.	2	Um	iP	00 43 51.0	Dec.	2	(cont.)		
		Gulf of California					Ki	iP	20 15 47.1
		(h = 30 km).							micr sec
"	2	Up	iP	09 31 28.7			P	Z'	0.2 1.4
		Ka	iP	09 30 46.3			Um	eP	20 15 52
		Ud	iP	09 31 33.1				i	20 15 58.5
			i	09 31 41.9				i	20 16 17.8
		Albania-Yugoslavia					Ud	iP	20 16 21.9
		(h = 30 km).					China (h = 15 km).		
							Magn. = 6.0 (Up,Ki).		
"	2	Ud	iP	11 52 23.6 C	"	2	Up	iP	23 11 55.6 C
									micr sec
"	2	Up	iP	12 48 59.8 C			P	Z'	0.1 0.5
			i	12 49 32.0			Ud	iP	23 12 02.6 C
				micr sec			Greece.		
		P	Z'	0.4 1.0					
		M	E	2.2 17	"	3	Ki	ePn	12 39 55
		M	N	4.2 9				iSn	12 40 39.6
		M	Z	5.3 10				iSg	12 40 55.9
		Ki	iP	12 50 20.4					D = 410 km = 3.7°
				micr sec			Possibly northwest Russia.		
		P	Z'	0.3 1.1			Origin time = 12 38 55.		
		Sk	iP	12 49 45.1 C					
		Gb	iP	12 48 46.7 C	"	3	Ud	iP	15 11 35.5
		Um	iP	12 49 42.5 C					
		Ka	iP	12 48 20.5	"	3	Um	iP	18 04 28.8
		Ud	iP	12 49 05.5			Albania-Yugoslavia.		
		Albania-Yugoslavia			"	3	Sk	iP	19 54 29.1
		(h = 15 km).					Um	iP	19 54 32.7
		Magn. = 5.8 (Up,Ki).					Italy (h = 20 km).		
"	2	Up	iP	14 22 21.3	"	3	Sk	iP	21 34 49.8
		Um	iP	14 23 04.5			Italy (h = 30 km).		
		Ka	iP	14 21 38.7	"	4	Ud	iP	03 07 28.0
		Ud	iP	14 22 26.4				i	03 07 33.8
		Albania-Yugoslavia							
		(h = 30 km).			"	4	Up	iP	03 51 53.1
"	2	Up	iP	14 23 23.1			Greece.		
		Um	iP	14 24 07.5	"	4	Ki	iPg	04 59 35.2
		Ka	iP	14 22 41.2 C				iSg	04 59 57.0
		Ud	iP	14 23 28.3					D = 190 km = 1.7°
		Albania-Yugoslavia.					Sk	(iSg	05 01 57.7) ^{unreliable}
		Origin time = 14 19 07.					Um	iSg	05 00 40.2
"	2	Um	iPKP	17 42 09.0			Tornedalen, Sweden,		
		New Zealand (h = 170 km).					66.6° N, 23.4° E.		
"	2	Up	iP	20 16 16.9			Origin time = 04 59 02		
			i	20 16 46.8	"	4	Gb	iP	06 19 18.6
				micr sec					
		M	E	5.3 20	"	4	Up	i(P)	11 59 17.5
		M	N	12 18					
		M	Z	1.6 20					
		(cont.)							

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1967

Dec. 4 Up iP 12 08 53.3
ipP 12 09 00.8
Ki iP 12 08 01.3
Ud iP 12 08 54.2
Aleutian Islands.
h = 30 km (Up).

" 4 Up iP 12 28 55.9
Ki iP 12 28 33.3

" 4 Up iP 15 43 07.6
Ki iP 15 43 16.1
Um iP 15 43 05.9
Ud iP 15 43 24.7
Hindu Kush (h = 140 km).

" 4 Up iPKP 22 23 53.5
Ud iPKP 22 23 55.2
Tonga-Kermadec Islands
(h = 520 km).

" 4 Up iP 22 29 40.1
i(PcP) 22 30 02.6
Ki iP 22 28 45.6
Ud iP 22 29 37.4 C
iPcP 22 30 06.6
Aleutian Islands
(h = 50 km).

" 5 Up iP 05 25 06.9
ipP 05 25 33.8
micr sec
P Z' 0.3 0.6
Ki iP 05 26 13.4
Sk iP 05 25 46.1
Gb iP 05 25 00.7
Um iP 05 25 43.0
isP 05 26 26.3
Ka iP 05 24 35.1 C
Ud iP 05 25 14.7 C
Dodecanese Islands.
h = 140 km (Up,Um).

" 5 Up iP 09 16 13.6
micr sec
P Z' 0.1 0.5
Ki iP 09 15 18.8
iPcP 09 16 03.9
Um iP 09 15 46.5
Ud iP 09 16 11.5 C
Aleutian Islands
(h = 40 km).

" 5 Um iP 21 59 56.3

1967

Dec. 6 Up iP 00 06 13.4
Um iP 00 06 52.3
Ud iP 00 06 19.1
Albania-Yugoslavia
(h = 30 km).

" 6 Up iP 04 54 05.7
Ki iP 04 54 04.8
Um iP 04 54 02.7
Ud iP 04 54 15.7
Sumatra (h = 80 km).

" 6 Up iPKP 05 21 57.3
i 05 22 07.3
Ki iPKP 05 21 51.0
iSKP 05 24 26.2
Gb iPKP 05 22 07.8
Um i(PKP) 05 21 45.7
i 05 21 51.4
iPKP 05 21 56.9
iSKP 05 24 38.3
Ka iPKP 05 22 09.9 D
Ud iPKP 05 21 59.0
Fiji Islands (h = 560 km).

" 6 Ud i(Pg) 07 41 55.4
iSg 07 42 21.0

" 6 Up iP 08 13 48.1 C
Ki iP 08 13 16.7
Um iP 08 13 30.3
Ud iP 08 13 54.9
Bonin Islands (h = 460 km).

" 6 Ud i(Sg) 08 57 07.8

" 6 Ki iPg 10 49 14.7
iSg 10 49 39.0
D = 210 km = 1.9°.
Origin time = 10 48 36.

" 6 Ud iPg 12 57 49.6
iSg 12 58 10.6
D = 180 km = 1.6°.
Origin time = 12 57 18.

" 7 Ki iP 03 16 31.2

" 7 Ud eP 06 59 45

" 7 Ki iP 07 34 28.9
Um iP 07 34 56.1
i 07 35 12.7
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967				1967			
Dec.	7	(cont.)		Dec.	7	(cont.)	
		Ud iP	07 35 20.7 C			Sk ePKP	20 47 41
		Aleutian Islands				Gb iPKP	20 47 56.7
		(h = 30 km).				Um iPKP	20 47 36.9
"	7	Ud eP	08 29 07			Ud iPKP	20 47 50.5
		Venezuela (h = 40 km).				Kermadec Islands	
						(h = 370 km).	
"	7	Ud iP	08 34 56.9	"	8	Ud iP	03 43 11.2
"	7	Ud iP	09 07 42.8	"	8	Up iP	06 10 52.5
"	7	Ki iPg	09 37 17.4			iPn	06 11 58.3
		iSg	09 37 47.1			iPP	06 12 11.1
		D = 260 km = 2.3°.					micr sec
		Sk iSg	09 39 05.0			P Z'	0.1 0.5
		Um iLg1	09 39 09.7			Sk iP	06 11 08.0 C
		Lofoten, near 68.4°N,				Gb iP	06 11 21.8
		14.4°E.				iPn	06 12 37.3
		Origin time = 09 36 31.				Um iP	06 10 37.3 C
"	7	Up iSKP	10 11 37.6			Ud iP	06 11 09.0 C
		Ki iPKP	10 08 14.2 C			iPn	06 12 23.7
		Sk iPKP	10 08 26.5			iPP	06 12 34.2
		Um iPKP	10 08 21.9			Kazakh SSR.	
		Ud iPKP	10 08 31.0			Underground explosion.	
		iSKP	10 11 42.9	"	8	Um iP	06 32 24.2
		New Hebrides Islands				i	06 32 37.1
		(h = 150 km).		"	8	Ud iP	10 12 46.8
"	7	Ud iP	10 26 28.9			Aleutian Islands	
"	7	Um iP	10 51 24.8			(h = 30 km).	
"	7	Ud iP	12 12 59.2	"	8	Ki iP	11 21 30.2
"	7	Ud iP	13 42 58.2			Aleutian Islands	
"	7	Ud iP	13 58 17.9			(h = 15 km).	
"	7	Ki iP	18 09 10.6	"	8	Um iP	11 43 43.7
		Sk iP	18 08 36.8	"	8	Sk iP	13 14 05.0
		Ka iP	18 07 13.6	"	8	Ud iP	18 36 47.6 D
		Ud iP	18 07 59.6	"	8	Ud eP	19 11 24
		Albania-Yugoslavia				i	19 11 30.9
		(h = 30 km).		"	8	Um ePg	19 34 12
"	7	Ud iP	20 03 03.9			iSn	19 34 44.7
"	7	Ud iP	20 17 13.7			iSg	19 35 01.0
						D = 400 km = 3.6°.	
						Origin time = 19 33 02.	
"	7	Up iPKP	20 47 48.1	"	8	Ud iP	22 35 26.6
		i	20 47 53.1	"	8	Sk iP	22 56 39.2
		i	20 47 56.4				
		(cont.)					

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967						1967					
Dec.	8	Ud	iP	23 07 11.3		Dec.	9	(cont.)			
"	9	Up	iP	01 20 44.3				Ud	iPKP	11 09 51.9	
		Ud	iP	01 20 46.3				Santa Cruz Islands			
								(h = 30 km).			
"	9	Ud	iP	01 31 01.8 D		"	9	Ki	iPn	12 39 32.1	
								iP ^x	12 39 40.6		
"	9	Up	iP	03 14 01.7				iSn	12 40 18.7		
		i		03 14 06.8				iLg1	12 40 31.3		
				micr sec				D = 430 km = 3.9 ⁰ .			
		P	Z'	0.1 0.8				Um	iSg	12 42 05.9	
		M	N	0.9 11				Probably northwest Russia.			
		M	Z	0.9 11				Origin time = 12 38 30.			
		Ki	iP	03 15 22.6				Explosion?			
		i		03 15 30.8							
		Sk	iP	03 14 42.1		"	9	Up	iP	13 50 22.5	
		i		03 14 47.8				Ud	iP	13 50 32.0	
		Gb	iP	03 13 45.2 C				i	13 50 34.3		
		Um	iP	03 14 43.7				Formosa (h = 30 km).			
		i		03 14 50.1							
		Ka	iP	03 13 18.5		"	9	Ud	iP	14 41 56.1	
		i		03 13 23.8							
		Ud	iP	03 14 04.1		"	9	Um	iP	14 57 52.9 C	
		i		03 14 09.8							
		Adriatic Sea		(h = 30 km).		"	9	Ud	iP	17 23 31.5	
		Multiple P.									
"	9	Ki	iP	05 04 02.6		"	9	Ud	iP	18 42 38.1 C	
		Ud	iP	05 03 52.5				Vancouver Island			
		Hindu Kush		(h = 230 km).				(h = 30 km).			
"	9	Ki	eP	05 22 44		"	9	Ud	iPg	19 33 04.0	
		Ud	iP	05 23 29.4 D				iSg	19 33 34.7		
								D = 260 km = 2.3 ⁰ .			
								Origin time = 19 32 19.			
"	9	Up	iPKP	05 46 55.3		"	9	Up	iP	22 22 04.3	
			iSKP	05 49 44.2				Ki	iP	22 21 10.3	
		Sk	ePKP	05 46 49				Gb	iP	22 22 17.8	
		Gb	iPKP	05 47 05.5 D				Um	iP	22 21 38.7	
		Um	iPKP	05 46 49.5				Ud	iP	22 22 02.7 C	
			iSKP	05 49 33.3				Unimak Island (h = 15 km).			
		Ka	iPKP	05 47 07.6							
		Ud	iPKP	05 46 57.3		"	10	Up	i(Sg)	05 45 02.4	
			iSKP	05 49 46.5				Ki	iPn	05 40 55.5	
		Tonga-Kermadec Islands						iSn	05 41 57.5		
		(h = 590 km).						iLg1	05 42 19.6		
"	9	Up		---				D = 580 km = 5.2 ⁰ .			
				micr sec				Sk	iSg	05 44 46.7	
		M	E	0.8 18				Um	iSn	05 42 35.1	
		M	N	1.0 20				iSg	05 43 08.9		
		M	Z	1.7 18				Ud	e(Sg)	05 45 39	
		Ki	ePKP	11 09 34				Northwest Russia, 67.1 ⁰ N,			
		Sk	iPKP	11 09 46.3				33.9 ⁰ E.			
		Um	iPKP	11 09 41.7				Origin time = 05 39 36.			
		(cont.)						Explosion?			

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
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1967					1967				
Dec.	10	Ud	iP	06 30 27.1	Dec.	10	(cont.)		
"	10	Um	i(P)	07 00 41.0			Magn. = 6.0 (Up,Ki).		
			i	07 03 33.6			Multiple P: three phases		
"	10	Ud	iP	07 23 31.7			can be distinguished,		
							especially clear at Up		
"	10	Ud	iP	07 45 29.8	"	10	Ki	ePn	14 12 44
"	10	Ud	eP	08 00 07				iSn	14 13 28.5
"	10	Up	iP	08 04 49.1				iSg	14 13 44.4
		Ud	iP	08 05 05.2				D = 410 km = 3.7°.	
"	10	Ud	iP	08 35 42.8			Sk	eSg	14 16 16
"	10	Ki	iPP	11 01 09.8			Um	iSg	14 14 41.8
		Um	iP	10 59 37.1			Northwest Russia-Finland		
		Ud	iP	10 59 42.9			border region, 67.6°N,		
		Iran (h = 50 km).					30.1°E.		
"	10	Up	iP	12 18 34.3			Origin time = 14 11 43.		
			i	12 18 39.5			Explosion?		
			i	12 18 43.0	"	10	Up	eP	15 42 25
			iS	12 28 16				i	15 42 27.1
				micr sec			Ki	iP	15 42 12.8
		P	Z'	0.2 1.0			Sk	iP	15 42 41.7
		M	E	2.5 19			Um	iP	15 42 10.5
		M	N	3.7 17				i	15 42 13.3
		M	Z	2.9 18				i	15 42 34.4
		D = 8350 km = 75°.					Ud	eP	15 42 39
		Ki	iP	12 17 57.2			Kazakh SSR (h = 50 km).		
			i	12 18 04.2	"	10	Ud	iP	18 52 34.5
			iS	12 27 06	"	10	Up	iP	18 53 54.4
				micr sec				i	18 54 13.9
		P	Z'	0.1 1.0				ipP	18 54 31.9
		S	E	1.5 6					micr sec
		S	N	0.9 6				P	Z' 0.1 1.0
		M	E	2.5 17			Ki	iP	18 53 48.9
		M	N	1.0 17				ipP	18 54 22.5
		M	Z	4.2 21			Sk	iP	18 54 09.8 C
		D = 7600 km = 68 1/2°.					Gb	iP	18 54 13.7
		Sk	iP	12 18 08.0			Um	iP	18 53 47.2 C
			i	12 18 14.5				ipP	18 54 23.4
		Gb	iP	12 18 37.2			Ka	iP	18 54 02.5
			i	12 18 45.2			Ud	iP	18 54 07.3
		Um	iP	12 18 17.6				ipP	18 54 43.8
			i	12 18 22.1			Burma. h = 150 km (Up,Ki,		
			i	12 18 26.0			Um,Ud).		
			iS	12 27 39	"	10	Up	iP	19 41 34.5
		Ka	e(P)	12 19 01			Ki	iP	19 41 04.6
		Ud	iP	12 18 28.2			Um	iP	19 41 23.0
			i	12 18 32.4			Ka	iP	19 41 46.1
		California (h = 5 km).					New Mexico. Underground		
		(cont.)					nuclear explosion.		

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Dec.	10	Um	iP	19 45 57.9	Dec.	11	Ki	iP	09 28 02.5
				South of Japan (h = 50 km).				i	09 28 15.3
"	10	Ud	iP	20 05 14.9	"	11	Ki	iP	14 28 49.7
"	10	Up	iP	23 01 15.2 D	"	11	Um	iP	16 50 38.8
			iS	23 09 11				i	16 51 14.9
				micr sec	"	11	Um	iP	17 45 44.3
		P	Z	0.9 4				i	17 45 47.6
		P	Z'	0.1 0.5	"	11	Up	iP	19 14 24.0
		S	E	1.0 8			Um	iP	19 14 37.3
		S	N	2.0 10			Arabian Sea (h = 30 km).		
		S	Z	1.6 10	"	11	Up	iP	19 57 54.2
		M	E	41 19				i	19 58 00.1
		M	N	63 21			Ki	iP	19 58 32.6
		M	Z	59 20				i	19 58 35.6
		D = 6450 km = 58°.					Sk	eP	19 58 25
	Ki	iP		23 01 32.5			Um	iP	19 58 09.8 C
		iS		23 09 46			Ud	iP	19 58 05.8
				micr sec			iPP		20 00 10.3
		P	E	1.1 5			Gulf of Aden (h = 30 km).		
		P	Z	2.0 5	"	11	Up	iP	20 59 44.4
		P	Z'	0.4 1.0			Ki	iP	21 00 00.7
		S	E	3.0 10			Sk	iP	21 00 09.9
		S	N	2.1 10			Um	iP	20 59 48.3
		M	E	33 16			Ud	iP	20 59 58.7
		M	N	24 16			India (h = 10 km).		
		M	Z	39 16	"	11	Ud	iP	21 31 18.5
		D = 6700 km = 60 1/2°.			"	11	Up	iP	22 39 28.8
	Sk	iP		23 01 41.2				i	22 39 38.9
		i		23 02 34.0			iS		22 47 02
		i		23 04 19.6					micr sec
	Gb	iP		23 01 30.9			P	Z'	0.1 0.7
	Um	iP		23 01 19.6 D			M	E	1.8 19
		iPP		23 03 21.4			M	N	3.3 18
		i		23 09 01			M	Z	2.6 20
		iS		23 09 21			D = 5900 km = 53°.		
	Ka	iP		23 01 14.5		Ki	iP		22 40 07.3 C
	Ud	iP		23 01 29.9			iPa		22 43 40
	India (h = 30 km).						eS		22 47 54
	Magn. = 6.5 (Up,Ki).								micr sec
"	10	Um	iP	23 15 18.0			P	Z'	0.2 1.0
"	11	Ki	iP	00 02 29.2			M	E	1.8 15
		Um	iP	00 02 16.3			M	N	1.9 15
		Ud	iP	00 02 25.4			M	Z	1.8 17
		India (h = 30 km).					D = 6400 km = 57 1/2°.		
"	11	Um	eP	02 44 30		Sk	iP		22 40 00.8
		i		02 44 31.8		Gb	iP		22 39 33.5
"	11	Ud	iP	06 57 26.5		Um	iP		22 39 44.6 C
"	11	Um	e(Sg)	08 22 20			iS		22 47 16
					(cont.)				

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Dec.	11	(cont.)			Dec.	12	Um	iP	12 51 31.7
		Um	iPS	22 47 37					
			iSS	22 51 11	"	12	Ki	eP	14 31 31
		Ka	iP	22 39 13.9			Um	eP	14 31 41
		Ud	iP	22 39 40.3			Ud	iP	14 31 57.7
		Gulf of Aden (h = 30 km).					Luzon.		
		Magn. = 5.8 (Up,Ki).			"	12	Um	iP	15 51 57.8
"	11	Ki	iP	23 11 45.6	"	12	Up	eP	15 58 49
			i	23 11 52.4					micr sec
			iS	23 13 40.1				M	N 1.3 21
		D = 1110 km = 10.0°.					Ki	iP	15 59 05.1
		Sk	iP	23 11 52.5			Sk	iP	15 59 14.8
			iS	23 13 45.3			Um	iP	15 58 52.1
		Um	iP	23 12 21.4				ipP	15 59 00.5
			iS	23 14 35.8			Ud	iP	15 59 02.7
		Jan Mayen, 71°N, 8°W.					India. h = 30 km (Um).		
		Origin time = 23 09 26.			"	12	Um	i	16 53 34.7
		Solution checked by						i(Sg)	16 53 47.8
		Finnish and Norwegian							
		data.			"	12	Ki	iSg	18 04 45.0
"	12	Up	iP	06 28 30.0	"	12	Sk	iSg	18 04 48.8
		Ki	iP	06 28 46.8 D			Um	iPg	18 04 24.0
		Sk	iP	06 28 55.8				iSg	18 05 12.2
		Um	iP	06 28 34.2			Ud	iSg	18 06 41.2
		Ud	iP	06 28 43.8			Nordlands Fylke, Norway,		
		India (h = 30 km).					66.4°N, 14.8°E.		
"	12	Up		---			Origin time = 18 03 15.		
				micr sec	"	12	Ud	iP	20 08 47.4
		M	E	0.8 21	"	13	Gb	eP	02 57 29
		M	N	1.1 22	"	13	Up	i(P)	10 26 10.1 C
		M	Z	1.4 22	"	13	Up	iP	10 49 01.5 C
		Ki		---				ipP	10 49 29.5
				micr sec					micr sec
		M	E	0.8 18				P	Z' 0.6 0.9
		M	N	0.8 20			Ki	iP	10 48 12.8 C
		M	Z	1.3 18				iPcP	10 49 04.6
		Um	iPP	08 28 05				iPP	10 50 18.3
			i	08 28 50					micr sec
			iPKS	08 29 03				P	Z' 0.3 0.8
		Loyalty Islands					Sk	iP	10 48 48.9 C
		(h = 40 km).					Gb	iP	10 49 22.3 C
"	12	Up	iP	10 22 24.6				iPP	10 51 53.8
			i	10 22 27.8			Um	iP	10 48 35.4 C
		Ki	iP	10 22 00.7				isP	10 49 13.0
		Sk	eP	10 22 28			Ka	iP	10 49 24.5 C
		Ud	iP	10 22 34.2				iPcP	10 49 46.8
		Ryukyu Islands (h = 50 km).					(cont.)		
"	12	Ki	iP	10 35 49.7					
		Ud	iP	10 36 02.5					
		Pamir.							

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1967					1967				
Dec.	13	(cont.)			Dec.	13	(cont.)		
		Ud	iP	10 49 06.8 C			Up		micr sec
		Kurile Islands. h = 110 km					M	N	3.2 30
		(Up,Um).					M	Z	3.1 30
		Magn. = 6.3 (Up,Ki).				Ki	iPKP		19 26 12.8
									micr sec
"	13	Up	iP	11 08 51.1			PKP	Z'	0.2 0.9
				micr sec			M	E	1.4 22
		P	Z'	0.1 0.7			M	N	0.9 21
		Ki	iP	11 08 01.4 C			M	Z	2.6 23
		Sk	iP	11 08 37.6		Sk	i(PKP)		19 26 13.6
		Um	iP	11 08 24.1			iPKP		19 26 23.7
		i		11 09 31.6		Gb	i(PKP)		19 26 23.7
		Ka	iP	11 09 15.0			iPKP		19 26 35.1
		Ud	iP	11 08 55.7		Um	i(PKP)		19 26 11.3
		i		11 08 57.5			iPKP		19 26 19.1
		Kurile Islands					iPKS		19 29 38
		(h = 140 km).				Ka	ePKP		19 26 35
						Ud	i(PKP)		19 26 21.3
"	13	Up	iSg	13 16 07.3			iPKP		19 26 30.1
		Ki	eSg	13 18 36			iPKS		19 29 51.5
		Sk	eSg	13 17 58		New Hebrides Islands (h =			
		Um	iSg	13 16 37.6		50 km). Magn. = 6.1 (Up,Ki).			
		Ud	iSg	13 17 12.3					
		Esthonia. Explosion?			"	13	Ud	iP	21 39 04.8
"	13	Sk	eP	15 02 09	"	13	Ki	iPKP	21 53 14.6
"	13	Um	iP	15 32 54.5			Um	iPKP	21 53 21.4
"	13	Ki	iP	15 48 51.9			Ud	i(PKP)	21 53 21.3
		Ud	eP	15 49 16			iPKP		21 53 31.8
		ipP		15 49 42.7	"	14	Up	eP	01 58 22
		Mindanao. h = 100 km (Ud).			"	14	Up	iP	02 29 38.5
"	13	Up	i(Sg)	16 03 42.3			iS		02 37 04
				micr sec					micr sec
		(Sg) Z'		0.1 1.0			S	E	0.4 8
		Ud	e	16 03 19			M	E	0.7 15
		i(Sg)		16 03 29.9			M	N	1.6 16
		Probably blast.					M	Z	1.3 16
							D = 5850 km = 52 1/2°.		
"	13	Up	iP	17 58 00.9		Ki	iP		02 30 14.5
		Ki	iP	17 57 15.1 D			eS		02 38 12
		Sk	iP	17 57 51.4					micr sec
		Gb	eP	17 58 22			S	E	0.6 9
		Um	iP	17 57 35.5			S	N	0.5 9
		Ud	iP	17 58 07.1			M	E	1.0 14
		Sea of Okhotsk					M	N	1.0 15
		(h = 310 km).					M	Z	2.0 16
							D = 6400 km = 57 1/2°.		
"	13	Ud	eP	18 57 45		Sk	iP		02 30 14.8
"	13	Up	iPKP	19 26 27.2		Um	iP		02 29 52.0
				micr sec			iS		02 37 29
		M	E	0.7 19		Ka	eP		02 29 29
		(cont.)				(cont.)			

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1967				1967			
Dec.	14	(cont.)		Dec.	14	(cont.)	
		Ud	iP 02 29 50.7			Up	i 19 24 16.3
		i	02 29 55.5			Ki	iP 19 23 58.7
		Arabian Sea (h = 30 km).				Sk	iP 19 24 30.3
		Magn. = 5.4 (Up,Ki).				Ud	iP 19 24 27.7
						Tsinghai, China	
						(h = 30 km).	
"	14	Up	iP 03 00 19.5				
		i	03 00 25.2				
		Ki	iP 03 01 26.9	"	14	Ud	iPKP 20 47 14.2
		Sk	eP 03 01 01			i	20 47 23.6
		i	03 01 14.1			Tonga-Kermadec Islands	
		Um	iP 03 00 56.9			(h = 110 km).	
		Ka	iP 02 59 49.5				
		Ud	iP 03 00 27.7	"	15	Up	iPKP 06 21 11.4
		Crete (h = 5 km).				Ud	iPKP 06 21 12.2 D
						i	06 22 20.4
"	14	Ud	eP 08 40 56			Kermadec Islands	
		Crete (h = 80 km).				(h = 30 km).	
"	14	Up	i 11 50 19.6	"	15	Up	iPKP 20 06 49.8
		i(Sg)	11 50 48.4			micr sec	
		Ka	i 11 49 28.2			PKP	Z' 0.2 0.9
		i(Sg)	11 50 00.4			Ki	ePKP 20 06 37
"	14	Ki	iPn 12 57 03.9			Sk	iPKP 20 06 42.4 C
		iSn	12 57 50.2			Gb	iPKP 20 06 58.4
		iLg1	12 58 03.1			i	20 07 05.0
		D = 420 km = 3.8°.				Um	iPKP 20 06 37.8
		Possibly northwest Russia.				Ka	iPKP 20 06 59.5 C
		Origin time = 12 56 03.				Ud	iPKP 20 06 51.6 C
		Explosion?				Kermadec Islands	
"	14	Um	iP 13 13 11.5			(h = 60 km).	
"	14	Um	iP 13 40 45.9	"	15	Up	iSg 20 45 58.2
"	14	Ki	iP 17 42 00.6			micr sec	
"	14	Up	iP 18 35 34.6			Sg	Z' 0.1 0.7
		iPcP	18 36 14.3			Ud	iSg 20 46 50.3
		Ki	iP 18 34 40.2			Probably blast near	
		iPcP	18 35 43.7			Uppsala.	
		Sk	iP 18 35 18.6	"	15	Ud	i(P) 21 52 10.2
		iPcP	18 36 04.8			i	21 53 01.8
		Gb	iP 18 35 53.8			i	21 58 00.8
		Um	iP 18 35 05.7	"	16	Ud	iP 11 50 13.2
		iPcP	18 35 57.4	"	16	Up	iPKP 13 32 59.7 C
		Ka	iP 18 35 58.8			i	13 33 05.5
		Ud	iP 18 35 38.2			micr sec	
		i	18 35 40.6			PKP	Z' 0.1 0.7
		iPcP	18 36 16.7			Um	iPKP 13 32 48.4
		Kamchatka (h = 30 km).				Ud	iPKP 13 33 01.5 C
		Pronounced PcP.				Kermadec Islands	
"	14	Up	iP 19 24 12.4			(h = 400 km).	
		(cont.)		"	16	Up	eP 21 04 35
						(cont.)	

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1967					1967				
Dec.	16	(cont.)			Dec.	17	(cont.)		
		Up	i	21 05 18.3			Sk	eP	17 57 30
				micr sec			Ud	iP	17 57 39.4
		M	E	3.2 19					
		M	N	7.7 22	"	17	Um	iP	18 29 20.5
		M	Z	7.9 22					
		Ki	iP	21 03 42.9	"	18	Ud	iP	02 46 11.7
			i	21 04 13.1					
			iPP	21 05 47.7	"	18	Ud	iP	03 51 02.5 C
				micr sec					
		M	E	6.8 22	"	18	Ud	iP	05 07 38.4
		M	N	3.6 22					
		M	Z	5.1 20	"	18	Um	iPKP	06 43 34.4
		Sk	eP	21 04 20			Ud	iPKP	06 43 40.0
		Gb	iP	21 04 55.9			Loyalty Islands		
			iPcP	21 05 21.2			(h = 30 km).		
		Um	iP	21 04 03.0					
			i	21 04 09.1	"	18	Ud	iP	08 14 31.1
			iPcP	21 04 45.8					
			iPa	21 07 50	"	18	Up	iSg	09 54 34.2
			i	21 08 14			Um	iSg	09 56 00.5
		Ud	iP	21 04 39.4			Ud	iPg	09 54 40.8
			iPcP	21 05 11.6				iSg	09 54 57.3
		Kamchatka (h = 25 km).					Probably Gästrikland,		
		Magn. = 6.0 (Up,Ki).					Sweden, 60.7°N, 16.7°E.		
							Origin time = 09 54 03.0		
"	17	Up	iP	00 32 53.1	"	18	Up	iP	10 29 39.2
				micr sec			Sk	eP	10 29 29
		P	Z'	0.2 0.7			Um	iP	10 29 23.2
		Ki	iP	00 33 00.8				i	10 29 27.3
			i	00 33 11.4			Ud	iP	10 29 36.9
				micr sec					
		P	Z'	0.2 1.0	"	18	Ki	iP	10 34 53.6
		Sk	iP	00 33 18.5			Um	iP	10 35 04.4
		Gb	iP	00 33 14.8			Mariana Islands		
			i	00 33 15.9			(h = 40 km).		
			i	00 33 41.6					
		Um	iP	00 32 51.2 D	"	18	Ki	iP	10 43 38.7
			iPP	00 34 24.9			Mariana Islands		
		Ka	iP	00 32 58.5			(h = 100 km).		
		Ud	iP	00 33 10.0					
			ipP	00 33 32.6	"	18	Up	iP	11 00 44.0
		Hindu Kush.						micr sec	
		h = 110 km (Ud).					P	Z'	0.1 0.6
		Magn. = 6.2 (Up,Ki).					Ki	iP	11 00 45.6
"	17	Um	iP	10 29 44.7			Sk	iP	11 01 04.9
							Gb	iP	11 01 05.3
"	17	Up	iP	16 16 24.8			Um	iP	11 00 39.3
		Ki	iP	16 16 03.5			Ud	iP	11 00 59.1
		Ud	iP	16 16 32.2				i	11 01 02.7
			i	16 16 43.6			Nepal (h = 40 km).		
		Samar (h = 5 km).			"	18	Ud	iPg	13 52 30.3 D
								iSg	13 53 04.6
"	17	Up	iP	17 57 37.2					
		(cont.)							

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1967						1967					
Dec.	18	Ud	iPg	13 54	13.0	Dec.	19	(cont.)			
			iSg	13 54	55.1			Up	iX	03 32	13.2
									iPP	03 32	55.5
"	18	Up	iP	14 17	53.1					micr	sec
			i	14 18	26.0				P	Z'	0.1 0.5
								Ki	iP	03 31	28.7
			M	E	1.2 16				iX	03 32	12.5
			M	N	0.9 12			Sk	iP	03 31	47.7
			M	Z	1.4 15				iPP	03 33	24.5
		Ki	iP	14 17	22.4			Gb	iP	03 31	45.4
								Um	iP	03 31	19.9
			P	Z'	0.1 1.2			Ka	iP	03 31	28.5
			M	E	1.0 14				iX	03 32	20.2
			M	N	0.6 14			Ud	iP	03 31	39.3
			M	Z	0.8 12						Tadzhik SSR (h = 90 km).
		Sk	e(P)	14 18	07						
			i	14 18	10.4	"	19	Up	iP	06 07	07.4
		Um	iP	14 17	31.7			Um	iP	06 06	48.4
		Ud	iP	14 18	04.5			Ud	iP	06 07	14.4
					China (h = 30 km).						South of Japan (h = 360 km).
"	18	Up	eP	14 17	49	"	19	Up	iP	08 36	46.8
		Ud	iP	14 17	54.1					micr	sec
					Mariana Islands				P	Z'	0.1 0.6
					(h = 10 km).			Ki	iP	08 38	07.2 C
"	18	Up	iP	15 17	00.6			Sk	iP	08 37	32.1
"	18	Ud	iP	17 36	23.9			Gb	iP	08 36	32.6
					California (h = 10 km).			Um	iP	08 37	27.9
"	18	Um	iP	19 13	45.0 C			Ka	iP	08 36	08.0
								Ud	iP	08 36	53.9
"	18	Up	iP	19 23	35.1						Albania-Yugoslavia
		Ki	iP	19 22	50.5	"	19	Ki	iPn	10 56	53.6
		Um	iP	19 23	10.7				iSn	10 57	39.1
		Ud	iP	19 23	41.8				iSg	10 57	55.3
					Kurile Islands.				D = 410 km = 3.7°.		
"	18	Up	iP	21 49	44.6 C			Um	iSg	10 58	57.4
			i	21 49	48.6						Northwest Russia-Finland
"	18	Up	iP	21 53	20.8						border region. Origin time =
"	18	Up	iP	22 01	12.4	"	19	Ki	iP	12 21	49.3
"	18	Ki	iP	22 56	39.9						
		Ud	iP	22 56	11.6	"	19	Ud	eP	14 51	37
					Iran-Iraq (h = 40 km).						Aleutian Islands
"	18	Um	eP	23 41	51	"	20	Um	iP	00 17	40.6
											(h = 60 km).
"	18	Um	iP	00 46	25.8	"	20	Sk	eP	01 47	29
"	19	Up	iP	03 31	22.7	"	20	Ud	iP	01 47	39.4
		(cont.)									China.
						"	20	Up	iP	02 05	56.6
						"	20	Ud	iP	02 28	21.2 C

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
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1967

Dec. 20 Up iP 11 45 47.0
iX 11 45 54.5
iS 11 55 01
iPS 11 55 29
micr sec
P Z' 0.1 0.7
M E 0.9 23
M N 1.8 22
M Z 1.4 22
D = 8000 km = 72°.
Ki iP 11 45 47.8
iX 11 45 55.5
eS 11 55 06
iPS 11 55 34
micr sec
S E 0.7 7
M E 0.8 21
M N 0.6 15
M Z 0.9 19
D = 8000 km = 72°.
Sk iP 11 46 04.1
ipP 11 46 22.1
i 11 47 05.8
Gb iP 11 46 03.7
iX 11 46 11.3
ipP 11 46 21.4
Um iP 11 45 43.3
ipP 11 46 01.3
iS 11 54 57
iPS 11 55 27
Ka iP 11 45 51.7
iX 11 45 59.8
Andaman Islands. h = 70 km
(Sk, Gb, Um). Magn. = 6.1
(Up, Ki). Multiple P: X-P =
7.7 sec in average.

" 20 Up iP 12 12 34.5

" 20 Um eP 13 00 22

" 20 Ka iP 14 12 11.9

" 20 Up iPKP 17 26 43.3
iPKS 17 29 57.4
Ki iPKP 17 26 29.5
Sk iPKP 17 26 40.2
Um iPKP 17 26 36.3
i 17 26 41.0

New Hebrides Islands
(h = 140 km).

" 20 Um iP 19 56 17.8

" 21 Up iP 00 13 47.6
(cont.)

1967

Dec. 21 (cont.)
Ki iP 00 15 09.0
micr sec
M E 0.9 12
M N 0.3 12
Sk iP 00 14 32.5 D
Gb iP 00 13 34.4
Um iP 00 14 29.4
Yugoslavia (h = 20 km).

" 21 Up iP 02 39 41
iX 02 43 08.2
i(PF) 02 44 02
iPP 02 44 10
iS 02 51 45
iPS 02 53 32
i(PKKP) 02 55 28.7
micr sec
P Z 1.5 8
PP E 1.2 4
PP Z 4.2 8
PP Z' 0.4 1.5
M E 150 24
M N 74 25
M Z 200 23
(D = 12000 km = 108°).
Ki iP 02 39 52
iX 02 43 44.9
ePKP 02 43 59
iPP 02 44 23
iSKS 02 50 28
iS 02 52 08
iPS 02 53 53
iPKKP 02 54 53.8
i 02 55 03.4
micr sec
P E 0.4 9
P Z 1.9 9
PP E 2.2 7
PP Z 3.6 8
PP Z' 0.6 2.0
SKS E 4.5 16
S N 6.2 15
M E 130 23
M N 46 22
M Z 240 24
(D = 12200 km = 110°).

Sk iP 02 39 37.7
i 02 40 28.0
iX 02 43 23.8
iPP 02 44 09.3
iPKKP 02 55 07.9
i 02 55 25.9
Gb iP 02 39 30.6
(cont.)

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Gb = Göteborg, Um = Umeå,
Ka = Karlskrona, Ud = Uddeholm

1967					1967				
Dec.	21	(cont.)			Dec.	21	Um	iP	17 03 04.6
		Gb	i	02 42 42.8					
			iPP	02 43 48.0	"	21	Ki	iSg	17 47 38.2
			i(PKKP)	02 55 39.1			Sk	ePg	17 47 05
		Um	iP	02 39 47 C				iSg	17 47 42.7
			iX	02 43 36.2			Um	iPg	17 47 17.3
			iPP	02 44 21				iSn	17 47 50.9
			iS	02 52 01				iSg	17 48 05.6
			iPKKP	02 54 56.3			Nordlands Fylke, Norway,		
			i	02 55 11.5			66.4°N, 14.8°E.		
		Ka	iPKP	02 43 41.9			Origin time = 17 46 11.		
			i	02 43 52.8					
		Chile (h = 30 km).			"	21	Up	iPKP	18 05 43.1
		Magn. = 7.3 (Up,Ki).							micr sec
		The phase marked X may be						PKP	Z' 0.1 0.7
		the unidentified phase					Sk	iPKP	18 05 41.6
		arriving before PP in this					Um	i(PKP)	18 05 29.1
		distance range, which has						iPKP	18 05 33.3
		been mentioned several					Kermadec Islands		
		times in earlier bulletins.					(h = 25 km).		
"	21	Um	iP	03 51 25.7	"	21	Um	iP	18 29 46.9
			i	03 51 33.7					
"	21	Um	iP	04 57 16.2	"	21	Up	iP1	23 54 35.5
								iP2	23 54 44.2
								iP3	23 54 52.5
"	21	Um	iP	05 19 50.7					micr sec
"	21	Um	iP	05 45 12.7				P3	Z' 0.1 0.7
"	21	Up	iP	11 49 49.5		Ki	iP1	23 54 37.0	
		Ki	iP	11 49 53.9 C			iP2	23 54 44.6	
				micr sec			iP3	23 54 54.7	
			P	Z' 0.1 1.3		Sk	iP2	23 54 59.5	
		Sk	iP	11 49 37.6 C		Um	iP1	23 54 32.7	
		Gb	iP	11 49 35.8			iP2	23 54 41.4	
		Um	iP	11 49 55.0 C			iP3	23 54 50.2	
			i	11 49 58.2		Ka	i(P1)	23 54 35.8	
		Colombia (h = 30 km).					iP3	23 54 55.6	
							Andaman Islands		
"	21	Gb	iPKP	12 00 46.5			(h = 30 km).		
		Um	iPKP	12 00 30.6			Multiple P: P2-P1 = 8.3		
		Ka	iPKP	12 00 48.8			sec and P3-P1 = 17.4 sec		
		Fiji Islands (h = 610 km).					(averages); some of these		
							phases could be pP.		
"	21	Up	iP	16 23 14.0	"	22	Um	iP	02 33 29.4
				micr sec					
			M	N 1.4 17	"	22	Up	iPKP	05 30 01.5 C
			M	Z 2.2 17			Um	iPKP	05 30 09.1 C
		Ki	iP	16 22 22.4			South Sandwich Islands		
		Kurile Islands					(h = 30 km).		
		(h = 50 km).			"	22	Up	iP	10 11 39.3 C
"	21	Up	iP	16 27 24.5 D					micr sec
		Kurile Islands					P	Z' 0.1 0.6	
		(h = 50 km).			"	22	Um	iP	13 00 27.3

Up = Uppsala, Ki = Kiruna, Sk = Skanstugan, Gb = Göteborg, Um = Umeå,
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1967						1967					
Dec.	22	Gb	iP	18 36 39.4		Dec.	24	(cont.)			
"	22	Up	iPKP	23 28 42.7				Sk	iP	04 24 19.5	
			i	23 28 45.2					iS	04 26 03.5	
				micr sec				Um	iP	04 24 42.5	C
			PKP	Z' 0.2 1.0					iS	04 26 44	
		Ki	ePKP	23 28 24				Jan Mayen (h = 30 km).			
		Sk	iPKP	23 28 35.5	D	"	24	Ki	ePn	04 50 51	
			i	23 28 42.6					iSn	04 51 44.2	
		Gb	iPKP	23 28 52.1					iSg	04 52 06.2	
			i	23 28 55.6					D = 500 km = 4.5°.		
		Um	iPKP	23 28 29.6				Um	iSg	04 53 01.9	
		Ka	iPKP	23 28 52.4					Probably northwest Russia.		
			i	23 28 57.3					Origin time = 04 49 39.		
		Kermadec Islands							Explosion?		
		(h = 20 km).									
"	23	Up	iP	16 15 31.8			24	Up	iP	08 44 02.6	
		Ki	iP	16 14 41.5					M	E 1.5 16	
		Um	iP	16 15 04.5					M	N 1.8 15	
			ipP	16 15 10.5					M	Z 3.4 18	
		Kurile Islands.						Ki	eP	08 43 09	
		h = 20 km (Um).								micr sec	
"	23	Um	eP	17 27 18					M	E 2.2 17	
		Samar (h = 150 km).							M	N 1.5 14	
"	23	Ki	iPn	18 58 25.7					M	Z 2.2 15	
			iSn	18 59 12.2				Um	iP	08 43 34.6	
			iLg1	18 59 24.6					i	08 43 40.0	
			D = 420 km = 3.8°.			"	24	Um	iP	12 27 44.5	
		Um	iSg	19 01 05.9							
		Probably northwest Russia.				"	24	Ki	ePn	13 18 50	
		Origin time = 18 57 25.							i	13 19 10.8	
		Explosion?							iSn	13 19 34.6	
"	24	Up	iPKP	02 43 28.3					iSg	13 19 50.9	
		Ki	iPKP	02 43 20.5					D = 410 km = 3.7°.		
			iSKP	02 46 06.4				Um	iSn	13 20 17.1	
		Gb	iPKP	02 43 37.6					iSg	13 20 44.2	
		Um	iPKP	02 43 23.0					Northwest Russia-Finland		
			iSKP	02 46 18.6					border region.		
		Fiji Islands (h = 430 km).							Origin time = 13 17 50.		
									Explosion?		
"	24	Up	iP	04 25 19.8		"	24	Um	iP	15 21 59.8	
		Ki	iP	04 24 03.2					Gulf of Alaska		
			i	04 24 12.0					(h = 30 km).		
			eT	04 30 43		"	24	Um	iP	19 34 04.3	
			i	04 31 07.3							
				micr sec		"	24	Up	iP	20 14 18.1	
		P	Z' 0.6 2.0						i	20 14 21.2	
		M	E 4.2 17						iS	20 23 26	
		M	N 2.3 15						(cont.)		
		M	Z 6.4 17								
		(cont.)									

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1967

Dec. 24 (cont.)

Up			micr	sec
P	E	1.2	5	
P	Z	1.9	4	
P	Z'	0.8	1.5	
S	E	2.6	6	
S	N	5.4	11	
M	E	13	23	
M	N	16	20	
M	Z	14	22	
D = 7700 km = 69 1/2°.				
Ki	iP	20	14	27.0
	i	20	14	30.5
	i	20	14	39
	iS	20	23	42
	iScS	20	24	33
			micr	sec
	P	Z'	2.1	2.0
	S	E	6.3	16
	S	N	2.9	8
	M	E	16	19
	M	N	4.7	18
	M	Z	17	20
D = 7900 km = 71°.				
Sk	iP	20	14	05.4
	i	20	14	08.6
Gb	iP	20	14	00.4
	i	20	14	03.2
Um	iP	20	14	26.4
	i	20	14	30.3
	iS	20	23	37
Ka	iP	20	14	11.7
	i	20	14	14.2
Leeward Islands (h = 25 km).				
Magn. = 6.5 (Up,Ki).				
Multiple P: in average 3.2				
sec between the first				
smaller and the second				
larger onset.				

"	24	Up	iP	21	43	39.5
				micr	sec	
		P	Z'	0.2	0.9	
		M	E	2.2	19	
		M	N	2.5	18	
		M	Z	2.2	17	
		Ki	iP	21	43	48.3 D
				micr	sec	
		P	Z'	0.5	1.0	
		M	E	2.4	18	
		M	Z	3.2	17	
		Sk	iP	21	43	25.1
			i	21	43	38.0
		Gb	iP	21	43	21.2
		(cont.)				

1967

Dec. 24 (cont.)

Gb	i	21	43	24.7
Um	iP	21	43	47.0
Ka	iP	21	43	32.9
Leeward Islands				
(h = 20 km).				
Magn. = 6.1 (Up,Ki).				

"	24	Up	iP	23	59	47.5
	-25	Ki	iP	00	00	03.8
		Sk	iP	00	00	12.9
		Um	iP	23	59	51.0
		India (h = 30 km).				

"	25	Up	eP	01	38	26
			i	01	38	33.2
			iPKP	01	42	11.6
			i(PP)	01	43	02.2
			iPP	01	43	12
			iSKKS	01	50	12
			iPKKP	01	52	42.5
			iX	01	55	29.1
				micr	sec	
		M	E	36	22	
		M	N	61	22	
		M	Z	72	25	
		(D = 12900 km = 116°).				
		Ki	iP	01	38	02.0
			iPKP	01	42	04.9
			iPP	01	42	34.0
			iSKKS	01	49	34
			ePKKP	01	53	07
				micr	sec	
		PP	E	3.1	18	
		PP	Z	3.6	12	
		PP	Z'	0.3	1.7	
		M	E	52	22	
		M	N	52	24	
		M	Z	180	26	
		(D = 12200 km = 110°).				

Sk	iPKP	01	42	13.3
	iPP	01	43	14.0
	e	01	53	17.6
Gb	e(P)	01	39	02
	iPKP	01	42	18.4
	iPP	01	43	38.3
	iPKKP	01	52	31.0
	iX	01	55	24.0
Um	eP	01	38	07
	iPKP	01	42	05.6
	iPP	01	42	49
	iPKKP	01	53	00.5
	iX	01	55	29.8
Ka	iPKP	01	42	20.7
(cont.)				

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Ka = Karlskrona, Ud = Uddeholm

1967				1967			
Dec.				Dec.			
25	(cont.)			26	Up	iP	10 52 05.5
	Ka	i	01 43 24.1		Sk	eP	10 51 38
	New Ireland (h = 60 km).				Um	iP	10 51 46.1
	Magn. = 7.1 (Up,Ki).				Off coast of Oregon		
	Surface waves of pro-				(h = 30 km).		
	nounced long period.						
"	25	Up	iP 02 57 36.7	"	26	Up	iPKP 14 54 21.0
"	25	Sk	i(Sg) 03 52 51.6			Sk	iPKP 14 54 14.0
"	25	Up	iP 10 28 55.1			Um	iPKP 14 54 04.1
"	25	Up	iSKS 11 06 21		South of Kermadec Islands		
		iS	11 07 44		(h = 30 km).		
		iPS	11 09 22	"	26	Um	eP 17 19 28
			micr sec			i	17 19 36.3
	M	E	2.4 21	"	27	Ki	iSg 01 36 11.1
	M	N	3.0 28	"	27	Up	iP 03 45 29.4
	M	Z	3.2 20		Aleutian Islands		
	Ki		---		(h = 30 km).		
			micr sec	"	27	Um	iP 07 23 26.5 C
	M	E	3.8 24	"	27	Up	iPP 09 36 11.6
	M	Z	6.1 23			iSKS	09 42 22
	Um	iSKS	11 06 30			i	09 43 09
		iS	11 07 49			iS	09 43 41
		i	11 09 36			iSP	09 45 17
		iSS	11 15 45				micr sec
	Chile (h = 50 km).					SKS	E 2.0 5
	Magn. = 6.2 (Up,Ki).					S	E 1.5 4
"	25	Um	iP 13 24 21.8			M	E 3.2 19
		i	13 24 29.7			M	N 4.2 19
"	25	Up	iP 21 30 38.7			M	Z 4.9 19
		Sk	eP 21 30 50				(D = 11800 km = 106°).
	North of Ascension Island			Ki	iPKP	09 36 09.6	
	(h = 30 km).				iPP	09 36 38.5	
"	26	Up	iP 00 41 16.1		iSKS	09 42 36	
		Um	iP 00 40 56.5		i	09 43 29	
	South of Japan				iSP	09 45 50	
	(h = 200 km).				e	09 47 12	
"	26	Um	iP 01 51 21.2		iPKKP	09 47 29.8	
"	26	Um	iP 07 14 37.7			micr sec	
"	26	Um	iP 08 45 06.9		PP	Z' 0.2 1.5	
"	26	Um	iP 09 41 04.0		SKS	E 3.0 11	
		Sk	eP 09 40 34		M	E 3.0 20	
		Um	iP 09 40 44.0		M	N 1.4 16	
	Off coast of Oregon				M	Z 2.5 18	
	(h = 30 km).					(D = 12100 km = 109°).	
				Sk	iP	09 31 47.7 C	
					iPP	09 36 03.4	
					i	09 36 17.8	
				Gb	iP	09 31 38.8	
					iPP	09 35 50.9	
					(cont.)		

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1967				1967			
Dec.	27	(cont.)		Dec.	27	Um	iP 16 53 43.9
		Um	eP 09 32 02				
			iPKP 09 36 08.4	"	27	Um	iP 22 40 12.5
			iPP 09 36 32.3				
			iSKS 09 42 28	"	28	Up	eP 06 37 46
			iSP 09 45 35				i 06 37 49.7
			i 09 47 19.6				iS 06 47 09
			iPKKP 09 47 32.6				micr sec
			iSS 09 51 38			S	E 1.0 4
		Chile-Bolivia				M	E 1.7 18
		(h = 140 km).				M	N 3.1 19
		Magn. = 6.6 (Up,Ki).				M	Z 2.7 17
"	27	Ka	iP 09 51 23.9 C				D = 8050 km = 72 1/2°.
"	27	Ki	eSg 13 17 54		Ki	iP	06 37 01.8
			i 13 18 06.3			iS	06 45 48
		Um	iSg 13 15 53.5			iSa	06 53 03
			i 13 16 13.3				micr sec
		Ka	eSg 13 16 34			P	Z' 0.7 2.5
		Esthonia. Explosion?				S	E 1.0 9
"	27	Up	i(PKP) 16 42 10.3			S	N 1.0 10
			iPKP 16 42 17.9			M	E 2.1 18
			iPKS 16 45 45.1			M	N 1.8 19
			iSS 17 03 53			M	Z 4.1 18
			micr sec				D = 7350 km = 66°.
		M	E 2.3 20		Sk	iP	06 37 22.0
		M	N 5.7 23		Um	iP	06 37 24.8 C
		M	Z 5.3 23			iS	06 46 36
		Ki	e(PKP) 16 42 02			iSa	06 54 05
			iPKP 16 42 04.7				Off coast of Oregon
			iPP 16 44 32				(h = 30 km).
			iPKS 16 45 33				Magn. = 6.1 (Up,Ki).
			micr sec	"	28	Ki	iP 07 12 23.6
		PKP	Z' 0.4 2.0			Sk	eP 07 12 40
		PKS	N 2.5 8			Um	iP 07 12 43.8
		PKS	Z 2.5 10				Off coast of Oregon
		M	E 2.2 20				(h = 30 km).
		M	N 2.4 19	"	28	Up	iP 12 57 27.1
		M	Z 4.6 18			Ki	iP 12 57 21.6
		Sk	i(PKP) 16 42 06.4			Sk	iP 12 57 41.9
			iPKP 16 42 14.6			Um	iP 12 57 20.3 C
		Gb	i(PKP) 16 42 19.3 C	"	28	Um	iP 13 13 37.9
			iPKP 16 42 23.4				
		Um	i(PKP) 16 42 00.5	"	28	Ki	iP 16 59 42.6
			iPKP 16 42 12.5 C			i	16 59 55.4
			iPP 16 44 57			Sk	iP 16 59 59.2
			iPKS 16 45 42			i	17 00 05.2
			iSS 17 03 03			Um	iP 17 00 22.2
		Ka	i(PKP) 16 42 23.0				Jan Mayen (h = 30 km).
			iPKP 16 42 24.7	"	28	Up	iP 17 45 50.2
		Tonga Islands (h = 30 km).				(cont.)	
		Magn. = 6.3 (Up,Ki).					

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1967
Dec. 28 (cont.)
Ki iP 17 45 54.3
micr sec
P Z' 0.1 1.0
Sk iP 17 45 37.5
ipP 17 46 29.4
Colombia.
h = 210 km (Sk).
" 28 Up iP 18 20 53.8
" 28 Sk iP 22 22 38.6
Um iP 22 22 40.6
i 22 22 46.3
iS 22 31 50
iSa 22 39 35
Off coast of Oregon
(h = 30 km).
" 29 Um iP 07 16 12.8 C
" 29 Um i(Sg) 12 21 01.2
" 29 Ki iP 12 45 42.1
Kamchatka (h = 40 km).
" 29 Ud iPg 18 07 28.6
iSg 18 07 39.4
iRg 18 07 44.5
D = 90 km = 0.8°.
Origin time = 18 07 13.
" 29 Up iP 19 53 37.0
Ki iP 19 54 57.7 C
Sk iP 19 54 22.0 C
Gb iP 19 53 24.6
i 19 53 31.5
Um iP 19 54 19.7
Ka iP 19 52 58.9 C
Ud iP 19 53 44.2 C
Albania-Yugoslavia
(h = 40 km).
" 29 Up ---
micr sec
M E 0.5 18
M N 1.6 20
M Z 1.5 19
Ki ePKP 20 48 49
ePP 20 51 10
iSS 21 09 07
micr sec
M E 0.7 19
M N 0.8 19
(cont.)

1967
Dec. 29 (cont.)
Ki micr sec
M Z 1.3 20
Gb iPKP 20 49 05.0
i 20 49 17.3
Um iPP 20 51 38
iSKSP 21 01 46
eSS 21 09 46
Ka iP 20 49 11.3
i 20 49 20.3
Ud iPKP 20 48 58.9
Tonga Islands (h = 30 km).
" 29 Ud iP 21 55 44.2
South of Alaska
(h = 40 km).
" 29 Gb ePKP 22 42 38
i 22 42 58.3
Tonga Islands (h = 30 km).
" 29 Ki eP 23 00 30
Um iP 22 59 53.3
Ka iP 22 58 31.0
Ud iP 22 59 18.2
Albania-Yugoslavia.
Origin time = 22 54.9.
" 30 Ki iP 00 20 23.4
Um iP 00 20 28.3
Ud iP 00 20 48.3
Talaud Islands
(h = 30 km).
" 30 Um iP 02 38 48.7
Japan (h = 30 km).
" 30 Up iP 04 22 57.6
i 04 23 03.5
iS 04 25 44.5
i 04 26 03
iLg2 04 27 48
iL(3.21) 04 28 17
micr sec
P N 0.7 2
P Z' 0.5 0.7
M E 9.8 15
M N 8.1 12
M Z 8.6 12
D = 1700 km = 15 1/2°.
Ki iP 04 24 30.3
iS 04 28 44
i 04 29 47.0
iLg2 04 32 04
(cont.)

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1967						1967						
Dec.	30	(cont.)				Dec.	30	Um	iP		20	36 17.5
		Ki	iL(3.27)	04 32 35								
				micr sec		"	30	Up	eP		21	31 46
		P	N	0.7 5				Um	eP		21	32 28
		P	Z	1.0 4				Ud	eP		21	31 55
		P	Z'	0.5 1.4				Greece (h = 50 km).				
		S	E	0.9 7		"	31	Ud	iP		02	02 20.2 C
		S	N	0.8 12								
		S	Z	0.7 8		"	31	Ud	iP		02	11 18.4 C
		M	E	9.6 16								
		M	N	2.9 13		"	31	Up	iP		02	40 39.1
		M	Z	4.3 13				Ki	iP		02	39 46.3
		D = 2600 km = 23 1/2°.						Sk	eP		02	40 22
		Sk	iP	04 23 40.0				Um	eP		02	40 12 C
		i		04 23 53.0					ipP		02	40 26.1
		i		04 26 34.4				Ud	iP		02	40 38.8
		iLg2		04 29 56.5					ipP		02	40 51.8
		Gb	iP	04 22 24.2				Aleutian Islands.				
		i		04 22 37.2				h = 50 km (Um,Ud).				
		i		04 25 19.6		"	31	Ki	iPn		05	05 23.7
		Um	iP	04 23 49.2					iSn		05	06 10.1
		iS		04 27 16					iSg		05	06 27.8
		i		04 27 27					D = 420 km = 3.8°.			
		iLi		04 29 02				Um	iSg		05	07 57.1
		iLg1		04 29 24.2				Probably northwest Russia.				
		iL(3.27)		04 30 28				Origin time = 05 04 23.				
		Ka	iP	04 22 05.5				Explosion?				
		i		04 22 11.2		"	31	Ki	iP		05	27 36.7
		iS		04 24 11.2				Um	e(P)		05	28 07
		i(Lg2)		04 25 31.6					i		05	28 10.6
		Ud	iP	04 22 57.0		"	31	Up	iP		07	04 32.5
		i		04 23 01.0				Um	iP		07	05 09.5
		iLi		04 27 00.3				Ka	iP		07	03 56.0
		Italy (h = 30 km).						Ud	iP		07	04 39.0
		Magn. = 5.7 (Up,Ki).				"	31		i		07	04 48.7
		Multiple P.						South of Greece.				
"	30	Ki	eP	09 41 48		"	31	Sk	iP		10	54 31.3
		Um	iP	09 42 33.5					i		10	55 49.7
"	30	Ud	iP	12 23 12.0 C		"	31	Ki	ePn		18	38 53
		(Albania).							iSn		18	39 43.4
"	30	Um	i(P)	13 27 34.8		"	31		iSg		18	40 03.3
			i(Sg)	13 27 58.4					D = 470 km = 4.2°.			
"	30	Ki	iP	14 57 11.6				Sk	iSg		18	

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1967

Dec. 31 (cont.)

Ud iSg 18 43 29.8
Northwest Russia, 67.5° N,
31.5° E.
Origin time = 18 37 45.
Explosion?

" 31 Up iP 19 13 48.8 C
Ki eP 19 12 57
Um iP 19 13 21.4
Ud iP 19 13 53.1

Markus Båth
May 10, 1968