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Seismological Laboratory
Uppsala

PRELIMINARY

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, and U M E Å

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°49.0'N,	20°14.1'E;	h = 20 m

R e m a r k s.

(1) Our Preliminary Seismological Bulletins for the months of August-December, 1960, have not yet been issued, but they will be sent as soon as they are ready. From this bulletin on, we have resumed giving amplitudes and magnitudes (Gutenberg-Richter scale, M), whenever possible.

(2) Umeå is a new seismograph station, situated near the Baltic coast of Sweden (coordinates see above). The station is housed in a water tower, which is no longer in use. It is situated directly on bed-rock, which here consists mainly of gneiss (biotite mica gneiss in contact with pegmatite). The station started its operation on October 10, 1960. Like Skalstugan and Göteborg it is equipped with a short-period vertical seismograph of type Grenet-Coulomb of high sensitivity. The records are sent weekly to the Seismological Laboratory, Uppsala, where they are measured and stored. In the bulletins Umeå will be abbreviated Um. - Umeå has shown to be a very good location with very small background noise and with a sensitivity which probably surpasses that of any other station in Sweden.

J A N U A R Y 1 - 31, 1961

1961
Jan 1 Ki iP 02 14 29

" 1 Up iP 13 34 34
i 13 34 39
Ki eP 13 34 12
Sk iP 13 34 34

" 1 Ki iP 14 04 22
Near north coast of Luzon, Philippine Islands.
(h = 80 km).

" 1 Ki iP 16 34 39

" 1 Up iPKP 16 56 29
Ki iPKP 16 56 28
Fiji Islands region.
(h = 660 km).

" 1 Ki iP 18 50 24
Arctic Ocean (h = 25 km).

" 1 Ki iPKP 19 52 07
Bouvet Island region.
(h = 90 km).

" 1 Up iPKP 22 30 51
i 22 31 06
Sk iPKP 22 30 41 C
Kermadec Islands region.
(h = 120 km).

" 2 Ki iP 02 04 00

" 2 Up iPKP 10 30 47 C
i 10 31 07
iPP 10 32 41
i 10 34 23
iSKS 10 37 48
microns sec
PKP Z' 0.5 1.5
SKS N 0.4 3
M E 4.5 23
M N 8.1 23
M Z 10 23
(D = 14100 km = 127°).
Ki iPKP 10 30 33 C
i 10 30 53
eSKS 10 37 15
iPKKP 10 40 40
ePS 10 41 46
microns sec
PKP Z' 0.5 1.5
cont.

1961
Jan 2 cont.
SKS E 0.8 9
SKS N 0.7 11
PKKP Z' 0.3 1.5
M E 6.4 23
M N 2.6 20
M Z 5.5 20
(D = 13200 km = 119°).
Sk iPKP 10 30 44 C
i 10 31 04
Gb iPKP 10 30 54 C
i 10 31 14
i(PKS) 10 34 13
Santa Cruz Islands region.
(h = 160 km).

" 2 Up eP 10 43 20
i 10 43 50
Sk eP 10 43 58

" 2 Ki iP 13 02 17
i 13 02 41
Near Mindanao, Philippine Islands (h = 70 km).

" 2 Up iP 16 32 05
Ki iP 16 31 13
Near east coast of Kamchatka.
(h = 40 km).

" 3 Up eP 00 52 31
i 00 52 36

" 3 Up iP 02 41 24 D
Ki iP 02 40 36
Kurile Islands (h = 40 km).

" 3 Ki iP 11 54 38
Banda Sea (h = 70 km).

" 3 Ki i(P) 13 24 53

" 3 Sk iP 22 41 24

" 4 Ki iP 02 02 13 C
Celebes Sea (h = 630 km).

" 4 Ki eP 12 16 53

" 4 Ki iP 12 17 09
i 12 17 20
Sk iP 12 17 16
Near coast of Guerrero, Mexico (h = 40 km).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961						
Jan	4	Up	iP		20 46 21	
"	5	Gb	iP		06 38 08	D
"	5	Up	iP		13 29 24	C
"	5	Up	iP		14 17 28	C
			iPP		14 19 59	
			iS		14 26 21	
			iP'P'		14 45 39	
			i		14 45 54	
				microns	sec	
			P	N	1.2 6	
			P	Z'	0.4 1.0	
			PP	N	0.8 5	
			PP	Z	1.3 6	
			S	E	3.3 24	
			S	N	3.9 13	
			P'P'	Z'	0.1 1.0	
			M	E	20 21	
			M	N	51 22	
			M	Z	60 22	
			D = 7550 km = 68°.			
		Ki	iP		14 16 34	C
			ePP		14 18 43	
			iS		14 24 43	
			eP'P'		14 45 55	
			i		14 46 20	
				microns	sec	
			P	N	1.6 9	
			P	Z	4.1 9	
			P	Z'	0.2 1.0	
			PP	N	2.2 9	
			PP	Z	1.9 9	
			S	E	2.1 10	
			S	N	2.5 11	
			P'P'	Z'	0.7 3.0	
			M	E	28 19	
			M	N	18 17	
			M	Z	36 21	
			D = 6650 km = 60°.			
		Sk	iP		14 17 06	C
			iP'P'		14 45 48	
		Gb	iP		14 17 43	
			iPcP		14 18 05	
			Andreanof Islands, Aleutian Islands (h = 40 km). Magn. = 6.6 (Up, Ki).			
"	5	Up	iP		15 17 01	
				microns	sec	
			P	Z'	0.1 0.5	
"	5	Up	iP		15 20 37	C
			cont.			

1961						
Jan	5		iPcP		15 21 05	
cont.				microns	sec	
			P	Z'	0.1 0.6	
		Ki	iP		15 19 50	C
				microns	sec	
			P	Z'	0.2 1.0	
		Sk	iP		15 20 26	C
		Gb	iP		15 20 58	
			Kurile Islands (h = 20 km).			
"	5	Up	ePKP		16 12 17	
			iPP		16 13 01	
			i		16 13 44	
				microns	sec	
			PP	Z	1.1 3	
			PP	Z'	0.2 1.4	
			M	E	3.6 21	
			M	N	5.3 20	
			M	Z	5.5 20	
			(D = 12200 km = 110°).			
		Ki	iP		16 07 58	
			i		16 11 21	
			iPP		16 12 24	
			i		16 19 25	
			i(PS)		16 21 43	
				microns	sec	
			PP	E	1.2 6	
			PP	N	0.6 6	
			PP	Z	2.3 6	
			PP	Z'	0.4 1.5	
			M	E	4.8 21	
			M	N	2.6 18	
			M	Z	5.4 21	
			(D = 11650 km = 105°).			
		Sk	ePKP		16 12 20	
			iPP		16 12 46	
		Gb	i(PKP)		16 12 07	
			iPP		16 13 20	
			New Guinea (h = 110 km). Magn. = 7.0 (Up, Ki).			
"	5	Up	iPKP		18 17 11	
			iPP		18 19 52	
			iPKS		18 20 42	
				microns	sec	
			PKP	Z	0.6 4	
			PKP	Z'	0.1 1.0	
			PP	Z	0.9 5	
			PKS	E	1.8 10	
			PKS	N	3.6 12	
			PKS	Z'	0.1 1.2	
			M	E	12 22	
			M	N	15 20	
			M	Z	17 24	
			cont.			

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Jan 5 cont.

(D = 15100 km = 136°).

Ki	iPKP	18 16 55	
	iPP	18 19 05	
	iPKS	18 20 19	
		microns	sec
	PKP Z	0.8	6
	PKP Z'	0.4	1.1
	PP N	0.6	10
	PP Z	2.2	10
	PKS E	2.1	10
	PKS N	1.6	9
	M E	14	21
	M N	11	22
	M Z	26	22

(D = 14350 km = 129°).

Sk	iPKP	18 17 04	
	iPKS	18 20 36	
	i	18 20 47	
Gb	iPKP	18 17 12	
	i	18 17 17	
	iPKS	18 20 53	

Loyalty Islands region.
(h = 120 km).

" 5 Up iPKP 18 33 57
iPP 18 36 29
iPKS 18 37 27

		microns	sec
	PKS E	3.2	11
	PKS N	5.6	14
	PKS Z'	0.1	1.0
	M E	14	22
	M N	26	20
	M Z	28	21

(D = 15100 km = 136°).

Ki	iPKP	18 33 42	C
	i	18 33 53	
	iPP	18 35 50	
	iPKS	18 37 04	
		microns	sec
	PKP Z'	0.3	1.2
	PP E	1.2	14
	PP Z	4.3	10
	PKS E	2.9	11
	PKS N	2.9	10
	M E	23	22
	M N	17	22
	M Z	43	22

(D = 14350 km = 129°).

Sk	iPKP	18 33 52	C
	iPKS	18 37 23	
Gb	iPKP	18 33 55	
	ePP	18 37 03	

Loyalty Islands.
(h = 120 km).

1961
Jan 5 Up iP 18 48 53
Andreanof Islands, Aleutian Islands (h = 30 km).

" 6 Up iPKP 00 17 07
i 00 17 22

		microns	sec
	PKP Z'	0.1	1.0
Ki	iPKP	00 16 45	
Sk	iPKP	00 17 02	D
Gb	ePKP	00 17 15	
	i	00 17 29	

Kermadec Islands region.
(h = 170 km).

" 6 Up iP 01 02 37

" 6 Up iP 01 31 35
iPeP 01 31 59
Ki iP 01 30 52
i 01 30 55
eS 01 39 12

		microns	sec
	P Z'	0.1	1.3
	M E	0.3	19
	M Z	0.3	19

D = 6850 km = 61½°.

Sk iP 01 31 27
Gb iP 01 31 58
Hokkaido, Japan (h = 20 km).

" 6 Up e(Sg) 05 16 20
Ki iPg 05 12 50
i 05 12 54
iSg 05 13 18
D = 240 km = 2.2°.
Sk e(Sn) 05 14 10
eSg 05 14 28
D = 490 km = 4.4°.
On the coast of Norway, near Lofoten, 68°N, 15°E.
Origin time = 05 12 05.

" 6 Up iP 06 32 36

		microns	sec
	P Z'	0.1	1.0
Ki	iP	06 31 45	

Andreanof Islands, Aleutian Islands (H = 50 km).

" 6 Up iP 07 16 16
Ki iP 07 15 23
Sk iP 07 16 00
Gb iP 07 16 37
Kamchatka (h = 20 km).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Jan 6 Sk iP 11 01 07 D
Off south coast of Mexico.
(h = 50 km).

" 6 Ki iP 23 20 00
Kamchatka (h = 290 km).

" 7 Ki iP 10 37 17 C
iS 10 42 26
microns sec
P Z' 0.2 1.0
Sk iP 10 36 49
Gb eP 10 35 54
Dodecanese Islands.
(h = 130 km).

" 7 Up iP 15 57 50 C
iS 16 01 52
microns sec
P Z' 0.4 0.6
M E 0.4 14
M N 1.7 13
M Z 1.6 13
D = 2450 km = 22°.
Ki iP 15 59 04
microns sec
P Z' 0.1 1.1
M E 1.1 17
M N 0.8 16
M Z 1.0 17
Sk iP 15 58 31
Gb iP 15 57 37
Near west coast of Greece.
(h = 20 km).

" 7 Ki e(P) 17 01 49

" 7 Up iPKP 18 35 44
i 18 35 53
iPKKP 18 45 43
Ki iPKP 18 35 59
i 18 36 10
microns sec
PKP Z' 0.3 1.5
Sk iPKP 18 35 49
Sandwich Islands.
(h = 90 km).

" 7 Up i(P) 18 38 23
i 18 38 30

" 7 Up i(P) 19 05 38
Ki i(P) 19 04 37

1961
Jan 7 Up iP 21 49 07
Ki iP 21 48 48 C
Gb iP 21 49 25

" 8 Ki iP 01 28 30
Halmahera region.
(h = 110 km).

" 8 Up -
microns sec
M N 1.0 17
Ki iP 03 09 37
Halmahera region.
(h = 120 km).

" 8 Up iPKP 10 19 43 D
microns sec
PKP Z' 0.2 0.6
Ki iSKP 10 22 18
Sk ePKP 10 19 35
Gb iPKP 10 19 52
Kermadec Islands region.
(h = 540 km).

" 9 Up iPKP 08 14 07
Gb iPKP2 08 14 30
Um ePKP 08 13 49
Kermadec Islands region.
(h = 25 km).

" 9 Ki i(P) 08 57 20

" 9 Ki iP 11 18 14 D
i 11 18 27
Sk iP 11 17 52 C
Um iP 11 18 13
Leeward Islands (h = 25 km).

" 9 Ki iP 11 22 27 D
Sk iP 11 22 04
Leeward Islands (h = 50 km).

" 9 Up iP 19 12 54

" 9 Ki iP 19 33 21
Um iP 19 33 19
Leeward Islands (h = 30 km).

" 9 Up i(P) 20 44 30

" 10 Um iP 07 35 01

" 10 Ki iP 09 26 44 C
cont.

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Jan 10 cont.	Um	iP		09 26 47	
	Banda Sea (h = 80 km).				
" 10	Up	iP		14 33 00	C
		i		14 33 09	
		iPa		14 37 12	
		iS		14 41 31	
			microns	sec	
		P	Z	3.6	9
		P	Z'	0.3	1.0
		S	E	2.2	12
		S	N	3.9	13
		M	E	39	19
		M	N	86	20
		M	Z	96	20
		D = 7150 km = 64 $^{\circ}\frac{1}{2}$.			
	Ki	iP		14 32 09	C
		ePa		14 35 44	
		eS		14 39 59	
			microns	sec	
		P	N	1.2	9
		P	Z	3.2	8
		P	Z'	0.6	0.8
		S	E	3.2	15
		S	N	2.1	14
		M	E	42	18
		M	N	19	18
		M	Z	40	18
		D = 6350 km = 57°.			
	Sk	iP		14 32 45	
	Gb	iP		14 33 21	
	Um	iP		14 32 31	
	Kurile Islands region.				
	(h = 30 km).				
	Magn. = 6.6 (Up, Ki).				
" 10	Um	iP		14 42 36	
" 10	Um	e(P)		15 01 28	
" 10	Ki	iP		19 12 16	
		i		19 12 33	
" 10	Ki	iP		23 41 37	
" 11	Um	i(P)		11 52 28	
" 11	Ki	iP		12 08 27	
	Um	iP		12 08 53	
	Fox Islands, Aleutian				
	Islands (h = 40 km).				
" 11	Up	iP		12 10 56	
		iScS		12 20 40	
	cont.				

1961 Jan 11 cont.			microns	sec	
	P	Z'	0.3	1.0	
	M	E	2.5	18	
	M	N	6.7	18	
	M	Z	6.3	18	
	Ki	iP		12 10 03	D
		eS		12 18 11	
			microns	sec	
	P	Z'	0.7	1.0	
	S	N	0.8	9	
	M	E	7.0	17	
	M	N	4.8	16	
	M	Z	8.6	17	
	D = 6600 km = 59 $^{\circ}\frac{1}{2}$.				
	Sk	iP		12 10 32	
	Gb	iP		12 11 11	D
	Um	iP		12 10 29	
		eP'P'		12 39 08	
	Fox Islands, Aleutian				
	Islands (h = 50 km).				
	Magn. = 6.2 (Up, Ki).				
" 11	Gb	i(P)		12 58 29	
" 11	Um	ePKP2		21 57 40	
	Near Macquarie Islands.				
	(h = 25 km).				
" 12	Ki	i(P)		05 09 11	
" 12	Um	iP		11 00 35	
" 12	Up	iP		14 23 52	
	Ki	iP		14 22 57	
			microns	sec	
	P	Z'	0.1	0.6	
	Sk	iP		14 23 25	
	Alaska Peninsula (h = 40 km).				
" 12	Ki	iP		16 40 14	
" 12	Ki	iP		17 36 43	
" 12	Ki	i(P)		19 20 32	
" 12	Ki	i(P)		21 22 35	
" 13	Up	iP		22 43 32	
" 14	Up	eP		02 37 05	
	Ki	iP		02 36 07	
		i		02 36 32	
	Um	eP		02 36 38	
	Near Islands, Aleutian				
	Islands (h = 90 km).				

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Jan 10 cont.	Um	iP		09 26 47	
	Banda Sea (h = 80 km).				
" 10	Up	iP		14 33 00	C
		i		14 33 09	
		iPa		14 37 12	
		iS		14 41 31	
			microns	sec	
		P	Z	3.6	9
		P	Z'	0.3	1.0
		S	E	2.2	12
		S	N	3.9	13
		M	E	39	19
		M	N	86	20
		M	Z	96	20
		D = 7150 km = 64 $^{\circ}\frac{1}{2}$.			
	Ki	iP		14 32 09	C
		ePa		14 35 44	
		eS		14 39 59	
			microns	sec	
		P	N	1.2	9
		P	Z	3.2	8
		P	Z'	0.6	0.8
		S	E	3.2	15
		S	N	2.1	14
		M	E	42	18
		M	N	19	18
		M	Z	40	18
		D = 6350 km = 57°.			
	Sk	iP		14 32 45	
	Gb	iP		14 33 21	
	Um	iP		14 32 31	
	Kurile Islands region.				
	(h = 30 km).				
	Magn. = 6.6 (Up, Ki).				
" 10	Um	iP		14 42 36	
" 10	Um	e(P)		15 01 28	
" 10	Ki	iP		19 12 16	
		i		19 12 33	
" 10	Ki	iP		23 41 37	
" 11	Um	i(P)		11 52 28	
" 11	Ki	iP		12 08 27	
	Um	iP		12 08 53	
	Fox Islands, Aleutian				
	Islands (h = 40 km).				
" 11	Up	iP		12 10 56	
		iScS		12 20 40	
	cont.				

1961 Jan 11 cont.			microns	sec	
	P	Z'	0.3	1.0	
	M	E	2.5	18	
	M	N	6.7	18	
	M	Z	6.3	18	
	Ki	iP		12 10 03	D
		eS		12 18 11	
			microns	sec	
	P	Z'	0.7	1.0	
	S	N	0.8	9	
	M	E	7.0	17	
	M	N	4.8	16	
	M	Z	8.6	17	
	D = 6600 km = 59 $^{\circ}\frac{1}{2}$.				
	Sk	iP		12 10 32	
	Gb	iP		12 11 11	D
	Um	iP		12 10 29	
		eP'P'		12 39 08	
	Fox Islands, Aleutian				
	Islands (h = 50 km).				
	Magn. = 6.2 (Up, Ki).				
" 11	Gb	i(P)		12 58 29	
" 11	Um	ePKP2		21 57 40	
	Near Macquarie Islands.				
	(h = 25 km).				
" 12	Ki	i(P)		05 09 11	
" 12	Um	iP		11 00 35	
" 12	Up	iP		14 23 52	
	Ki	iP		14 22 57	
			microns	sec	
	P	Z'	0.1	0.6	
	Sk	iP		14 23 25	
	Alaska Peninsula (h = 40 km).				
" 12	Ki	iP		16 40 14	
" 12	Ki	iP		17 36 43	
" 12	Ki	i(P)		19 20 32	
" 12	Ki	i(P)		21 22 35	
" 13	Up	iP		22 43 32	
" 14	Up	eP		02 37 05	
	Ki	iP		02 36 07	
		i		02 36 32	
	Um	eP		02 36 38	
	Near Islands, Aleutian				
	Islands (h = 90 km).				

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961						
Jan	14	Up	i(P)	07 18 37		
"	14	Up	iP	12 04 40		
"	14	Up	iP	16 29 43	C	
		Ki	iP	16 29 46	D	
		Sk	iP	16 29 30	D	
		Um	i(P)	16 29 33		
			ipP	16 30 27		
		Colombia (h = 180 km).				
"	14	Up	iP	16 49 46	D	
			microns	sec		
			P Z'	0.2	0.8	
			M E	2.2	17	
			M N	3.9	17	
			M Z	3.7	18	
		Ki	iP	16 48 53		
			i	16 49 01		
			microns	sec		
			P Z'	0.2	1.0	
		Sk	iP	16 49 22		
		Gb	iP	16 50 00		
		Um	iP	16 49 06	D	
		Unimak Island region.				
		(h = 40 km).				
		Magn. = 6.0 (Up, Ki).				
"	15	Up	iP	00 19 29		
"	15	Ki	ePKP	01 22 48		
		Um	iPKP	01 22 33		
		South of Australia.				
		(h = 25 km).				
"	15	Up	iP	04 18 01		
		Ki	iP	04 17 26		
		Um	iP	04 17 30		
		South of Honshu, Japan.				
		(h = 290 km).				
"	15	Ki	eP	12 03 44		
		Near east coast of Honshu,				
		Japan (h = 80 km).				
"	15	Up	iPKP	17 03 49		
		Ki	iPKP	17 03 34		
		Um	iPKP	17 03 41		
			iSKP	17 06 53		
		Loyalty Islands region.				
		(h = 180 km).				
"	15	Up	iP	20 46 46		
		cont.				

1961						
Jan	15			microns	sec	
cont.			P Z'	0.1	0.9	
		Ki	iP	20 46 41		
		Um	iP	20 46 37	D	
		Java Sea (h = 570 km).				
"	16	Ki	iP	04 11 16		
		Um	eP	04 11 27		
			i	04 11 42		
		Near coast of Mexico.				
		(h = 150 km).				
"	16	Up	iP	07 31 44	C	
			iPP	07 34 27		
			i(S)	07 41 12		
			ipS	07 41 30		
			iP'P'	07 59 21		
			microns	sec		
			P E	2.2	6	
			P N	3.1	5	
			P Z	7.5	6	
			P Z'	0.7	1.0	
			PP E	1.8	6	
			PP N	2.3	7	
			(S) E	3.9	6	
			(S) N	4.3	7	
			M E	88	16	
			M N	85	17	
			M Z	98	16	
			(D = 8100 km = 73°).			
		Ki	iP	07 31 05	C	
			iPP	07 33 29		
			iS	07 39 55		
			eP'P'	07 59 41		
			microns	sec		
			P E	3.9	9	
			P N	3.2	10	
			P Z	15	9	
			P Z'	1.1	1.3	
			PP Z'	3.2	3.0	
			S E	16	10	
			S N	9.8	11	
			M E	100	18	
			M N	85	17	
			M Z	240	17	
			(D = 7450 km = 67°).			
		Sk	iP	07 31 39		
			iPP	07 34 11		
		Gb	iP	07 32 04	C	
			i	07 32 07		
			i	07 34 45		
			iPP	07 35 13		
		Um	iP	07 31 20		
			i	07 31 35		
			iP'P'	07 59 49		
		cont.				

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Jan 16 cont.

Near east coast of Honshu, Japan (h = 130 km). Magn. = 7.0 (Up, Ki).

" 16 Up iP 08 59 43
Ki iP 08 59 03
Gb iP 09 00 13
Um iP 08 59 20

Near east coast of Honshu, Japan (h = 190 km).

" 16 Up iP 09 05 02

" 16 Um iP 10 25 10

Near east coast of Honshu, Japan (h = 130 km).

" 16 Up iP 11 31 10 C

		microns	sec
P	Z'	0.3	1.3
M	E	6.4	17
M	N	8.8	19
M	Z	7.2	18

Ki iP 11 30 32
eS 11 39 27

		microns	sec
P	Z'	0.2	1.0
M	E	15	20
M	N	13	19
M	Z	23	16

Sk iP 11 31 05 C
iPP 11 33 46
Gb iP 11 31 30
Um iP 11 30 48 C

Near east coast of Honshu, Japan (h = 160 km).

" 16 Up iP 11 52 33
i 11 52 37
Ki iP 11 51 54
Sk i(PcP) 11 52 39
Gb eP 11 53 02
Um iP 11 52 11 C
i 11 52 23

Near east coast of Honshu, Japan (h = 150 km).

" 16 Up iP 12 24 00 C
iS 12 33 29
i 12 33 47

		microns	sec
P	E	1.4	5
P	N	1.7	6
P	Z	3.9	6

cont.

1961 Jan 16 cont.

P	Z'	0.3	0.8
S	E	2.8	6
M	E	41	16
M	N	73	16
M	Z	57	16

(D = 8200 km = 74°).

Ki iP 12 23 21 C
i 12 23 32
iS 12 32 16

		microns	sec
P	Z	8.3	9
P	Z'	0.4	1.2
S	E	9.6	10
S	N	5.0	11
M	E	84	16
M	N	63	15
M	Z	105	14

(D = 7450 km = 67°).

Sk iP 12 23 53 C
iSP 12 24 34
iPP 12 26 40
Gb iP 12 24 20
i 12 24 32
Um iP 12 23 38 C
i 12 23 49

Honshu, Japan (h = 110 km). Magn. = 6.6 (Up, Ki).

" 16 Ki iP 12 30 22

" 16 Um iP 12 47 58

" 16 Up iP 13 20 43
i 13 20 54
Ki iP 13 20 05
i 13 20 15
Sk eP 13 20 35
i 13 20 48
Gb eP 13 21 04
e 13 21 15
Um iP 13 20 21
i 13 20 33

Near east coast of Honshu, Japan (h = 140 km).

" 16 Um iP 14 08 16

" 16 Up iP 14 15 29
i 14 15 37

		microns	sec
P	Z'	0.2	1.0
M	E	5.9	20
M	N	8.5	17
M	Z	3.8	15

cont.

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Jan 16 cont.	Ki	iP		14 14 50		
		eS		14 23 49		
			microns	sec		
		P	Z'	0.2	1.1	
		M	E	16	16	
		M	N	9.9	15	
		M	Z	21	16	
	Sk	iP		14 15 24		
	Gb	iP		14 15 51	D	
	Um	iP		14 15 08		
	Near east coast of Honshu, Japan (h = 130 km).					
" 16	Um	iP		14 48 29		
" 16	Up	iP		14 55 39		
	Ki	e(P)		14 55 13		
	Sk	iP		14 55 34		
	Gb	iP		14 56 00		
	Um	iP		14 55 18		
	Honshu, Japan (h = 110 km).					
" 16	Um	iP		15 34 09		
" 16	Up	iP		15 37 42		
	Um	iP		15 37 31		
	Near east coast of Honshu, Japan (h = 140 km).					
" 16	Um	iP		15 47 19		
" 16	Up	iP		15 52 44	C	
		iPP		15 55 31		
		iS		16 02 12		
		i		16 02 30		
			microns	sec		
		P	E	0.5	3	
		P	N	1.1	4	
		P	Z	1.6	3	
		P	Z'	0.6	1.3	
		S	E	1.8	6	
		S	N	1.5	6	
		M	E	18	19	
		M	N	21	21	
		M	Z	27	16	
	(D = 8100 km = 73°).					
	Ki	iP		15 52 05	C	
		iPP		15 54 41		
		iS		16 00 59		
		i		16 01 15		
			microns	sec		
		P	Z	3.1	6	
		P	Z'	1.6	2.0	
		PP	Z'	2.7	3.0	
	cont.					

1961 Jan 16 cont.		S	N	2.5	9	
		M	E	42	16	
		M	N	28	14	
		M	Z	69	17	
	(D = 7450 km = 67°).					
	Sk	iP		15 52 37	C	
		iPP		15 55 13		
		i		15 55 29		
	Gb	iP		15 53 04		
		i		15 53 18		
	Um	iP		15 52 22	C	
	Near east coast of Honshu, Japan (h = 150 km). Magn. = 6.5 (Up, Ki).					
" 16	Ki	iP		16 32 47		
	Gb	eP		16 33 41		
	Um	iP		16 33 04		
" 16	Gb	iP		18 13 16		
" 16	Up	i(P)		18 34 16		
" 16	Up	iP		20 31 50	C	
" 16	Ki	iP		21 17 14		
" 17	Up	iP		00 41 02		
	Ki	iP		00 40 24		
	Sk	iP		00 40 56		
	Um	iP		00 40 44		
	Near east coast of Honshu, Japan (h = 100 km).					
" 17	Up	iP		06 53 04		
		i		06 53 15		
	Ki	iP		06 52 26		
	Sk	eP		06 52 57		
		i		06 53 07		
	Gb	iP		06 53 24		
		i		06 53 35		
	Um	iP		06 52 43		
		i		06 52 54		
	Honshu, Japan (h = 100 km).					
" 17	Ki	i(P)		08 58 36		
" 17	Um	iP		10 12 25	C	
" 18	Ki	iP		05 15 04		
	Sk	iP		05 15 10		
	Um	iP		05 15 14	D	
" 18	Up	iP		06 01 16		

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Jan	18	Um	iP	07 23 52	
		Near east coast of Honshu, Japan (h = 100 km).			
"	18	Um	iP	07 38 59	
		Near east coast of Honshu, Japan (h = 100 km).			
"	18	Um	iP	10 22 58	
"	18	Um	iP	14 13 45	C
"	18	Um	iP	16 59 34	
		Near east coast of Honshu, Japan (h = 140 km).			
"	19	Up	iP	00 56 16	
			i	00 56 35	
"	19	Up	iPKS	04 40 26	
			iPKS	04 44 00	
		Sk	iPKS	04 40 22	
		Um	iPKS	04 40 19	
		New Hebrides Islands region (h = 30 km).			
"	19	Up	e(P)	04 47 24	
"	19	Up	i(P)	04 54 17	
"	19	Um	iP	09 51 36	C
"	19	Ki	eP	14 14 56	
"	19	Up	iP	17 33 01	
				microns	sec
			P Z'	0.1	0.8
			M E	2.5	20
			M N	6.1	20
			M Z	5.5	20
		Ki	iP	17 32 10	
			i	17 32 23	
				microns	sec
			P Z'	0.3	0.7
			M E	2.3	19
			M N	2.9	23
			M Z	4.2	21
		Sk	iP	17 32 47	C
		Gb	iP	17 33 22	C
			i	17 33 33	
			i	17 34 05	
		Um	iP	17 32 36	
		Kurile Islands (h = 30 km). Magn. = 6.0 (Up, Ki).			

1961 Jan	19	Up	i(P)	18 58 00	
"	19	Um	i(P)	21 16 37	
"	20	Up	iP	01 07 29	
				microns	sec
			P Z'	0.1	1.0
		Ki	iP	01 06 35	
		Sk	iP	01 07 02	
		Um	iP	01 07 05	
		Near Kodiak Island, Alaska. (h = 60 km).			
"	20	Up	iP	03 31 52	
"	20	Up	iP	05 33 45	
		Ki	iP	05 32 51	
				microns	sec
			P Z'	0.1	1.0
		Sk	iP	05 33 17	
		Gb	iP	05 33 56	
		Um	iP	05 33 22	
		Near Kodiak Island, Alaska. (H = 60 km).			
"	20	Sk	iP	05 41 06	
"	20	Sk	iP	08 34 39	
"	20	Um	iP	11 34 20	
"	20	Up	iP	13 43 42	
		Ki	iP	13 42 48	
		Sk	iP	13 43 15	C
		Um	iP	13 43 16	
		Near Kodiak Island, Alaska. (h = 40 km).			
"	20	Up	iP	13 45 10	
"	20	Um	iP	14 23 47	
"	20	Up	iP	17 19 46	C
			iS	17 28 21	
				microns	sec
			P Z'	0.4	0.9
			S E	1.8	14
			S N	1.5	13
			M E	3.4	19
			M N	5.6	21
			M Z	4.2	20
		D = 7000 km = 63°.			
		Ki	iP	17 18 52	D
		cont.			

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Jan 20 cont.

			microns	sec	
		P	Z'	0.6	1.0
		M	E	3.8	19
		M	N	6.8	20
		M	Z	8.3	20
	Sk	iP		17 19 19	C
	Gb	iP		17 19 58	
	Um	iP		17 19 18	C

Sea of Okhotsk (h = 50 km).
Magn. = 6.3 (Up, Ki).

" 20	Up	iP		17 23 39	C
			microns	sec	
		P	Z'	0.1	1.0
	Ki	iP		17 22 45	
			microns	sec	
		P	Z'	0.2	1.0
	Sk	iP		17 23 13	D
	Gb	iP		17 23 51	
	Um	iP		17 23 12	

Sea of Okhotsk.

" 20	Gb	iP		17 55 36
" 20	Um	iP		20 36 24
" 20	Um	iP		21 02 18
" 20	Up	iP		21 09 18
	Sk	iP		21 09 43
	Um	iP		21 08 59
		i		21 09 18
" 20	Up	iP		21 41 37
	Ki	iP		21 40 43 C
	Sk	iP		21 41 08
	Gb	iP		21 41 50
	Um	iP		21 41 09

Near Kodiak Island, Alaska.
(h = 40 km).

" 20	Up	iP		21 47 58
	Ki	iP		21 47 03
	Sk	iP		21 47 31
	Um	iP		21 47 31

Near Kodiak Island, Alaska.
(h = 14 km).

" 20	Up	iP		21 58 06
	Ki	iP		21 57 27
	Um	iP		21 57 44
" 20	Up	iP		22 46 13
		i(pP)		22 46 25

cont.

1961 Jan 20 cont.

			microns	sec	
		P	Z'	0.1	1.0
	Ki	iP		22 45 33	
		i(pP)		22 45 44	
			microns	sec	
		P	Z'	0.1	1.0
	Sk	iP		22 46 06	C
		i(pP)		22 46 18	
	Gb	iP		22 46 34	
		i(pP)		22 46 46	
	Um	iP		22 45 51	C
		i(pP)		22 46 03	

Near east coast of Honshu, Japan (h = 50 km).

" 21	Up	e(P)		05 31 59	
		iSn		05 33 30	
		iSg		05 34 21	
			microns	sec	
		Sg	Z'	0.1	0.5

D = 970 km = 8.7°.

	Ki	iPg		05 30 44
		i		05 30 53
		iSg		05 31 27
		i		05 31 41
			microns	sec
		Sg	Z'	1.4 0.6

D = 370 km = 3.3°.

	Sk	iPg		05 30 58 D
		i		05 31 03
		iSn		05 31 28
		iSg		05 31 50

D = 440 km = 4.0°.

	Um	iPg		05 31 14 D
		i		05 31 19
		iSg		05 32 18
		i		05 32 41

D = 540 km = 4.9°.

Off coast of Norway, near Lofoten, 68°N, 12°E.
Origin time = 05 29 37.

" 21	Um	iP		13 29 31

Near Kodiak Island, Alaska.
(h = 60 km).

" 21	Um	iP		17 54 11

Honshu, Japan (h = 25 km).

" 21	Sk	iP		21 34 16
" 21	Sk	iP		21 56 53
" 22	Sk	iP		01 31 49

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961					
Jan	22	Sk	iP	03 35 01	
"	22	Up	iPKP	03 43 13	
			i	03 43 18	
			ePP	03 45 18	
			i	03 46 26	
				microns sec	
			M E	14	18
			M N	29	19
			M Z	28	19
			(D = 14100 km = 127°).		
		Ki	ePKP	03 42 53	
			i	03 43 00	
				microns sec	
			M E	15	17
			M N	19	19
			M Z	20	19
			(D = 13200 km = 119°).		
		Sk	iPKP	03 43 04	
			i	03 43 11	
			i	03 45 16	
		Gb	ePKP	03 43 15	
		Um	iPKP	03 42 58	
			i	03 43 09	
			i	03 43 20	
		Santa Cruz Islands region.			
		(h = 25 km). Magn. = 7.1			
		(Up, Ki).			
"	22	Sk	iPKP	06 35 32	
		Um	iPKP	06 35 21	
		Santa Cruz Islands.			
		(h = 16 km).			
"	22	Sk	iP	13 07 15	
		Um	iP	13 07 07	
"	22	Up	i(P)	14 59 17	
"	22	Up	iPKP	16 29 15	D
			i	16 29 26	
				microns sec	
			PKP Z'	0.1	0.8
		Sk	iPKP	16 29 07	D
			i	16 29 18	
		Um	iPKP	16 29 03	C
		Kermadec Islands region.			
		(h = 70 km).			
"	22	Up	e(P)	18 08 16	
"	22	Up	e(P)	19 01 46	
"	22	Sk	iPKP	19 23 58	
		cont.			

1961					
Jan	22	Um	iPKP	19 23 50	
cont.		Santa Cruz Islands.			
		(h = 40 km).			
"	22	Up	iP	19 35 30	
		Ki	eP	19 35 11	
		Um	iP	19 35 19	
		Leyte, Philippine Islands.			
		(h = 190 km).			
"	23	Up	iP	04 59 25	
				microns sec	
			P Z'	0.2	0.8
			M E	0.7	18
			M N	0.8	16
			M Z	1.1	17
		Ki	iP	04 58 40	
				microns sec	
			M E	1.1	20
			M N	1.3	20
			M Z	2.2	19
		Sk	iP	04 59 16	
			i	04 59 26	
		Um	iP	04 58 58	
		Hokkaido, Japan (h = 50 km).			
"	23	Up	i(P)	19 19 49	
"	23	Sk	e(P)	23 12 08	
"	24	Up	iPKP	07 43 55	
			iSKP	07 47 08	
			iPKS	07 47 19	
				microns sec	
			SKP Z'	0.3	1.1
		Ki	iPKP	07 43 41	C
				microns sec	
			PKP Z'	0.2	1.2
		Sk	iPKP	07 43 51	
			iSKP	07 47 03	
		Gb	iPKP	07 44 01	
			iSKP	07 47 22	
		Um	i(PKP)	07 43 40	
			iPKP	07 43 48	
		New Hebrides Islands region.			
		(H = 200 km).			
"	24	Ki	ePKP2	08 23 04	
		Antarctic Ocean, south of			
		Australia (h = 25 km).			
"	24	Um	iP	10 27 42	
"	24	Ki	i(P)	11 26 13	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Jan 24 Ki iP 15 48 50

" 24 Up iP 20 26 32 C

" 24 Sk iP 22 18 01

" 25 Ki iP 01 07 06
Sk iP 01 07 19
Um iP 01 07 05 D
Near west coast of Sumatra (h = 140 km).

" 25 Sk eP 04 25 45

" 25 Sk e(P) 04 49 27
Um iP 04 48 17

" 25 Sk eP 05 11 58

" 25 Um ePKP 05 40 25
New Hebrides Islands region (h = 200 km).

" 25 Sk iP 06 38 12

" 25 Sk iP 07 14 25

" 25 Sk iP 07 34 09

" 25 Sk iP 09 06 34

" 25 Um iP 17 33 45 D
Celebes (h = 60 km).

" 25 Up iP 19 14 59
iPcP 19 15 30
Ki iP 19 14 07
microns sec
P Z' 0.1 0.6
Sk iP 19 14 44
Gb iP 19 15 20
Um iP 19 14 32
Kurile Islands (h = 100 km).

" 25 Up iP 19 27 13
microns sec
M E 1.1 15
M N 1.6 16
M Z 2.0 20
Sk eP 19 27 19

" 26 Up iP 01 58 09
Um iP 01 58 06 C
Southern Burma (h = 70 km).

1961
Jan 26 Um iP 02 36 17

" 26 Sk iP 07 07 14

" 26 Sk iP 10 54 47 C

" 26 Um iP 12 46 47

" 26 Um iP 13 03 58 C

" 26 Um ePKP 13 31 35
Loyalty Islands region. (h = 80 km).

" 26 Up eSKP 16 35 57
microns sec
SKP N 2.8 14
M E 4.0 19
M N 4.7 18
M Z 8.7 20
Ki ePKP 16 32 22
M E 5.7 21
M N 3.9 18
M Z 6.2 21
Um iPKP 16 32 33
i(PKS) 16 35 57
Loyalty Islands (h = 120 km).

" 26 Up iPKP 19 08 09
Ki iPKP 19 07 57
microns sec
PKP Z' 0.1 1.0
Sk iPKP 19 08 05
Gb e(PKP) 19 08 06
iPKP 19 08 15
Um iPKP 19 08 01
iSKP 19 11 22
Loyalty Islands region. (h = 110 km).

" 26 Up iP 21 57 29

" 26 Up i(P) 22 44 07
Ki iPg 22 44 22
iSg 22 44 33
Possibly two different shocks, of which the one recorded at Ki may be an explosion.

" 27 Um iPKP 01 10 54
Solomon Islands (h = 20 km).

" 27 Sk e(PKP) 14 13 28
cont.

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Jan 27 cont. New Ireland region. (h = 120 km).

" 27 Up iP 20 17 57
Kurile Islands (h = 60 km).

" 28 Up iP 07 22 53
microns sec
P Z' 0.1 0.6
Ki iP 07 24 07
Sk iP 07 23 35
Um iP 07 23 30
Northern Greece (h = 90 km).

" 28 Um iP 09 29 51

" 28 Up iP 11 28 06
microns sec
P Z' 0.2 0.7
Ki iP 11 28 05
Gb iP 11 28 28
Um iP 11 28 00

" 28 Ki iP 12 57 17
i 12 57 22
microns sec
P Z' 0.3 0.8

" 28 Up iPKP 14 25 42
Ki iPKP 14 25 45
microns sec
PKP Z' 0.5 1.0
Um iPKP 14 25 43 C
South Pacific Ocean,
south of Easter Island.
(h = 140 km).

" 29 Up iP 13 34 55
Ki eP 13 34 03
Andreanof Islands,
Aleutian Islands.
(h = 40 km).

" 29 Up iP 18 44 23

" 30 Ki iP 12 21 13
microns sec
P Z' 0.1 1.3
Sk eP 12 21 39
i 12 21 56
Um iP 12 21 43 C
Central Alaska (h = 30 km).

" 31 Up iP 00 57 52

1961
Jan 31 Up iP 00 59 12 C
i 00 59 15
iS 01 07 50
microns sec
P Z' 0.1 0.5
M E 9.2 18
M N 5.0 19
M Z 6.6 18
D = 7100 km = 64°.
Ki iP 00 58 18 C
i 00 58 28
iS 01 06 04
microns sec
P Z' 0.4 1.0
S E 2.5 8
S N 3.2 8
M E 7.4 19
M N 7.2 21
M Z 11 20
D = 6200 km = 56°.
Sk iP 00 58 46
i 00 58 55
Gb iP 00 59 24 C
i 00 59 31
Um iP 00 58 48
i 00 58 56
Near Kodiak Island, Alaska.
(h = 30 km). Magn. = 6.2
(Up, Ki).

" 31 Ki iPn 09 00 59
iPg 09 01 07
iSg 09 01 44
D = 310 km = 2.8°.
Sk e(S^x) 09 03 50
e 09 04 43
Um eSg 09 02 45
Northern Finland.
Origin time = 09 00 11.

" 31 Up iP 11 43 19

" 31 Gb i(P) 13 37 56
i 13 38 03

" 31 Up iP 18 43 19
microns sec
P Z' 0.1 0.5
Ki iP 18 42 25
iPcP 18 43 10
Sk eP 18 43 19
Um iP 18 42 51
Andreanof Islands,
Aleutian Islands (h = 50 km).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961					
Jan	31	Up	iP	20 42 15	
"	31	Up	iP	23 25 48	

Markus Båth
27.3.1961

1961 Feb. Copied 4/5

Seismological Laboratory
Uppsala

P R E L I M I N A R Y
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, and U M E Å

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°49.0'N,	20°14.1'E;	h = 20 m

F E B R U A R Y 1 - 28, 1961

1961 Feb	1	Ki	iP	00 46 07	
		Off coast of Vancouver Island (h = 40 km).			
"	1	Ki	iP	05 06 42	
				microns	sec
		M	E	0.9	18
		M	N	0.5	18
		Um	iP	05 06 54	
		Mariana Islands region (h = 100 km).			
"	1	Ki	eP	17 59 30	
"	1	Ki	eP	18 49 43	
		Sk	iP	18 50 19	
		Um	iP	18 50 03	
		Near north coast of Honshu, Japan (h = 40 km).			
"	2	Ki	iP	00 54 51	
		Um	iP	00 55 00	
		Near south coast of Mindanao, Philippine Islands (h = 160 km).			
"	2	Ki	iP	11 26 17 D	
		Sk	iP	11 26 42	
		Um	iP	11 26 28	
		Mariana Islands (h = 130 km).			
"	2	Ki	iP	19 43 57	
1961 Feb	2	Um	iP	20 09 34 C	
"	3	Up	iP	02 38 12 C	
		Ki	iP	02 38 12 C	
		Sk	iP	02 38 27	
		Um	iP	02 38 11	
		Near coast of Sumatra (h = 15 km).			
"	3	Um	iP	06 39 55	
"	3	Up	iP	07 23 04	
		Um	i(P)	07 23 45	
"	3	Sk	iPP	12 20 44	
		Near coast of central Chile (h = 20 km).			
"	3	Up	iPKP	12 53 01	
				microns	sec
			PKP Z'	0.1	1.0
		Ki	iPKP	12 52 31	
			i	12 54 40	
				microns	sec
			PKP Z'	0.1	1.3
		Sk	iPKP	12 52 45	
		Um	iPKP	12 52 39	
		Off north coast of North Island, New Zealand (h = 300 km).			
"	3	Up	iP	13 43 10	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Feb 3 cont.

				microns	sec
		P	Z'	0.1	1.0
	Ki	iP		13 42 31	
	Sk	i(P)		13 42 51	
	Gb	iP		13 43 31	
		i		13 43 40	
	Um	iP		13 42 48	D
		i		13 42 59	

Honshu, Japan (h = 100 km).

" 3	Up	iP		14 31 58
" 3	Up	iP		14 50 40
" 3	Up	iP		20 37 00
" 3	Um	i(P)		21 04 09
" 4	Up	iP		09 02 01 C
		i(S)		09 10 14
		i		09 10 45
			microns	sec
		P	Z'	0.4 0.7
	Ki	iP		09 01 54 C
		ipP		09 02 25
		i(S)		09 09 58
	Sk	iP		09 02 16 C
		ipP		09 02 47
	Gb	iP		09 02 21 C
		ipP		09 02 53
	Um	iP		09 01 54 C
		ipP		09 02 25
		i(S)		09 10 05

Northern Burma . h = 140 km (Ki,Sk,Gb,Um).

" 4	Up	iP		12 11 28
" 4	Up	iP		13 00 03
	Ki	iP		12 59 12
	Sk	iP		12 59 49
	Gb	iP		13 00 26
	Um	eP		12 59 36

Kamchatka (h = 160 km).

" 4	Up	eL		16 30	
			microns	sec	
		M	E	0.7	16
		M	N	0.9	17
		M	Z	1.1	17

Fiji Islands region (h = 60 km).

" 4	Up	iP		19 21 05

1961 Feb 4 cont.

		i		19 21 32	
		iSKS		19 31 09	
		e		19 40 01	
			microns	sec	
		P	Z'	0.1	0.7
		M	E	9.6	17
		M	N	8.0	18
		M	Z	12	17

D = 8450 km = 76°.

	Ki	iP		19 20 40 C
		eLgl		19 46 50
			microns	sec
		P	Z'	0.1 1.1
		M	E	6.0 22
		M	N	4.6 17
		M	Z	5.4 17
	Sk	iP		19 21 08 C
	Gb	iP		19 21 28 C
	Um	iP		19 20 50

Off east coast of Formosa (h = 14 km). Magn. = 6.1 (Up, Ki).

" 5	Up	iP		00 09 50
	Ki	iP		00 09 04
	Sk	iP		00 09 41
	Um	iP		00 09 23

Kurile Islands (h = 25 km).

" 5	Up	iP		02 52 39 C
	Ki	iP		02 52 40
	Um	iP		02 52 34
		i		02 52 51
" 5	Um	iSKP		08 00 44

Fiji Islands (h = 590 km).

" 5	Ki	iP		10 29 26
" 5	Ki	iP		11 31 11
" 5	Up	iP		15 51 23 D
		eS		16 02 08
		iPS		16 03 00
			microns	sec
		P	Z'	0.1 1.0
		M	E	0.8 17
		M	N	0.6 15
		M	Z	1.3 17

D = 9700 km = 87 1/2°.

	Ki	iP		15 51 19
		iS		16 01 51
			microns	sec
		P	Z'	0.4 1.6
		S	E	1.0 10

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Feb 5 cont.

	M	E	1.2	18
	M	N	0.6	15
	M	Z	1.8	16

D = 9550 km = 86°.

Sk	iP	15 51 09	D
Gb	iP	15 51 14	D
Um	iP	15 51 24	D

South of Panama (h = 50 km).

" 5 Ki e(P) 17 00 10

" 5 Up i(P) 17 48 10

" 5 Up eL 18 42

microns sec

M	E	0.8	18
M	N	1.6	22
M	Z	1.1	18

Ki eL 18 42

microns sec

M	E	1.2	18
M	N	0.8	17
M	Z	1.0	15

Indian Ocean.

" 6 Um iP 08 56 04

" 6 Up iP 12 23 24
i 12 23 36

microns sec

P	Z'	0.1	0.5
M	E	1.0	17
M	N	1.3	18
M	Z	1.2	19

Ki iP 12 22 31

microns sec

M	E	0.6	16
M	N	0.5	16
M	Z	1.0	17

Sk	iP	12 22 59
Gb	iP	12 23 40
Um	iP	12 22 58

Aleutian Islands (h = 80 km).

" 6 Up iS^x 13 59 29
iSg 13 59 43

D = 610 km = 5.5°.

Ki $i(P^x)$ 13 58 06
iSn 13 58 50
iSg 13 59 15

D = 510 km = 4.6°.

Sk iPg 13 57 10
iSg 13 57 27

D = 140 km = 1.3°.

1961
Feb 6 cont.

Um iPg 13 57 57
i 13 58 05
iSn 13 58 32
iSg 13 58 47

D = 420 km = 3.8°.

Coast region of central Norway, 64.8°N, 11.9°E.
Origin time = 13 56 43

" 6 Up iP 18 26 23 D
i 18 26 35
i(PcP) 18 26 49

microns sec

P	Z'	0.1	0.5
M	E	0.9	16
M	N	1.9	19
M	Z	1.4	18

Ki iP 18 25 36

microns sec

M	E	1.2	18
M	N	0.9	18
M	Z	1.2	17

Sk iP 18 26 13
i 18 26 42

Um iP 18 26 00
iPcP 18 26 36

Kurile Islands (h = 25 km).

" 6 Up iPKP 22 03 56 C
iPKKP 22 14 15
i 22 14 30
eSS 22 21 26

microns sec

PKP	Z'	0.2	0.6
PKKP	Z'	0.1	1.0
M	E	6.1	21
M	N	8.8	23
M	Z	7.5	21

Ki iP 21 59 47
iPKP 22 03 45
iPP 22 04 35
iPS 22 14 00
iPKKP 22 14 36

microns sec

PKP	Z'	0.2	1.0
PP	E	0.9	7
PP	Z	0.9	8
M	E	14	21
M	N	11	20
M	Z	14	20

D = 12400 km = 111 1/2°.

Sk	iPKP	22 03 55	C
	iPKKP	22 14 18	
Gb	iPKP	22 04 13	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Feb 6 cont.	Um	iPKP	22 03 51		
		iPKKP	22 14 35		
		i	22 14 49		
	Solomon Islands (h = 60 km).				
	Magn. = 6.7 (Up, Ki).				
" 7	Ki	iP	03 07 43		
" 7	Up	iP	05 24 45		
			microns	sec	
		P	Z'	0.1	0.5
	Ki	iP	05 24 45 C		
			microns	sec	
		P	Z'	0.2	0.8
	Sk	iP	05 24 58 C		
		i	05 25 10		
	Um	iP	05 24 44		
	Sumatra (h = 80 km).				
" 7	Ki	e(P)	14 10 49		
" 7	Ki	eP	14 48 10		
		ePP	14 50 46		
	Off east coast of Honshu, Japan (h = 25 km).				
" 7	Up	iP	15 40 23		
	Ki	iP	15 40 01		
	Sk	eP	15 40 26		
	Near east coast of Formosa (h = 40 km).				
" 7	Up	iP	21 12 40		
		iPcP	21 13 05		
			microns	sec	
		P	Z'	0.1	0.8
	Ki	iP	21 11 54 C		
			microns	sec	
		P	Z'	0.1	1.0
	Sk	iP	21 12 29		
	Gb	iP	21 12 56		
	Um	iP	21 12 15		
	Kurile Islands (h = 40 km).				
" 7	Up	iP	22 20 23		
	Ki	iP	22 19 32		
	Kurile Islands (h = 60 km).				
" 7	Up	iP	23 38 16		
	Ki	iP	23 37 21		
	Aleutian Islands (h = 15 km).				
" 8	Up	iPKP	02 55 36		
		iSKP	02 58 49		

1961 Feb 7 cont.	Ki	iPKP	02 55 22 C		
			microns	sec	
		PKP	Z'	0.2	0.9
	Sk	iPKP	02 55 33		
	Gb	iPKP	02 55 38		
	Um	iPKP	02 55 27		
	New Hebrides Islands region (h = 160 km).				
" 8	Up	iPKP	04 53 25 C		
	Kermadec Islands region (h = 430 km).				
" 8	Up	iP	06 20 17		
	Sk	iP	06 21 04		
" 8	Ki	iP	08 16 57		
	Sk	iP	08 16 40 C		
		ipP	08 18 52		
	Brazil-Peru border. h = 610 km (Sk).				
" 8	Gb	i(P)	14 56 59		
" 8	Up	iP	15 34 54		
" 8	Up	iPKP	18 09 04		
		iSKP	18 11 59		
			microns	sec	
		SKP	Z'	0.2	1.0
	Ki	iPKP	18 08 58		
		iSKP	18 11 35		
			microns	sec	
		SKP	Z'	0.5	1.5
	Sk	i(PKP)	18 08 53		
		iPKP	18 09 08		
		iSKP	18 11 51		
	Gb	iPKP	18 09 17		
		iSKP	18 12 10		
	Um	iPKP	18 08 57		
		iSKP	18 11 45		
	Tonga Islands (h = 540 km).				
" 8	Up	iP	20 19 31		
" 8	Um	iP	22 37 35 C		
" 9	Up	iPKP	02 27 53 C		
			microns	sec	
		PKP	Z'	1.3	0.7
		M	E	1.9	22
		M	N	3.1	23
		M	Z	4.5	23
	Ki	iPKP	02 27 32		

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961					
Feb	9		i	02 27 38	
cont.			iPP	02 30 32	
			ePKS	02 31 13	
				microns	sec
			PKP Z'	0.3	1.5
			PP Z'	0.4	2.0
			PKS N	1.0	7
			M E	2.7	20
			M N	2.3	20
			M Z	3.8	20
		Sk	iPKP	02 27 47	C
		Gb	ePKP	02 27 57	C
			i	02 28 02	
			iPP	02 30 53	
		Um	iPKP	02 27 44	D
			i	02 27 55	
		Kermadec Islands region (h = 40 km). Magn. = 6.4 (Up, Ki).			
"	9	Ki	e(P)	02 39 05	
		Um	iP	02 38 23	
"	9	Gb	iP	04 36 11	
"	9	Up	e(P)	05 51 32	
"	9	Um	iPKP	09 22 50	
		Santa Cruz Islands (h = 80 km).			
"	9	Up	eL	21 13	
				microns	sec
			M E	1.3	20
			M N	1.2	20
			M Z	1.9	20
		Ki	eL	21 13	
				microns	sec
			M E	1.8	21
			M N	1.4	19
			M Z	2.1	20
		Off south coast of Java (h = 70 km).			
"	10	Sk	iPKP	00 57 14	
		Um	iPKP	00 57 03	
		Kermadec Islands (h = 25 km).			
"	10	Up	i(P)	14 33 58	
"	10	Gb	iP	17 15 07	
"	11	Ki	eP	02 46 53	
		Um	eP	02 46 59	

1961					
Feb	11	Mariana Islands region (h = 60 km).			
cont.					
"	11	Up	iP	06 23 53	
			i(PP)	06 27 02	
				microns	sec
			P Z'	0.4	0.6
		Ki	iP	06 23 21	D
			i	06 27 36	
				microns	sec
			P Z'	0.2	0.6
		Sk	iP	06 23 50	
			i(PP)	06 27 05	
		Gb	iP	06 24 11	
		Um	iP	06 23 36	
			i	06 27 22	
			i	06 27 28	
		North of Bonin Islands region (h = 360 km). The phases after P possibly belong to another earthquake of different location.			
"	11	Up	iP	09 18 48	C
			i	09 18 53	
		Sk	iP	09 19 26	C
		Um	iP	09 19 22	
"	11	Up	i(P)	11 19 27	
"	11	Ki	iP	12 36 42	C
		Near coast of Mindanao, Philippine Islands (h = 200 km).			
"	11	Um	iP	14 56 33	
			i	14 56 46	
"	11	Ki	ePKP	17 05 09	
		Um	iPKP	17 05 15	
		Fiji Islands (h = 260 km).			
"	11	Up	iPKP	21 20 43	
			i	21 22 03	
			iPKS	21 24 24	
				microns	sec
			PKP Z'	2.9	0.8
			M E	1.3	19
			M N	4.2	24
			M Z	3.0	23
		Ki	iPKP	21 20 21	
			iPKS	21 24 01	
				microns	sec
			PKP Z'	0.8	1.3

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Feb 11 cont.		PKS	Z'	0.2	1.3	
		M	E	2.7	22	
		M	N	1.8	21	
		M	Z	4.6	21	
	Sk	iPKP		21 20 37		
	Gb	iPKP		21 20 49		
		i		21 20 55		
	Um	iPKP		21 20 30		
	Kermadec Islands (h = 40 km).					
	Magn. = 6.3 (Up, Ki).					
" 11	Up	i(P)		21 31 45		
" 12	Gb	i(P)		00 46 08		
" 12	Um	iPKP		01 38 38		
	Easter Island region.					
" 12	Gb	i(P)		05 15 01		
" 12	Ki	iP		10 38 15		
	Um	iP		10 37 47		
" 12	Um	iPKP		12 28 02		
	Samoa Islands region					
	(h = 280 km).					
" 12	Up	i(SKP)		13 17 47		
		i		13 17 57		
				microns	sec	
		(SKP)	Z'	0.1	0.5	
	Gb	i(SKP)		13 17 56		
	Um	iPKP		13 15 12		
		i		13 15 22		
		i(SKP)		13 17 52		
	New Hebrides Islands region					
	(h = 600 km).					
" 12	Up	iP		22 04 46	C	
		ePa		22 09 14		
		iS		22 13 45		
		iP'P'		22 32 59		
				microns	sec	
		P	E	1.3	7	
		P	N	2.6	5	
		P	Z	4.7	5	
		P	Z'	0.4	0.6	
		S	E	26	25	
		S	N	12	21	
		P'P'	Z'	0.3	2.2	
		M	E	103	18	
		M	N	104	18	
		M	Z	120	20	
	D = 7550 km = 68°.					

1961 Feb 12 cont.	Ki	iP		22 04 00	C	
		i		22 04 12		
		i		22 05 40		
		iS		22 12 18		
		iPS		22 12 38		
		iP'P'		22 33 12		
		i		22 33 27		
				microns	sec	
		P	E	5.3	17	
		P	N	3.7	15	
		P	Z	12	15	
		P	Z'	1.0	1.2	
		S	N	9.2	15	
		P'P'	Z'	1.4	3.0	
		M	E	170	18	
		M	N	92	17	
		M	Z	210	18	
	D = 6800 km = 61°.					
	Sk	iP		22 04 35		
	Gb	iP		22 05 03	C	
	Um	iP		22 04 21		
	Kurile Islands (h = 50 km).					
	Magn. = 6.9 (Up, Ki).					
" 12	Up	iP		23 02 33		
	Ki	iP		23 01 49		
	Gb	iP		23 02 56		
	Um	iP		23 02 10		
	Kurile Islands (h = 20 km).					
" 12	Up	iP		23 24 09		
	Gb	iP		23 24 31		
	Um	eP		23 23 34		
" 12	Up	iP		23 37 39	D	
				microns	sec	
		P	Z'	0.2	0.7	
		M	E	9.9	17	
		M	N	14	18	
		M	Z	14	20	
	Ki	iP		23 36 52	C	
				microns	sec	
		P	Z'	0.4	1.2	
		M	E	19	17	
		M	N	14	16	
		M	Z	22	15	
	Sk	iP		23 37 29		
	Gb	iP		23 38 00	C	
	Um	iP		23 37 14		
	Kurile Islands (h = 20 km).					
	Magn. = 6.3 (Up, Ki).					
" 13	Up	iP		00 42 58		
	Kurile Islands (h = 25 km).					

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Feb 13 Up iP 02 41 08
Gb iP 02 41 24
Kurile Islands (h = 20 km).

" 13 Up iP 02 42 21
Gb iP 02 42 36
Um iP 02 41 54
Kurile Islands (h = 60 km).

" 13 Up iP 04 54 27
Gb iP 04 54 44
Um iP 04 54 01
Kurile Islands (h = 50 km).

" 13 Up -

		microns	sec
M	E	3.1	20
M	N	4.3	21
M	Z	5.8	21

Ki -

		microns	sec
M	E	3.7	20
M	N	2.6	19
M	Z	5.5	20

Um iPKP 07 04 40
Tonga Islands region (h = 40 km). Magn. = 6.3 (Up, Ki).

" 13 Up iP 09 18 02 D
Ki iP 09 17 16
Sk iP 09 17 51
Gb iP 09 18 20 D
Um iP 09 17 37
Kurile Islands (h = 25 km).

" 13 Um iP 14 22 18 C

" 13 Up iP 16 19 25
Ki iP 16 19 28 C
Nepal-Tibet border (h = 40 km).

" 13 Up iP 16 31 21
Ki iP 16 31 07 D
Um iP 16 31 14
Banda Sea (h = 70 km).

" 13 Up iP 16 38 27 C
i 16 38 37

		microns	sec
P	Z'	0.3	0.6
M	E	2.8	15
M	N	3.8	18
M	Z	4.7	15

1961
Feb 13 cont. Ki iP 16 37 41 C
iPP 16 39 48

		microns	sec
P	Z'	0.6	1.5
M	E	5.9	15
M	N	4.4	15
M	Z	10	15

Sk iP 16 38 17
i 16 38 28
Um iP 16 38 03
i 16 38 13
Kurile Islands (h = 25 km).
Magn. = 6.2 (Up, Ki).

" 13 Up iP 18 01 18
Ki iP 18 00 32
Um iP 18 00 51
Kurile Islands (h = 40 km).

" 13 Up iP 20 33 47

" 13 Up iP 21 22 42
Kurile Islands (h = 50 km).

" 13 Up eP 22 48 18
i 22 48 30
Ki iP 22 47 29
Um iP 22 47 49
Kurile Islands (h = 40 km).

" 14 Up iP 00 26 39
Ki iP 00 25 53
Um eP 00 26 09
Kurile Islands (h = 90 km).

" 14 Up iP 03 02 11
Ki iP 03 01 25

		microns	sec
P	Z'	0.1	1.3

Um iP 03 01 43
Kurile Islands (h = 100 km).

" 14 Up iP 03 26 31
Ki iP 03 25 45
Um iP 03 26 04
Kurile Islands (h = 25 km).

" 14 Up iP 03 33 07
i 03 33 23

		microns	sec
P	Z'	0.2	0.6
M	E	4.6	20
M	N	3.8	19
M	Z	4.6	19

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Feb 14 cont. Ki iP 03 32 21
microns sec
P Z' 0.3 1.3
M E 5.3 17
M N 5.0 19
M Z 11 18
Sk iP 03 32 57
Um iP 03 32 40
Kurile Islands (h = 20 km).
Magn. = 6.2 (Up, Ki).

" 14 Up i(P) 12 17 42
i 12 17 50

" 14 Ki eP 19 32 18

" 14 Up iP 20 15 08 D
Um iP 20 14 30 D

" 14 Um iP 23 31 57

" 15 Up iPKP 06 46 36
i 06 46 39
microns sec
PKP Z' 0.1 0.5
Um iPKP 06 46 24
Southwest of Tonga Islands
(h = 150 km).

" 15 Um e(P) 08 02 54

" 15 Um iP 08 45 42 D

" 15 Up iP 10 56 17 C
i 10 56 33
iS 11 05 17
microns sec
P Z' 0.3 0.8
S N 3.6 18
M E 13 15
M N 13 16
M Z 12 17
D = 7550 km = 68°.
Ki iP 10 55 31
microns sec
P Z' 0.7 1.2
M E 17 15
M N 10 16
M Z 33 18
Sk iP 10 56 07
Um iP 10 55 51
i 10 56 04
Kurile Islands (h = 70 km).
Magn. = 6.4 (Up, Ki).

1961
Feb 15 Up iP 11 38 03
microns sec
P Z' 0.1 0.8
Ki iP 11 38 01
microns sec
P Z' 0.1 1.3
Sk iP 11 38 22
Um iP 11 37 56
Tibet (h = 70 km).

" 15 Up iP 15 01 57
microns sec
P Z' 0.1 1.0

" 15 Sk iP 18 30 06
Um iP 18 30 05

" 16 Up iP 03 49 11
microns sec
M E 1.0 17
M N 1.1 21
M Z 1.1 17
Ki -
microns sec
M N 0.5 13
Sk iP 03 49 54
Um eP 03 49 47
Near coast of Albania
(h = 140 km).

" 16 Um iP 07 15 45

" 16 Gb iP 09 06 36
South of Honshu, Japan
(h = 300 km).

" 16 Up iP 12 34 35

" 16 Up iP 14 05 53
i 14 06 02
microns sec
P Z' 0.2 0.6
M E 2.0 15
M N 2.4 17
M Z 1.9 15
Ki iP 14 05 07
microns sec
P Z' 0.4 1.5
M E 3.6 16
M N 2.1 16
M Z 6.6 16
Sk iP 14 05 44
i 14 05 59
Gb iP 14 06 15 C

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Feb 16 cont.			i	14 06 22	
	Um	iP		14 05 28	
		i		14 05 39	
	Kurile Islands (h = 70 km).				
	Magn. = 6.3 (Up, Ki).				
" 16	Up	iP		14 42 48	
	Um	iP		14 43 00	C
" 16	Up	iP		15 05 29	
	Ki	iP		15 04 44	
	Gb	iP		15 05 51	
	Um	iP		15 05 04	
	Kurile Islands (h = 25 km).				
" 16	Up	iP		15 25 06	
" 17	Up	i(P^{x})		03 23 31	
		iSn		03 24 28	
		i(Lgl)		03 24 58	
		D = 680 km = 6.1°.			
	Ki	iPn		03 22 38	
		i		03 23 22	
		iSg		03 23 25	
		D = 320 km = 2.9°.			
	Sk	ePn		03 23 10	
		eSn		03 24 07	
		iSg		03 24 37	
		D = 580 km = 5.2°.			
	Gb	i(Lgl)		03 26 40	
	Um	iPg		03 22 28	
		iSn		03 22 47	
		i		03 22 54	
		iSg		03 22 56	
		D = 230 km = 2.1°.			
	Northern part of the Gulf of Bothnia, 65.3°N, 24.0°E.				
	Origin time = 03 21 47.				
" 17	Ki	iP		06 59 22	
	Um	iP		06 59 43	
	Kurile Islands (h = 25 km).				
" 17	Up	i(P)		08 42 23	
" 17	Up	iP		13 15 51	
	Hindu Kush (h = 230 km).				
" 17	Um	iP		13 42 43	
" 17	Um	iP		13 46 57	C
" 17	Up	iP		15 16 28	
	Um	eP		15 16 06	

1961 Feb 17	Ki	iP		15 51 13	C
	Um	iP		15 51 19	
	Banda Sea (h = 250 km).				
" 17	Um	iP		22 11 45	
" 17	Um	iP		23 12 17	
" 18	Up	iP		01 15 05	
	Ki	iP		01 14 19	
	Gb	iP		01 15 30	
	Um	iP		01 14 41	
	Kurile Islands (h = 30 km).				
" 18	Um	iP		02 01 30	
" 18	Um	iP		03 27 23	
" 18	Um	iP		05 41 54	
" 18	Up	iP		08 33 35	
	Ki	eP		08 32 41	
	Gb	iP		08 33 55	
	Um	iP		08 33 13	C
" 18	Ki	i(P)		11 01 53	
" 18	Up	iP		11 03 35	
	Ki	i(P)		11 04 06	
		i		11 05 36	
	Sk	iP		11 04 18	
	Um	eP		11 04 16	
" 18	Up	i(P)		11 08 36	
" 18	Um	iPKP		12 24 53	
	Loyalty Islands region (h = 40 km).				
" 18	Ki	iP		12 37 37	
	Um	iP		12 36 02	
" 18	Up	iP		15 14 35	
	Ki	iP		15 15 16	
	Um	iP		15 16 12	
	Probably more than one shock.				
" 18	Up	iP		16 05 07	
	Kurile Islands (h = 25 km).				
" 18	Up	i(P)		17 12 50	
	Ki	iP		17 13 44	
	Sk	eP		17 13 10	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Feb cont.	18		i	17 13 18	
		Um	iP	17 13 24	C
			i	17 13 30	
		Atlantic Ocean, north of Ascension Island (h = 25 km).			
"	18	Up	iP	20 13 49	
		Ki	iP	20 13 35	C
		Um	iP	20 13 42	
		Off coast of Mindanao, Philippine Islands (h = 70 km).			
"	19	Up	i(P)	04 50 13	
"	19	Up	iP	08 05 59	
		Ki	iP	08 05 05	
		Sk	iP	08 05 31	
		Um	iP	08 05 33	
		Kodiak Island, Alaska (h = 60 km).			
"	19	Up	eP	11 11 07	
"	19	Up	iP	12 21 49	C
		Ki	iP	12 20 56	C
		Sk	iP	12 21 23	C
		Gb	iP	12 22 00	
		Um	eP	12 21 18	
			i	12 21 22	
		Kodiak Island, Alaska (h = 40 km).			
"	19	Up	iP	12 45 35	
		Sk	iP	12 45 46	
		Um	iP	12 45 56	
		South Atlantic Ocean (h = 100 km).			
"	19	Up	iP	13 18 18	D
		Ki	iP	13 17 25	
		Sk	iP	13 17 52	
		Gb	iP	13 18 28	
		Um	iP	13 17 53	
		Kodiak Island, Alaska (h = 40 km).			
"	19	Um	iP	14 01 41	
"	20	Um	iP	05 17 38	D
"	20	Up	iP	13 15 44	C
		Ki	iP	13 14 51	
"	20	Up	iP	14 01 13	C

1961 Feb	20	Um	iP	18 44 16	C
			i	18 44 47	
"	20	Up	iP	18 55 25	
		Um	e(P)	18 55 13	
"	20	Ki	iP	18 58 53	
		Um	iP	18 58 48	
		Near north coast of Sumatra (h = 140 km).			
"	21	Up	iP	03 07 03	
		Ki	iP	03 08 15	
		Sk	iP	03 07 43	
			i	03 07 59	
		Gb	iP	03 06 50	
			i	03 07 07	
		Um	iP	03 07 49	
			i	03 08 00	
		Near south coast of Greece (h = 50 km).			
"	21	Up	iP	10 27 49	
"	21	Up	eP	11 31 42	
		Um	iP	11 32 08	
"	21	Sk	i(P)	13 29 12	
"	21	Up	iP	15 48 01	
"	22	Up	iP	03 00 10	
		Um	iP	02 59 37	
		Aleutian Islands (h = 100 km).			
"	22	Um	eP	09 05 32	
"	22	Um	iP	13 31 52	
"	22	Up	iP	15 55 31	
		Ki	iP	15 55 31	
		Near coast of Sumatra (h = 40 km).			
"	22	Up	iPKP	22 13 10	C
				microns sec	
			PKP Z'	0.2 0.6	
		Ki	iPKP	22 12 49	
		Sk	iPKP	22 13 03	D
		Gb	iPKP	22 13 13	C
			i	22 13 18	
		Um	iPKP	22 12 58	
		Kermadec Islands region (h = 80 km).			

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Feb 23 Up iP 01 12 54
Um iP 01 12 45

" 23 Up iP 03 25 00
Ki iP 03 25 41
Sk iP 03 25 15
Gb eP 03 24 28

" 23 Up -
microns sec
M E 1.6 17
M N 1.4 14
Ki iP 03 29 51
Sk eP 03 29 33
Gb eP 03 28 36
Dodecanese Islands region (h = 20 km).

" 23 Um iP 04 16 41 C

" 23 Up iP 04 27 43 C
iPP 04 30 32
iS 04 37 04
microns sec
P Z' 0.3 1.0
M E 6.5 20
M N 8.0 19
M Z 9.7 20
D = 8000 km = 72°.
Ki iP 04 27 02 C
i 04 27 10
e(S) 04 35 52
microns sec
P Z' 0.2 1.0
M E 19 21
M N 9.2 22
M Z 8.4 19
Sk iP 04 27 35 C
Gb iP 04 28 05 C
iPP 04 30 55
Um iP 04 27 22
i 04 27 30
Off east coast of Honshu, Japan (h = 120 km).
Magn. = 6.3 (Up, Ki).

" 23 Up iSn 04 49 20
iSg 04 49 59
microns sec
Sg Z' 0.1 0.5
D = 830 km = 7.5°.
Ki iPg 04 47 09
i 04 47 16
iSn 04 47 44
iSg 04 47 59

1961
Feb 23 cont.
microns sec
Sg Z' 0.5 0.5
D = 420 km = 3.8°.
Sk ePg 04 47 09
i 04 47 15
iSg 04 47 55
(D = 390 km = 3.5°).
Gb i 04 50 24
iSg 04 50 59
D = 1020 km = 9.2°.
Um iPg 04 47 36
iSn 04 48 09
iS[x] 04 48 19
eSg 04 48 34
D = 530 km = 4.8°.
Off coast of central Norway, 66.9°N, 11.1°E. Origin time = 04 45 56.

" 23 Up iP 09 11 09
Um eP 09 13 19

" 23 Up i(P) 13 58 06
Gb iP 13 58 15

" 23 Um i(P) 16 03 41

" 23 Up i(P) 21 06 46

" 23 Up iP 21 22 48
Um iP 21 22 06

" 23 Up eP 21 51 06
Ki eP 21 52 08
Sk iP 21 51 45
Gb iP 21 50 56
Um iP 21 51 38
Dodecanese Islands (h = 25 km).

" 23 Up iP 21 51 48
iS 21 56 10
microns sec
S N 1.5 6
M E 2.5 15
M N 3.5 16
M Z 3.3 15
D = 2650 km = 24°.
Ki iP 21 52 54
microns sec
M E 1.4 13
M N 1.1 10
M Z 1.8 12
Sk iP 21 52 31
Gb iP 21 51 43

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961							
Feb	23	Um	iP		21 52 19		
cont.			Northern Aegean Sea.				
"	23	Up	iP		22 02 01		
			i(S)		22 05 49		
					microns	sec	
			(S)	N	1.1	6	
			M	E	1.9	16	
			M	N	1.7	17	
			M	Z	1.9	15	
		Ki	iP		22 03 09		
					microns	sec	
			M	E	1.3	11	
			M	N	0.9	10	
			M	Z	1.1	9	
		Sk	iP		22 02 41		
		Gb	iP		22 01 56		
		Um	iP		22 02 35		
			Turkey (h = 14 km).				
"	23	Um	iP		23 03 16		
"	24	Up	iP		03 15 59		
			i		03 16 00		
					microns	sec	
			P	Z'	0.4	0.7	
			M	E	0.9	16	
			M	N	1.0	16	
			M	Z	0.5	17	
		Ki	iP		03 15 33		
					microns	sec	
			P	Z'	0.2	1.0	
		Sk	iP		03 16 02		
			i		03 16 45		
		Gb	iP		03 16 22		
		Um	iP		03 15 44		
			Ryukyu Islands (h = 25 km).				
"	24	Um	iP		13 27 28		
"	24	Um	iP		16 43 16		
"	24	Um	iP		16 47 49		
"	25	Ki	iSKP		05 16 08		
		Gb	iPKP		05 13 52	C	
			Fiji Islands region (h = 610 km).				
"	25	Um	iPKP		08 43 01		
			iSKP		08 45 38		
			South of Fiji Islands region (h = 580 km).				

1961							
Feb	25	Up	iP		12 18 50		
"	25	Up	iP		15 34 33		
		Ki	iP		15 33 56		
		Um	iP		15 34 12		
"	26	Up	eSS		06 29 12		
					microns	sec	
			M	E	1.5	20	
			M	N	1.1	18	
			M	Z	2.4	19	
		Ki	iPKP		06 08 07		
			i		06 08 20		
					microns	sec	
			M	E	1.6	18	
			M	N	1.6	20	
			M	Z	3.1	19	
		Um	iPKP		06 08 12	C	
			Easter Island region (h = 30 km).				
"	26	Sk	iP		09 44 47		
			i		09 45 18		
"	26	Um	i(P)		11 47 42		
			i		11 48 38		
"	26	Up	i(P)		12 21 24	C	
"	26	Gb	i(P)		13 04 32		
"	26	Um	iP		13 12 57	C	
"	26	Um	iP		15 01 11		
			i		15 01 29		
"	26	Up	iP		18 22 20	C	
			i(PP)		18 24 54		
			iPP		18 25 02		
			iPa		18 26 58		
			i		18 30 56		
			iS		18 31 45		
			iSS		18 36 42		
					microns	sec	
			P	E	9.1	14	
			P	N	8.3	16	
			P	Z	25	16	
			P	Z'	1.5	0.8	
			PP	E	7.5	15	
			PP	N	5.7	13	
			PP	Z	23	20	
			S	E	29	20	
			M	E	280	17	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Feb 26 cont.		M	N	370	20	
		M	Z	470	20	
		D = 8050 km = 72 1/2°.				
	Ki	iP		18 21 47	C	
		iPP		18 24 19		
		iPa		18 25 54		
		iS		18 30 36		
		iPS		18 31 06		
		iP'P'		18 49 59		
		microns	sec			
		P	E	6.5	9	
		P	N	2.9	10	
		P	Z	16	9	
		P	Z'	0.9	1.4	
		PP	E	13	17	
		PP	Z	16	14	
		S	E	30	18	
		P'P'	Z'	1.6	3.3	
		M	E	560	24	
		M	N	480	24	
		M	Z	1200	24	
		D = 7450 km = 67°.				
	Sk	iP		18 22 18	C	
		iPP		18 25 07		
	Gb	iP		18 22 40	C	
	Um	iP		18 22 01	C	
		iP'P'		18 50 02		
	Near coast of Kyushu, Japan (h = 50 km). Magn. = 7.3 (Up, Ki).					
" 26	Up	iP		21 13 30	C	
		microns	sec			
		P	Z'	0.1	1.0	
	Ki	iP		21 13 11	C	
		microns	sec			
		P	Z'	0.2	1.2	
	Sk	iP		21 13 34		
	Gb	iP		21 13 48	C	
		i		21 13 55		
	Um	iP		21 13 18		
		i		21 13 25		
	Luzon, Philippine Islands (h = 30 km).					
" 27	Up	iP		01 20 06		
	Ki	iP		01 20 10		
	Sk	iP		01 19 53	C	
		i		01 20 36		
	Um	iP		01 20 08		
" 27	Ki	ePKP		10 48 59		
	Southern Chile (h = 60 km).					

1961 Feb 27	Up	iP		13 17 31		
	Ki	iP		13 16 38	C	
		i		13 16 44		
		microns	sec			
		P	Z'	0.2	1.0	
	Sk	iP		13 17 07		
		i		13 17 35		
	Gb	iP		13 17 44		
	Um	iP		13 17 03	C	
	Aleutian Islands (h = 60 km).					
" 27	Up	iP		15 57 01		
	Ki	iP		15 56 56		
	microns	sec				
	P	Z'	0.1	1.5		
	Um	iP		15 57 03	C	
	Near coast of Costa Rica (h = 100 km).					
" 27	Up	iP		18 01 21		
	Ki	iP		18 01 25		
	microns	sec				
	P	Z'	0.1	0.8		
	Um	iP		18 01 16		
	Tadzhik, U.S.S.R. (h = 50 km).					
" 27	Gb	iPg		20 28 46	C	
		eSg		20 29 07		
	D = 180 km = 1.6°.					
	Seismic ?					
" 27	Up	iP		21 45 17		
	microns	sec				
	M	N	1.8	11		
	M	Z	1.7	10		
	Ki	iP		21 46 21		
		i		21 46 28		
	microns	sec				
	M	E	1.5	19		
	Gb	iP		21 45 09		
" 27	Ki	iP		21 50 02		
" 27	Up	i(P)		22 00 07		
	microns	sec				
	M	N	2.8	14		
	M	Z	2.2	14		
	Ki	iP		22 00 54		
	Aegean Sea (h = 30 km).					
" 28	Up	i(P)		12 17 43		
" 28	Up	iP		12 44 29		

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961							
Feb	28		iPcP		12	44	54
cont.				microns	sec		
			P	Z'	0.2	0.6	
		Ki	iP		12	43	42 D
				microns	sec		
			P	Z'	0.1	0.8	
		Gb	iP		12	44	50
		Um	iP		12	44	04
		Kurile Islands (h = 30 km).					
"	28	Up	i(P)		15	18	13
"	28	Up	i(P)		20	38	07
"	28	Ki	iP		21	40	02

Markus Båth
April 10, 1961.

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Seismological Institute
University
Uppsala, Sweden

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PRELIMINARY SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, SKALSTUGAN, GÖTEBORG, and UMEÅ

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°49.0'N,	20°14.1'E; h = 20 m

March 1 - 31, 1961

1961				
Mar	1	Ki	iP	00 36 18
		Um	iP	00 36 23
		Mariana Islands region (h ~ 220 km).		
"	1	Up	iP	12 27 39
			i	12 27 42
		Local ? Seismic ?		
"	1	Um	iP	13 27 36
		Near coast of Java (h ~ 30 km).		
"	1	Ki	iP	14 18 20
		Um	iP	14 18 37
		Molucca Passage (h ~ 60 km).		
"	1	Ki	iP	14 21 17
		Um	iP	14 22 17
"	1	Up	iP	14 43 48 D
		Um	iP	14 44 09
		South Atlantic Ocean (h ~ 70 km).		
"	1	Gb	i(P)	15 26 38
"	1	Um	iP	16 37 01
"	1	Ki	i(P)	16 51 49
"	1	Um	eP	19 39 20
		Mariana Islands (h ~ 70 km).		

1961				
Mar	1	Up	iP	20 34 52
"	1	Um	iP	23 12 00
"	1	Um	iP	00 11 37
"	2	Um	iP	00 15 08
"	2	Um	iP	00 41 00
"	2	Up	i(P)	01 00 39
			i(Sg)	01 01 14
		Local ?		
"	2	Um	iP	01 16 56
"	2	Up	iP	13 57 55
"	3	Up	iP	05 27 00
		Ki	iP	05 26 19
			i	05 26 30
		Um	iP	05 26 35
		Hokkaido, Japan (h ~ 60 km).		
"	3	Um	iPKP	06 44 53
		Loyalty Islands region (h ~ 30 km).		
"	3	Up	iPKP	08 37 22
		Um	iPKP	08 37 06
			i	08 37 10
		Kermadec Islands region (h ~ 60 km).		

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Mar	3	Um	iP	09 30 14		
"	3	Um	iP	11 31 28 C		
"	3	Gb	iP	13 59 57 C		
"	3	Up	i(P)	15 05 49		
"	3	Ki	iPKP	23 10 23		
		Near coast of southern Chile (h ~ 100 km).				
"	4	Up	iP	07 52 34		
		Aleutian Islands (h ~ 50 km).				
"	4	Ki	iP	19 09 58		
		Um	iP	19 10 28		
		Aleutian Islands (h ~ 100 km).				
"	4	Up	iP	22 37 26		
		Ki	iP	22 36 46		
		Um	iP	22 37 03		
			i	22 37 12		
		Near coast of Honshu, Japan (h ~ 60 km).				
"	5	Up	iPKP	21 45 13		
		Tonga Islands region (h ~ 60 km).				
"	6	Um	iP	03 44 36		
			i	03 44 57		
"	6	Up	iP	16 54 35		
"	7	Ki	iP	00 21 06		
		Seismic ?				
"	7	Up	iP	02 59 29		
		West of Bonin Islands (h ~ 25 km).				
"	7	Up	iP	04 28 52		
			i	04 31 06		
		Bonin Islands region (h ~ 120 km).				
"	7	Up	iPKP	10 30 18 D		
			i	10 33 26		
			iPP	10 33 39		
			iSKSP	10 43 56		
				microns sec		
			PKP	E 8.0 11		
			PKP	N 14 10		
1961 Mar	7 cont.		PKP	Z 67 12		
			PKP	Z' 0.9 0.7		
			PP	N 7.1 9		
			M	E 23 17		
			M	N 32 22		
			M	Z 47 23		
			D ~ 16200 km ~ 146°.			
		Ki	iPKP	10 29 57 D		
			i	10 30 02		
			i	10 31 13		
			iPP	10 32 58		
			iPKS	10 33 38		
			iPS	10 43 13		
				microns sec		
			PKP	Z 13 8		
			PKP	Z' 0.5 1.5		
			PP	N 4.7 8		
			PP	Z 14 8		
			PKS	E 8.1 8		
			PKS	N 12 9		
			M	E 20 18		
			M	N 16 17		
			M	Z 29 18		
			D ~ 15350 km ~ 138°.			
		Gb	iPKP	10 30 25		
		Um	iPKP	10 30 09		
		Kermadec Islands region (h ~ 40 km).				
		Magn. = 7.5 (Up, Ki).				
"	7	Um	iP	14 01 46 C		
"	7	Up	iP	15 54 33		
				microns sec		
			P	Z' 0.1 0.6		
"	7	Up	iPKP	20 08 21 C		
			i	20 08 27		
		Gb	iPKP	20 08 27		
		Um	iPKP	20 07 58		
		Kermadec Islands region (h ~ 50 km).				
"	7	Up	iPKP	23 30 35		
		Ki	iP	23 26 21		
			iPP	23 30 56		
		Gb	iPKP	23 30 43		
		Um	iPKP	23 30 30		
		New Britain region (h ~ 90 km).				
"	8	Up	iP	00 28 56		
		Ki	iP	00 28 03		
		Gb	iP	00 29 10		

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Mar 8 cont
Um iP 00 28 31 C
i 00 28 35
Aleutian Islands
(h ~ 60 km).

" 8 Up iP 05 11 21

" 8 Up ePKP 05 48 13
i 05 48 18
i 05 48 25
microns sec
PKP Z' 0.1 0.6
Gb iPKP 05 48 32
Um iPKP 05 48 06
Kermadec Islands region
(h ~ 60 km).

" 8 Um iP 09 18 44

" 8 Up iP 23 13 52
Um iP 23 13 27
Off coast of Honshu, Japan
(h ~ 40 km).

" 9 Up iP 04 09 54
i 04 10 02
microns sec
P Z' 0.1 1.0
M E 1.2 16
M N 1.4 20
Ki iP 04 10 19
i 04 10 29
Gb eP 04 09 38
Um iP 04 10 18
Atlantic Ocean (h ~ 30 km).

" 9 Um iP 08 35 49

" 9 Um iP 13 06 59

" 9 Um iP 15 07 49

" 9 Um iP 15 56 46 C

" 9 Up i(P) 16 12 12

" 9 Um iP 17 18 38

" 10 Ki iPKP 03 20 38
Macquarie Island region
(h ~ 120 km).

" 10 Up iP 14 37 03 C
microns sec
P Z' 0.1 0.5

1961
Mar 10 Up iP 15 31 33
Um i(P) 15 31 23

" 10 Ki i(P) 17 32 09

" 10 Ki e(P) 21 14 36
i 21 14 41

" 11 Up eP 01 42 24
microns sec
P Z' 0.1 1.0
M E 7.1 18
M N 18 22
M Z 19 23
Ki iP 01 41 32
microns sec
P Z' 0.2 1.5
M E 14 22
M N 12 22
M Z 20 19
Um iP 01 41 52
iPeP 01 42 28
Kurile Islands (h ~ 30 km).
Magn. = 6.3 (Up, Ki).

" 11 Um i(P) 03 41 48

" 11 Um iP 03 49 31

" 11 Up iP 08 50 13
i 08 50 17
microns sec
P Z' 0.1 1.0
Ki iP 08 50 59 C
microns sec
P Z' 0.4 1.5
Um iP 08 50 35
Near coast of British
Somaliland (h ~ 20 km).

" 12 Up iPKP 23 41 17
microns sec
PKP Z' 0.1 0.9
Gb iPKP 23 41 28
Um iPKP 23 41 08
i 23 41 13
Tonga Islands region
(h ~ 110 km).

" 13 Up iPKP 08 02 10
Tonga Islands region
(h ~ 450 km).

" 13 Um iP 15 36 19

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Mar 13 Up iP 19 22 47
microns sec
P Z' 0.2 0.8
M E 2.6 14
M N 2.2 15
M Z 2.8 14
Ki iP 19 23 55
microns sec
P Z' 0.2 0.8
Sk iP 19 23 25
Gb iP 19 22 41
Um iP 19 23 19
Crete (h ~ 25 km).

" 13 Ki iPKP 20 54 16
i 20 54 33
Sandwich Islands (h ~ 60 km).

" 13 Um iP 22 23 50

" 15 Um iP 04 52 25

" 15 Ki iP 23 32 19
microns sec
P Z' 0.1 0.9
Um iP 23 32 30

" 16 Gb iPKP 04 49 25
Um iSKP 04 51 59
Kermadec Islands region
(h ~ 540 km).

" 16 Ki iP 05 08 02
i 05 08 29
Um iP 05 08 29
Aleutian Islands (h ~ 40 km).

" 16 Um iP 10 53 02

" 16 Ki iP 11 33 38
i 11 34 06
Um iPP 11 38 06
Banda Sea (h ~ 80 km).

" 16 Up ePKP 14 03 23
iPP 14 03 59
microns sec
M E 15 19
M N 24 21
M Z 12 20
Ki iP 13 59 25
i(PKP) 14 03 07
iPP 14 03 41
iSKS 14 10 02

1961
Mar 16 cont. iPS 14 12 45
microns sec
SKS E 2.9 7
M E 19 21
M N 12 21
M Z 21 20
Um i(PP) 14 03 33
Flores Island (h ~ 70 km).
Magn. = 6.9 (Up, Ki).

" 16 Gb ePKP 20 24 54
Tonga Islands region
(h ~ 100 km).

" 17 Up iP 11 11 22
i 11 11 26
Local ? Seismic ?

" 17 Up iP 13 51 05
i 13 51 10
Local ? Seismic ?

" 17 Gb iPKP 14 26 23
Tonga Islands region
(h ~ 120 km).

" 17 Up iP 15 02 59
i 15 03 01
microns sec
P Z' 0.2 0.6
Ki e(P) 15 02 35

" 17 Up iP 15 20 45

" 17 Gb i(P) 16 36 38

" 17 Up e(P) 19 09 01

" 17 Up iPKP 20 30 03
i 20 30 12
Ki iPKP 20 29 55
Gb iPKP 20 30 12
i 20 30 23
Tonga Islands region
(h ~ 80 km).

" 17 Up iP 22 51 57
Ki iP 22 51 19
Um iP 22 51 38 C
i 22 51 55
Off south coast of Honshu,
Japan (h ~ 120 km).

" 18 Um iP 09 45 55

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961

Mar	18	Up	iPKP	09 59 44	
		Ki	iPKP	09 59 29	
		Sk	iPKP	09 59 37	
		Kermadec Islands region (h ~ 670 km).			
"	18	Up	iP	10 28 03	
		Ki	iP	10 27 30	
		Um	iP	10 27 30	
		Bonin Islands region (h ~ 500 km).			
"	18	Um	iP	12 08 39	
"	18	Ki	iP	13 09 16	
				microns	sec
			P Z'	3.1	0.5
		Sk	i(Sg)	13 12 01	
		Explosion of 48 ton dynamite in the Kiruna iron ore mines.			
"	18	Um	iP	13 24 52	
"	18	Up	iPKP$_2$	15 15 46	
			i	15 16 20	
			i	15 30 10	
			i	15 31 20	
				microns	sec
			M E	11	24
			M N	27	23
			M Z	16	23
		D ~ 17800 km ~160°.			
		Ki	iPKP	15 15 02	
			i	15 15 11	
			ePP	15 18 53	
			i	15 21 13	
			ePPP	15 22 24	
			iSS	15 38 22	
				microns	sec
			PKP E	0.9	6
			PKP Z'	0.6	2.2
			PP Z	2.8	6
			M E	11	18
			M N	10	20
			M Z	16	19
		D ~ 17100 km ~154°.			
		South of New Zealand (h ~ 40 km). Magn. = 7.0 (Up, Ki).			

1961

Mar	18	Um	eP	16 24 27	
"	18	Ki	iP	17 52 26	
		Off east coast of Mindanao (h ~ 60 km).			
"	18	Up	e(P)	18 32 34	
			i	18 32 54	
"	19	Up	iP	05 03 07	
				microns	sec
			P Z'	0.1	1.0
		Ki	iP	05 02 25	
			i	05 02 36	
		Um	iP	05 02 40	
			i	05 02 51	
		North of Honshu, Japan (h ~ 14 km).			
"	19	Up	iP	05 12 30	
		Ki	iP	05 12 28	
			i	05 12 39	
		Um	iP	05 12 25	
		Soenda Strait (h ~ 120 km).			
"	19	Up	-		
				microns	sec
			M E	1.1	20
			M N	2.1	21
			M Z	2.2	22
		Ki	iPKP	07 33 58	
				microns	sec
			M E	1.2	21
			M N	1.0	20
			M Z	2.6	22
		Um	iPKP	07 34 03	
		New Hebrides Islands (h ~ 90 km).			
"	19	Ki	iP	08 04 45	
		Um	eP	08 04 49	
		Molucca Passage (h ~ 80 km).			
"	19	Up	iP	09 30 14	D
		Ki	iP	09 29 33	
		Sk	iP	09 30 19	
		Gb	iP	09 30 33	
		Um	iP	09 29 51	
		Honshu, Japan (h ~ 120 km).			
"	19	Um	iP	09 53 38	D

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Mar	19	Um	iP		09 59 57	
"	19	Um	i(P)		10 02 12	D
"	19	Up	iPKS		12 28 35	
			i		12 28 43	
				microns	sec	
			PKS	Z'	0.1	1.0
			M	N	1.4	23
			M	Z	1.9	23
		Ki	iPKP		12 24 49	
			i		12 24 50	
		Um	iPKP		12 24 55	
		New Hebrides Islands (h ~ 16 km).				
"	19	Um	eP		13 27 45	
"	19	Up	iP		13 46 02	
"	19	Gb	iPKP		20 53 44	
		Tonga Islands region (h ~ 40 km).				
"	20	Um	iP		02 30 05	
		Mariana Islands (h ~ 100 km).				
"	20	Up	iP		03 38 03	C
			i		03 38 13	
				microns	sec	
			P	Z'	0.1	0.5
		Ki	iP		03 38 12	C
				microns	sec	
			P	Z'	0.1	0.6
		Sk	iP		03 38 29	C
		Gb	iP		03 38 27	C
		Um	iP		03 38 04	
		Hindu Kush (h ~ 120 km).				
"	20	Ki	iP		06 28 55	
				microns	sec	
			M	E	5.6	17
			M	N	2.6	18
			M	Z	5.7	17
		Um	iP		06 29 09	
			i		06 29 23	
		Off west coast of Nicaragua (h ~ 120 km).				
"	20	Um	iP		06 50 05	
"	20	Up	iP		11 48 47	C
			iPcP		11 49 16	
				microns	sec	
			P	Z'	0.2	0.5

1961 Mar cont.	20	Ki	iP		11 48 02	C
		Sk	iP		11 48 38	
		Gb	iP		11 49 09	
		Um	iP		11 48 22	
			iPcP		11 49 00	
			ipP		11 49 40	
		Sakhalin Island (h ~ 350 km).				
"	20	Um	iP		13 09 24	
"	20	Up	iP		14 08 42	
			i		14 09 06	
		Ki	iP		14 08 43	
			i		14 09 07	
				microns	sec	
			P	Z'	0.1	1.0
		Sk	iP		14 09 04	
		Um	iP		14 08 36	
		Northern India (h ~ 70 km).				
"	20	Ki	i(Sg)		15 45 03	
		Sk	e(Pg)		15 42 10	
			iSg		15 42 22	
			iSn		15 42 28	
			i		15 42 32	
		Um	i(Sg)		15 44 10	
		Norway, district of Trondheim.				
"	20	Up	iPKP		16 12 07	
			i		16 12 16	
			iPP		16 15 07	
			iSKP		16 15 31	
			iPKS		16 15 50	
			ipPKS		16 16 43	
			i		16 17 13	
				microns	sec	
			PKP	Z'	0.2	0.9
			PP	Z'	0.1	1.0
			SKP	Z	1.8	4
			PKS	E	1.0	4
			PKS	N	2.8	7
			M	E	3.7	25
			M	N	3.6	22
			M	Z	4.2	23
		D ~ 15350 km ~ 138°.				
		Ki	iPKP		16 11 55	
			i		16 12 04	
			iPP		16 14 14	
			iSKP		16 15 09	
			iPKS		16 15 24	
				microns	sec	
			PKP	Z	1.1	5
			PKP	Z'	0.4	1.0
			PP	N	1.2	7
			PP	Z	2.5	6

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961

Mar	20		SKP	Z	4.7	6	
cont.			SKP	Z'	2.6	2.5	
			PKS	E	2.4	7	
			PKS	N	4.2	7	
			M	E	2.9	20	
			M	N	1.6	19	
			M	Z	3.7	19	
			D ~ 14450 km ~ 130°.				
		Sk	iPKP		16 12 06		C
			i		16 12 13		
			iSKP		16 15 27		
		Gb	iPKP		16 12 17		
		Um	iPKP		16 11 59		
			i		16 12 07		
			i		16 12 11		
			iSKP		16 15 23		
			Tonga Islands (h ~ 18 km).				
			Magn. = 6.5 (Ki).				
"	20	Up	iP		16 24 22		
		Um	iP		16 24 26		
"	20	Up	iP		16 48 19		
"	20	Um	iP		18 43 20		
			i		18 43 29		
"	20/21	Up	iPKP		00 02 07		
					microns sec		
			M	E	1.9	20	
			M	N	6.1	20	
			M	Z	6.1	21	
		Ki	iPKP		00 01 59		
					microns sec		
			M	E	2.4	18	
			M	N	4.5	20	
			M	Z	7.7	21	
		Sk	iPKP		00 02 07		
		Gb	iPKP		00 02 13		
			i		00 02 16		
		Um	ePKP		00 01 58		
			Tonga Islands region				
			(h ~ 25 km).				
			Magn. = 6.5 (Up, Ki).				
"	21	Up	iP		03 28 50		C
"	21	Um	iP		06 12 42		
"	21	Gb	iPKP		09 41 03		
			South of Fiji Islands				
			(h ~ 600 km).				
"	21	Um	iP		15 08 04		

1961

Mar	21	Ki	iP		19 53 35		
"	21	Um	iPKP		20 14 04		
			Loyalty Islands region				
			(h ~ 20 km).				
"	22	Um	iP		00 41 31		
"	22	Um	i(P)		05 19 15		
"	22	Up	iPKP		21 47 15		
		Ki	iPKP		21 46 55		
		Gb	iPKP		21 47 33		
			South of Fiji Islands				
			(h ~ 520 km).				
"	23	Ki	iP		01 07 13		
			Italy (h ~ 120 km).				
"	23	Ki	iP		02 00 50		
			Celebes (h ~ 10 km).				
"	23	Ki	iP		04 12 25		
"	23	Up	iP		14 22 13		
"	24	Um	i(P)		09 41 03		C
"	24	Um	iP		15 03 00		
			i		15 03 12		
"	24	Ki	i(P)		20 59 53		
"	24	Up	iP		23 08 43		C
					microns sec		
			P	Z'	0.4	1.2	
			M	E	2.4	21	
			M	N	2.4	20	
			M	Z	2.7	21	
		Ki	iP		23 08 04		C
			iPP		23 10 30		
					microns sec		
			P	Z'	0.2	1.0	
			PP	Z'	0.1	1.2	
			M	E	6.9	17	
			M	N	3.1	23	
			M	Z	5.9	17	
		Sk	iP		23 08 38		
			iPP		23 11 18		
		Um	iP		23 08 17		C
			i		23 08 29		
			Near east coast of Honshu,				
			Japan (h ~ 100 km).				
			Magn. = 6.0 (Up, Ki).				

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Mar 25 Up iP 12 06 56
i 12 06 59
microns sec
P Z' 0.1 0.6

" 25 Up iP 13 21 45
Ki iP 13 22 57
Sk iP 13 22 24
Gb eP 13 21 32
Um iP 13 22 20
Greece.

" 26 Up iP 01 34 18
i 01 34 26
Ki eP 01 34 05
Luzon, Philippine Islands
(h ~ 70 km).

" 26 Gb iP 02 50 09

" 26 Ki iP 05 34 47

" 26 Um iP 09 51 19

" 26 Up iP 14 42 34
microns sec
P Z' 0.1 1.0
Ki iP 14 42 14 C
microns sec
P Z' 0.4 1.1
Um iP 14 42 25
Mindanao, Philippine Islands
(h ~ 150 km).

" 26 Up iP 20 21 05
Ki iP 20 20 12
Um iP 20 20 41 C
Bristol Bay (h ~ 220 km).

" 26 Up iP 23 20 53
i 23 20 56
microns sec
P Z' 0.1 1.0
Ki iP 23 20 51
Southern Tibet (h ~ 20 km).

" 27 Um iP 04 36 06
Banda Sea (h ~ 40 km).

" 27 Um iP 13 43 16

" 27 Up iPKP 16 48 43 D
i 16 48 49
microns sec
PKP Z' 0.2 0.5

1961
Mar 27 Ki iPKP 16 48 21
cont. Gb iPKP 16 48 52
Um iPKP 16 48 35 D
Kermadec Islands (h ~ 510 km).

" 28 Um iP 00 49 34

" 28 Um i(P) 04 14 55

" 28 Ki iP 06 09 52 C
Um iP 06 10 19 D
Aleutian Islands (h ~ 50 km).

" 28 Up e 09 40 43
iSg 09 40 51
D = 1110 km = 10.0°.
Ki iPn 09 36 17
iP 09 36 25
iSn 09 37 02
iSg 09 37 18
D = 390 km = 3.5°.
Sk eSn 09 39 03
eSg 09 39 59
D = 930 km = 8.4°.
Um iSn 09 38 05
iSg 09 38 38
D = 670 km = 6.0°.
Northwestern Russia, 68.5°N,
29.7°E. Origin time=09 35 22.
Explosion ?

" 28 Up iP 09 49 24 C
i 09 52 30
iPP 09 53 28
i 09 53 57
iSKS 09 59 47
iS 10 00 36
microns sec
P Z' 0.2 0.6
PP E 2.3 5
PP Z 2.5 5
SKS E 1.5 3
M E 32 24
M N 46 19
M Z 26 20
D ~ 10900 km ~ 98°.
Ki iP 09 49 11 C
i 09 52 28
ePP 09 53 01
e(S) 10 00 00
i(PKKP) 10 06 08
microns sec
P Z 3.9 6
P Z' 1.5 1.5
PP E 4.5 9

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Mar 28 cont.		(S)	N	2.9	10	
		(PKKP)	Z'	0.2	1.5	
		M	E	55	22	
		M	N	51	22	
		M	Z	63	21	
		D ~ 10550 km ~ 95°.				
	Sk	iP		09 49 30		
	Gb	iP		09 49 40	C	
		iPP		09 53 55		
	Um	iP		09 49 15	C	
		i		09 49 27		
		i(PKKP)		10 06 10		
	Northern Celebes (h ~ 80 km). Magn. = 7.0 (Up, Ki).					
" 28	Up	iP		10 00 14		
" 28	Um	iP		10 15 43		
" 28	Um	iP		10 17 01		
" 28	Um	iP		10 23 15	C	
" 28	Up	iP		12 40 09	C	
		i		12 40 34		
		iP'P'		13 08 26		
			microns	sec		
		P	Z'	0.3	1.0	
		P'P'	Z'	0.2	1.3	
		M	E	3.4	18	
		M	N	10	21	
		M	Z	11	21	
	Ki	iP		12 39 16	C	
		iP'P'		13 08 47		
			microns	sec		
		P	Z'	0.2	1.2	
		M	E	5.5	20	
		M	N	3.4	18	
		M	Z	7.7	21	
	Gb	iP		12 40 25		
	Um	iP		12 39 42		
		i		12 40 08		
		iP'P'		13 08 29		
	Aleutian Islands (h ~ 60 km). Magn. = 6.2 (Up, Ki).					
" 28	Up	iP		14 10 00		
	Ki	eP		14 09 04		
		i		14 09 22		
	Aleutian Islands (h ~ 90 km).					
" 28	Up	iP		14 26 10		
			microns	sec		
		P	Z'	0.1	0.6	

1961 Mar 28	Ki	iP		23 01 54		
" 29	Up	iP		06 55 20		
	Ki	eP		06 54 38		
	Sk	eP		06 55 14		
	Gb	eP		06 55 23		
	Um	iP		06 54 59	C	
	Near east coast of Honshu, Japan (h ~ 120 km).					
" 29	Ki	e(P)		07 35 35		
" 29	Ki	iP		09 48 16		
	Um	eP		09 48 21		
	Northern Celebes (h ~ 80 km).					
" 29	Um	iP		10 00 27		
" 29	Up	iP		13 29 04		
		i		13 29 08		
	Local ? Seismic ?					
" 29	Up	iP		16 02 55		
			microns	sec		
		P	Z'	0.1	0.6	
" 29	Up	iP		18 21 45		
			microns	sec		
		P	Z'	0.1	1.0	
	Ki	iP		18 21 05		
	Sk	eP		18 21 30		
	Um	iP		18 21 18	C	
		i		18 21 31		
	Near east coast of Honshu, Japan (h ~ 130 km).					
" 29	Ki	iP		21 36 10		
" 30	Up			-		
			microns	sec		
		M	E	1.2	18	
		M	N	2.3	19	
		M	Z	1.7	18	
	Ki			-		
			microns	sec		
		M	E	2.0	21	
		M	N	1.1	20	
		M	Z	1.7	17	
	Um	iP		07 55 53		
	Gulf of California (h ~ 20 km).					
" 30	Up			-		

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Mar 30 cont.

				microns	sec
		M	N	2.3	22
		M	Z	1.7	21
	Ki	iPKP		09 08 49	
				microns	sec
		M	E	2.2	20
		M	N	1.3	20
		M	Z	2.8	20

Samoa Islands region
(h ~ 25 km).

" 30	Ki	i(P)	11 41 05	
" 30	Ki	iP	12 09 58	
			microns	sec
		M E	0.9	13
		M N	0.7	16
		M Z	0.8	12
	Um	eP	12 10 07	

Szechwan Province, China
(h ~ 80 km).

" 30	Up	i(P)	12 41 23
		i	12 41 44
" 30	Ki	iPg	13 31 18
		iSg	13 31 27
		iS*	13 31 30
		iSn	13 31 34

D = 80 km = 0.7°.
Explosion of 15.6 ton dynamite in the iron ore mines at Malmberget.

" 31	Ki	iP	05 31 36	
	Um	iP	05 31 55	

South of Honshu, Japan.

" 31	Up	iP	11 11 29
	Ki	iP	11 11 02
	Sk	iP	11 11 33
	Um	iP	11 11 12

Outer Mongolia (h ~ 80 km).

" 31	Gb	e(P)	21 16 21	

Markus Båth
July 31, 1961

1961
Apr.

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Seismological Laboratory
Uppsala

P R E L I M I N A R Y
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, and U M E Å

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°49.0'N,	20°14.1'E; h = 20 m

A P R I L 1 - 30, 1961

1961 Apr 1	Up	iP			02 52 33	
	Ki	iP			02 51 59	
	Sk	iP			02 52 26	
	Um	iP			02 52 08	
	South of Honshu, Japan (h = 140 km).					
" 1	Ki	iP			03 09 25	
				microns	sec	
		P	Z'	0.1	1.5	
" 1	Ki	iP			08 18 11	
	Um	iP			08 18 37	
	Off east coast of Kamchatka (h = 40 km).					
" 1	Um	iP			12 36 12	C
		i			12 36 40	
" 1	Up	iP			15 26 13	
		i			15 26 16	
		iPP			15 27 51	
		i			15 31 56	
		iS			15 32 34	
		iSS			15 35 29	
				microns	sec	
		P	E	4.6	5	
		P	Z	7.3	4	
		P	Z'	2.2	1.5	
		PP	E	13	9	

1961 Apr 1 cont.	Up	PP	N	1.5	5	
		PP	Z	11	9	
		S	E	16	10	
		S	N	4	4	
		S	Z	7	8	
		M	E	58	8	
		M	N	87	15	
		M	Z	69	8	
		D = 4550 km = 41°.				
	Ki	iP			15 26 11	C
		i			15 26 14	
		iPP			15 27 44	
		iS			15 32 30	
		i			15 35 38	
				microns	sec	
		p	E	6.8	6	
		P	N	1.7	6	
		P	Z	9.5	5	
		P	Z'	2.3	0.5	
		PP	E	12	8	
		PP	N	3.6	7	
		PP	Z	11	5	
		S	E	11	5	
		S	N	4.9	6	
		S	Z	8.2	7	
		M	E	120	10	
		M	N	73	9	
		M	Z	170	9	
		D = 4550 km = 41°.				
	Sk	iP			15 26 37	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Apr 1 cont.

Gb	EP	15 26 39	
	i	15 26 41	
	iPP	15 28 23	
Um	iP	15 26 05	

Sinkiang Province, China (h = 20 km). Magn. = 7.2 (Up, Ki).

" 2

Up	iP	08 00 03	

" 2

Up	iP	12 59 58	
Ki	eP	13 00 33	
Sk	iP	13 00 33	
Um	e(P)	13 00 07	

" 2

Up	iP	13 13 16	D
Ki	iP	13 13 16	
Um	iP	13 13 13	

Near coast of Sumatra (h = 25 km).

" 2

Um	iP	13 39 03	

" 2

Ki	iP	17 46 03	

" 3

Up	iP	01 22 45	
Ki	iP	01 22 49	
Um	iP	01 22 46	

Colombia (h = 220 km).

" 3

Up	eP	02 54 18	
Ki	iP	02 53 25	D
Um	iP	02 53 46	

Near east coast of Kamchatka (h = 25 km).

" 3

Up	iP	08 07 55	
Ki	eP	08 07 47	
Um	iP	08 07 53	

North of Swan Island, Caribbean Sea (h = 90 km).

" 3

Up	iP	16 42 35	D
Ki	iP	16 41 41	
Sk	iP	16 42 18	
Gb	iP	16 42 55	C
Um	iP	16 42 09	

Near east coast of Kamchatka (h = 40 km).

" 4

Up	iP	01 25 46		
		microns	sec	
	N	E	0.7	19
	N	N	0.5	18
	N	Z	0.8	17

1961
Apr 4 cont.

Ki	iP	01 25 44	C
		microns	sec
	P	Z'	0.2	1.0
	N	E	2.0	16
	N	N	0.8	16
	N	Z	2.1	15
Sk	iP	01 26 08	
Um	iP	01 25 37	

Sinkiang Province, China (h = 80 km).

" 4

Ki	iP	01 33 55	
		microns	sec
	P	Z'	0.1	1.0
Sk	iP	01 34 20	
Um	eP	01 33 48	

Sinkiang Province, China (h = 60 km).

" 4

Ki	iP	06 40 30	

" 4

Um	iP	07 13 06	

" 4

Um	i(P)	07 22 48	
	i	07 22 53	

" 4

Up	iP	07 50 35	
		microns	sec
	P	Z'	0.1	1.0
Ki	eP	07 50 20	

Ryukyu Islands (h = 50 km).

" 4

Up	iP	09 54 29		
	i	09 54 35		
	iPP	09 56 09		
	i(S)	10 00 43		
	eS	10 00 53		
	iSS	10 03 57		
	iLgl	10 08 24		
		microns	sec	
	P	E	0.7	5
	P	Z	1.3	5
	P	Z'	0.3	1.0
	PP	E	0.7	5
	S	E	11	30
	S	N	1.6	10
	M	E	78	21
	M	N	47	17
	M	Z	90	20

D = 4600 km = 41°.

Ki	iP	09 54 26	
	i	09 54 31	
	iPP	09 56 10	
	iS	10 00 49	
	eSS	10 03 52	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Apr cont.	4	Ki	iLg1		10 08 16	
					microns	sec
			P	E	1.0	6
			P	Z	1.4	5
			P	Z'	0.9	1.0
			PP	E	1.0	6
			PP	Z	0.9	5
			M	E	110	16
			M	N	54	14
			M	Z	150	17
			D = 4600 km = 41°½.			
		Sk	iP		09 54 50	
			i		09 54 52	
			iPP		09 56 39	
			iLg1		10 09 53	
		Gb	eP		09 54 56	
			i		09 55 00	
			iPP		09 56 43	
		Um	iP		09 54 22	
			iPP		09 56 01	
		Sinkiang Province, China (h = 20 km). Magn.= 6.4 (Up, Ki).				
"	4	Up	i(Sg)		11 50 40	
			i		11 50 43	
		Sk	i(Sg)		11 52 16	
		Gb	i(Sg)		11 49 21	
		Um	e(Sg)		11 52 47	
		Local.				
"	4	Um	iP		12 00 09	
"	4	Up	iP		12 06 19	D
		Ki	iP		12 06 58	
		Um	iP		12 06 33	
		Persian Gulf (h = 25 km).				
"	4	Ki	iP		22 17 24	
"	4	Up	iPn		22 44 34	
			i(P^x)		22 44 50	
			iSn		22 46 08	
			i(S^x)		22 46 39	
					microns	sec
			Pn	Z'	0.1	0.5
			(P^x)	Z'	0.4	0.5
		Ki	iPn		22 45 04	
			iSn		22 47 15	
			iSg		22 48 08	
					microns	sec
			Sn	Z'	0.1	0.7
			Sg	Z'	0.3	0.8

1961 Apr cont.	4	Sk	iPn		22 43 58	C
			i		22 44 02	
			iPg		22 44 20	
			iSn		22 44 53	
			iSg		22 45 26	
		Gb	iPn		22 44 13	
			i		22 44 21	
			iSn		22 45 17	
			iSg		22 46 05	
		Um	iPn		22 44 47	
			iSn		22 46 16	
			iS^x		22 46 57	
			iSg		22 47 10	
		North Sea. Agreement between the stations as well as between different phases is not good.				
"	5	Ki	iP		01 53 35	
					microns	sec
			P	Z'	0.7	0.5
"	5	Up	iP		04 54 23	
		Ki	iP		04 54 08	
		Um	iP		04 54 11	
"	5	Up	iP		05 15 17	
		Um	iP		05 15 01	
"	5	Up			microns	sec
			M	N	1.3	18
		Ki	iP		06 54 52	
					microns	sec
			M	E	0.6	11
			M	N	1.5	15
			M	Z	0.5	10
		Sinkiang Province, China (h = 80 km).				
"	5	Gb	iP		09 17 20	
"	5	Sk	iP		10 20 56	
"	5	Um	e(P)		10 24 52	
"	5	Ki	iP		10 28 16	
"	5	Gb	i(P)		10 47 14	
		Seismic?				
"	5	Gb	e(P)		12 02 16	
		Seismic?				
"	5	Um	e(P)		23 45 04	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå.

1961
Apr 6 Up iP 01 41 39
eSS 01 50 59
iLgl 01 55 30
microns sec
T Z' 0.1 1.5
M E 2.9 20
M N 1.4 18
M Z 4.2 20
Ki iP 01 41 36
ePP 01 43 14
iPcP 01 43 33
eSS 01 50 54
iLgl 01 55 28
microns sec
T Z' 0.2 0.8
M E 3.7 14
M N 2.1 10
M Z 4.7 12
Sk iP 01 42 00
i 01 42 18
Um iP 01 41 32
iLgl 01 54 44
Sinkiang Province, China
(h = 30 km).

" 6 Up iP 03 29 32
Ki iP 03 28 47
Kurile Islands (h = 30 km).

" 6 Up iP 04 16 35
microns sec
T Z' 0.1 1.0
Ki iP 04 15 56
microns sec
T Z' 0.1 1.4
M E 0.7 20
M N 0.3 15
M Z 0.5 17
Sk iP 04 16 08
Gb iP 04 16 37
Um iP 04 16 16
Near coast of northern
California (h = 70 km).

" 6 Gb iP 10 59 06

" 6 Ki i(P) 11 02 04

" 6 Sk iP 12 39 22
Italy

" 6 Sk eP 12 53 45

1961
Apr 6 Up iP 14 17 27 C
eS 14 27 42
D = 9200 km = 83°.
Ki iP 14 17 27 C
i 14 17 38
iS 14 27 44
microns sec
T Z' 0.3 1.0
M E 0.5 17
M N 0.4 16
M Z 0.8 18
D = 9200 km = 83°.
Sk iP 14 17 42 C
i 14 19 53
Gb iP 14 17 40
Um iP 14 17 25 C
i 14 17 32
Near coast of Sumatra
(h = 25 km).

" 6 Ki iPKP 15 52 35
Sk iPKP 15 52 47
Loyalty Islands region
(h = 120 km).

" 6 Up iP 18 20 23
i 18 20 29
iS 18 26 45
eSS 18 29 52
microns sec
P Z' 0.2 0.6
M E 1.5 18
M N 2.9 19
M Z 2.2 17
D = 4550 km = 41°.
Ki iP 18 20 54
i 18 21 00
iPP 18 22 53
iS 18 27 35
iSS 18 30 47
microns sec
P Z' 0.3 1.2
S E 1.0 12
M E 5.0 15
M N 3.2 18
M Z 8.3 15
D = 5000 km = 45°.
Sk iP 18 20 56
i 18 21 02
Gb iP 18 20 34 C
i 18 20 40

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Apr cont.	6	Um	iP	18 20 34	
			i	18 20 40	
		Southern Iran (h = 110 km).			
"	6	Sk	iP	18 28 07	
"	6	Up	iP	21 33 02	
		Sk	iP	21 33 38	
		Um	iP	21 33 18	
"	6	Gb	i(P)	21 39 59	
"	6	Up	iP	22 38 54	D
		Ki	iP	22 38 55	
				microns sec	
			P Z'	0,1 1,2	
		Sk	iP	22 39 10	
			i	22 39 26	
		Gb	i(P)	22 39 07	
		Um	iP	22 38 53	
		Near coast of Sumatra (h = 25 km).			
"	7	Um	iP	02 29 07	
"	7	Up	iP	04 48 19	D
				microns sec	
			P Z'	0,1 0,6	
		Ki	iP	04 48 27	
		Sk	iP	04 48 44	
			i	04 49 10	
		Um	iP	04 48 16	C
		Hindu Kush region (h = 70 km).			
"	7	Up	iP	05 00 23	
		Ki	iP	05 00 31	
		Sk	iP	05 00 49	
		Um	iP	05 00 20	
		Hindu Kush region (h = 60 km).			
"	7	Um	eP	06 24 58	
"	7	Up	iP	06 56 45	C
				microns sec	
			P Z'	0,1 0,9	
		Ki	iP	06 57 11	C
				microns sec	
			P Z'	0,1 1,0	
		Sk	iP	06 57 10	
		Gb	iP	06 56 52	
		Um	iP	06 56 53	C

1961 Apr	7	Um	i(P)	07 00 04	
"	7	Um	eP	08 46 04	
		Near coast of Kamchatka (h = 30 km).			
"	7	Up	iP	10 19 25	D
				microns sec	
			P Z'	0,1 0,6	
		Ki	iP	10 19 27	D
		Sk	iP	10 19 40	
		Gb	iP	10 19 38	
		Um	iP	10 19 20	
		Near coast of Sumatra. (h = 25 km).			
"	7	Ki	iP	18 34 49	
"	7	Up	eP	20 05 01	
			i	20 05 29	
			iS	20 13 13	
				microns sec	
			P Z'	0,1 1,0	
			M E	1,0 20	
			M N	1,0 19	
			M Z	0,5 11	
		D = 6650 km = 60°).			
		Ki	iP	20 04 05	
			i	20 04 18	
			iS	20 11 31	
				microns sec	
			P Z'	0,1 1,0	
			S N	0,5 7	
			M E	1,6 18	
			M N	1,4 17	
			M Z	1,2 17	
		D = 5800 km = 52°.			
		Sk	iP	20 04 51	
		Gb	iP	20 05 21	
			i	20 05 35	
		Um	iP	20 04 33	
		Near east coast of Kamchatka (h = 20 km). Magn.= 5.7. (Up, Ki).			
"	7	Up	iP	21 25 16	
			i	21 25 23	
			iP	21 26 45	
			i	21 26 57	
			iS	21 31 15	
			iSS	21 33 38	
			iLg1	21 38 44	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961						
Apr 7				microns	sec	
cont.	Up	P	Z'	0.2	0.9	
		M	E	1.7	13	
		M	N	2.1	15	
		M	Z	1.4	13	
	Ki	iP		21 25 20		
		i		21 25 30		
		eSS		21 34 06		
		i		21 39 06		
				microns	sec	
		P	Z'	0.2	0.9	
		M	E	3.4	13	
		M	N	0.7	12	
		M	Z	3.4	13	
	Sk	iP		21 25 41		
		i		21 25 49		
	Gb	iP		21 25 40	C	
		i		21 25 51		
		i		21 27 27		
	Um	iP		21 25 13		
		i		21 25 21		
		i		21 25 25		
	Kirghiz-Tadzhik border (h = 40 km).					
" 7	Up	i(P)		21 33 53		
" 7	Gb	i(P)		21 35 38		
" 8	Um	iP		00 42 44	C	
" 8	Up	-		-		
				microns	sec	
		M	E	0.4	20	
	Ki	iP		05 00 28		
	Gb	eP		05 00 13		
	Ecuador (h = 25 km).					
" 8	Ki	i(P)		12 07 57		
" 8	Up	-				
				microns	sec	
		M	E	9.7	19	
		M	N	8.0	18	
		M	Z	15	19	
	Ki	iPKP		18 18 45		
		eSS		18 37 39		
				microns	sec	
		M	E	9.1	20	
		M	N	4.1	18	
		M	Z	9.7	20	
	Um	iPKP		18 18 40		
	Chile (h = 60 km).					

1961						
Apr 8	Up	iP		19 30 33		
				microns	sec	
		P	Z'	0.1	1.4	
	Ki	eP		19 29 48		
	Um	iP		19 29 36		
	Honshu, Japan (h = 190 km).					
" 8	Up	iP		21 49 52		
		i		21 49 53		
				microns	sec	
		P	Z'	0.1	0.6	
	Ki	iP		21 49 24		
		i		21 50 08		
				microns	sec	
		P	Z'	0.1	0.6	
	Sk	iP		21 49 50	C	
	Gb	iP		21 50 09		
	Um	iP		21 49 33		
	Mariana Islands region (h = 110 km).					
" 9	Up	eP		00 43 44		
		i		00 44 11		
		i		00 44 18		
	Ki	iP		00 44 15		
" 9	Um	eP		05 43 38		
" 9	Up	-				
				microns	sec	
		M	E	0.8	17	
		M	N	1.4	16	
		M	Z	1.6	17	
	Ki	iP		07 34 44		
				microns	sec	
		M	E	2.2	16	
		M	N	2.0	17	
		M	Z	3.4	17	
	Um	iP		07 35 02		
	San Benito County, California (h = 10 km).					
" 9	Up	iPKP		09 39 54	D	
				microns	sec	
		PKP	Z'	0.3	0.5	
	Ki	ePKP		09 39 35		
				microns	sec	
		PKP	Z'	0.1	1.2	
	Sk	iPKP		09 39 47		
	Gb	iPKP		09 40 03		
	Um	iPKP		09 39 40		
		iSKP		09 42 24		
	South of Fiji Islands (h = 660 km).					

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Apr 9 Um iP 10 57 20

" 9 Up iP 15 46 57 C
i 15 47 08
i(Pa) 15 51 44
iS 15 56 37

		microns	sec
P	E	0.5	3
P	N	0.5	3
P	Z	0.9	2
P	Z'	0.3	1.0
S	E	3.3	15
S	N	3.6	15
M	E	75	18
M	N	62	19
M	Z	105	18

D = 8450 km = 76°.

Ki iP 15 46 33 C
i(Pa) 15 50 58
iS 15 55 53

		microns	sec
P	E	1.5	8
P	Z	3.3	7
P	Z'	2.9	2.5
S	E	4.0	12
S	N	2.2	13
M	E	21	14
M	N	27	15
M	Z	42	15

D = 8000 km = 72°.

Sk iP 15 47 01 C
iPP 15 50 01
Gb iP 15 47 17
iPP 15 50 19
Um iP 15 46 41
Near coast of Formosa
(h = 10 km). Magn.= 6.8
(Up, Ki).

" 9 Ki iP 20 08 53

		microns	sec
P	Z'	0.2	1.7

Mariana Islands region
(h = 70 km).

" 10 Um iP 02 39 39

" 10 Sk e(P) 03 04 49

" 10 Ki iP 07 08 40

		microns	sec
M	E	9.7	17
M	N	0.3	13
M	Z	0.6	15

Near coast of Formosa
(h = 20 km).

1961
Apr 10 Ki iP 08 26 01
iSg 08 26 28
Local?

" 10 Um eP 17 26 56
i(pP) 17 27 15
Near coast of Honshu,
Japan (h = 60 km).

" 10 Ki eL 20 30

		microns	sec
M	E	1.1	20
M	N	0.4	16
M	Z	1.7	20

Near coast of New Guinea
(h = 40 km).

" 11 Ki eP 00 40 33

		microns	sec
M	E	0.4	16
M	N	0.2	15
M	Z	0.3	14

Um iP 00 40 51
Off east coast of Honshu,
Japan (h = 100 km).

" 11 Ki iP 10 20 39
Sinkiang Province, China.

" 12 Up iPKP 03 26 22
i 03 26 27
Ki iPKP 03 26 04
Sk iPKP 03 26 16
i 03 26 20
Gb iPKP 03 26 30
i 03 26 34
Um iPKP 03 26 13 C
Kermadec Islands region
(h = 190 km).

" 12 Ki iP 04 39 32

" 12 Ki iP 12 47 54

" 12 Gb i(P) 13 00 12

" 12 Up eP 17 31 13
Ki iP 17 31 05
Sk iP 17 31 25
Um iP 17 31 07
Northern Celebes
(h = 120 km).

" 12 Up iP 17 38 35

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Apr 12 cont. Up microns sec
M N 0.9 18
M Z 0.9 18
Ki eP 17 37 46
microns sec
M E 0.6 18
M N 1.0 24
M Z 1.2 19
Kurile Islands (h = 40 km).

" 12 Up iP 18 04 37
i 18 04 40
Ki iP 18 04 05
Sk iP 18 04 32
Um iP 18 04 17
Mariana Islands region
(h = 60 km).

" 12 Up i(P) 21 08 56

" 12 Up iP 22 33 07
i 22 36 30
iPP 22 36 50
iSKS 22 43 24
iPS 22 44 54
microns sec
P Z' 0.2 1.1
PP Z 0.4 3
SKS E 1.9 17
M E 4.5 23
M N 1.6 22
M Z 6.1 23
D = 9650 km = 87°.
Ki iP 22 33 00
i 22 33 13
i 22 36 14
iSKS 22 43 16
microns sec
P Z' 0.5 1.0
SKS E 3.5 13
SKS N 1.2 13
M E 1.8 19
M N 1.6 22
M Z 2.8 20
D = 9450 km = 85°.
Sk iP 22 32 51
i 22 33 57
i 22 36 01
Gb iP 22 32 58
Um iP 22 33 07
i 22 33 19
i 22 36 28
El Salvador (h = 120 km).
Magn.= 6.5 (Up, Ki).

1961
Apr 13 Up iP 04 36 24 D
microns sec
P Z' 0.1 0.7
Ki iP 04 36 18
Sk iP 04 36 40 D
Um iP 04 36 17
Central Burma (h = 100 km).

" 13 Um iP 10 13 05

" 13 Up iP 15 37 40
Sk eP 15 37 39
Ryukyu Islands (h=200 km).

" 13 Up iP 16 42 30 C
iPP 16 44 07
iS 16 48 47
iSS 16 51 53
iLgl 16 56 03
microns sec
P E 0.9 5
P Z 0.5 2
P Z' 0.1 0.6
PP E 5.1 12
PP Z 4.0 10
S E 21 29
M E 240 21
M N 64 16
M Z 250 20
D = 4600 km = 41°½.
Ki iP 16 42 28 C
iPP 16 44 09
iS 16 48 46
iSS 16 51 48
i 16 55 44
iLgl 16 56 08
microns sec
P E 1.3 5
P Z 1.8 5
P Z' 0.9 0.5
PP E 4.0 13
PP Z 4.1 12
S E 28 29
S N 2.3 16
M E 130 12
M N 54 13
M Z 230 15
D = 4600 km = 41°½.
Sk iP 16 42 51 C
iPP 16 44 35
Gb iP 16 42 53 C
iPP 16 44 37

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Apr cont.	13	Um	iP	16 42 20	
			i	16 42 27	
			iPP	16 43 57	
			Sinkiang, China (h = 20 km). Magn.= 6.6 (Up, Ki). Unusually long period of SE (see also the Sinkiang earthquake of Apr 4, 09.54).		
"	13	Ki	iP	17 18 43	
			Sinkiang Province, China		
"	13	Up	iP	17 50 32	
		Sk	iP	17 51 12	
"	13	Ki	iP	20 21 08	
		Sk	iP	20 21 31	
			Sinkiang Province, China (h = 60 km).		
"	14	Um	iP	00 14 42	
"	14	Up	iP	00 37 03	
"	14	Up	i(P)	01 08 11	
"	14	Ki	i(P)	01 29 16	
"	14	Up	iP	02 54 39	
"	14	Up	iPKP	04 22 16	
			i	04 22 22	
		Ki	ePKP	04 21 54	
		Sk	iPKP	04 22 07	
		Gb	iPKP	04 22 22	
		Um	iPKP	04 22 04	
			Kermadec Islands (h = 60 km).		
"	14	Ki	iP	05 17 43	
"	14	Ki	e(P)	16 10 34	
"	15	Up	iP	00 26 26	
		Ki	iP	00 25 50	
		Um	iP	00 26 08	
			Off - east coast of Honshu, Japan (h = 100 km).		
"	15	Up	iPKP	01 36 56 D	
		Ki	iPKP	01 36 43	

1961 Apr cont.	15	Sk	iPKP	01 36 54 C	
			New Hebrides Islands (h = 230 km).		
"	15	Ki	iP	03 03 21	
			Sinkiang Province, China (h = 25 km).		
"	15	Up	iPKP	09 56 03	
			i	09 56 11	
		Sk	iPKP	09 55 58	
		Um	iPKP	09 55 55	
			Kermadec Islands region (h = 130 km).		
"	15	Up	iP	12 16 08	
			i	12 16 40	
"	16	Up	iP	06 28 43 D	
			microns sec		
			P Z'	0.1 0.5	
		Ki	iP	06 28 10	
			microns sec		
			P Z'	0.1 0.7	
		Sk	iP	06 28 39	
		Um	iP	06 28 24	
			South of Honshu, Japan (h = 390 km)		
"	16	Up	iP	11 51 05 D	
			i	11 51 10	
			microns sec		
			P Z'	0.2 0.5	
		Ki	iP	11 50 12	
			microns sec		
			P Z'	0.1 1.0	
		Sk	iP	11 50 49 D	
		Gb	iP	11 51 26 D	
			iPeP	11 51 55	
		Um	iP	11 50 37	
			Kamchatka (h = 30 km).		
"	16	Up	iP	12 33 31	
			i	12 33 36	
			microns sec		
			P Z'	0.1 1.1	
		Ki	iP	12 32 46	
			microns sec		
			P Z'	0.1 1.2	
		Sk	eP	12 33 03	
		Gb	iP	12 33 42	
			Off northwest coast of Vancouver Island (h= 50 km).		

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Apr	16	Gb	iP	13 19 43	
"	16	Um	iP	14 26 36	
			i	14 26 42	
"	16	Gb	iP	15 36 08	
"	16	Up	iPKP	17 08 01	
			i	17 08 19	
		Ki	ePKP	17 07 49	
		Sk	iPKP	17 07 58	
		Gb	iPKP	17 08 09	
			i	17 08 19	
		Um	iPKP	17 07 50	
			i	17 08 04	
		(New Zealand region).			
"	16	Up	iP	23 27 02	
			i	23 27 16	
		Ki	iP	23 26 44	
		Near south coast of New Guinea (h = 60 km).			
"	17	Ki	i(P)	00 23 14	
"	17	Ki	iP	05 53 10	
"	17	Ki	i(P)	11 45 15	
"	17	Gb	iP	12 58 02	
"	17	Um	iP	13 19 49	
			i	13 20 01	
		South of Honshu, Japan (h = 140 km).			
"	17	Up	iP	16 32 05	
			i	16 32 14	
		Ki	iP	16 32 40	
		Gb	iP	16 31 43	
		Mid-Atlantic Ocean (h = 25 km).			
"	17	Up	e(P)	20 16 26	
"	17	Um	iP	20 46 58	
"	17	Gb	iPKP	21 06 43	
		Tonga Islands region (h = 550 km).			
"	18	Up	iPKP2	04 30 35	

1961 Apr cont.	18	Um	iPKP	04 30 23	
			i	04 30 46	
		Kermadec Islands. (h = 25 km).			
"	18	Up	i(P)	05 10 26	
		Um	iP	05 10 10	
"	18	Ki	iP	05 40 13	
"	18	Up	iP	15 05 13	
"	18	Ki	i(P)	15 47 03	
"	18	Up	iP	16 06 45	
				microns sec	
			P Z'	0.1 0.5	
"	18	Um	i(P)	17 48 22	
"	18	Um	iP	18 12 53	
"	18	Ki	ePKP	19 08 31	
		Near coast of southern Chile (h = 30 km).			
"	18	Up	iP	22 06 38	
			i	22 06 44	
"	19	Up	iP	07 05 47 D	
		Sk	iP	07 06 15	
		Um	iP	07 05 50	
		West Pakistan.			
"	19	Um	i(P)	07 15 07	
"	19	Um	iP	11 29 20	
"	19	Ki	e(P)	14 35 50	
		Um	iP	14 35 06	
"	19	Ki	i(P)	16 14 04	
		Um	iP	16 15 45	
			i	16 16 13	
"	19	Up	iP	16 23 30 D	
				microns sec	
			P Z	0.7 3	
			P Z'	0.1 0.6	
			M E	0.8 21	
			M N	1.7 19	
			M Z	1.0 20	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Apr cont.	19	Ki	iP		16	22	43
				microns	sec		
			P	Z'	0.1	1.0	
		Sk	iP		16	23	20
			i		16	23	44
		Gb	eP		16	23	48
			i		16	23	51
		Um	iP		16	23	01
			i		16	23	32
		Kurile Islands (h = 50 km).					
"	19	Um	i(P)		17	02	55
"	19	Up	i(P)		17	39	45
			i		17	39	59
			i		17	40	03
		Local?					
"	19	Up	iP		18	24	14 D
				microns	sec		
			P	Z'	0.1	0.7	
			M	E	0.8	18	
			M	N	0.9	21	
		Ki	iP		18	23	19 D
				microns	sec		
			P	Z'	0.3	1.1	
		Gb	iP		18	24	34 D
			iPcP		18	25	05
		Um	iP		18	23	44
		Kamchatka (h = 20 km).					
"	19	Um	iP		19	03	37
			i		19	04	23
"	19	Ki	i(P)		20	23	19
		Um	iP		20	23	28
"	19	Up	iP		20	26	46
"	19	Up	iP		20	30	51
			i		20	30	56
				microns	sec		
			P	Z'	0.1	0.5	
			M	E	2.3	19	
			M	N	2.7	18	
			M	Z	2.4	19	
		Ki	iP		20	30	04
				microns	sec		
			P	Z'	0.1	0.9	
			M	E	2.9	17	
			M	N	2.2	15	
			M	Z	4.6	16	

1961 Apr cont.	19	Sk	iP		20	30	40 C
		Gb	iP		20	31	13
		Um	iP		20	30	24
		Kurile Islands (h = 30 km).					
		Magn. = 5.9 (Up, Ki).					
"	19	Up	iP		22	18	52
				microns	sec		
			P	Z'	0.1	0.5	
			M	E	0.5	19	
			M	N	0.7	15	
			M	Z	0.8	17	
		Ki	iP		22	18	05
				microns	sec		
			P	Z'	0.1	0.8	
		Sk	iP		22	18	41 D
		Um	iP		22	18	29
		Kurile Islands (h = 30 km).					
"	20	Ki	iP		04	07	15
		Sk	iP		04	07	27
"	20	Up	iP		10	05	23
			i(Sg)		10	05	28
			i		10	05	34
		Local? Seismic?					
"	20	Up	iP		12	15	39
			i(Sg)		12	15	44
			i		12	15	48
				microns	sec		
			(Sg)	Z'	0.1	0.5	
		Local? Seismic?					
"	20	Up	eP		17	24	04
			i(Sg)		17	24	09
			i		17	24	13
				microns	sec		
			(Sg)	Z'	0.1	0.5	
		Local? Seismic?					
"	20	Up	iP		18	23	57
			i(Sg)		18	24	02
			i		18	24	07
				microns	sec		
			(Sg)	Z'	0.1	0.5	
		Local? Seismic?					
"	20	Up	iPKP		19	39	15
			i		19	39	22
		Sk	iPKP		19	39	11
			i		19	39	35

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961					
Apr	20	Um	iPKP	19 39 05	
oont.			Kermadec Islands region (h = 60 km).		
"	20	Up	iP	20 42 47	
"	20	Um	iP	21 57 32	
"	20	Up	iPKP	21 58 29	
			ePKS	22 02 13	
				microns sec	
			M E	0.6	21
			M N	2.0	21
			M Z	1.4	22
		Ki	i(PKP)	21 58 24	
				microns sec	
			M E	1.6	20
			M N	1.0	20
			M Z	1.4	20
		Sk	iPKP	21 58 23	
			e	21 58 38	
		Um	iPKP	21 58 20	
			i	21 58 37	
			South of Samoa Islands (h = 25 km).		
"	21	Um	i(P)	06 53 16	
"	21	Up	iP	07 13 38	
"	21	Up	e(P)	07 26 16	
		Ki	e(P)	07 24 58	
"	21	Up	iP	07 57 45	
			i(Sg)	07 57 51	
				microns sec	
			(Sg) Z'	0.1	0.5
			Local?	Seismic?	
"	21	Gb	i(P)	10 41 46	
"	21	Up	iP	11 42 19	
			i(Sg)	11 42 24	
			Local?	Seismic?	
"	21	Up	iP	13 49 31	
			i(Sg)	13 49 37	
			Local?	Seismic?	
"	21	Up	iPKP	14 08 34	
		Sk	iPKP	14 08 29	0
		Um	iPKP	14 08 23	

1961					
Apr	21	Up	iP	14 27 52	
"	21	Up	iP	14 44 14	
			i(Sg)	14 44 19	
				microns sec	
			(Sg) Z'	0.1	0.5
			Local?	Seismic?	
"	21	Up	iP	18 37 15	
				microns sec	
			P Z'	0.1	0.6
"	21	Up	iP	19 41 30	
				microns sec	
			M E	1.2	24
			M N	1.3	16
			M Z	1.5	16
		Ki	iP	19 40 42	
				microns sec	
			M E	1.5	19
			M N	0.7	16
			M Z	1.7	18
			Kurile Islands (h = 20 km).		
"	21	Up	iP	20 21 32	
			eS	20 30 21	
				microns sec	
			P Z'	0.2	0.5
			S E	0.8	10
			M E	1.6	17
			M N	7.2	18
			M Z	7.3	19
			D = 7400 km = 66°½.		
		Ki	iP	20 20 43	
			eS	20 28 51	
				microns sec	
			M E	6.6	19
			M N	2.1	16
			M Z	5.2	17
			D = 6550 km = 59°.		
		Sk	iP	20 21 19	
		Gb	iP	20 21 53	D
		Um	iP	20 21 06	
			Kurile Islands (h = 30 km).		
			Magn. = 6.0 (Up, Ki).		
"	21	Up	iP	21 37 44	
			i	21 38 01	
				microns sec	
			P Z'	0.1	0.5
			M E	0.5	18
			M N	1.0	20
			M Z	0.9	18

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Apr 21 Ki iP 21 36 51
cont. i 21 37 06

		microns	sec
P	Z'	0.1	1.0
M	E	1.0	18
M	N	0.7	17
M	Z	1.5	17

Sk oP 21 37 23
i 21 37 35
Gb iP 21 37 59
Um iP 21 37 17
i 21 37 30
Andreanof Islands, Aleutian Islands (h = 40 km).

" 22 Up oL 01 20

		microns	sec
M	E	0.9	23
M	N	2.0	22
M	Z	1.2	20

Ki oL 01 20

		microns	sec
M	E	1.4	21
M	N	1.1	21
M	Z	1.7	20

0 22 Up iP 05 48 11

" 22 Up iP 10 55 59
Sk iP 10 55 47
Um iP 10 55 43

" 22 Um i(P) 12 06 13

" 22 Up i(P) 12 30 48

" 22 Up iP 19 12 51
Ki iP 19 12 48

		microns	sec
M	E	0.4	18
M	N	1.0	16
M	Z	0.6	19

Sk oP 19 13 07
Um iP 19 12 41
Sinkiang Province, China

" 22 Um iP 21 14 51

" 23 Up iP 05 26 22 D
i 05 26 32
iSoS 05 36 15

1961
Apr 23 Up microns sec

P	E	0.3	3
P	N	0.2	3
P	Z	0.6	3
P	Z'	0.1	0.6
M	E	3.4	21
M	N	3.2	21
M	Z	3.2	20

D = 8650 km = 78°.
Ki iP 05 25 53 D
ipP 05 26 22
iSoS 05 35 21

		microns	sec
P	Z	1.2	5
P	Z'	0.1	1.0
M	E	2.4	18
M	N	1.5	18
M	Z	2.7	17

D = 8000 km = 72°.
Sk iP 05 26 22 D
Gb iP 05 26 41 D
i 05 26 48
Um iP 05 26 03
i 05 26 11
Ryukyu Islands (h = 110 km).
Magn.= 6.0 (Up, Ki).

" 23 Ki iP 06 54 35
Um iP 06 55 24 C

" 23 Up iP 09 12 43 C
oPoS 09 17 10
iS 09 21 40
oP'P' 09 41 04
i 09 41 12

		microns	sec
P	Z'	0.2	0.6
S	Z	1.1	9
M	E	48	22
M	N	42	18
M	Z	69	19

D = 7550 km = 68°.
Ki iP 09 11 56 C
i 09 12 17
iS 09 20 29
iP'P' 09 41 26

		microns	sec
P	E	2.4	18
P	N	1.1	10
P	Z	4.3	10
P	Z'	0.2	1.2
S	E	7.4	16

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Apr 23 Ki M E 50 15
cont. M N 45 16
M Z 77 15
D = 6800 km = 61°.
Sk iP 09 12 33
i 09 13 04
Gb iP 09 13 04 C
i 09 13 15
Um iP 09 12 17
Kurile Islands (h = 40 km).
Magn. = 6.6 (Up, Ki).

" 23 Up iP 09 24 55

" 23 Up iP 12 28 57 C
microns sec
P Z' 0.1 0.5
M N 0.9 17
M Z 0.8 16
Ki iP 12 28 10
microns sec
M E 0.9 15
M N 0.6 15
M Z 1.3 16
Sk iP 12 28 46
Gb eP 12 29 19
Um iP 12 28 32
Kurile Islands (h = 80 km).

" 23 Up iP 15 06 24
Ki i(P) 15 05 38

" 23 Up iP 17 02 02
microns sec
P Z' 0.1 0.8
M E 2.3 19
M N 3.6 18
M Z 2.8 16
Ki iP 17 01 17
microns sec
M E 2.2 18
M N 1.6 17
M Z 5.2 15
Sk iP 17 01 52
Gb iP 17 02 18 D
Um iP 17 01 38
Kurile Islands (h = 80 km).

" 23 Ki iP 20 53 19
Fox Islands, Aleutian
Islands (h = 40 km).

" 23 Up iP 22 15 30

1961
Apr 23 Ki iP 22 14 59
cont. Sk iP 22 15 27
Um iP 22 15 12 D
Bonin Islands
(h = 580 km).

" 23 Up iP 23 57 20
i 23 57 27
Ki e(P) 23 56 53
Um iP 23 57 12

" 24 Um iP 02 27 14

" 24 Up eP 05 05 27
Ki iP 05 02 49
Fox Islands, Aleutian
Islands (h = 60 km).

" 24 Um iP 05 20 48

" 24 Up iP 12 38 40
microns sec
M E 0.8 18
M N 1.2 17
M Z 1.0 16
Ki eP 12 37 52
microns sec
M E 1.1 17
M N 0.8 17
M Z 1.7 18
Um iP 12 38 15
Kurile Islands (h = 80 km).

" 24 Up eP 13 07 19
i 13 07 23
Um iP 13 07 17

" 24 Up iPKP 13 29 37
Gb iPKP 13 29 45
Kermadec Islands
(h = 25 km).

" 24 Up iP 21 16 47
Ki iP 21 16 48
Um iP 21 16 44

" 25 Up iP 00 39 15
i 00 39 41
Ki iP 00 38 28
i 00 38 55
microns sec
M E 0.4 15
M N 0.5 21
M Z 0.9 16

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Apr 25 Um iP 00 38 51
cont. i 00 39 18
Kurile Islands (h = 70 km).
The phase arriving 26-27 sec after P may belong to another shock in the same area.

" 25 Um iP 00 55 52

" 25 Up iP 01 21 43
Ki iP 01 21 34
Um iP 01 21 42
i 01 22 45
Guatemala (h = 140 km).

" 25 Up iP 01 28 40 0
i 01 28 56
eS 01 37 50
isS 01 38 34
microns sec
P Z' 0.1 0.6
M E 2.7 18
M N 4.7 18
M Z 3.7 18
D = 7800 km = 70°.

Ki iP 01 27 54
i 01 28 05
eS 01 36 26
i 01 37 46
microns sec
P Z' 0.1 0.8
S E 1.0 10
M E 2.3 17
M N 2.7 18
M Z 4.4 18
D = 6900 km = 69°.

Gb iP 01 29 04
i 01 29 17

Um iP 01 28 18
i 01 28 31
Kurile Islands (h = 30 km).

" 25 Up iP 08 41 44
microns sec
P Z' 0.1 0.5

" 25 Ki iP 09 26 29

" 25 Up iPKP 11 36 31
i 11 36 39

1961
Apr 25 Up microns sec
cont. M E 0.4 20
M N 1.0 20
M Z 1.0 20
Ki iPKP 11 36 10
microns sec
M E 0.4 18
M N 0.4 19
M Z 1.2 19
Gb iPKP 11 36 42
i 11 36 53
Um iPKP 11 36 20
i 11 36 45
Kermadec Islands region (h = 50 km).

" 25 Up iP 16 02 59

" 25 Um iP 19 55 48

" 25 Up eP 21 11 32
Um iP 21 11 17

" 25 Up iP 23 52 23
Ki iP 23 51 53
Sk eP 23 52 24
Um iP 23 52 06
Ryukyu Islands (h = 25 km).

" 26 Ki iP 02 21 49
Sk iP 02 22 13
Sinkiang Province, China.

" 26 Up iP 02 34 23
Southern Sumatra.
(h = 90 km).

" 26 Up iP 05 30 47 0
Ki iP 05 30 55
Um iP 05 30 45
Hindu Kush (h = 200 km).

" 26 Up iP 06 15 51
Sk iP 06 15 46
Um iP 06 1 5 42

" 26 Gb iPKP 07 41 23
Fiji Islands region
(h = 620 km).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Apr 26 Up iP 07 50 00 C
i 07 50 39
eS 07 58 57
eP'P' 08 18 11

		microns	sec
P	M	0.1	3
P	Z	0.2	2
P	Z'	0.1	0.5
S	E	1.1	12
S	N	1.0	10
M	E	12	20
M	N	16	18
M	Z	15	18

D = 7600 km = 68°.

Ki iP 07 49 13 C
i 07 49 26
e 07 57 15
eS 07 57 34
iSeS 07 59 03
eP'P' 08 18 50

		microns	sec
P	E	0.3	8
P	N	0.6	11
P	Z	1.9	11
P	Z'	0.1	0.9
S	E	2.3	13
M	E	13	22
M	N	11	20
M	Z	10	21

D = 6850 km = 61°.

Sk iP 07 49 49
i 07 50 19
Gb iP 07 50 24
Um iP 07 49 35
i 07 49 51
Kurile Islands (h = 20 km).
Magn. = 6.1 (Up, Ki).

" 26 Ki iP 10 19 16
Sk iP 10 19 28

" 26 Up iP 11 56 49
Ki iP 11 56 41
Sk iP 11 57 05
India-Burma border region
(h = 220 km).

" 26 Ki iP 12 14 12
Sk iP 12 14 11
Um iP 12 13 53

1961 Apr 26 Sk iP 13 34 41
Um iP 13 34 37

" 26 Up iP 14 55 21

		microns	sec
P	Z'	0.1	0.5

" 26 Um iP 15 41 08

" 26 Up iP 19 43 35 C
i 19 43 44

		microns	sec
M	E	1.0	20
M	N	1.8	18
M	Z	1.5	19

Ki iP 19 42 48

		microns	sec
P	Z'	0.1	1.1
M	E	1.0	18
M	N	0.8	16
M	Z	2.2	16

Sk iP 19 43 26
Gb iP 19 43 54
Um iP 19 43 12
Kurile Islands (h = 50 km).

" 26 Up iP 21 52 45

" 27 Up iPKP 00 44 27

		microns	sec
PKP	Z'	0.1	0.5

Gb iPKP 00 44 37
South of Fiji Islands
(h = 500 km).

" 27 Ki i(P) 00 53 44

		microns	sec
M	E	0.7	8
M	N	0.7	13
M	Z	0.7	9

" 27 Sk iP 09 15 47

" 27 Up iP 11 17 56
i 11 18 08
Ki iP 11 17 04
Sk eP 11 17 26

" 27 Gb iP 11 51 47

" 27 Up i(P) 15 17 27

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961

Apr	27	Up	iP		20 43 46		
					microns sec		
			P	Z'	0.1	0.5	
"	28	Up	i(P)		02 42 26		
		Um	e(P)		02 41 42		
"	28	Um	iP		05 21 46		
"	28	Up	eP		22 25 41		
		Ki	iP		22 25 14		
"	29	Up	iSg		09 05 29		
			i		09 05 33		
			D = 110 km = 9,°9				
		Ki	iPn		09 00 58		C
			iP[x]		09 01 07		
			iSn		09 01 44		
			microns sec				
			Pn	Z'	0.2	0.5	
			Sn	Z'	0.2	0.5	
			D = 420 km = 3,°8.				
		Sk	iPn		09 02 09		
			iSn		09 03 55		
			iSg		09 04 44		
			D = 940 km = 8,°5.				
		Um	e(Sn)		09 02 52		
			iSg		09 03 19		
			D = 670 km = 6,°0.				

Northwestern Russia, 68,°2 N, 30,°5 E. Origin time = 09 00 01. Explosion.

"	29	Up	iP		09 31 15		D
			i		09 31 24		
			microns sec				
			P	N	0.5	3	
			P	Z	0.5	2	
			P	Z'	0.2	1.0	
		Ki	iP		09 30 55		
			i		09 30 42		
			microns sec				
			P	E	0.4	7	
			P	N	0.4	7	
			P	Z	1.0	7	
			P	Z'	0.9	2.0	
		Sk	iP		09 30 49		D
			i		09 30 56		
		Um	iP		09 31 01		
			i		09 31 08		

Off coast of northern California (h = 33 km). Magn.= 6.3 (Up, Ki).

1961

Apr	29	Up	iP		09 32 46		C
			i		09 34 23		
			i		09 35 27		
			iS		09 35 59		
			microns sec				
			P	E	0.6	2	
			P	N	1.4	2	
			P	Z	1.1	2	
			P	Z'	0.4	0.5	
			M	E	43	16	
			M	N	38	18	
			M	Z	44	18	
			D = 1700 km = 15°½.				
		Ki	iP		09 31 41		D
			iS		09 33 26		
			~~eT~~		~~09 40 18~~		
			microns sec				
			~~P~~	~~E~~	~~4.7~~	~~16~~	
			~~P~~	~~N~~	~~2.3~~	~~10~~	
			P	Z	3.5	10	C1=3
			P	Z'	0.2	0.5	C1=5
			M	E	46	15	
			M	N	43	15	
			M	Z	33	14	
			D = 1100 km = 10°.				
		Sk	iP		09 31 46		D
			iS		09 33 40		
			D = 11 50 km = 10°½.				
		Um	iP		09 32 17		
			iS		09 34 34		
			i		09 35 01		
			D = 1450 km = 13°.				

Jan Mayen Island region (h = 15 km). Magn.= 5.8 (Up).

A T phase was recorded at Kiruna but not at the other stations, not even at Skalstugan. The reason is probably different properties (Slope etc) of the transition ocean-continent at the points, where T hits the coast.

"	29	Up	iP		10 55 02		D
			microns sec				
			M	E	0.9	16	
			M	N	1.8	16	
			M	Z	1.0	13	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Apr 29 cont. Ki iP 10 54 35
microns sec
M E 2.2 15
M N 0.9 15
M Z 3.5 15
Sk iP 10 55 11
Um iP 10 54 46
Outer Mongolia (h = 25 km).

" 29 Up iP 14 14 32
Ki iP 14 14 57
microns sec
P Z' 0.1 0.9

" 30 Sk ePKP 00 29 40
i 00 29 54
About 1500 km south of western Australia (h = 25 km).

" 30 Ki iP 00 55 59
Sk iP 00 56 07
i 00 58 01

" 30 Up iP 07 39 43
eS 07 44 26
microns sec
P Z' 0.1 0.9
S N 0.3 7
M E 2.8 16
M N 2.5 18
M Z 1.9 17
D = 3050 km = 27½°.
Ki iP 07 39 54 C
eS 07 44 08
microns sec
S E 0.2 6
M E 2.5 18
M N 1.2 17
M Z 3.0 18
D = 3200 km = 29°.
Sk iP 07 39 21
Um iP 07 39 55
North Atlantic Ocean (h = 40 km). Magn. = 5.1 (Up, Ki).

" 30 Up iP 11 11 37
Ki iP 11 10 50
Sk iP 11 11 26
Um iP 11 11 12
Kurile Islands (h = 100 km).

1961
Apr 30 Up iP 11 26 18
i 11 27 14
eS 11 35 21
iScS 11 36 15
microns sec
P Z' 0.1 0.5
M E 4.0 19
M N 7.7 17
M Z 6.3 18
D = 7500 km = 67½°.
Ki iP 11 25 31
eS 11 33 38
iPS 11 35 58
iScS 11 35 21
microns sec
P Z 0.4 19
P Z' 0.1 0.9
S N 0.3 12
M E 5.6 22
M N 5.2 21
M Z 8.1 15
D = 6650 km = 60°.
Sk iP 11 26 08
Um iP 11 25 53
Kurile Islands (h = 70 km). Magn. = 5.9 (Up, Ki).

" 30 Up ePKS 15 11 07
microns sec
M E 0.4 19
M N 0.7 18
M Z 1.0 20
Ki eSS 15 26 28
microns sec
M E 0.6 21
M N 0.3 17
M Z 1.7 20
Sk iPKP 15 07 30
Um iPKP 15 07 28
Samoa Islands region (h = 25 km).

" 30 Up iP 17 42 22
Sk iP 17 41 56
Um iP 17 42 03
Off coast of northern California (h = 40 km).

" 30 Up iP 18 27 54
Sk iP 18 28 29
Um eP 18 28 33
Cephalonia Island.

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961				
Apr	30	Ki	i(P)	18 46 21
		Sk	iP	18 46 36
"	30	Um	iP	18 57 46
"	30	Um	iP	21 56 55

Markus Båth
December 21, 1961

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May.

Seismological Institute
The University
Uppsala, Sweden

PRELIMINARY SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, SKALSTUGAN, GÖTEBORG, and UMEÅ

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°49.0'N,	20°14.1'E; h = 20 m

MAY 1 - 31, 1961

1961

May 1 Up iP 00 53 40
Ki iP 00 53 05
Sk iP 00 53 33
Um iP 00 53 19
Near coast of Honshu, Japan
(h 140 km).

" 1 Up eP 01 44 45
i 01 46 06
Ki eP 01 45 10
i 01 46 22
microns sec
M E 0.4 14
M N 0.2 12
M Z 0.6 15
Sk iP 01 45 18
i 01 46 41
Um iP 01 44 48
i 01 46 16

1961

May 1 Ki iP 02 52 46
Sk iP 02 53 01
Um iP 02 53 13
Off coast of northern
California (h= 30 km).

" 1 Ki eP 03 01 53
Sk iP 03 02 08
Um iP 03 02 19
Off coast of northern
California (h= 50 km).

" 1 Ki iP 03 35 03
Off coast of northern
California (h= 25 km).

" 1 Ki eP 07 32 20
Sk eP 07 32 38
Off coast of northern
California (h= 50 km).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961				
May 1	Up	iP	12 30 54	
			microns	sec
		P	Z' 0.1	1.0
	Ki	iP	12 30 12	
	Um	iP	12 30 35	
	Off coast of northern California (h= 30 km).			
" 1	Up	iP	14 25 47	
	Sk	iP	14 26 29	
" 1	Up	eP	18 57 09	
	Ki	iP	18 56 31	
	Sk	iP	18 56 42	
	Um	iP	18 56 59	
	Off coast of northern California (h= 70 km).			
" 2	Ki	iP	03 06 41	
		i	03 07 33	
	Sk	iP	03 07 28	
" 2	Up	iP	03 15 23	
		iS	03 18 17	
		i	03 18 36	
			microns	sec
		M	E 1.4	15
		M	N 1.0	16
		M	Z 0.8	16
	D= 1700 km = 15°½.			
	Ki	iP	03 14 14	
		i	03 14 18	
		iS	03 16 21	
		eT	03 22 06	
		e	03 22 33	

1961				
May 2			microns	sec
cont.	P	Z'	0.2	0.8
	S	Z'	0.1	0.8
	M	E	2.3	16
	M	N	1.3	13
	M	Z	3.5	15
	D= 1150 km = 10°½.			
	Sk	iP	03 14 19	
		i	03 14 31	
		iS	03 16 13	
		e(T)	03 22 54	
	D= 1150 km = 10°½.			
	Um	iP	03 14 53	
		i(S)	03 17 08	
		i	03 17 37	
	Jan Mayen Island region (h= 20 km).			
" 2	Ki	iP	08 32 47	
		eT	08 40 46	
		e	08 41 20	
	Sk	iP	08 32 52	
		iS	08 34 49	
	Um	iP	08 33 24	
		i(S)	08 35 40	
		i	08 36 03	
	Jan Mayen Island region.			
" 2	Ki	iP	11 21 20	
" 2	Up	iP	11 47 42	
" 2	Um	iPKP	19 10 08	
	Samoa Islands region (h= 70 km).			

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961					
May 2	Up	iPKP	19 57 51		
		i	19 58 06		
			microns	sec	
		PKP Z'	0.1	0.8	
	Sk	iPKP	19 57 44		
	Gb	iPKP	19 58 04		
		i	19 58 18		
	Um	ePKP	19 57 42		
	Kermadec Islands region				
	(h= 50 km).				
" 2	Up	iPKP	19 59 15 (D)		
	Ki	ePKP	19 58 57		
	Sk	iPKP	19 59 07		
	Gb	iPKP	19 59 26		
	Um	iPKP	19 59 06		
	Kermadec Islands region				
	(h= 80 km).				
" 2	Ki	iP	20 17 35		
" 2	Up	iP	20 20 17		
" 2	Up	iPKP	21 09 19		
	Ki	ePKP	21 09 00		
	Sk	iPKP	21 09 12		
		i	21 09 28		
	Um	iPKP	21 09 12		
		i	21 09 24		
	(Kermadec Islands region).				
" 2	Um	i(P)	21 28 54		
" 2	Um	i(P)	21 44 11		

1961					
May 2	Up	iPKP	23 04 24 C		
		i	23 04 37		
		iPP	23 07 47		
		iSKSP	23 17 57		
			microns	sec	
		PKP E	0.7	10	
		PKP N	0.6	6	
		PKP Z	3.3	7	
		PKP Z'	0.3	0.5	
		PP Z	2.8	9	
		SKSP E	0.7	8	
		M E	4.3	19	
		M N	6.3	19	
		M Z	7.6	19	
	D= 16100 km = 145°.				
	Ki	iPKP	23 04 06		
		iPP	23 07 03		
		iPKS	23 07 46		
		i(PPP)	23 09 54		
			microns	sec	
		PKP Z	1.0	9	
		PP N	0.7	8	
		PKS E	0.9	8	
		PKS N	1.8	8	
		PKS Z	1.7	9	
		M E	4.6	20	
		M N	5.9	19	
		M Z	18	20	
	D = 15350 km = 138°.				
	Sk	iPKP	23 04 16		
	Gb	iPKP	23 04 37		
		i	23 04 49		
	Um	iPKP	23 04 15		

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
May 2 cont.

i 23 04 23
Kermadec Islands region (h= 50 km). Magn. = 6.6 (Up, Ki).

" 2 Um i(P) 23 15 07

" 2

Up	iPKP	23 43 37 D
	i	23 43 52
Ki	ePKP	23 43 20
Sk	iPKP	23 43 30
Gb	iPKP	23 43 51
Um.	iPKP	23 43 31
	i	23 43 45

Kermadec Islands region (h= 80 km).

" 3

Up	iP	00 37 17
Ki	iP	00 37 55
Sk	iP	00 37 23
Um	iP	00 37 44

Mid- Atlantic Ocean (h= 25 km).

" 3 Ki i(P) 09 00 08
Off coast of northern California (h= 25 km).

" 3 Ki iP 12 26 56
Fox Islands, Aleutian Islands (h= 50 km).

" 3

Up	iP	13 22 20
Ki	iP	13 21 59
Sk	iP	13 22 27

1961
May 3 Um iP 13 22 08
Near coast of Luzon, Philippine Islands (h= 25 km).

" 3

Up	iP	14 16 02
Ki	iP	14 15 45
Sk	iP	14 15 43
Um	iP	14 15 56

Near coast of Mexico (h= 20 km).

" 3 Sk e(P) 16 56 20

" 3 Up iPKP 17 13 51 D

			microns	sec
	PKP	Z'	0.1	0.8
Sk	iPKP		17 13 43	
Gb	iPKP		17 14 00	
Um	iPKP		17 13 40	

Kermadec Islands region (h= 50 km).

" 3 Up iPKP 17 22 44

			microns	sec
	PKP	Z'	0.1	1.0
Sk	iPKP		17 22 36	
Gb	iPKP		17 22 53	

Kermadec Islands region (h= 60 km).

" 3

Up	iPKP	19 20 20
Ki	ePKP	19 19 59

Kermadec Islands region (h= 40 km).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961				
May 3	Up	iP	20 16 10	C
	Ki	iP	20 15 39	C
	Sk	iP	20 16 07	
	Um	iP	20 15 55	
" 3	Um	i(P)	21 57 21	
" 4	Up	iP	01 20 30	
	Ki	iP	01 20 09	
	Um	iP	01 20 22	
" 4	Up	iP	02 29 19	
		i	02 29 26	
			microns sec	
		P Z'	0.1 0.9	
	Ki	iP	02 28 39	
	Sk	iP	02 28 50	
	Gb	iP	02 29 27	
	Um	iP	02 29 05	
		i	02 29 13	
	Off coast of northern California (h= 25 km).			
" 4	Ki	iP	03 51 08	
	Um	iP	03 51 20	
	Fiji Islands region (h= 600 km).			
" 4	Um	i(P)	04 55 55	
" 4	Up	iP	07 10 54	
	Ki	iP	07 11 16	
	Um	iP	07 11 14	
	Atlantic Ocean (h= 20 km).			

1961				
May 4	Um	iP	12 35 53	
" 4	Up	iP	15 35 57	C
	Ki	iP	15 35 58	
	Sk	iP	15 36 12	
	Near coast of Sumatra (h= 40 km).			
" 4	Ki	i(P)	16 29 05	
" 4	Up	iP	21 10 51	
	Ki	eP	21 10 11	
	Gb	eP	21 10 58	
	Off coast of northern California (h= 70 km).			
" 4	Um	i(P)	22 23 23	
" 4	Um	i(P)	23 03 40	
" 4	Um	i(P)	23 28 20	
" 5	Um	i(P)	06 47 02	
" 5	Um	i(P)	06 51 45	
" 5	Up	iPKP	06 58 42	
	Ki	iPKP	06 58 24	
	Sk	ePKP	06 58 41	
	Kermadec Islands region (h= 80 km).			
" 5	Up	iPKP	09 03 56	
	Sk	ePKP	09 03 56	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961									
May 5	Um	iP		18 14 38					
" 5	Um	iP		18 21 17					
		i		18 22 53					
" 5	Um	iP		18 39 40					
" 5	Um	iP		18 56 56					
" 5	Ki	iP		19 38 41 C					
		i		19 52 50					
		i		19 53 28					
				microns sec					
		M	E	0.5	10				
		M	N	0.7	11				
		M	Z	0.8	11				
" 5	Up	i(PKP)		20 56 51					
	Ki	i		20 59 00					
	Sk	i(PKP)		20 56 42					
	Um	i(PKP)		20 56 42					
" 5	Up	iPKP		21 06 37 C					
	Sk	iPKP		21 06 29					
	Kermadec Islands region								
	(h= 600 km).								
" 5	Um	iP		23 39 07					
" 6	Um	iP		06 50 24					
" 6	Sk	iP		09 02 59					

1961									
May 6	Up	i(P)		10 16 20					
	Ki	e(P)		10 16 22					
" 6	Gb	i(P)		10 18 24					
	Um	i(P)		10 18 23					
" 6	Up	iP		10 37 42					
				microns sec					
		P	Z'	0.1	0.5				
	Ki	eP		10 36 21					
" 6	Ki	i(P)		12 16 15					
" 6	Up	i(P)		12 19 17					
	Ki	i(P)		12 18 41					
" 6	Up	iP		16 09 34					
				microns sec					
		P	Z'	0.1	0.9				
	Ki	iP		16 10 49					
		iS		16 15 48					
				microns sec					
		P	Z'	0.1	1.0				
		M	E	0.4	15				
		M	N	0.1	11				
		M	Z	0.2	11				
		D= 3400 km = $30^{\circ}\frac{1}{2}$.							
	Sk	iP		16 10 06					
	Gb	iP		16 09 10					
	Um	iP		16 10 15					
	Mediterranean Sea, off coast								
	of Tunisia (h= 30 km).								

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961

May 6 Up iP 19 48 30

" 6 Up iP 19 48 54
eS 19 57 43
microns sec
M E 1.0 20
M N 1.4 20
M Z 1.6 20
D= 7350 km = 66°.

Ki iP 19 49 39
i 19 49 55
eS 19 59 06
microns sec
S N 0.2 4
M E 2.1 18
M N 1.3 17
M Z 3.3 18
D= 8100 km = 73°.

Sk iP 19 49 05
i 19 49 21

Um iP 19 49 18
i 19 49 35

Atlantic Ocean, north of Ascension Island (h= 25 km).
Magn. = 5.7 (Up, Ki).

" 6 Up iP 21 17 06
Sk iP 21 17 21
Um iP 21 16 58

" 6 Up iP 21 29 45
Ki iP 21 29 28
i 21 29 35

1961

May 6 cont. Sk iP 21 29 50
Near coast of Mindanao, Philippine Islands (h= 90 km).

" 6 Up iP 22 36 20 C
Ki iP 22 35 28 C
Andreanof Islands, Aleutian Islands (h= 20 km).

" 6 Up iP 22 45 59
eSKS 22 56 23

Ki iP 22 45 42
ipP 22 46 05
iSKS 22 56 04
iS 22 56 24
i 22 57 04
microns sec
SKS E 0.5 4
S E 0.5 4
S N 0.2 5
M E 0.3 18
M N 0.3 17
M Z 0.8 18
D= 10000 km = 90°.

Sk iP 22 46 07
ipP 22 46 29

Um iP 22 45 48

Near coast of Mindanao, Philippine Islands
h= 90 km (Ki, Sk).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961

May 6 Up iPKS 23 36 03

		microns	sec
PKS	E	0.4	6
PKS	N	0.6	6
M	E	0.6	21
M	N	0.9	23
M	Z	1.0	21

Ki ePKP 23 32 24

		microns	sec
M	E	0.8	21
M	N	0.6	22
M	Z	2.4	23

Sk iPKP 23 32 38

Um iPKP 23 32 28

New Hebrides Islands region (h= 100 km).

" 7 Up iPP 00 45 31

ePS 00 55 17

		microns	sec
M	E	3.8	19
M	N	2.9	18
M	Z	3.2	20

Ki iPP 00 44 51

e 00 45 11

iSS 01 00 28

		microns	sec
M	E	5.6	22
M	N	4.4	23
M	Z	14	23

Sk iPP 00 45 15

Solomon Islands region (h= 120 km).

1961

May 7 Up iP 01 10 10

		microns	sec
P	Z'	0.1	0.5

Ki iP 01 09 24

Sk iP 01 09 59

Um iP 01 09 46

Kurile Islands (h= 40 km).

" 7 Up iP 02 07 51

Ki iP 02 08 16

		microns	sec
M	E	0.9	20
M	N	0.8	20
M	Z	1.7	22

Um iP 02 08 10

Atlantic Ocean (h= 25 km).

" 7 Ki iP 02 55 14

Atlantic Ocean (h= 50 km).

" 7 Up iP 04 45 12

Kurile Islands (h= 70 km).

" 7 Up iP 04 45 48 C

		microns	sec
P	Z'	0.1	0.6
M	E	1.0	20
M	N	1.4	23
M	Z	1.4	21

Ki iP 04 45 43 C

i 04 45 48

		microns	sec
P	Z'	0.1	1.0
M	E	1.5	19

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961					
May 7		M	N	0.8	18
cont.		M	Z	2.5	19
	Sk	iP		04 45 59	C
		i(pP)		04 46 17	
		i		04 48 38	
		iPP		04 50 11	
	Um	iP		04 45 47	C
	Near coast of Java (h= 110 km).				
" 7	Up	iPKP		08 05 32	
		i		08 05 38	
	Ki	iPKP		08 05 23	
	Sk	ePKP		08 05 25	
	Um	iPKP		08 05 20	
	Kermadec Islands region (h= 370 km).				
" 7	Um	i(P)		08 47 08	
" 7	Up	iP		10 35 57	
		ipP		10 36 26	
		iS		10 46 57	
				microns	sec
		P	Z'	0.1	0.6
		S	E	0.6	6
		S	N	0.7	6
		M	E	2.6	22
		M	N	5.6	21
		M	Z	1.9	20
	D= 10500 km = 94°½.				
	Ki	iP		10 35 40	
		ipP		10 36 02	

1961					
May 7		i(SKS)		10 46 05	
cont.		iS		10 46 30	
		isS		10 47 05	
		i		10 48 18	
				microns	sec
		P	Z'	0.3	0.8
		(SKS)	E	0.4	7
		S	E	1.8	7
		S	N	1.1	6
		M	E	2.7	20
		M	N	1.2	18
		M	Z	5.0	19
	D= 10050 km = 90°½.				
	Sk	iP		10 36 02	
		ipP		10 36 26	
	Gb	iP		10 36 12	
	Um	iP		10 35 43	
		i		10 36 16	
	Off coast of Mindanao, Philippine Islands h= 100 km (Up,Ki,Sk), Magn.= 6.3 (Up,Ki)				
" 7	Up	iP		12 25 40	
				microns	sec
		P	Z'	0.2	1.2
		M	E	0.5	12
		M	N	0.6	14
	Ki	iP		12 25 05	
		i		12 25 08	
				microns	sec
		P	Z'	0.2	1.3
		M	E	0.6	16

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961					
May 7		M	N	0.4	13
cont.		M	Z	1.1	13
	Sk	iP		12 25 40	
	Um	iP		12 25 19	
	Honshu, Japan (h= 25 km).				
" 7	Ki	iP		12 30 51	
" 7	Sk	iP		15 16 17	
" 7	Up	iP		15 44 24	
		iS		15 47 10	
		i		15 47 43	
		iT		15 54 33	
			microns	sec	
		P	Z	0.3	4
		S	Z'	0.1	0.5
		M	E	1.5	12
		M	N	2.5	11
		M	Z	1.7	10
		D= 1600 km = 14½°.			
	Ki	iP		15 43 18	
		i		15 43 23	
		iS		15 45 14	
		eT		15 50 55	
		i		15 51 51	
			microns	sec	
		P	E'	0.6	8
		P	N	0.5	8
		P	Z	0.6	9
		P	Z'	0.2	0.5
		S	E'	0.1	0.8
		M	E	5.0	15
		M	N	3.1	13
		M	Z	7.2	14
		D= 1100 km = 10°.			

1961			
May 7	Sk	iP	15 43 24
cont.		iS	15 45 19
		eT	15 51 01
		e	15 51 57
		D= 1100 km = 10°.	
	Gb	iP	15 44 40
	Um	iP	15 43 48
		i	15 44 00
		iS	15 46 08
		i	15 46 38
		iT	15 51 37
		i	15 52 59
	D= 1350 km = 12°.		
	Jan Mayen Island region (h= 70 km).		
" 7	Up	iP	16 51 19
" 8	Ki	iP	13 05 35
" 8	Ki	i(P)	14 43 03
	Sk	iP	14 44 17
" 8	Ki	i(P)	19 40 37
" 8	Up	iPS	19 52 09
		microns	sec
	M	E	1.3 22
	M	N	1.0 19
	M	Z	2.3 23
	Ki	iPS	19 52 42
		microns	sec
	M	E	1.5 19

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Un = Umeå

1961 May 8 cont.

M N 1.1 21
M Z 3.1 21
Northern Chile (h= 50 km).

" 8 Up eP 20 03 04

" 8 Up i(P) 22 44 01
Ki i(P) 22 44 13

" 8 Up iP 22 49 43
Ki eP 22 51 15
Italy (h= 20 km).

" 9 Up i(P) 00 37 03
Ki e(P) 00 36 25

" 9 Up iP 12 18 09
Ki iP 12 17 30
Sk iP 12 17 43
Off coast of northern California (h= 50 km).

" 9 Up i(P) 15 11 02
microns sec
(P) Z' 0.1 0.5

" 9 Up iSg 16 44 58
i 16 45 02
D= 380 km = 3°.4.
Ki eSg 16 48 15
D= 1040 km = 9°.4.
Sk iSg 16 45 29
D= 490 km = 4°.4.
Gb iPg 16 43 33
iSg 16 43 53

1961 May 9 cont.

D= 170 km = 1°.5.
Un iSg 16 46 27
D= 690 km = 6°.2.
South Norway, 59°.2 N, 11°.1 E. Origin time = 16 43 04.

" 10 Ki iP 08 12 04
i 08 12 07
Un iP 08 12 19

" 10 Up iP 12 19 59

" 10 Up iP 15 38 15

" 10 Up i 17 17 39
microns sec
M E 0.3 15
M N 0.3 14
Ki e(P) 17 14 52
Un iP 17 14 00
i 17 14 20

" 10 Un iP 17 33 02

" 10 Un iP 18 48 01

" 10 Un iP 19 28 03

" 10 Un iP 21 40 47

" 10 Un iP 23 08 02

" 10 Up iP 23 43 49
microns sec
P Z' 0.1 0.6

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961						
May 10	Gb	i(P)		23 43 57		
cont.						
" 11	Ki	iP		04 47 33		
" 11	Up	iP		05 04 40		
	Um	iP		05 04 20		
" 11	Ki	iPKP		08 57 25		
		i		08 58 18		
		iPP		08 59 17		
		i		09 00 40		
		iPS		09 09 13		
		iSS		09 16 17		
			microns	sec		
		PP	E	0.2	6	
		PP	Z	0.4	6	
		M	E	3.7	20	
		M	N	1.2	19	
		M	Z	6.6	20	
	Um	iPKP		08 57 17		
	Near coast of southern Chile					
	(h= 50 km). Magn. = 6.2 (Ki).					
" 11	Um	i(P)		10 42 54 D		
		i		10 43 11		
" 11	Um	iP		10 45 27		
" 11	Um	iP		10 48 02		
		i		10 48 57		
" 11	Up	iP		13 36 47		
	Ki	iP		13 36 04		

1961						
May 11	Sk	iP		13 36 36		
cont.	Off northeast coast of					
	Hokkaido, Japan (h= 40 km).					
" 11	Up	iP		13 47 38 C		
	Ki	iP		13 46 52		
	Sk	iP		13 47 33		
	Kurile Islands (h= 60 km).					
" 11	Um	iP		14 57 55 D		
" 11	Ki	iP		18 59 54		
	Sk	eP		19 00 13		
	Um	iP		19 00 13		
	Off coast of northern					
	California (h= 40 km).					
" 12	Up	iP		03 52 51		
		i		03 52 56		
	Ki	eP		03 52 50		
		i		03 52 58		
	Um	iP		03 52 48		
		i		03 52 54		
	Near coast of Sumatra					
	(h= 80 km).					
" 12	Up	iPKP		05 04 09		
	Ki			———		
			microns	sec		
		M	N	0.2	21	
		M	Z	0.7	20	
	Sk	iPKP		05 04 03		
	Gb	iPKP		05 04 15		

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961				
May 12	Um	iPKP	05 03 55	
cont.	Kermadec Islands region			
	(h= 60 km).			
" 12	Up	iP	06 40 00	
	Um	iP	06 39 30	
" 12	Up	iP	06 59 14	C
	Ki	iP	06 58 49	
	Gb	iP	06 59 30	
	Um	iP	06 58 54	
	Ryukyu Islands (h= 100 km).			
" 12	Um	iP	07 30 58	
" 12	Up	iPKP	07 43 43	
		i	07 43 57	
	Gb	iPKP	07 43 51	
	Kermadec Islands region			
	(h= 20 km).			
" 12	Up	iP	14 12 45	
		microns	sec	
	P	Z'	0.1	0.6
" 12	Up	i(P)	16 54 37	
" 12	Um	iP	17 48 29	
	Off coast of Northern			
	California (h= 30 km).			
" 13	Um	iP	06 03 20	
" 13	Up	iP	08 59 22	
	Ki	iP	08 58 42	

1961				
May 13	Um	iP	08 59 05	
cont.	Off coast of northern			
	California (h= 40 km).			
" 13	Up	iPKP	14 01 28	
	Ki	iPKP	14 01 15	
		microns	sec	
	M	E	0.6	13
	Sk	ePKP	14 01 27	
	Um	iPKP	14 01 19	
	Kermadec Islands region			
	(h= 30 km).			
" 13	Up	iPKP	14 38 23	
		i	14 38 34	
		eSS	15 00 45	
		microns	sec	
	PKP	Z'	0.1	0.6
	M	N	0.9	21
	M	Z	0.9	18
	Ki	iPKP	14 38 07	
		microns	sec	
	M	E	0.5	16
	M	N	0.9	21
	Sk	iPKP	14 38 16	
	Gb	iPKP	14 38 33	
		i	14 38 41	
	Um	iPKP	14 38 13	
	Kermadec Islands region			
	(h= 25 km).			
" 13	Up	iPKP	15 11 05	
		iSKP	15 14 00	
	Ki	e(PKP)	15 10 46	
		iPKP	15 11 03	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 May 13 cont.

		iSKP	15 13 12	
		microns sec		
		PKP Z′	0.1	1.0
	Sk	i(PKP)	15 11 01	
		iPKP	15 11 14	
		iSKP	15 13 53	
	Gb	iPKP	15 11 18	
		i	15 11 24	
	Um	iPKP	15 11 08	
		i	15 11 12	
		iSKP	15 13 50	

Fiji Islands region (h= 560 km).

"	13	Up	iP	16 00 36	
			microns sec		
			P Z′	0.1	0.5
			M E	0.4	16
			M N	0.6	15
		Ki	iP	15 59 50	
			i	16 00 39	
			microns sec		
			P Z′	0.3	1.0
			M E	0.8	16
			M N	0.6	17
		Sk	iP	16 00 24	
		Gb	iP	16 00 57	
			i	16 01 06	
		Um	iP	16 00 12	

Off northeastern coast of Hokkaido, Japan (h= 30 km). Magn. = 6.2 (Up,Ki).

"	13	Up	iP	19 30 55 D

1961 May 13 cont.

			microns sec		
			P Z′	0.1	0.5
		Ki	iP	19 30 30	D
			microns sec		
			P Z′	0.1	1.0
		Sk	iP	19 30 58	D
			i	19 31 13	
		Gb	iP	19 31 16	
		Um	iP	19 30 41	D

Off northeast coast of Formosa (h= 260 km).

"	14	Up	i(P)	00 27 07
"	14	Ki	iPKP	00 32 20
			microns sec	
			PKP Z′	0.1 0.8
		Um	iPKP	00 32 29 C

North Island, New Zealand (h= 40 km).

"	14	Up	iPKP	03 03 01
		Sk	iPKP	03 02 54
		Gb	iPKP	03 03 09

Kermadec Islands region (h= 50 km).

"	14	Ki	iP	03 17 15
"	14	Up	iP	03 33 21
		Sk	iP	03 33 12
		Um	iP	03 33 02
			i	03 33 07

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961

May 14	Up	eP	03 54 23	
" 14	Up	i(P)	11 08 35	
	Gb	e(P)	11 08 00	
" 14	Sk	iP	13 54 28	
" 14	Up	iP	13 58 21	
" 14	Up	iP	14 03 08	
" 14	Ki	iP	15 08 43	
" 14	Up	iP	15 12 07	
			microns	sec
	M	E	0.6	20
	M	N	0.4	15
	M	Z	0.8	16
	Ki	iP	15 11 32	
		i	15 11 39	
		eS	15 14 38	
			microns	sec
	P	E	0.4	6
	M	E	1.1	15
	M	N	0.6	14
	D= 1650 km = 15°.			
	Sk	iP	15 11 27	
	Um	iP	15 11 57	
North of Iceland (h= 50 km).				
" 14	Up	iP	15 42 13	
		iS	15 45 39	
		i	15 45 45	
			microns	sec
	P	E	0.4	5

1961

May 14 cont.	P	N	0.5	6
	P	Z	0.4	6
	S	E	0.2	4
	S	N	0.2	4
	S	Z	0.3	4
	M	E	1.0	17
	M	N	1.4	13
	M	Z	1.5	16
	D= 1950 km = 17½°,			
	Ki	iP	15 41 38	
		i	15 41 45	
		iS	15 44 42	
			microns	sec
	P	E	0.6	7
	P	N	0.3	7
	M	E	2.6	15
	M	N	1.6	15
	D= 1650 km = 15°.			
	Um	iP	15 42 01	
North of Iceland (h= 20 km).				
Magn. = 4.9 (Up,Ki).				
" 14	Up	iP	19 43 16	
	Ki	iP	19 42 39	
	Sk	eP	19 42 55	
	Gb	eP	19 43 15	
	Um	iP	19 42 58	
Off coast of northern California (h= 50 km).				
" 15	Sk	iP	14 12 27	
" 15	Up	iP	17 09 47	
" 15	Ki	iPKP	19 31 03	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Uneå

1961				
May 15	Sk	iPKP	19 31 10	
cont.	Um	iPKP	19 31 14	
	Santa Cruz Islands (h=60 km).			
" 15	Um	iP	19 45 09	
" 15	Ki	iPKP	20 07 59	
		i	20 08 06	
	Sk	iPKP	20 08 16	
	Um	iPKP	20 08 16	
	New Hebrides Islands region (h= 110 km).			
" 15	Um	iP	20 14 34	
" 15	Um	iP	20 31 40	
" 15	Up	iPKP	21 12 10	
			microns sec	
		PKP Z'	0.1 0.6	
	Ki	iPKP	21 12 02	
		i	21 14 22	
		iPP	21 14 34	
		i	21 14 43	
			microns sec	
		PP Z'	0.4 0.5	
	Sk	i(PKP)	21 12 00	
		iPKP	21 12 09	
		iPP	21 15 00	
	Gb	iPKP	21 12 24	
	Um	i(PKP)	21 12 06	
		iPKP	21 12 09	
		i	21 12 15	
		iPP	21 15 00	
	Tonga Islands region			

1961			
May 15	(h= 90 km).		
cont.			
" 15	Um	iP	22 49 45
" 15	Up	iP	23 07 23
	Ki	iP	23 07 16
	Sk	i(P)	23 07 21
" 15	Um	i(P)	23 52 43
" 16	Um	iP	00 56 40
" 16	Um	iP	01 22 14
		i	01 22 24
" 16	Ki	iP	03 42 18
	Um	iP	03 42 47
	Fox Islands, Aleutian Islands (h= 40 km).		
" 16	Ki	iP	04 02 46
	Um	iP	04 03 16
	Fox Islands, Aleutian Islands (h= 60 km).		
" 16	Um	iP	07 25 34
" 16	Um	iP	07 37 22
		i(P)	07 41 02
" 16	Um	iP	08 02 42
" 16	Um	iP	08 52 55
" 16	Um	iP	10 30 37

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 May 16 cont.		i(P)	10 33 10	
" 16	Ki	i(P)	11 09 47	C
" 16	Um	iP	13 08 34	
" 16	Um	iP	13 32 35	
		i	13 32 52	
" 16	Um	iP	15 10 18	
" 16	Um	iP	17 41 00	
" 16	Up	iPKP	17 47 11	D
		i	17 47 23	
			microns	sec
		PKP Z′	0.1	0.6
	Ki	e(PKP)	17 47 11	
	Sk	iPKP	17 47 04	D
		i	17 47 16	
	Gb	iPKP	17 47 22	
		i	17 47 33	
	Um	iPKP	17 47 01	

Kermadec Islands region
(h= 50 km).

" 16	Um	iP	17 59 56	
" 16	Um	iP	18 02 45	
" 16	Um	iP	18 07 23	
" 16	Sk	iP	18 09 20	
	Um	iP	18 09 39	

Near coast of Honduras

1961 May 16 cont.		(h= 120 km).		
" 16	Um	iP	19 58 59	
" 16	Um	i(P)	20 11 08	
" 16	Um	i(P)	20 57 51	
" 16	Ki	iP	21 16 04	
" 16	Up	iP	21 57 08	D
		i	21 57 18	
		iS	22 06 42	
			microns	sec
		P E	0.2	2
		P N	0.1	2
		P Z	0.5	2
		P Z′	0.3	1.0
		S E	1.1	4
		S N	0.3	4
		S Z	0.5	4
		M E	3.8	17
		M N	5.1	20
		M Z	4.1	21

D= 8350 km = 75°.

	Ki	iP	21 56 35	
		i	21 56 46	
		iS	22 05 43	
			microns	sec
		P Z′	0.7	1.5
		S E	2.7	5
		S N	0.6	5
		M E	6.6	20
		M N	6.9	20

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961

May 16 cont.

D= 7700 km = 69°½.

Sk	iP	21	57 06
Gb	iP	21	57 29
	i	21	57 40
Um	iP	21	56 50
	i	21	57 01

Ryukyu Islands (h= 25 km).
Magn. = 6.4 (Up,Ki).

"	17	Um	i(P)	00 52 35
"	17	Um	iP	02 11 15
"	17	Um	iP	05 13 04
"	17	Ki	iPg	08 13 06
			iSg	08 14 02

D= 480 km = 4°.3.

	Sk	eSg	08 16 48

D= 1030 km = 9°.3.

	Um	i(Sn)	08 14 49

Northwest Russia, 68°3/4 N, 32° E. Origin time = 08 11 40.
Possibly explosion.

"	17	Um	iP	09 19 16
"	17	Um	iP	10 10 37
"	17	Um	iP	13 00 13
"	17	Um	iP	14 31 02
"	17	Up	iP	19 40 12 C
			i	19 40 32

1961

May 17 cont.

		iS	19	48 59

		microns	sec
P	N	0.9	3
P	Z	1.4	3
P	Z'	0.2	0.5
S	E	2.0	11
S	N	0.5	4
M	E	3.1	20
M	N	7.3	20
M	Z	7.8	20

D= 7400 km = 66°½.

Ki	iP	19	39 18 C
	i	19	40 14
	iPa	19	43 00
	iS	19	47 18
	iP'P'	20	08 54
	i	20	09 36

		microns	sec
P	E	0.2	7
P	N	0.7	7
P	Z	1.5	5
P	Z'	0.4	1.0
S	E	1.2	7
S	N	1.4	8
M	E	8.5	21
M	N	7.9	18
M	Z	20	19

D= 6550 km = 59°.

Sk	iP	19	39 52 C
	iP'P'	20	08 42
Gb	iP	19	40 28 C
	i	19	40 48
	iS	19	49 35
	iP'P'	20	08 34

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961

May 17, [illegible] iP 19 39 43 C
i 19 40 11
iP'P' 20 08 40
Near Islands, Aleutian Islands
(h= 20 km). Magn.= 6.4 (Up,Ki).

" 18 Up iP 00 33 36 C
i 00 33 39
microns sec
P Z' 0.1 0.7
Ki iP 00 33 20
microns sec
M E 0.3 14
M N 0.3 16
M Z 0.5 14
Sk iP 00 33 48
Um iP 00 33 20
Sinkiang Province, China
(h= 30 km).

" 18 Up i(P) 07 58 29 D
microns sec
P Z' 0.2 0.5

" 18 Um iP 09 09 14

" 18 Up i 09 45 42
i 09 45 54
microns sec
M E 0.4 14
M N 0.9 17
M Z 0.8 16
Ki iP 09 41 06
eT 09 46 06

1961

May 18 cont. i 09 46 46
microns sec
P E 0.2 8
P N 0.2 8
M E 0.7 18
M N 0.6 18
M Z 1.7 18
Sk iP 09 41 42 D
iS 09 43 22
i 09 45 42
D= 970 km = 8°.7.
Gb iP 09 43 09
Um iP 09 41 53
iS 09 43 44
i 09 48 21
i 09 48 37
D= 1080 km = 9°.7.
Arctic Ocean, near 73° N,
11° E. Origin time= 09 39 30

" 18 Up iP 09 49 41
Ki iP 09 49 00
Sk iP 09 49 19
Off coast of northern
California (h= 40 km).

" 18 Up i(P) 10 19 51
microns sec
(P) Z' 0.1 0.6
Ki e(P) 10 19 26

" 18 Ki iP 13 07 07
i 13 07 55
Sk iP 13 07 42

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961				
May 18		i	13 09 26	
cont.				
" 18	Ki	iP	15 24 29	
" 18	Up	i(P)	15 45 26	
	Ki	iP	15 45 33	
	Gb	i(P)	15 45 48	
" 18	Up	iP	18 24 20	
" 18	Ki	iP	20 50 53	D
		ipP	20 51 28	
	Um	iP	20 50 59	
	Near south coast of Mindanao, Philippine Islands. h = 140 km (Ki).			
" 19	Ki	iP	01 03 26	
	Um	iP	01 03 32	
	Off south coast of Mindanao (h= 80 km).			
" 19	Up	iPKP	02 39 54	
	Ki	iPKP	02 39 46	
	Sk	ePKP	02 39 48	
	Gb	iPKP	02 40 07	
	Um	iPKP	02 39 51	
		i	02 39 56	
	Fiji Islands region (h= 600 km).			
å" 19	Ki	iP	09 38 11	
		i	09 38 25	

1961				
May 19	Sk	iP	09 38 04	
cont.	Um	iP	09 38 36	
	Off coast of Nicaragua (h= 30 km).			
" 19	Ki	iP	14 58 47	
	Um	iP	14 59 07	
" 19	Up	iP	16 14 59	
" 19	Up	iP	16 49 17	
		i	16 49 29	
	Ki	iP	16 48 53	C
		iS	16 58 17	
			microns	sec
		P	Z' 0.1	0.8
		S	E 0.2	8
		S	N 0.5	9
		M	E 1.8	18
		M	N 0.9	18
		M	Z 1.9	19
	Sk	iP	16 49 20	C
		i	16 49 33	
	Gb	iP	16 49 36	
		i	16 49 51	
	Um	iP	16 49 02	
		i	16 49 13	
	Ryukyu Islands (h= 70 km). Magn.= 6.1 (Ki).			
" 19	Up	iP	21 37 57	
		iPP	21 39 30	
	Ki	iP	21 38 01	
		iPP	21 39 33	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961

May 19 cont,	Sk	iP	21 38 21	
		iPP	21 40 03	
	Gb	iP	21 38 20	
		iPP	21 40 03	
	Um	iP	21 37 54	
		iPP	21 39 26	

Tadzhik, U.S.S.R. (h= 40 km).

" 20	Ki	iP	00 54 14	
	Um	iP	00 54 43	

Fox Islands, Aleutian Islands (h= 70 km).

" 20	Ki	iP	07 08 33	
		i	07 08 42	
		eT	07 13 27	
		i	07 14 21	
	Sk	iP	07 09 13	
		i	07 09 19	
		eS	07 10 52	
		D= 1050 km= $9^{\circ}\frac{1}{2}$.		
	Um	iP	07 09 35	

Arctic Ocean (h= 50 km).

" 20	Up	iP	12 02 02	
	Ki	iP	12 01 18	
	Um	iP	12 01 37	

Kurile Islands (h= 60 km).

" 20	Ki	iP	17 25 14	
		i	17 25 20	
		iT	17 30 19	
		i	17 30 35	

1961

May 20 cont.	Sk	iP	17 25 51	
		iS	17 27 31	
		i	17 27 35	
		D= 1050 km = $9^{\circ}\frac{1}{2}$.		
	Um	iP	17 26 06	

Svalbord region (h= 60 km).

" 20	Ki	iP	17 49 03	
		eT	17 53 56	
		i	17 54 51	
			microns	sec
	M	E	0.4	18
	M	N	0.4	19
	M	Z	1.1	18
	Sk	iP	17 49 39	
		iS	17 51 20	
		i	17 51 25	
		D= 1050 km = $9^{\circ}\frac{1}{2}$.		
	Um	iP	17 49 50	
		iS	17 51 41	
		i(T)	17 56 25	
		D= 1150 km = $10^{\circ}\frac{1}{2}$.		

Arctic Ocean (h= 50 km).

" 20	Up	iP	18 02 15	
" 20	Up	iP	18 02 56	
	Ki	i(P)	18 03 32	
		iP	18 03 42	
			microns	sec
	P	Z'	0.1	1.3
	M	E	0.3	18
	M	N	0.4	19

Up = Uppsala, Ki = Kiruna. Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961				
May 20	Sk	iP	18 03 20	
cont.	Gb	eP	18 02 44	
	Um	i(P)	18 03 13	
		iP	18 03 18	
	Tanganyika (h= 60 km).			
" 20	Ki	iP	18 13 45	
" 21	Up	iP	01 13 28	D
		i	01 13 42	
	Ki	iP	01 13 07	
		i	01 13 23	
	Sk	iP	01 13 55	
	Um	iP	01 13 09	
		i	01 13 24	
	Kazakh, U.S.S.R. - Sinkiang, China border (h= 90 km).			
" 21	Ki	e(P)	05 04 50	
" 21	Up	iP	05 35 23	C
	Ki	iP	05 34 40	
	Sk	iP	05 35 14	
	Um	iP	05 34 55	
	Near east coast of Hokkaido, Japan (h= 60 km),			
" 21	Up	iP	05 40 02	
" 21	Up	iP	10 25 37	
	Ki	iP	10 25 13	
	Sk	iP	10 25 41	

1961				
May 21	Gb	iP	10 25 53	
cont.	Ryukyu Islands (h= 60 km).			
" 21	Gb	iP	15 27 06	
	Off coast of northern California (h= 25 km).			
" 21	Up	iP	16 50 16	
" 21	Up	iP	17 41 51	
" 21	Um	iPKP	18 32 17	
		i	18 32 36	
	Tonga Islands (h= 60 km).			
" 21	Um	iP	18 49 21	C
" 21	Up	iP	19 27 31	D
	Ki	iP	19 27 00	D
			microns	sec
	M	E	0.2	12
	M	N	0.4	13
	Um	iP	19 27 16	D
" 21	Ki	iP	21 23 13	
	Molucca Passage (h= 100 km).			
" 21	Ki	ePKP	21 59 26	
	Gb	ePKP	21 59 39	
	Um	iPKP	21 59 28	
	New South Wales, Australia (h= 30 km).			

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961

May 22 Up iP 08 30 05

" 22 Ki iP 09 07 09

Kurile Islands (h= 30 km).

" 22 Up ePKP 14 03 50

iPKS 14 07 35

e(SPP) 14 19 12

		microns	sec
PKS	E	0.1	3
PKS	N	0.3	3
M	E	1.3	20
M	N	1.6	20
M	Z	1.3	20

(D= 15650 km = 141°).

Ki e(PKP) 14 03 57

iPP 14 06 19

iPKS 14 07 08

iSS 14 23 40

		microns	sec
PP	Z	0.5	4
PKS	E	0.8	4
PKS	N	0.7	4
M	E	1.8	20
M	N	1.6	20
M	Z	2.8	20

(D= 14900 km = 134°).

Sk ePKP 14 03 45

i 14 06 31

Gb iPKP 14 04 02

Um iPKP 14 03 53

Tonga Islands (h= 100 km).

1961

May 22 Up iPKP 17 51 45

i 17 51 47

iPP 17 54 56

iPKS 17 55 29

ePPS 18 07 19

iSS 18 13 16

		microns	sec
PKP	Z'	0.1	0.5
PKS	E	0.4	10
PKS	N	0.7	12
PKS	Z	1.1	12
M	E	2.3	20
M	N	4.5	21
M	Z	5.5	21

(D= 15650 km = 141°).

Ki iPKP 17 51 26

i 17 51 38

iPKS 17 55 04

i 17 55 11

i 17 55 37

		microns	sec
PKS	E	0.7	11
PKS	N	0.9	11
PKS	Z	1.6	7
PKS	Z'	0.4	1.5
M	E	2.7	20
M	N	3.5	20
M	Z	7.7	21

(D= 15000 km = 135°).

Sk iPKP 17 51 40

i 17 51 49

iPP 17 54 38

Gb iPKP 17 51 56

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961

May 22		i	17 52 14	
cont.	Um	iPKP	17 51 35	
		i	17 51 41	
		i	17 51 48	
		i	17 55 50	

Tonga Islands region (h= 40 km). Magn.= 6.4 (Up,Ki).

" 23	Gb	iPKP	00 05 50	

Tonga Islands region (h= 530 km).

" 23	Up	iP	01 12 37	
	Ki	iP	01 11 44	

Andreanof Islands, Aleutian Islands (h= 50 km).

" 23	Up	iP	02 50 31	C
		iS	02 54 44	
		iLg	02 58 12	

		microns	sec
P	E	5.4	5
P	N	13	5
P	Z	8.6	4
P	Z'	0.3	0.5
S	E	26	9
S	N	45	12
S	Z	20	10
M	E	43	11
M	N	97	17
M	Z	81	16

D= 2650 km = 24°.

1961

May 23	Ki	iP	02 51 38	C
cont.		i	02 55 27	
		iS	02 56 41	
		i	02 57 44	

		microns	sec
P	E	1.2	4
P	N	4.1	5
P	Z	5.0	5
P	Z'	1.8	1.0
S	E	6.2	10
S	N	9.2	11
M	E	26	7
M	N	51	18
M	Z	100	18

D= 3450 km = 31°.

	Sk	iP	02 51 11	C
	Gb	iP	02 50 29	C
		iS	02 54 57	
		iPcS	02 57 48	
	Um	iP	02 51 05	C

Dodecanese Islands (h= 50 km). Magn.= 6.6 (Up,Ki).

" 23	Up	iP	03 53 02	

		microns	sec
P	Z'	0.1	1.0
M	E	0.8	20
M	N	1.0	19
M	Z	0.9	18

	Ki	iP	03 52 58	
		i	03 53 08	
		iS	04 03 23	

microns sec

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961						
May 23		P	Z'	0.3	1.5	
cont.		S	N	0.5	7	
		M	E	1.0	18	
		M	N	0.5	16	
		M	Z	1.2	17	
	Sk	iP		03 52 46		
	Gb	iP		03 52 54		
	Um	iP		03 53 06		
	Costa Rica (h= 140 km).					
" 23	Up	iP		03 55 45		
	Ki	iP		03 55 41		
		i		03 55 57		
		iPP		03 59 16		
	Sk	iP		03 55 29		
		i		03 55 46		
	Gb	iP		03 55 38		
	Um	iP		03 55 49		
	Costa Rica.					
" 23	Um	iP		04 05 00		
" 23	Ki	i(P)		05 30 27		
" 23	Ki	iP		07 13 40		
		eT		07 18 52		
		i		07 19 28		
	Sk	iP		07 14 12		
		iS		07 15 54		
	D= 1000 km = 9°.					
	Um	eP		07 14 25		
	Arctic Ocean.					

1961						
May 23	Um	i(P)		08 43 40		
" 23	Um	iP		08 51 39		
" 23	Up	i(P)		08 59 33		
		i		08 59 34		
				microns sec		
		(P)	Z'	0.1	0.8	
" 23	Um	iP		10 34 04		
" 23	Um	iP		11 17 03		
" 23	Ki	iP		12 27 45		
" 23	Up	i(P)		13 19 25		
		i		13 19 26		
				microns sec		
		(P)	Z'	0.1	0.7	
" 23	Ki	e(P)		16 23 48		
" 23	Up	iP		16 57 29		
		i		17 00 17		
		iPP		17 00 52		
		eS		17 07 59		
		isS		17 09 15		
				microns sec		
		M	E	0.5	19	
		M	N	0.6	19	
		M	Z	1.6	24	
	(D= 9650 km = 87°).					

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961					
May 23 cont.	Ki	iP		16 57 22	
		iPP		17 00 41	
		iS		17 07 36	
			microns	sec	
		P	E	0.3	4
		P	Z	0.5	7
		P	Z'	0.2	1.3
		PP	E	0.4	3
		PP	Z	0.5	3
		S	E	0.4	13
		S	N	0.2	11
		M	E	0.6	16
		M	N	0.5	18
		M	Z	1.1	16
	(D= 9350 km = 84°).				
	Sk	iP		16 57 11	C
		ipP		16 57 38	
		iPP		17 00 27	
	Gb	iP		16 57 16	
	Um	iP		16 57 27	
		ipP		16 57 55	
		iPP		17 00 49	
	Near coast of Nicaragua h = 110 km (Sk,Um). Magn.= 6.2 (Ki).				
" 23	Up	iP		17 08 54	
		i		17 08 58	
	Ki	iP		17 08 35	
	Um	iP		17 08 40	
" 24	Up	i(P)		09 11 37	
	Seismic?				

1961				
May 24	Up	iP		16 09 20
	Gb	i(P)		16 09 55
" 24	Up	i(P)		18 33 44
		i		18 33 51
" 24	Up	iP		20 34 18
" 25	Up	i(P)		08 40 06
		i		08 40 07
	Seismic?			
" 25	Up	iP		09 30 29
		i		09 30 30
			microns	sec
		P	Z'	0.1 0.5
	Ki	iP		09 29 55
			microns	sec
		P	Z'	0.1 0.6
	Sk	iP		09 30 24
	Gb	iP		09 30 46
	Um	iP		09 30 09
	South of Honshu, Japan (h= 170 km).			
" 25	Up	i(P)		12 37 31
	Seismic?			
" 25	Ki	iP		13 41 16
" 25	Up	i(P)		15 02 10
	Seismic?			

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961

May25 Up i(P) 16 03 51
Seismic?

" 25 Ki iPKP 18 59 25
Tonga Islands (h= 40 km).

" 25 Up iP 19 46 03
Ki iP 19 46 03
microns sec
P Z' 0.1 0.8
Um iP 19 45 59
Sumatra (h= 90 km).

" 25 Up iP 22 55 54
Ki iP 22 55 35

" 25 Up iP 03 01 13

" 26 Ki iP 05 18 45
Sk iP 05 18 37
i 05 19 32
Western Guatemala (h= 120 km).

" 26 Ki i(P) 08 02 43

" 26 Up iP 23 01 11
Ki iP 23 00 30
Um iP 23 00 48
Near east coast of Honshu, Japan (h= 60 km).

" 27 Up iP 05 22 18 C
i 05 22 33

1961

May 27 iPP 05 23 58
cont.
microns sec
P Z' 0.1 0.5
Ki iP 05 22 27 C
i 05 22 37
microns sec
P Z' 0.1 1.1
Sk iP 05 22 43 C
iPP 05 24 31
Um iP 05 22 18 C
Hindu Kush (h= 90 km).

" 27 Up ——
microns sec
M E 0.4 22
M N 0.9 23
M Z 1.0 21
Ki iP 07 28 25 C
i 07 28 40
microns sec
M E 0.5 17
M N 0.6 17
M Z 0.5 17
Sk iP 07 29 08
i 07 29 16
iPP 07 31 24
Gb iP 07 29 37 C
Um iP 07 28 45 C
i 07 29 01
Near north coast of Honshu, Japan (h= 160 km).

" 27 Up iP 10 34 20

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Un = Umeå

1961

May 27 cont.

M E 0.5 20
M N 0.2 15
M Z 0.6 19
Um iP 22 50 37
Near coast of Luzon, Philippine Islands (h= 90 km).

" 28 Up iP 02 08 02

" 28 Um iP 02 15 22

" 28 Un iP 03 41 56

" 28 Up iP 04 13 00
Ki iP 04 12 59
Sk iP 04 13 13
Um iP 04 13 00
Off coast of southern Sumatra (h= 70 km).

" 28 Up iPKP 13 00 59
South of Fiji Islands (h= 90 km).

" 28 Up iPKP 19 47 38 D
i 19 47 42
microns sec
PKP Z' 0.1 0.7
Ki ePKP 19 47 20
Sk iPKP 19 47 30
Gb iPKP 19 47 50
i 19 47 54
Um ePKP 19 47 27
South of Fiji Islands (h= 220 km).

1961

May 29 Un iP 00 05 44

" 29 Up iP 00 33 51
Ki iP 00 32 58
i 00 33 09
microns sec
P Z' 0.2 1.4
Sk iP 00 33 28
Gb iP 00 34 10
i 00 34 42
Um iP 00 33 29
i 00 33 41
Fox Islands, Aleutian Islands (h= 70 km).

" 29 Ki iP 05 09 38
Sk iP 05 09 23
Um iP 05 09 17

" 29 Ki iP 06 52 49

" 29 Up ——
microns sec
M E 1.4 19
M N 0.8 20
M Z 1.5 19
Ki iPKP 07 47 32
eSS 08 06 23
microns sec
M E 1.1 20
M N 0.7 21
M Z 1.0 17
Un iPKP 07 47 24
Near coast of southern Chile (h= 10 km).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961

May 27	Ki	iP	10 33 39	
cont.	Um	iP	10 33 58	
		i	10 34 17	
" 27	Up	iP	10 45 28	
		i	10 45 31	
		iPP	10 47 05	
			microns	sec
		M E	0.1	14
		M N	0.5	13
	Ki	eP	10 45 37	
		i	10 45 43	
			microns	sec
		M E	0.3	9
		M N	0.2	10
		M Z	0.2	9
	Sk	iP	10 45 54	
	Gb	iP	10 45 43	
	Um	iP	10 45 28	

Hindu Kush (h= 30 km).

" 27	Ki	iP	11 45 26
" 27	Um	iP	13 59 43
" 27	Um	iP	15 52 53
" 27	Up	iP	17 04 51
		i	17 04 59
		eS	17 15 17
			microns sec
		S N	0.1 3
		M E	0.1 16
		M N	0.6 20

1961

May 27 cont.

D= 9350 km = 84°.

Ki	iP	17 04 52	
	iS	17 15 19	
	iScS	17 15 31	
		microns	sec
	P Z'	0.1	0.9
	S E	0.3	4
	S N	0.3	5
	M E	0.7	18
	M N	0.6	20
	M Z	1.2	19

D= 9400 km = 84°½.

Sk	iP	17 05 06
	i	17 05 14
Gb	i(P)	17 05 13
Um	iP	17 04 47
	i	17 04 56

Near coast of northern Sumatra (h= 40 km). Magn.= 5.9 (Up,Ki).

" 27	Up	iP	17 39 03
		i	17 39 12
	Ki	iP	17 39 04
		i	17 39 13
	Sk	iP	17 39 21
	Um	iP	17 38 59

Near northwest coast of Sumatra (h= 40 km).

" 27	Up	iP	22 50 50
	Ki	iP	22 50 30
		i	22 50 48
			microns sec

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961

May 29	Up	iP		10 41 45 D
		i		10 41 53
		i		10 42 00
			microns	sec
		P	Z' 0.1	0.5
	Ki	iP		10 41 12
	Sk	iP		10 41 41
	Gb	iP		10 42 02
	Um	iP		10 41 25

Bonin Islands (h= 25 km).

" 29	Up	iP		11 01 12
		eS		11 08 41
			micrins	sec
		S	N 0.3	7
		M	E 0.6	17
		M	N 0.7	22

D= 5800 km = 52°.

	Ki	eP		11 02 00
		eS		11 10 00
			microns	sec
		M	E 0.7	17
		M	N 0.4	15
		M	Z 0.9	17

D= 6450 km = 58°.

	Sk	iP		11 01 44 C
	Gb	iP		11 01 10
	Um	iP		11 01 34

Ethiopia (h= 25 km).

" 29	Up	iP		11 49 05
	Ki	iP		11 49 50
	Sk	iP		11 49 35 C

1961

May 29	Up	iP		17 04 09
	Ki	iP		17 03 42
		i		17 04 13
	Sk	iP		17 04 06
	Um	iP		17 03 58

Near coast of Luzon, Philippine Islands (h= 25 km).

" 29	Up	iP		19 33 13
	Ki	iP		19 34 02 C
		eS		19 42 14
			microns	sec
		S	N 0.2	8
		M	E 0.4	14
		M	N 0.4	16
		M	Z 0.2	15

D= 6500 km = 58°½.

	Sk	iP		19 33 46 C
	Gb	iP		19 33 11
	Um	iP		19 33 34

Ethiopia (h= 50 km).

" 29	Ki	iP		19 50 25
	Sk	iP		19 50 10
	Um	iP		19 49 58
" 30	Ki	iP		13 21 06
	Sk	i(P)		13 20 59
" 30	Ki	iP		15 01 11
		i		15 01 26
			microns	sec
		P	Z' 0.3	0.8

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961

May 31 Up iP 09 05 56

microns sec

P Z' 0.1 0.7

" 31 Ki i(P) 10 00 27

" 31 Ki iP 10 22 55

" 31 Up i(P) 13 23 03

microns sec

(P) Z' 0.1 0.8

Gb i(P) 13 24 20

" 31 Up eS 14 40 17

microns sec

M E 2.4 18

M N 2.0 20

M Z 2.9 18

Ki eP 14 29 30

eS 14 39 23

microns sec

S N 0.3 8

M E 2.4 17

M N 2.2 16

M Z 4.4 17

D= 8650 km= 78°.

Gulf of California (h= 70 km).

Magn.= 5.8 (Up,Ki).

" 31 Up iP 14 50 06

Ki iP 14 49 14

Sk iP 14 49 51

Um iP 14 49 40

Kurile Islands (h= 50 km).

1961

May 31 Sk iP 17 18 44

" 31 Up ——

microns sec

M E 1.3 19

M N 1.6 22

M Z 1.9 20

Ki ePS 19 44 15

microns sec

M E 1.2 19

M N 0.6 18

New Britain (h= 60 km).

" 31 Up iP 20 26 07

Sk i(P) 20 26 13

Markus Båth

March 17, 1962

Seismological Laboratory
Uppsala

1961
June

PRELIMINARY SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, SKALSTUGAN, GÖTEBORG, and UMEÅ

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°49.0'N,	20°14.1'E,	h = 20 m

JUNE 1 -- 30, 1961

1961
June 1 Um i(P) 03 36 15

" 1 Up iP 03 37 59
Ki iP 03 37 05
Sk iP 03 37 41
Near east coast of
Kamchatka (h = 25 km).

" 1 Ki i(P) 03 40 30
Local?

" 1 Up i(P) 08 43 05
microns sec
(P) Z' 0.1 0.7
Um i(P) 08 43 48

" 1 Ki iP 10 14 08
Um iP 10 14 13
Sk iP 10 13 49
Near coast of Dominican
Republic (h = 50 km)

" 1 Up iPg 13 49 46
iSg 13 50 14
D = 230 km = 2.°1.

" 1 Up i(P) 14 02 16
microns sec
(P) Z' 0.1 0.6
Local?

" 1 Ki i(P) 14 52 58
Local?

1961
June 1 Up iP 15 09 22 D
microns sec
P Z' 0.1 0.6
Local? Seismic?

" 1 Up iP 16 37 08
Ki iP 16 38 03
Gb eP 16 37 14
Um eP 16 37 33
Southern Turkey (h = 60 km)

" 1 Up iP 18 59 31
Ki iP 18 59 16
Celebes Sea (h = 90 km).

" 1 Sk iP 21 16 59
Gb iP 21 16 24

" 1 Up iP 23 38 28 D
i 23 38 37
iPcP 23 39 52
iPS 23 45 51
microns sec
P E 0.5 4
P Z 1.6 4
M E 21 20
M N 18 20
M Z 9.4 22
Ki iP 23 39 16
i 23 39 24
microns sec
P Z' 0.2 1.9
M E 11 15
M N 9.8 18

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 June cont.	1	Gb	iP	23 39 27	
			i	23 39 35	
		Sk	iP	23 39 01	
			i	23 39 10	
		Um	iP	23 38 51	
			i	23 39 00	
		Ethiopia (h =50 km).			
		Magn. = 6.2 (Up, Ki).			
"	2	Up	iP	00 05 58	C
		Ki	iP	00 06 47	C
		Sk	iP	00 06 31	
		Um	iP	00 06 20	C
		Ethiopia (h = 60 km).			
"	2	Up	iP	00 10 55	
		Ki	iP	00 11 45	
		Sk	iP	00 11 27	
		Gb	iP	00 10 53	
		Um	iP	00 11 17	
			i	00 11 21	
		Ethiopia (h = 30 km).			
"	2	Up	iP	00 18 06	
			i	00 18 08	
			iPeP	00 19 14	
		Ki	iP	00 18 54	
		Sk	iP	00 18 38	
			iPeP	00 19 46	
		Gb	iP	00 18 03	
		Um	iP	00 18 27	
			iPeP	00 19 34	
		Ethiopia (h = 60 km).			
"	2	Up	iP	00 30 32	
		Ki	iP	00 31 20	
		Sk	iP	00 31 04	
		Gb	iP	00 30 30	
		Um	iP	00 30 54	
		Ethiopia.			
"	2	Up	iP	01 07 08	C
		Ki	iP	01 07 54	
		Sk	iP	01 07 41	C
		Gb	iP	01 07 04	C
		Um	iP	01 07 30	C
		Ethiopia.			
"	2	Up	iP	01 25 23	C
		Ki	iP	01 26 12	C
		Sk	iP	01 25 55	C
		Gb	eP	01 25 21	C
		Um	iP	01 25 44	
		Ethiopia (h = 60 km).			
"	2	Sk	iP	01 29 17	
		Gb	eP	01 28 40	

1961 June	2	Up	iP	02 44 43	
		Ki	iP	02 45 32	
		Sk	iP	02 45 17	
		Gb	i(P)	02 44 41	
		Um	iP	02 45 06	
		Ethiopia.			
"	2	Up	iP	03 28 51	C
		Sk	iP	03 29 23	
		Gb	eP	03 28 49	
		Um	iP	03 29 16	
		(Ethiopia).			
"	2	Up	iP	03 58 23	
		Ki	iP	03 59 11	
		Sk	iP	03 58 56	
		Gb	eP	03 58 18	
		Um	iP	03 58 45	
		Ethiopia.			
"	2	Up	iP	05 00 24	D
			iS	05 07 40	
			iSP	05 07 49	
				microns	sec
			P E	1.3	9
			P N	1.6	9
			P Z	4.7	9
			P Z'	0.3	1.0
			M E	9.4	19
			M N	13	19
			M Z	8.2	19
		D = 5850 km = 52 1/2°.			
		Ki	iP	05 01 11	D
			i	05 01 55	
			iS	05 09 21	
				microns	sec
			P E	0.9	8
			P N	1.4	7
			P Z'	0.6	1.2
			S E	4.2	13
			S N	4.2	10
			M E	9.9	16
			M N	8.2	17
		D = 6600 km = 59 1/2°.			
		Sk	iP	05 00 56	D
			i	05 01 22	
		Gb	iP	05 00 24	D
			ii	05 00 55	
		Um	iP	05 00 48	
			i	05 00 58	
		Ethiopia (h = 40 km).			
		Magn. = 6.4 (Up, Ki).			
"	2	Up	iP	05 22 21	
		Gb	iP	05 22 32	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
June 2 Up iP 05 31 41 D
i 05 31 46
iS 05 39 10
microns sec
P Z 0.2 2.0
P Z' 0.1 0.9
D = 5750 km = 52°.
Ki iP 05 32 29 D
i 05 32 34
microns sec
P Z' 0.1 1.0
Sk iP 05 32 14
i 05 32 18
Gb iP 05 31 41 D
i 05 31 46
Um iP 05 32 06 D
i 05 32 10
Ethiopia (h = 25 km).

" 2 Up iP 05 42 51
Gb eP 05 42 52

" 2 Up iP 05 54 04
i 05 54 09
iS 06 01 31
microns sec
P E 0.1 3
P Z' 0.1 0.9
M E 4.2 18
M N 4.7 21
M Z 3.9 20
Ki iP 05 54 52 D
microns sec
P Z' 0.2 1.5
Sk iP 05 54 36
Gb iP 05 54 53
i 05 54 10
Um iP 05 54 28
i 05 54 33
Ethiopia (h = 30 km).
Magn. = 5.8 (Up, Ki).

" 2 Up iP 06 26 22
Ki iP 06 27 09
Sk iP 06 26 55
Gb iP 06 26 21
Um iP 06 26 46
Ethiopia (h = 40 km).

" 2 Up iP 06 30 05
i 06 30 10
Ki iP 06 29 50
Um iP 06 29 54

" 2 Sk iP 06 39 54
Um iP 06 39 45

1961
June 2 Up microns sec
M E 1.0 17
M N 0.9 17
M Z 1.3 17
Ki iP 07 12 48
i 07 12 52
iSP 07 21 02
microns sec
M E 1.2 19
M N 0.8 15
Sk iP 07 12 32
i 07 12 36
Gb iP 07 11 58
Um iP 07 12 23
i 07 12 27
Ethiopia (h = 50 km).
Magn. = 5.2 (Up, Ki).

" 2 Up iP 07 30 55
Ki iP 07 31 44
Sk iP 07 31 29
Gb iP 07 30 54
Um iP 07 31 19
Ethiopia.

" 2 Ki iP 11 09 41 D
Sk iP 11 10 32
Um iP 11 10 34
Svalbard region (h = 25 km).

" 2 Ki i(P) 11 27 11

" 2 Up iP 14 27 07
Local? Seismic?

" 2 Up iP 14 32 48 D
microns sec
P 0.1 0.5
Local? Seismic?

" 2 Um i(P) 18 06 35

" 2 Up iP 18 22 17 D
i 18 22 27
microns sec
M E 0.3 18
M N 0.3 17
M Z 0.3 17
Ki iP 18 21 47
iScS 18 32 05
microns sec
M E 0.4 15
M N 0.3 15
Sk iP 18 22 13
Gb iP 18 22 31
Um iP 18 21 59
i 18 22 10
Mariana Islands region
(h = 40 km).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
June 2 Up iP 22 28 43
Um i(P) 22 29 05

" 2 Up iP 23 41 47
i 23 41 51
Ki iP 23 42 35
microns sec
M E 0.2 12
M N 0.2 15
Sk iP 23 42 20
Gb iP 23 41 47
Um iP 23 42 11
Ethiopia.

" 3 Up iP 01 23 42 D
i 01 23 52
iS 01 32 04
microns sec
S E 0.2 5
M E 1.9 22
M N 2.8 20
M Z 2.3 20
D = 6850 km = 61½°.
Ki iP 01 22 47 D
i 01 22 54
iS 01 30 22
microns sec
P Z' 0.1 1.1
S E 0.5 7
S N 0.4 7
M E 1.6 16
M N 1.3 18
D = 5950 km = 53½°.
Sk iP 01 23 24
Gb iP 01 24 01
i 01 24 12
Um iP 01 23 14 D
Off east coast of
Kamchatka (h = 30 km).
Magn. = 5.7 (Up, Ki).

" 3 Up iP 02 14 45
i 02 14 50
Sk iP 02 15 18
Gb i(P) 02 14 43
Um iP 02 15 08
Ethiopia.

" 3 Ki ePKP 03 37 24
New Hebrides Islands
(h = 30 km).

" 3 Ki iPKP 03 59 21
New Hebrides Islands
(h = 40 km).

1961
June 3 Up iP 06 18 36
Sk iP 06 18 31
Um iP 06 18 27 D

" 3 Up iP 06 21 17
i 06 21 32
microns sec
M E 0.4 11
M N 0.3 11
Ki iP 06 22 19
microns sec
M E 0.4 11
M N 0.1 13
Sk iP 06 21 51
Gb iP 06 21 19
i 06 21 30
Um iP 06 21 46
i 06 21 56
Turkey (h = 60 km).

" 3 Up iP 14 03 49
i 14 03 54
Local? Seismic?

" 3 Up iP 15 29 37 C
Ki iP 15 30 25 C
Sk iP 15 30 09
Gb iP 15 29 36 C
Um iP 15 30 00 C
Ethiopia (h = 60 km).

" 3 Up iP 15 32 28 D
oS 15 39 54
microns sec
P E 0.1 2
P N 0.2 3
S E 0.3 7
S N 0.6 7
M E 0.4 14
M N 0.5 16
M Z 0.5 17
D = 5750 km = 52°.
Ki iP 15 33 17 D
iS 15 41 28
microns sec
P N 0.2 5
P Z' 0.1 1.0
S E 0.3 5
S N 0.3 8
M E 0.4 14
M N 0.3 14
D = 6550 km = 59°.
Sk iP 15 33 01 D
Gb iP 15 32 28 D
Um iP 15 32 51 D
Ethiopia (h = 50 km).
Magn. = 5.8 (Up, Ki).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Un = Umeå

1961
June 3 Up iP 16 35 02 C
Ki iP 16 35 51 C
Sk i iP 16 35 35 C
Gb iP 16 35 03
Un iP 16 35 24 C
Ethiopia.

" 3 Ki iP 17 56 36
Northern Celebes (h = 90 km).

" 3 Ki i(P) 22 55 54
Sk iP 22 56 31
i 22 58 10
Un iP 22 56 43

" 4 Up iP 00 50 51
Sk iP 00 51 24
Gb iP 00 50 52
(Ethiopia).

" 4 Up iP 07 41 46 D
iPP 07 43 39
iS 07 48 48
i 07 49 00
iSS 07 52 27

		microns	sec
P	E	1.3	3
P	Z	2.3	3
P	Z'	0.5	0.9
PP	E	1.9	5
PP	Z	1.9	5
S	E	0.7	5
S	N	1.1	5
M	E	21	17
M	N	28	17
M	Z	23	16

D = 5400 km = 48°.

Ki iP 07 41 45 D
i 07 41 50
iPP 07 43 37
iSoP 07 47 04
iSP 07 48 59

		microns	sec
P	E	2.6	6
P	N	0.8	6
P	Z'	0.7	1.5
PP	E	3.7	7
PP	N	0.9	6
M	E	31	12
M	N	15	9

D = 5350 km = 48°.

Sk iP 07 42 06 D
Gb iP 07 42 08 D
iPcP 07 43 28
Un iP 07 41 39 D
i 07 41 50
iPcP 07 43 08
Tibet (h = 50 km).
Magn. = 6.6 (Up, Ki).

1961
June 4 Up iP 07 52 26 D
i 07 52 31

		microns	sec
P	E	0.3	1
P	Z	0.4	1
P	Z'	0.3	1.0

Ki iP 07 52 24 D
i 07 52 42

		microns	sec
P	Z'	0.1	1.0

Sk iP 07 52 46
Gb iP 07 52 49 D
Un iP 07 52 19
Tibet (h = 30 km).

" 4 Ki iP 08 18 08
Local? Seismic?

" 4 Un iP 11 17 37

" 4 Up iP 11 21 51
Local? Seismic?

" 4 Up iP 11 25 59 D
Ki iP 11 26 06
Hindu Kush (h = 190 km).

" 4 Up iP 14 00 12 C
iPcP 14 01 40

		microns	sec
M	E	0.4	15
M	N	0.7	15
M	Z	0.5	10

Ki iP 14 00 10
iLg 14 17 44

		microns	sec
P	Z'	0.1	0.8
M	E	0.7	12
M	N	0.4	13

Sk iP 14 00 32
Gb iP 14 00 35
Un iP 14 00 07
i 14 00 09
iPcP 14 01 38
Tibet (h = 40 km).

" 4 Un iPKP 23 13 30
New Hebrides Islands
(h = 220 km).

" 4 Up iP 23 43 49
Ki iP 23 43 56 D
Sk eP 23 44 13
Un iP 23 43 46
Northern India (h = 25 km).

" 5 Up iP 02 20 23
Ki iP 02 20 03
Un iP 02 20 09

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 June	5	Up	iP		03 38 34	
			i		03 38 37	
				microns	sec	
			M	E	0.5	17
			M	N	0.4	15
		Ki	eP		03 39 03	
			i		03 39 14	
			iScS		03 49 07	
				microns	sec	
			M	E	0.4	14
			M	N	0.4	15
		Sk	iP		03 39 11	
		Gb	iP		03 38 47	
		Um	iP		03 38 49	
			iPP		03 40 28	
		Southern Iran (h = 80 km).				
"	5	Ki	iP		06 19 43	
"	5	Ki	iP		06 47 43	
"	5	Gb	i(P)		07 44 14	
"	5	Ki	i(P)		12 17 57	
			i		12 21 11	
"	5	Sk	iP		16 08 02	
"	6	Up	iP		01 37 15	
"	6	Up	iP		03 47 17	
"	6	Ki	iP		07 29 56	
"	6	Up	iP		09 53 38	
		Ki	iP		09 54 15	
		Um	iP		09 53 50	
		Iran (h = 25 km).				
"	6	Up	i(P)		15 52 26	
		Local? Seismic?				
"	6	Up	i(P)		16 17 34	
		Local? Seismic?				
"	6	Sk	i(P)		16 18 48	
"	6	Ki	iP		17 45 28	
"	6	Ki	iP		19 43 32	
"	6	Up	iP		20 50 22	
"	6	Up	iP		21 04 04	
			iLg2		21 18 18	
				microns	sec	
			M	E	0.4	13
			M	Z	0.6	12

1961 June cont.	6	Ki	iP		21 04 03	
				microns	sec	
			M	E	1.1	17
			M	Z	1.1	16
		Sk	iP		21 04 25	
			iPP		21 06 10	
		Gb	iP		21 04 31	
			iPP		21 06 15	
		Um	iP		21 04 00	
		Sinkiang Province, China (h = 70 km).				
"	7	Ki	iP		13 12 41	
"	7	Ki	iP		13 15 15	
		Um	iP		13 15 31	
		Korea - China border (h = 300 km).				
"	7	Up	iP		14 26 26	D
			i		14 26 32	
			iS		14 35 30	
			eP'P'		14 54 37	
				microns	sec	
			P	E	0.2	3
			P	N	0.4	3
			P	Z	0.8	3
			P	Z'	0.3	1.5
			S	E	0.5	5
			S	N	0.9	8
			M	E	1.8	19
			M	N	3.0	21
			M	Z	3.0	19
		D = 7650 km = 69°.				
		Ki	iP		14 27 12	D
			i		14 27 17	
			iS		14 37 01	
				microns	sec	
			P	Z	1.8	8
			P	Z'	0.5	1.8
			S	E	0.8	10
			S	N	1.1	9
			M	E	1.8	18
			M	N	1.8	18
			M	Z	3.3	18
		D = 8500 km = 76½°.				
		Sk	iP		14 26 40	
		Gb	iP		14 26 06	
			iP'P'		14 54 47	
		Um	iP		14 26 51	D
			i		14 27 04	
		Ascension Island region (h = 15 km).				
		Magn. = 6.2 (Up, Ki).				
"	7	Ki	iP		15 11 14	
		Sk	iP		15 10 55	
		Um	iP		15 10 49	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Un = Umeå

1961
June 7 Up iP 15 41 11
Local? Seismic?

" 7 Ki iP 15 56 40
iSKKS 16 15 58
Sk iPKP 15 56 51
Un iPKP 15 56 47
Santa Cruz Islands
(h = 210 km).

" 7 Gb i(P) 20 44 44

" 8 Up iP 02 29 36

" 8 Up iP 04 06 45
Hindu Kush (h = 260 km).

" 8 Up iPP 16 02 27
microns sec
M E 0.4 19
M N 0.6 20
M Z 0.3 21
Ki iPP 16 02 01
eSKS 16 08 29
iPS 16 11 15
eSS 16 16 52
microns sec
PP Z 0.4 8
SKS E 0.2 7
M E 0.7 20
M N 0.6 22
M Z 0.8 18
Un ePP 16 02 06
Flores Sea (h = 25 km).

" 8 Up iP 16 12 46

" 8 Up iP 20 37 31

" 8 Up iP 21 44 04

" 9 Up iP 04 03 49
i 04 03 51
Ki iP 04 03 59
Sk iP 04 04 16
Gb i(P) 04 04 13
Un iP 04 03 52
Northern India (h = 110 km).

" 9 Up iP 09 42 38 C
i 09 42 42
i 09 42 53
iPP 09 43 11
iS 09 47 51
iSS 09 48 06

1961
June 9 Up microns sec
cont. S N 0.2 1
M E 0.5 19
M Z 1.0 21
D = 3100 km = 28°.
Ki iP 09 43 12 D
i 09 43 27
iPP 09 44 02
i 09 49 21
i 09 49 35
i(SS) 09 49 43
microns sec
P Z' 0.1 0.7
M E 0.3 10
M N 0.2 12
M Z 0.3 9
D = 3450 km = 31°.
Sk iP 09 43 38 C
Gb iP 09 42 55 C
i 09 43 10
i 09 48 33
Un iP 09 42 50 D
i 09 43 00
i 09 43 15
iPP 09 43 29
i 09 48 34
Caspian Sea (h = 15 km).

" 9 Up iP 14 34 44 D
microns sec
P Z' 0.1 0.5
Ki iP 14 34 12 D
microns sec
P Z' 0.1 0.77
Sk iP 14 34 40
Gb iP 14 35 02
Un iP 14 34 26 D
South of Honshu, Japan
(h = 470 km).

" 9 Up iP 14 45 45
Local? Seismic?

" 9 Up iP 15 21 20
Local? Seismic?

" 9 Up iP 15 29 51
i 15 30 06
Ki iP 15 29 52
i 15 32 17
Sk iP 15 30 07
Un iP 15 29 49 D
i 15 30 05
Near coast of Sumatra
(h = 100 km).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
June 9 Up iP 15 54 48 D
i 15 54 58
Ki iP 15 54 14 D
Um iP 15 54 29 D
South of Honshu, Japan
(h = 170 km).

" 9 Um iP 18 53 23

" 10 Ki iP 06 09 55

" 10 Up iP 08 24 27
Ki iP 08 23 33

" 10 Ki eP 09 04 35

" 10 Ki e 09 17 32
e(PcPPKP) 09 23 01

		microns	sec
(PcPPKP)	E	0.3	12
M	E	0.5	17
M	N	0.4	18
M	Z	0.8	18

Banda Sea (h = 80 km).

" 10 Up iP 11 43 16 C
Ki iP 11 42 23
Andreanof Islands,
Aleutian Islands (h = 30 km).

" 10 Up i(P) 14 38 35

" 10 Up i(P) 14 41 58

" 10 Up ePP 20 53 14
iSKKKS 21 10 41

		microns	sec
M	E	0.7	16
M	N	1.5	17
M	Z	1.2	16

Ki iPKP 20 50 58
iPP 20 52 56
ePPP 20 56 04
ePSP
or SPP 21 04 22

		microns	sec
PP	E	0.2	7
PP	N	0.2	8
PP	Z	0.8	7
M	E	2.9	22
M	N	2.2	22
M	Z	3.7	17

1961
June 10 cont. Ki D = 14250 km = 128°½.
Easter Island region
(h = 50 km).
Magn. = 6.2 (Up, Ki).

" 11 Up iP 04 13 21 D
Ki iP 04 12 29 D
Sk iP 04 12 58
Gb iP 04 13 41
Um iP 04 12 54 D
Kamchatka (h = 25 km).

" 11 Up iP 05 18 04 C
i 05 18 07
iPP 05 19 43
iS 05 24 20
iSS 05 27 22

		microns	sec
P	E	2.8	5
P	N	2.6	6
P	Z	4.7	5
P	Z'	0.6	0.5
PP	E	3.2	4
PP	N	2.9	4
PP	Z	3.2	4
S	E	12	10
S	N	8.9	9
S	Z	5.0	8
M	E	54	20
M	N	100	32
M	Z	72	26

D = 4550 km = 41°.

Ki iP 05 18 39 C
i 05 18 42
iPP 05 20 32
iPPP 05 21 12
iS 05 25 23
iSS 05 28 41

		microns	sec
P	E	2.7	5
P	N	3.2	6
P	Z	6.1	5
P	Z'	2.5	1.0
PP	E	6.0	4
PP	N	5.2	5
S	E	10	7
S	Z	5.3	8
M	E	28	12
M	N	38	15
M	Z	48	16

D = 5000 km = 45°.

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Un = Umeå

1961 June cont.	11	Sk	iP	05 18 39	
		Gb	iP	05 18 06	
		Un	iP	05 18 15	C
			iPP	05 19 53	
		Southern Iran (h = 40 km).			
		Magn. = 7.0 (Up, Ki).			
"	11	Up	iP	05 32 39	
		Ki	iP	05 32 11	
"	11	Up	iP	05 37 51	C
			microns sec		
			P Z'	0.1 0.5	
		Ki	iP	05 38 25	C
			i	05 39 02	
		Sk	iP	05 38 25	
		Gb	iP	05 38 02	
		Un	iP	05 38 01	
		Southern Iran (h = 25 km).			
"	11	Up	iP	05 49 46	
		Ki	iP	05 50 20	D
"	11	Up	iP	06 03 33	C
			i	06 03 43	
			microns sec		
			P Z'	0.1 0.5	
		Ki	iP	06 02 40	C
		Sk	iP	06 03 08	
		Gb	iP	06 03 53	C
		Un	iP	06 03 03	C
		Near south coast of Kamchatka (h = 20 km).			
"	11	Up	iP	06 18 21	
		Ki	iP	06 18 55	
		(Iran).			
"	11	Up	i(P)	06 27 07	C
			i	06 27 48	
			i(P)	06 27 54	
		Ki	iP	06 27 41	C
			i	06 28 28	
		Gb	i(P)	06 28 06	
		Un	eP	06 28 02	
"	11	Up	iP	06 [illegible]	
		Ki	iP	06 40 14	D
		Gb	i(P)	06 39 00	
"	11	Up	iP	06 47 06	
		Ki	iP	06 47 41	
		(Iran).			

1961 June	11	Up	iP	06 54 27	
			i	06 54 44	
		Ki	iP	06 55 02	
		Sk	eP	06 55 20	
		Gb	iP	06 54 39	
		Un	iP	06 54 37	
			iPP	06 56 16	
		Iran (h = 25 km).			
"	11	Up	iP	06 59 07	
		Ki	iP	06 59 42	
		Sk	iP	06 59 41	
		Gb	iP	06 59 15	
		Un	iP	06 59 17	
			iPP	07 00 51	
		Southern Iran (h = 40 km).			
"	11	Up	iP	07 46 35	
			microns sec		
			M E	1.2	19
			M N	1.2	20
			M Z	1.1	18
		(Iran).			
"	11	Up	iP	08 11 48	
		Ki	iP	08 12 22	
		Iran (h = 25 km).			
"	11	Ki	iP	09 29 52	
			microns sec		
			M N	0.2	14
		Sk	iP	09 29 54	
		Un	iP	09 29 27	
		Iran (h = 20 km).			
"	11	Ki	iP	10 08 49	
"	11	Up	iP	10 10 44	
		Ki	iP	10 11 19	C
		Un	iP	10 10 57	
		(Iran).			
"	11	Up	iP	11 31 47	
			i	11 31 56	
		Ki	iP	11 32 22	
			microns sec		
			M E	0.5	14
			M N	0.3	17
		Sk	iP	11 32 26	
		Un	iPP	11 33 37	
		Iran (h = 30 km).			

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
June 11 Up iP 12 38 01 D
Ki iP 12 38 36 D
microns sec
P Z' 0.1 1.0
Sk iP 12 38 36
i 12 38 58
Gb iP 12 38 12
Um iP 12 38 15
Iran (h = 60 km).

" 11 Up iP 12 39 05 C
iPP 12 40 41
iS 12 45 14
microns sec
P E 0.2 2
P N 0.1 3
P Z 0.4 2
P Z' 0.1 0.5
PP E 0.4 4
PP N 0.4 4
PP Z 0.5 4
S E 0.9 5
S N 0.6 5
M E 3.6 19
M N 2.9 18
M Z 2.7 19
D = 4550 km = 41°.
Ki iP 12 39 41 C
iPP 12 41 31
iS 12 46 16
microns sec
P E 0.9 3
P N 0.8 4
P Z 1.0 4
P Z' 0.4 1.0
PP E 0.1 4
PP N 1.1 4
PP Z 0.8 4
S E 1.2 6
S N 0.8 5
M E 3.9 14
M N 3.7 20
M Z 4.3 13
D = 5000 km = 45°.
Sk iP 12 39 40 C
Gb iP 12 39 17
Um iP 12 39 19
i 12 40 58
Iran (h = 40 km).
Magn. = 6.2 (Up, Ki).

" 11 Up iP 12 50 23
Ki iP 12 50 59
Iran (h = 60 km).

1961
June 11 Up iP 14 05 38 6
i 14 06 04
microns sec
P Z' 0.4 1.0
M E 1.1 20
M N 0.5 16
M Z 0.9 18
Ki iP 14 06 13 C
iPP 14 08 01
iS 14 13 09
iSS 14 16 10
iSeS 14 16 26
microns sec
P Z' 0.7 1.2
S N 0.5 3
M E 0.8 16
M N 1.0 16
M Z 1.1 16
D = 5050 km = 45 1/2°.
Sk iP 14 06 12
Gb iP 14 05 49
i 14 10 02
Um iP 14 05 52
iPP 14 07 29
Southern Iran (h = 60 km).

" 11 Up iPKP 15 06 39
Gb iPKP 15 06 49
Kermadec Islands region
(h = 600 km).

" 11 Up iP 15 13 56
Ki iP 15 14 28
Sk iP 15 14 30
Um e(P) 15 14 21
Southern Iran (h = 60 km).

" 11 Up iP 17 09 36
i 17 09 54
Ki iP 17 11 02
i 17 11 26
Gb iP 17 09 38 C
Um iP 17 10 17

" 11 Um e(P) 17 15 03
Seismic?

" 11 Up iP 17 26 07
eS 17 34 48
microns sec
P Z' 0.1 0.7
M E 0.6 16
M N 3.6 21
M Z 0.8 17
D = 7150 km = 64 1/2°.

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
June 11 cont. Ki iP 17 25 56
eS 17 34 31
microns sec
M E 1.1 16
M N 2.3 17
M Z 1.0 15
D = 7000 km = 63°.
Sk iP 17 26 22
Gb iP 17 26 28
Um iP 17 25 58 D
Burma (h = 40 km).

" 11 Up iP 20 41 03
Ki iP 20 41 31

" 11 Up iP 20 53 30 C
microns sec
P Z' 0.1 0.9
Ki iP 20 52 38 C
microns sec
P Z' 0.1 0.9
Sk iP 20 53 15
Gb iP 20 53 50
Um iP 20 53 03
Near south coast of Kamchatka (h = 40 km).

" 11 Ki iP 22 13 14
Um iP 22 12 58
Volcano Islands region (h = 100 km).

" 11 Up iP 23 20 46
Ki iP 23 21 21
Sk iP 23 21 20
Gb iP 23 20 58
Um iP 23 20 59
i 23 22 24
Iran (h = 25 km).

" 12 Up eL 00 55
microns sec
M E 0.4 19
M N 0.3 16
M Z 0.6 18
Ki eL 00 55
microns sec
M E 0.5 19
M N 0.3 15
M Z 0.5 17

" 12 Up iP 03 59 38
Ki iP 04 00 13

1961
June 12 Ki iPKP 07 55 20
iPKP 07 55 37
Um iPKP^2 07 55 26
iPKP$_2$ 07 55 44
Southwest of South Island, New Zealand (h = 30 km).

" 12 Up iP 10 09 31 C
i 10 09 35
microns sec
P Z' 0.2 0.9
M E 0.7 15
M N 0.5 16
M Z' 0.8 13
Ki iP 10 09 18 C
microns sec
P Z' 0.2 1.0
M E 1.1 14
M N 1.8 20
M Z 1.2 13
Sk iP 10 09 42 C
Gb iP 10 09 51
Um iP 10 09 20 C
i 10 09 31
North Viet-Nam (h = 60 km).

" 12 Ki iP 10 49 33
Um iP 10 49 56
Kamchatka (h = 60 km).

" 12 Ki iP 11 31 50

" 12 Gb iP 12 37 55

" 12 Ki iP 14 03 46

" 12 Up iP 17 12 46
Ki iP 17 13 18
Sk eP 17 13 19
Um iP 17 13 00
Iran (h = 50 km).

" 12 Ki iP 19 31 46

" 12 Up iP 21 10 19
Ki iP 21 10 54
Sk iP 21 10 54
Iran (h = 60 km).

" 12 Up iP 21 56 05
i 21 56 13
Ki iP 21 56 46
Sk iP 21 56 46

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 June cont.	12	Gb	iP	21 56 18	
		Um	eP	21 56 28	
		Iran (h = 40 km).			
"	13	Up	iP	02 35 23	
		Ki	iP	02 34 31	
			i	02 34 43	
		Andreanof Islands, Aleutian Islands, (h = 60 km).			
"	13	Um	iP	07 28 59	
		South Atlantic Ocean (h = 40 km).			
"	13	Up	iPKP	13 35 59	
		Kermadec Islands (h = 260 km).			
"	13	Up	iP	15 27 13	
		Ki	iP	15 26 27	
		Gb	iP	15 27 33	
		Kurile Islands (h = 40 km).			
"	13	Up	iPKP	21 57 02	
			i	21 57 09	
			i	21 57 46	
			iPP	21 59 54	
			iPKS	22 00 36	
			iPKS	22 00 46	
			i	22 01 28	
				microns sec	
			PKP Z'	0.1 0.5	
			PKS E	0.1 2	
			PKS N	0.2 2	
			D = 15550 km = 140°.		
		Ki	iPKP	21 56 42	
			i	21 56 55	
			iPP	21 59 17	
			iPKS	22 00 11	
			iPKS	22 00 22	
			e	22 07 08	
				microns sec	
			PP Z	0.3 6	
			PKS E	0.4 5	
			PKS N	0.3 6	
			PKS Z	0.8 5	
			PKS Z'	0.4 1.4	
			M E	0.3 18	
			M N	0.2 15	
			D = 14650 km = 132°.		
		Sk	iPKP	21 56 56	
			i	21 57 05	
			i	21 57 47	

1961 June cont.	13	Sk	iPP	21 59 47	
			iPKS	22 00 27	
		Gb	iPKP	21 57 12	
			i	21 57 55	
			iPKS	22 00 42	
		Um	iPKP	21 56 51	
			i	21 56 59	
			i	21 57 45	
			iPKS	22 00 23	
		Tonga Islands region (h = 150 km).			
"	14	Up	iP	00 32 05	C
		Ki	iP	00 32 39	
		Sk	iP	00 32 40	
		Gb	iP	00 32 16	
		Um	iP	00 32 19	
			iPP	00 33 58	
		Iran (h = 60 km).			
"	14	Up	iP	00 51 32	C
			i	00 51 38	
			eS	00 59 52	
				microns sec	
			P Z'	0.2 0.5	
			M E	0.4 20	
			M N	0.4 13	
			D = 6900 km = 62°.		
		Ki	iP	00 51 26	
			i(pP)	00 51 46	
			iS	00 59 42	
				microns sec	
			P Z'	0.1 0.7	
			S E	0.6 7	
			M E	0.6 16	
			M N	0.8 20	
			M Z	0.7 16	
			D = 6850 km = 61½°.		
		Sk	iP	00 51 49	C
			i	00 51 55	
			i(pP)	00 52 10	
			i	00 52 20	
		Gb	iP	00 51 53	
		Um	iP	00 51 27	
			i(pP)	00 51 48	
		Northern Burma (h = 50 km). (pP) could be P of a second shock.			
"	14	Up	iP	08 16 54	
			i	08 16 55	
		Local? Seismic?			

Up = Uppsala, Ki = Kiruna, Sk = Skallstugan, Gb = Göteborg, Un = Uneå

1961
June 14 Sk iP 08 21 35

" 14 Up iP 09 11 16
Ki iP 09 11 50
microns sec
M E 0.2 15
M N 0.2 14
M Z 0.4 15
Sk iP 09 11 50
Un eP 09 11 35
Iran (h = 60 km).

" 14 Up iP 09 19 42
Ki iP 09 19 20
Gb i 09 20 26
Un iP 09 19 30
Off north coast of
Luzon, P.I. (h = 25 km).

" 14 Ki iP 09 43 56
Sk i(P) 09 43 55
Un i(P) 09 43 36

" 14 Up i(P) 13 03 46
Local? Seismic?

" 14 Up iP 15 54 30 C
microns sec
P Z' 0.1 0.5
Local? Seismic?

" 14 Up iP 20 41 29 D
eS 20 48 58
microns sec
P E 0.2 5
P N 0.2 4
P Z 0.5 4
S E 0.3 7
S N 0.5 6
M E 0.8 18
M N 1.0 17
M Z 0.7 14
D = 5700 km = 51 1/2°.
Ki iP 20 42 17 D
iS 20 50 25
i(SePPcS) 20 57 47
microns sec
P N 0.3 6
P Z 0.6 5
S E 0.3 5
S N 0.3 8
M E 1.2 15
M N 0.7 15

1961
June 14 Ki M Z 1.2 15
cont. D = 6450 km = 58°.
Sk iP 20 42 01 D
Gb eP 20 41 27
Un iP 20 41 52 D
Ethiopia (h = 60 km).
Magn. = 5.7 (Up, Ki).

" 15 Up iP 00 01 23

" 15 Up iP 00 01 50
Ki iP 00 00 56
Fox Islands, Aleutian
Islands (h = 100 km).

" 15 Ki i(P) 01 09 55

" 15 Up eL 01 39
microns sec
M E 0.6 17
M N 0.4 19
M Z 0.6 18
Ki eL 01 41
microns sec
M E 0.2 16
M N 0.2 15
M Z 0.4 15
Venezuela (h = 200 km).

" 15 Up eP 04 36 22

" 15 Up iP 06 29 15 D
i 06 29 18
Ki iP 06 29 49
eSS 06 39 37
microns sec
M E 0.4 13
M N 0.2 13
M Z 0.5 13
Sk iP 06 29 48
Gb iP 06 29 31
Un iP 06 29 33
iPP 06 31 12
Southern Iran (h = 110 km).

" 15 Up iP 09 14 02
microns sec
P Z' 0.1 0.5
Local? Seismic?

" 15 Ki iP 20 05 03

" 15 Ki iP 20 57 12

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
June 15 cont.

	Ki		microns	sec
		M	E 0.2	11
		M	Z 0.4	11
	Sk	iP	20 57 31	
		iPP	20 59 02	
	Um	iP	20 57 01	

Tadzhik, U.S.S.R.
(h = 50 km).

" 15	Up	iP	22 36 28	
	Ki	iP	22 35 35	
	Sk	iP	22 36 13	
	Gb	iP	22 36 48	
	Um	iP	22 36 01	D

Near south coast of
Kamchatka (h = 25 km).

" 15	Up	iP	22 50 16	
	Ki	iP	22 49 31	
	Um	iP	22 49 51	

Off east coast of Honshu,
Japan (h = 80 km).

" 15	Up	iP	23 35 40	C
		ipP	23 35 50	
		iPPS	23 45 25	
		iScS	23 45 52	
			microns	sec
		P	Z' 0.1	0.5
		M	E 1.4	21
		M	N 2.0	20
		M	Z 1.9	20
	Ki	iP	23 34 53	
		i	23 35 11	
		eS	23 43 06	
			microns	sec
		P	Z' 0.2	1.0
		M	E 1.8	16
		M	N 1.6	21
		M	Z 3.1	19

D = 6750 km = 61°.

	Sk	iP	23 35 29	
	Gb	iP	23 36 01	
	Um	iP	23 35 15	C
		i	23 35 50	

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

" 16	Ki	iP	06 44 49	
	Sk	iP	06 45 02	
	Um	iP	06 44 59	

Andreanof Islands,
Aleutian Islands (h = 25 km).

1961
June 16

	Up	iPP	07 28 53	
			microns	sec
		M	E 0.8	20
		M	N 0.7	18
		M	Z 1.0	21
	Ki	iPKP	07 27 26	
		iPKS	07 30 50	
		ePKKP	07 37 47	
		eSS	07 47 07	
			microns	sec
		PKS	0.5	5
		M	E 0.7	20
		M	N 0.3	19
		M	Z 0.3	20

D = 14350 km = 129°½.
Off coast of southern Chile
(h = 15 km).

" 16	Up	iP	07 44 15	
" 16	Ki	iP	08 53 46	

Iran (h = 25 km).

" 16	Gb	i(P)	10 27 52	
" 16	Up	iP	10 44 13	D
		ipP	10 44 43	
		i	10 44 54	
		iS	10 54 20	
		iPS	10 55 10	
			microns	sec
		P	E 0.4	2
		P	N 0.2	2
		P	Z 1.3	2
		P	Z' 0.8	0.7
		S	E 0.5	3
		S	N 1.3	3

D = 9400 km = 84°½.

	Ki	iP	10 44 15	D
		ipP	10 44 42	
		iS	10 54 25	
		iPS	10 55 15	
			microns	sec
		P	E 0.7	5
		P	N 0.3	4
		P	Z 2.3	5
		P	Z' 1.1	0.7
		S	E 0.7	5
		S	N 1.6	10
		M	E 0.3	15
		M	N 0.2	16
		M	Z 0.4	15

D = 9450 = 85°.

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961

June cont. 16 Sk iP 10 43 59 D
ipP 10 44 28
Gb iP 10 43 58 D
ipP 10 44 27
Um iP 10 44 18 D
ipP 10 44 47
i 10 45 02
Northern Colombia (h = 120 km).
Magn. = 6.7 (Up, Ki).

" 16 Sk iP 14 47 41

" 16 Up i(PP) 15 05 51
Ki iP 15 06 21
Sk iP 15 05 53
Crete (h = 120 km).

" 17 Up iP 08 13 31
i 08 13 45
Ki iP 08 14 06
eSS 08 23 51
iSSS 08 24 08

		microns	sec
M	E	1.0	15
M	N	0.3	11
M	Z	1.6	15

Sk iP 08 14 06
Gb eP 08 13 49
Um iP 08 13 42
i 08 13 51
i 08 15 37
Southern Iran (h = 25 km).

" 17 Sk iP 09 50 33

" 17 Up iPKP 09 53 25
i 09 53 28
Sk iPKP 09 53 18
Kermadec Islands (h = 250 km).

" 17 Up eL 11 45

		microns	sec
M	E	0.6	20
M	Z	0.7	21

Ki eL 11 47

		microns	sec
M	E	0.6	18
M	N	0.4	18
M	Z	1.0	20

Peru (h = 25 km).

1961

June 17 Ki iP 14 45 15
Mindanao, Philippine Islands (h = 25 km).

" 17 Up iP 15 20 12
eS 15 30 29

		microns	sec
M	E	2.5	19
M	N	2.5	19
M	Z	2.9	18

Ki iP 15 20 02
iS 15 30 20

		microns	sec
P	Z	0.8	4
S	E	1.8	14
S	N	0.3	14
M	E	2.7	15
M	N	2.1	18
M	Z	4.0	14

D = 9600 km = 86°½.
Sk iP 15 19 55
Gb iP 15 20 04
Um iP 15 20 12
Mexico-Guatemala border (h = 150 km).

" 17 Up iP 15 38 28
Ki iP 15 38 08
Gb i(P) 15 38 31
Central New Guinea (h = 140 km).
x)

" 17 Ki iSKP 22 10 02
Um iSKP 22 10 13
Fiji Islands region (h = 630 km).

" 18 Up iP 03 25 09
iPP 03 29 04
i 03 29 17
Ki iP 03 25 01
iSKS 03 34 41
Sk iP 03 25 19
iPP 03 29 35
Java Sea (h = 640 km).

" 18 Um iP 06 30 35

" 18 Up iP 06 34 48 C
Ki iP 06 34 45
Tibet (h = 50 km).

x) June 17 Ki e(P) 18 52 26, Sk iP 18 52 11, Um iP 18 52 28, Near coast of Guatemala (h = 110 km).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 June 18 Up iP 10 17 50
Ki iP 10 18 25
Iran (h = 20 km).

" 18 Up iP 10 59 45
Ki iP 11 00 19
Iran (h = 25 km).

" 18 Up iPKP 14 14 16
i 14 14 23
i 14 14 37
microns sec
PKP Z' 0.6 0.5
D = 16500 km = 148°½.
Ki iPKP 14 13 54
i 14 13 59
D = 15650 km = 141°.
Sk iPKP 14 14 11
iPKS 14 17 32
Gb iPKP 14 14 25 D
i 14 14 37
Um iPKP 14 14 06
i 14 14 20
i 14 14 40
Kermadec Islands region
(h = 430 km).

" 18 Ki iP 14 59 47

" 18 Um iP 19 12 49
i 19 14 54

" 18 Up i(P) 22 31 17

" 19 Up iP 01 58 02 D
i 01 58 08
microns sec
P Z' 0.2 1.0
M E 2.1 20
M N 3.7 17
M Z 2.2 17
Ki iP 01 57 45 D
iS 02 08 01
microns sec
P Z' 0.5 1.0
S N 0.9 9
M E 3.4 18
M N 2.1 18
M Z' 3.7 17
D = 9400 km = 84°½.
Sk iP 01 58 08
Um iP 01 57 52
Luzon, Philippine Islands
(h = 120 km).

1961 June 19 Up iP 02 35 31
Ki iP 02 35 14
Um iP 02 35 21
Near south coast of Luzon,
P.I. (h = 20 km).

" 19 Up iP 02 57 17 D
Ki iP 02 56 45
microns sec
M E 2.6 20
M N 0.9 15
M Z 3.7 17
Um iP 02 56 57 D
i 02 57 06
Off east coast of Honshu,
Japan (h = 90 km).

" 19 Up iP 03 03 37
Ki iP 03 03 20
Um iP 03 03 28 C

" 19 Gb i(P) 06 16 14

" 19 Up iP 07 49 44
microns sec
P Z' 0.1 0.8
Ki iP 07 49 03
i 07 49 14
iPP 07 51 24
microns sec
M E 4.1 19
M N 2.2 20
M Z 4.3 15
D = 8200 km = 65°.
Gb iP 07 50 20
Um iP 07 49 21
Off east coast of Honshu,
Japan (h = 100 km).

" 19 Ki iP 08 10 16
Um iP 08 10 35
Near east coast of Honshu,
Japan (h = 25 km).

" 19 Um iP 13 06 37

" 19 Up iP 15 05 21
microns sec
P Z' 0.1 0.5
Local? Seismic?

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 June	19	Up	iPg		15 19 11	
			iSg		15 19 15	
				microns	sec	
			Sg	Z' 0.2	0.5	
			D = 33 km = 0.3°.			
"	19	Um	e(P)		15 44 16	
"	19	Up	iP		17 12 01	C
			i		17 12 11	
			ipP		17 12 44	
			iPP		17 13 45	
			i		17 14 36	
			iS		17 17 58	
			iSS		17 20 48	
				microns	sec	
			P	E 0.6	2	
			P	Z 0.8	1	
			P	Z' 0.3	0.5	
			PP	E 1.0	3	
			S	N 0.8	3	
			D = 4550 km = 41°.			
		Ki	iP		17 12 11	C
			i		17 12 20	
			ipP		17 12 52	
				microns	sec	
			P	Z' 0.6	1.0	
		Sk	iP		17 12 26	
			iS		17 18 34	
		Gb	iP		17 12 22	C
			ipP		17 13 05	
			iPP		17 14 09	
		Um	iP		17 12 01	C
			ipP		17 12 44	
			Hindu Kush (h = 150 km).			
			Magn. = 6.7 (Up, Ki).			
"	19	Ki	iP		17 28 03	
"	19	Up	iP		22 27 41	
		Ki	iP		22 26 46	
		Sk	iP		22 27 23	
		Gb	iP		22 28 01	
			Kamchatka (h = 25 km).			
" 20	19	Up	iP		03 30 39	
			i		03 30 41	
				microns	sec	
			M	E 1.3	17	
			M	N 4.0	19	
			M	Z 1.6	20	
		Ki	iP		03 31 23	

1961 June cont.	19 20	Ki	i		03 31 27	
				microns	sec	
			M	E 2.7	17	
			M	N 2.6	17	
			M	Z 2.6	14	
			Gulf of Aden (h = 30 km).			
"	20	Ki	i(P)		06 36 07	
"	20	Up	i(P)		12 26 22	
				microns	sec	
			(P)	Z' 0.1	0.5	
			Seismic?			
"	20	Um	iP		13 12 49	
			Local? Seismic?			
"	20	Um	iP		13 15 37	
			i		13 15 54	
"	20	Um	iP		13 43 29	
			Local? Seismic?			
"	20	Up	iP		15 48 08	
			Local? Seismic?			
"	20	Um	iP		21 34 10	
			Near north coast of Honduras (h = 140 km).			
"	20	Ki	i(P)		21 54 27	
"	21	Up	iP		02 55 25	
		Ki	iP		02 54 57	
			Mariana Islands region (h = 80 km).			
"	21	Up	iP		04 10 06	
		Ki	iP		04 09 58	
		Sk	iP		04 09 49	
		Um	iP		04 10 04	
			Northwestern Honduras (h = 110 km).			
"	21	Up	iP		06 47 02	C
			iPP		06 48 34	
				microns	sec	
			P	Z' 0.1	0.5	
			D = 4550 km = 41°.			
		Ki	iP		06 47 36	C
			iPP		06 49 16	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
June 21 cont.

Ki microns sec
P Z' 0.2 1.0
M E 0.9 13
M N 0.7 13
M Z 1.6 14
D = 5050 km = 45°½.

Sk iP 06 47 36 C
i 06 47 40
Gb iP 06 47 13 C
Um iP 06 47 12 C
i 06 47 16
iPP 06 48 50
Iran (h = 50 km).

" 21 Ki iPP 09 19 16
Near north coast of Mindanao, P.I. (h = 620 km).

" 21 Up i(P) 11 04 13
Local?

" 21 Ki i(P) 11 16 25

" 21 Ki i(P) 13 28 39

" 21 Up iP 14 18 07

" 21 Up iP 16 09 52
iS 16 14 01
microns sec
S E 0.2 6
M E 5.3 17
M N 4.3 11
M Z 3.9 11
D = 2600 km = 23°½.

Ki iP 16 10 57
microns sec
M E 4.5 10
M N 2.0 11
M Z 2.6 10
Sk iP 16 10 32
Um iP 16 10 19
Western Turkey.

" 21 Up iP 19 22 14
i 19 22 18
Ki iP 19 22 49
Sk iP 19 22 49
Um iP 19 22 24
Iran (h = 80 km).

" 21 Up iP 20 38 22 D

1961
June 21 cont.

Up iSKS 20 48 47
iS 20 49 14
microns sec
P Z' 0.1 0.5
S E 0.4 4
SKS E 0.4 3
SKS N 0.2 4
M E 0.7 16
M N 1.0 19
M Z 1.3 17
D = 10900 km = 98°.

Ki iP 20 38 17
microns sec
P Z' 0.1 0.7
M E 0.8 15
M N 0.6 16
M Z 1.5 17
Sk iP 20 38 33
Um iP 20 38 15
Near north coast of Java (h = 160 km).

" 21 Up iP 20 40 34
i 20 40 47
microns sec
P Z' 0.1 0.8
Ki iP 20 39 42
Gb iP 20 40 53
Um iP 20 40 05

" 22 Up iP 01 00 07 C
microns sec
P N 0.1 2
M E 1.8 11
M N 5.0 12
M Z 1.9 11
Ki iP 01 01 30
i 01 01 42
microns sec
M E 4.6 13
M N 3.0 11
M Z 3.6 10
Sk iP 01 00 52 C
i 01 01 42
Gb iP 00 59 54
Um iP 01 00 50
i 01 01 01
Northern Albania-Yugoslavia border (h = 50 km).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Uneå

1961
June 22 Up iP 15 35 49 C
Local? Seismic?

" 22 Up iP 15 42 01
microns sec
P Z' 0.1 0.5
Sk iP 15 42 24

" 23 Up iP 09 07 24
iS 09 16 51
microns sec
S E 1.6 9
S N 0.9 9
M E 3.4 26
M N 1.3 19
M Z 2.6 20
D = 8200 km = 74°.
Ki iP 09 06 40
iS 09 15 30
microns sec
P Z 0.3 5
S E 2.1 10
S N 1.0 9
M E 2.5 19
M N 2.2 19
M Z 3.9 18
D = 8450 km = 67°.
Sk iP 09 07 02
Um iP 09 07 06
Off coast of Oregon
(h = 60 km).
Magn. = 6.5 (Up, Ki).

" 23 Up iP 09 34 14
Ki iP 09 33 32
Sk eP 09 33 46
Um iP 09 33 50
Off coast of Oregon
(h = 50 km).

" 23 Up iP 10 18 12
Ki iP 10 17 44
Sk iP 10 18 09
Mariana Islands
(h = 260 km).

" 23 Up iP 11 16 23
Ki iP 11 15 46
Sk iP 11 16 19
Um iP 11 16 03
Honshu, Japan (h = 140 km).

" 23 Up iP 13 31 11 C
i 13 31 23

1961
June 23 Up microns sec
cont. P Z' 0.1 0.6
Ki iP 13 30 22
Sk iP 13 30 57
Um iP 13 30 45
Kurile Islands (h = 40 km).

" 23 Up iP 16 44 04
i 16 44 10
iS 16 50 12
microns sec
P Z' 0.1 0.7
M E 0.4 20
M N 0.5 18
D = 4550 km = 41°.
Ki iP 16 44 38
iPP 16 46 30
iS 16 51 16
iSS 16 54 33
microns sec
P Z' 0.1 0.9
S E 0.4 6
M E 0.6 16
M Z 0.6 13
D = 5050 km = 45½°.
Sk iP 16 44 38
Um iP 16 44 17
iPP 16 45 57
Iran (h = 50 km).
Magn. = 5.8 (Up, Ki).

" 24 Ki eL 05 52
microns sec
M E 0.4 18
M Z 0.6 15
Near coast of El Salvador
(h = 90 km).

" 24 Gb i(P) 09 46 00

" 24 Up iP 09 48 13
i 09 48 26
microns sec
M E 0.7 19
M Z 1.3 20
Ki iP 09 48 10
eS 09 58 18
microns sec
S N 0.2 9
M E 1.5 18
M N 1.1 21
M Z 0.9 14
Sk iP 09 48 22

Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Uneå

1961 June cont.	24	Um	iP	09 48 06	
		Sumatra (h = 190 km).			
"	24	Ki	iPn	10 40 58	
			iP	10 41 07	
			iSn	10 41 44	
			iSg	10 42 00	
			D = 410 km = 3.7°.		
		Sk	i	10 44 27	
			iSg	10 44 43	
			D = 960 km = 8.6°.		
		Um	iSg	10 43 15	
			D = 660 km = 5.9°.		
		Northwestern Russia, 68.2°N, 30.2°E. Origin time = 10 40 00. Probably explosion.			
"	24	Ki	iP	16 33 18	
		Near north coast of New Guinea (h = 210 km).			
"	24	Ki	iP	17 59 21	
"	24	Ki	iP	19 48 22	
		Ceram Sea (h = 20 km).			
"	25	Up	iP	02 40 43 C	
			i	02 40 49	
		Ki	iP	02 39 59	
		Sk	iP	02 40 34	
		Gb	iP	02 40 59	
		Um	iP	02 40 18	
		Near north coast of Honshu, Japan (h = 60 km).			
"	25	Ki	iP	10 22 01	
"	25	Ki	iP	12 48 33	
		Um	iP	12 48 14	
		Iran (h = 90 km).			
"	25	Ki	iP	16 33 32	
		Um	iP	16 33 42	
		Near north coast of Luzon, P.I. (h = 140 km).			
"	25	Up	iP	16 59 21	
			e	17 09 41	
			iS	17 10 06	
			i	17 10 47	
			microns	sec	
		M	E	1.1	17

1961 June cont.	25	Up	M	N 1.9	16
			M	Z 0.8	16
			D = 9700 km = 87°½.		
		Ki	iP	16 58 53	
			e	16 59 08	
			iS	17 09 01	
			microns	sec	
			S	E 0.5	10
			S	N 0.5	6
			M	E 4.1	19
			M	N 1.5	18
			M	Z 3.1	20
			D = 9050 km = 81°½.		
		Sk	iP	16 59 19	
		Um	iP	16 59 22	
		North of Marianna Islands (h = 15 Km).			
		Magn. = 6.0 (Up, Ki).			
"	25	Um	iP	19 25 15	
		Near east coast of Honshu, Japan (h = 25 km).			
"	25	Ki	i(P)	19 45 55	
"	26	Up	iP	03 02 02	
			i	03 02 14	
		Ki	iP	03 01 31	
		Sk	iP	03 01 45	
		Um	iP	03 01 41	
			i	03 01 47	
			i	03 01 56	
"	26	Up	eL	08 05	
			microns	sec	
			M	E 0.4	20
			M	N 0.7	23
			M	Z 0.7	21
		Loyalty Islands (h = 90 km).			
"	26	Ki	i(P)	11 02 38	
"	26	Up	iP	14 58 16 C	
			i	14 58 23	
			iS	15 07 06	
			iScS	15 08 08	
			microns	sec	
			P	N 0.2	1
			P	Z 0.3	1
			P	Z' 0.4	1.1
			S	E 0.4	3
			M	E 1.9	20

Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 June 26 cont.

	Up	M	N	3.4	19
		M	Z	3.6	22
		D = 7400 km = 66½°.			
	Ki	iP		14 57 23	C
		i		14 57 32	
		iS		15 05 24	
				microns	sec
		P	N	0.3	6
		P	Z	0.8	7
		P	Z'	0.3	1.0
		S	E	0.6	7
		S	N	0.3	7
		M	E	3.3	18
		M	N	3.4	18
		M	Z	4.4	18
		D = 6500 km = 58½°.			
	Sk	iP		14 57 56	C
		i		14 58 05	
		i		14 58 32	
	Gb	iP		14 58 34	C
	Um	iP		14 57 47	C
		i		14 57 56	

Near Islands, Aleutian Islands (h = 60 km).
Magn. = 6.2 (Up, Ki).

" 27	Up	iP		03 32 55	
	Ki	iP		03 32 12	
	Sk	iP		03 32 31	
	Gb	iP		03 33 09	
	Um	iP		03 32 32	

Unimak Island region (h = 90 km).

" 27	Up	iP		07 14 04	
		i		07 14 09	
		iS		07 22 31	
				microns	sec
		S	E	1.5	12
		S	N	2.9	13
		M	E	5.6	18
		M	N	23	28
		M	Z	9.1	19
		D = 6950 km = 62½°.			
	Ki	iS		07 22 00	
				microns	sec
		S	E	0.5	9
		M	E	5.4	15
		M	N	11	20
	Sk	iP		07 14 15	
		i		07 14 20	
		i		07 14 25	
	Gb	iP		07 14 26	
		i		07 14 31	

1961 June 27 cont.

	Um	iP		07 13 52	C
		i		07 13 56	
		i		07 14 09	

Yunan Province, China (h = 30 km).
Magn. = 6.2 (Up, Ki).

" 27	Up	iP		08 02 43	D
		i		08 02 49	
		i		08 03 04	
				microns	sec
		P	Z	1.0	8
		P	Z'	0.1	0.5
	Sk	iP		08 02 26	D
	Gb	iP		08 03 04	D
		i		08 03 34	
	Um	iP		08 02 13	
		i		08 03 04	

Kamchatka (h = 20 km).

" 27	Up	i(P)		10 56 30

Seismic?

" 27	Sk	iPKP		11 00 16

Kermadec Islands (h = 25 km)

" 27	Up	eL		11 13	
				microns	sec
		M	E	0.6	16
		M	N	0.4	19
		M	Z	0.7	15

" 27	Um	i(P)		11 48 56
" 27	Um	i(P)		14 14 18
" 27	Sk	iP		14 55 13
		i		14 55 22
" 27	Um	i(P)		14 59 41 D
" 27	Up	iP		22 06 25

Yunan Province, China (h = 40 km).

" 28	Sk	iP		00 35 04
" 28	Up	eP		00 43 43
" 28	Up	iP		04 32 12 C
		i		04 32 33
				microns sec
		P	Z'	0.1 0.7
	Sk	iP		04 32 21

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 June cont.	28	Um	iP		04 31 55	
		Szechwan Province, China (h = 40 km).				
"	28	Sk	iP		05 32 00	
			i		05 33 55	
"	28	Sk	iP		06 37 15	
"	28	Sk	iP		19 08 02	
			i		19 08 43	
			i		19 09 44	
"	28	Ki	eL		19 06	
				microns	sec	
			M	E 0.5	16	
"	29	Up	iPP		09 44 03	
			i		09 45 14	
				microns	sec	
			M	E 1.0	20	
			M	N 2.2	21	
			M	Z 1.9	20	
		Sk	iPKP		09 42 00	
		New Hebrides Islands (h = 40 km).				
"	29	Up	iP		14 13 35	
			iPcP		14 14 02	
		Sk	iP		14 13 13	
		Gb	eP		14 13 51	
			i		14 14 51	
		Andreanof Islands, Aleutian Islands (h = 80 km).				
"	29	Up	iP		18 12 23	
			i		18 12 37	
		Sk	iP		18 13 19	
		Gb	i(P)		18 12 33	
"	29	Up	iPP		22 08 16	
				microns	sec	
			M	E 1.3	22	
			M	N 0.8	16	
			M	Z 0.8	16	
		Ki	iP		22 06 18	
			iS		22 10 20	
				microns	sec	
			P	N 1.0	7	
			S	E 2.5	11	
			S	N 1.5	13	
		D = 2450 km = 22°.				

1961 June cont.	29	Sk	iP		22 07 04	
		Um	iP		22 07 02	
		Severnaya Zemlya region (h = 10 km).				
"	30	Up	iP		05 10 52	
			i		05 10 58	
		Sk	iP		05 11 32	
		Um	iP		05 11 27	
"	30	Up	eL		05 18	
				microns	sec	
			M	E 0.3	18	
		Tonga Islands (h = 170 km).				
"	30	Um	i(P)		05 52 00	
"	30	Up	iP		18 04 41	
		Seismic?				
"	30	Up	iP		19 05 12	
		Banda Sea (h = 180 km).				
"	30	Ki	i(P)		20 26 31	
		Um	i(P)		20 26 55	
"	30	Up	iP		20 47 46	
"	30	Ki	iP		20 59 00	
"	30	Ki	iP		21 21 47	

Seweryn Duda Markus Båth

July 18, 1962

1961 July.

Seismological Institute
Uppsala

PRELIMINARY

SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, SKALSTUGAN, GÖTEBORG and UMEÅ

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°49.0'N,	20°14.1'E;	h = 20 m

JULY 1 - 31, 1961

1961 July	1	Um	i(P)	00 15 30	
"	1	Up	iPn	01 33 12	
			iSn	01 34 26	
			iSg	01 34 58	
			D = 670 km = 6.0°.		
		Ki	ePn	01 33 31	
			eSn	01 34 52	
			D = 780 km = 7.0°.		
		Sk	iPn	01 33 43	
			iSg	01 36 05	
			D = 880 km = 7.9°.		
		Gb	e(Pn)	01 34 00	
			iSn	01 35 49	
			iSg	01 36 57	
			D = 1060 km = 9.5°.		
		Um	ePn	01 33 00	
			iS	01 34 11	
			iSg	01 34 18	
			D = 500 km = 4.5°.		
		Finland, 61.9°N, 29.1°E.			
		Origin time = 01 31 44.			
"	1	Up	iP	07 01 20	
		Seismic?			
"	1	Up	iP	07 33 40	
		Seismic?			
"	1	Up	iP	07 56 24	
		Seismic?			
"	1	Up	iP	08 07 23	
		Seismic?			

1961 July	1	Up	iP	08 12 04	
		Ki	iP	08 11 30	
		Sk	iP	08 11 59	
		Gb	iP	08 12 23	
		Bonin Islands (h = 180 km).			
"	1	Up	iP	08 43 54	
		Seismic?			
"	1	Up	iP	08 52 23	
		Seismic?			
"	1	Up	iP	10 33 24	
		Sk	iP	10 34 11	
		Greece.			
"	1	Ki	iP	11 53 52	
"	1	Up	iP	13 50 25	
"	1	Up	iP	23 54 41	
		Ki	iP	23 53 52	
			i	23 53 59	
				microns sec	
			P	Z' 0.1 1.2	
		Near Islands region, Aleutian Islands (h = 20 km).			
"	2	Up	iP	02 18 03 C	
		Ki	iP	02 17 20	
		Gb	iP	02 18 23	
		Hokkaido, Japan (h = 150 km).			

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 July 2 Up iP 07 02 54 C
Sk iP 07 03 33

" 2 Ki iPn 09 00 59
iSn 09 01 44
iSg 09 02 01
D = 410 km = 3.7 °
Sk i(Sg) 09 04 27
Northwest Russia, Origin time = 09 00 00.
Probably explosion.

" 2 Up iP 09 06 20 D
i 09 06 31
Ki iP 09 06 01 D
Sk iP 09 06 16 D

" 2 Up iP 10 23 01
Ki iP 10 22 33 D
microns sec
P Z' 0.1 0.9
Sk iP 10 22 58
Bonin Islands (h = 60 km).

" 2 Up iP 16 48 41
Ki eP 16 48 (58)

" 2 Gb iP 18 10 21 C
Near Islands region, Aleutian Islands (h = 50 km).

" 2 Gb iP 18 26 32

" 2 Ki i(P) 19 00 07 D
microns sec
(P) Z' 0.4 2.0

" 3 Ki iP 09 09 42
Sk iP 09 09 24 C

" 3 Ki iP 14 32 18
i 14 35 33

" 4 Up iP 02 32 52

" 4 Up iP 05 07 31 C
Ki iP 05 06 54
Sk iP 05 07 04
Western Nevada (h = 60 km).

" 4 Um i(P) 06 18 26

1961 July 4 Up iP 06 23 41 C
i 06 23 50
microns sec
P Z' 0.3 0.8
Ki iP 06 23 12 C
microns sec
P Z' 0.8 1.2
Sk iP 06 23 38
Gb iP 06 23 57
Um iP 06 23 26 C
Mariana Islands (h = 150 km).
Magn. = 6.5 (Up, Ki).

" 4 Up ePKP 12 26 26
Um iPKP 12 26 10 C
Kermadec Islands (h = 450 km).

" 5 Up iP 02 33 40
Ki iP 02 33 09
Sk eP 02 33 26
Ryukyu Islands (h = 100 km).

" 5 Up eL 03 46
microns sec
M E 0.5 18
M N 0.7 18
M Z 0.6 20
Southwest of Macquarie Island (h = 25 km).

" 5 Ki iP 05 13 51
Sk iP 05 13 28
Windward Islands (h = 90 km).

" 5 Up iP 05 58 19
i 05 58 23
microns sec
P Z' 0.1 0.7
Ki iP 05 58 05
Sk iP 05 58 30
Gb eP 05 58 37

" 5 Up iP 06 42 20
Ki iP 06 42 17
microns sec
P Z' 0.1 1.0
Sk iP 06 42 41 D
Sinkiang Province, China.

" 5 Ki iP 08 26 07
Sk iP 08 26 06

Up = U ppsala, Kl = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
July 5 Gb iP 13 41 20

" 5 Sk i(P) 15 18 33

" 6 Up iP 16 19 41
microns sec
P Z' 0.1 1.1
Sk iP 16 19 52
Gb iP 16 19 18
Ascension Island region
(h = 20 km).

" 6 Up iP 20 17 08

" 6 Up iPKP 22 28 34
i(PKP) 22 28 49
iPP 22 31 25
iPKS 22 32 16
iScPPKS 22 40 23
microns sec
PKP Z 0.5 3
PKP Z' 0.1 0.9
PP Z 0.4 3
PKS E 0.2 1.0
PKS N 1.0 3
PKS Z' 0.2 0.9
M E 18 22
M N 30 22
M Z 35 22
D = 15000 km = 135°.
Sk iPKP 22 28 36
i(PKP) 22 28 44
iPKS 22 32 11
iSKSP 22 41 00
Gb iPKP 22 28 46
i(PKP) 22 28 55
iPKS 22 32 27
iScPPKP 22 40 27
New Hebrides Islands
(h = 50 km). Magn. = 6.7 (Up).

" 7 Up iP 02 08 29

" 7 Up iP 08 15 54
i 08 16 02
Sk eP 08 15 41
i 08 15 48
Kurile Islands (h = 110 km).

" 7 Up iPP 13 30 28
i 13 39 29
microns sec
PP N 0.2 3

1961
July 7 cont. Up PP Z 0.9 7
M E 7.6 20
M N 12 24
M Z 14 21
D = 12800 km = 115°.
Sk iPKP 13 29 28
i 13 30 04
i(PP) 13 30 27
iPKKP 13 39 49
iPS 13 40 11
New Britain (h = 60 km).
Magn. = 6.7 (Up).

" 7 Up iP 15 04 34
Sk iP 15 04 30

" 7 Up iP 15 20 19
Gb iP 15 21 10

" 7 Up iP 15 38 43
Sk iP 15 38 27
Near east coast of
Kamchatka (h = 20 km).

" 7 Up iP 16 07 43

" 7 Up iP 17 12 30
microns sec
M E 0.3 17
M N 1.3 21
Sk iP 17 12 43
Burma-China border
(h = 25 km).

" 7 Up iP 18 26 05

" 7 Up iP 19 37 12
i 19 37 30
Sk iP 19 37 51

" 7 Up iP 20 09 22 D

" 7 Up iPKP 22 38 49
iPKS 22 42 18
microns sec
PKS N 0.2 4
M E 0.4 22
M N 0.9 22
M Z 0.7 21
Sk iPKP 22 38 44
Loyalty Islands region
(h = 90 km).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 July	7	Up	i(P)	23 44 06	
"	8	Up	iPKP	02 54 35	
			iPP	02 57 13	
			iPKS	02 58 07	
				microns	sec
			PKS E	0.5	10
			PKS N	0.8	10
			M E	2.1	20
			M N	2.6	21
			M Z	3.6	20
			D = 14650 km = 132°.		
		Sk	iPKP	02 54 33	
			i	02 54 45	
		Loyalty Islands (h = 50 km).			
		Magn.= 6.1 (Up).			
"	8	Sk	iPKP	03 44 38	
		Loyalty Islands (h = 25 km).			
"	8	Um	i(P)	04 04 41 D	
"	8	Um	i(P)	04 10 22 D	
"	8	Um	iP	04 31 42	
"	8	Ki	eP	07 54 34	
		Sk	iP	07 55 09	
			i	07 56 52	
		Um	iP	07 55 22	
			i	07 55 29	
"	8	Ki	iP	07 57 52	
		Sk	iP	07 58 30	
			i	08 00 16	
		Um	iP	07 58 45	
			i	07 58 56	
"	8	Ki	iP	08 02 57	
			i	08 03 20	
"	8	Up	iP	10 26 50	
		Sk	iP	10 27 33	
		Corfou Island.			
"	8	Um	iP	11 25 56	
"	8	Up	iPn	12 10 21	
			eSn	12 11 35	
			i	12 12 03	
			iSg	12 12 07	
			D = 670 km = 6.0°.		

1961 July cont.	8	Ki	iPn	12 10 40	
			e	12 12 08	
			iSx	12 12 22	
			D = 780 km = 7.0°.		
		Sk	iPn	12 10 53	
			eSg	12 13 11	
			i	12 13 19	
			D = 880 km = 7.9°.		
		Gb	ePn	12 11 08	
			iSn	12 12 58	
			D = 1060 km = 9.5°.		
		Um	e(Sg)	12 11 35	
			D = 500 km = 4.5°.		
		Finland, 61.9°N, 29.1°E.			
		Origin time = 12 08 50.			
"	8	Ki	eP	14 08 54	
		Sk	iP	14 09 40	
			i	14 11 19	
"	8	Ki	i(P)	14 35 38	
"	8	Up	iPKP	15 53 57	
			ePP	15 56 24	
			iPKS	15 57 25	
			i	15 57 39	
			i	16 03 07	
				microns	sec
			PKP Z	0.2	3
			PP Z	0.4	7
			PKS E	0.4	4
			PKS N	0.7	4
			M E	2.4	21
			M N	5.7	24
			M Z	4.7	22
			D = 14650 km = 132°.		
		Ki	iPKP	15 53 42	C
			ePP	15 55 25	
			e	15 55 42	
			iPKS	15 57 00	
				microns	sec
			PKP Z	0.3	7
			PKP Z'	0.2	1.5
			PP E	0.2	7
			PKS E	0.6	7
			PKS N	0.5	7
			M E	3.8	20
			M N	2.9	20
			M Z	6.2	21
			D = 13800 km = 124°.		
		Sk	iPKP	15 53 49	
			i	15 55 14	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 July 8 cont.	Sk	iPKS	15 57 21		
	Gb	iPKP	15 54 02		
		i(SKKS)	16 03 13		
	Um	iPKP	15 53 51		
		i	15 54 05		
		iPKS	15 57 14		
		iPKS	15 57 24		
		i(SKKS)	16 02 50		
	Loyalty Islands (h = 40 km).				
	Magn. = 6.2 (Up, Ki).				
" 8	Up	iPKS	21 36 52		
		i	21 36 55		
	Ki	iPKP	21 33 13		
	Sk	iPKP	21 33 24		
		iPKS	21 36 48		
	Um	ePKS	21 36 31		
	Loyalty Islands (h = 60 km).				
" 8	Up	e	22 09 01		
		ePKS	22 11 29		
			microns	sec	
		PKS	N 0.1	3	
		M	E 0.8	21	
		M	N 1.0	19	
		M	Z 1.0	21	
	Ki	iPKP	22 07 48		
		iPP	22 09 52		
		iPKS	22 11 10		
			microns	sec	
		PKS	E 0.2	7	
		PP	Z 0.4	8	
		M	E 0.8	19	
		M	N 0.7	19	
	Sk	iPKP	22 07 54		
	Um	ePKP	22 07 45		
		ePKS	22 11 20		
	Loyalty Islands region (h = 70 km).				
	Magn. = 5.8 (Up, Ki).				
" 8	Up	eL	22 50		
			microns	sec	
		M	E 0.4	22	
		M	N 1.1	21	
		M	Z 0.6	20	
	Tonga Islands region (h = 25 km).				
" 9	Ki	i(P)	00 18 38		
" 9	Sk	iP	05 09 36		
	British Honduras (h = 150 km).				

1961 July 9	Up	iP	06 45 14		
	Ki	iP	06 45 06		
	Sk	iP	06 44 55		
	Um	iP	06 45 11		
	Honduras (h = 170 km).				
" 9	Ki	eP	07 40 11		
" 9	Up	iP	08 13 22		
		iS	08 19 32		
			microns	sec	
		S	E 0.1	2	
		M	E 0.2	18	
		M	N 0.3	15	
		D = 4450 km = 40°.			
	Ki	iP	08 13 57	C	
		i	08 14 10		
		iS	08 20 37		
		iSSS	08 24 06		
			microns	sec	
		P	Z' 0.1	0.8	
		S	N 0.2	5	
		M	E 0.5	16	
		M	N 0.2	11	
		D = 4900 km = 44°.			
	Sk	iP	08 13 56		
		iPP	08 15 37		
		i	08 19 29		
	Gb	iP	08 13 42		
	Um	iP	08 13 34		
	Iran (h = 25 km).				
" 9	Sk	iP	14 03 13		
	Um	iP	14 03 31		
" 9	Um	iP	14 25 38		
" 9	Up	iP	16 56 58		
		i	16 57 13		
	Ki	iP	16 56 05		
	Sk	iP	16 56 41		
	Um	iP	16 56 30		
		i	16 56 45		
	Rat Islands, Aleutian Islands (h = 30 km).				
" 10	Up	eP	01 28 29		
" 10	Sk	iP	13 06 48		
	Off coast of Jalisco, Mexico (h = 20 km).				
" 10	Sk	iP	14 29 49		
	Campeche, Mexico (h = 60 km).				

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
July 10 Up iPKP 14 40 39
i 14 40 44
Ki iPKP 14 40 23
Sk iPKP 14 40 33 D
Um iPKP 14 40 27 D
Kermadec Islands region
(h = 330 km).

" 11 Up iPKP 06 05 06
Ki iPKP 06 04 47
Sk iPKP 06 04 58 D
Um iPKP 06 04 55
Kermadec Islands region
(h = 60 km).

" 11 Up iP 09 43 29
iS 09 52 50
iSP 09 53 04
microns sec
P E 0.2 4
P Z 0.5 3
S N 0.3 7
M E 4.8 20
M N 6.1 22
M Z 6.5 20
D = 8450 km = 77°.
Ki iP 09 43 30
i 09 53 15
microns sec
P E 0.8 4
P Z 1.3 4
P Z' 1.3 3
M E 4.8 17
M N 5.5 20
M Z 6.9 17
Sk iP 09 43 46
Gb iP 09 43 47
Um iP 09 43 26
Nicobar Islands region
(h = 160 km).
Magn. = 5.9 (Up, Ki).

" 11 Um i(P) 11 22 32

" 11 Ki iP 13 00 08 C
i 13 00 10
microns sec
P Z' 0.2 0.5

" 11 Up iP 13 59 00 D

" 11 Up iP 17 33 06
Sk iP 17 33 33
Northeastern India
(h = 25 km).

1961
July 11 Ki iP 18 18 13

" 12 Up iP 02 53 12 C
iPP 02 53 33
microns sec
P N 0.1 3
M E 0.9 14
M N 0.5 17
M Z 0.7 15
Ki iP 02 54 26
microns sec
M E 0.9 13
M N 0.3 12
Sk iP 02 53 56 C
Um iP 02 53 56
Northeastern Greece
(h = 130 km).

" 12 Ki iP 05 07 13 D
Sk iP 05 07 23
Um iP 05 07 54

" 12 Ki iSn 06 19 29
iSg 06 19 51
D = 500 km = 4.5°.
Sk eSg 06 22 27
D = 1020 km = 9.2°.
Northwest Russia, 67.7°N,
32.4°E. Origin time =
06 17 23.

" 12 Up iP 13 40 58
Ki iP 13 40 11 C
i 13 40 19
microns sec
P Z' 0.1 0.9
Sk iP 13 40 46
Gb iP 13 41 18
Um iP 13 40 34
Kurile Islands (h = 40 km).

" 12 Um eP 18 08 14

" 13 Up iP 02 23 26
Ki iP 02 22 55
Sk i(P) 02 23 23
Um iP 02 23 08
Volcano Islands region
(h = 400 km).

" 13 Up iP 09 36 35
i 09 36 40
Ki iP 09 37 09
i 09 37 26

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 July cont.	13	Sk	iP	09 37 09	
			i	09 37 21	
		Um	iP	09 36 48	D
			iPP	09 38 26	
		Iran (h = 60 km).			
"	13	Up	iP	21 56 29	
			i(PcP)	21 56 43	
			eS	22 06 14	
				microns sec	
			M E	1.7	22
			M N	4.0	23
			M Z	1.1	18
			D = 8650 km = 78°		
		Ki	iP	21 56 05	
			i(PcP)	21 56 21	
			eS	22 05 26	
			i	22 05 39	
				microns sec	
			P Z'	0.1	1.1
			S N	0.3	10
			M E	0.8	19
			M N	0.9	19
			M Z	1.4	15
			D = 8150 km = 73½°		
		Sk	iP	21 56 35	
			i	21 56 43	
		Um	iP	21 56 16	
			i(PcP)	21 56 31	
		Off east coast of Formosa (h = 100 km).			
"	13	Up	iPKP	22 28 40	
		Ki	iPKS	22 31 16	
		Um	iPKS	22 31 26	
		Kermadec Islands region (h = 530 km).			
"	13	Um	iP	23 52 37	D
"	14	Up	iP	00 19 00	D
		Ki	iP	00 18 41	D
		Sk	iP	00 19 05	
		Um	iP	00 18 47	
		Luzon, Philippine Islands (h = 170 km).			
"	14	Up	iP	02 41 54	
			i	02 41 58	
			i	02 42 10	
				microns sec	
			P Z'	0.1	0.6

1961 July cont.	14	Ki	iP	02 43 08	
		Sk	iP	02 42 33	D
		Gb	iP	02 41 40	D
		Um	iP	02 42 32	
		Greece.			
"	14	Ki	iP	03 44 22	
		Sinkiang Province, China.			
"	14	Sk	iP	07 38 45	
"	14	Um	eP	08 41 40	
			i	08 45 59	
"	14	Up	iP	10 15 19	
		Um	iP	10 16 32	
"	14	Um	iP	15 20 51	
			i	15 21 11	
			i	15 21 59	
"	14	Um	iP	18 28 31	
"	14	Up	iP	20 37 21	
"	14	Sk	iP	21 54 40	
		Um	iP	21 54 34	
		Fox Islands, Aleutian Islands (h = 50 km).			
"	15	Up	iP	00 30 22	
			i	00 30 33	
			i	00 32 59	
				microns sec	
			P Z'	0.2	0.6
			M E	0.8	17
			M N	2.5	22
			M Z	1.4	18
		Sk	iP	00 30 29	D
		Um	iP	00 30 10	D
		Luzon, Philippine Islands (h = 50 km).			
"	15	Up	iP	05 54 02	
			i	05 54 08	
				microns sec	
			P Z'	0.1	1.1
		Sk	iP	05 53 56	D
		Gb	iP	05 54 28	
		Um	iP	05 53 32	
			i	05 53 40	
		Off southern coast of Kamchatka (h = 20 km).			

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 July	15	Ki	i(P)	11 29 01		
"	15	Ki	iP	14 08 12		
				microns	sec	
			P	Z' 0.1	1.5	
			Java Sea (h = 570 km).			
"	16	Up	iP	00 57 59		
			Southeastern Alaska (h = 40 km).			
"	16	Ki	iPKP	05 41 26		
			Tonga Islands (h = 200 km).			
"	16	Up	iPKP	07 06 18		
		Ki	iPKP	07 06 12		
			iPKS	07 09 15		
		Um	iPKP	07 06 20		
			iPKS	07 09 28		
			Tonga Islands (h = 170 km).			
"	16	Up	iP	09 12 04	C	
		Ki	iP	09 12 13	C	
			i	09 12 23		
				microns	sec	
			P	Z' 0.1	1.0	
		Sk	iP	09 12 30		
		Gb	eP	09 12 25		
		Um	iP	09 12 03		
			Hindu Kush (h = 240 km).			
"	16	Up	iPKP	14 21 03		
				microns	sec	
			M	E 0.4	21	
			M	N 0.7	22	
			M	Z 1.1	22	
		Ki	iPKP	14 20 49		
			i	14 21 03		
			ePKS	14 24 09		
				microns	sec	
			PKS	N 0.2	7	
			PKS	Z 0.4	8	
			M	E 0.4	18	
			M	N 0.6	19	
			M	Z 0.9	19	
		Um	iPKP	14 20 58		
			Loyalty Islands region (h = 60 km).			
"	16	Ki	iP	18 13 05		
		Um	eP	18 13 16		
"	16	Up	iPKP	20 19 57		

1961 July cont.	16	Up	i	20 20 07		
		Ki	iPKP	20 19 37	D	
			i	20 19 51		
				microns	sec	
			PKP Z'	0.2	1.6	
		Sk	iPKP	20 19 51		
		Um	iPKP	20 19 46	D	
			i	20 20 01		
			Kermadec Islands region (h = 190 km).			
"	16	Ki	iP	21 05 04		
		Um	i(P)	21 04 49		
"	16	Up	iP	21 19 30		
				microns	sec	
			M E	0.4	21	
			M N	0.9	21	
			M Z	0.7	21	
		Ki	iP	21 18 39		
		Sk	iP	21 19 17		
		Um	iP	21 19 03		
			Kurile Islands (h = 30 km)			
"	16	Up	iPKP	23 21 38		
		Ki	iPKP	23 21 32		
		Gb	iPKP	23 21 38		
		Um	iPKP	23 21 39		
			Fiji Islands region (h = 590 km).			
"	17	Up	iP	01 13 53		
		Ki	iP	01 13 39		
			iS	01 24 12		
				microns	sec	
			P Z	0.3	5	
			S E	0.6	6	
			S N	0.3	6	
			M E	1.1	22	
			M N	0.5	21	
			M Z	1.4	20	
			D = 9350 km = 84°.			
		Sk	iP	01 13 35	C	
			i	01 13 45		
		Gb	iP	01 13 47		
			i	01 14 20		
		Um	iP	01 13 50	D	
			Oaxaca, Mexico (h = 70 km). Magn. = 6.0 (Ki).			
"	17	Sk	iP	03 43 17		
			Oaxaca, Mexico (h = 80 km).			

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 July	17	Up	iP		05 21 04	
			i		05 21 08	
			i		05 21 17	
		Ki	iP		05 21 38	
			iPP		05 23 30	
			eScS		05 31 44	
				microns	sec	
			P	Z	0.1	0.7
			M	E	0.2	12
			M	N	0.2	9
			M	Z	0.1	12
		Sk	iP		05 21 38	
		Gb	iP		05 21 16	
		Um	eP		05 21 15	
			i		05 21 20	
			iPP		05 22 59	
		Iran (h = 60 km).				
"	17	Um	i(P)		09 11 34	
"	17	Up	iP		15 00 44	D
			iPP		15 02 14	
			iLg1		15 13 53	
				microns	sec	
			P	Z	0.1	0.9
			M	E	0.3	12
			M	N	0.2	11
			M	Z	0.2	12
		Ki	iP		15 00 46	
			iLg1		15 13 35	
				microns	sec	
			M	E	1.2	14
			M	N	0.2	11
			M	Z	1.1	12
		Sk	iP		15 01 08	
			iPP		15 02 40	
		Gb	iP		15 01 09	D
			iPP		15 02 39	
		Um	iP		15 00 38	
		Kirghiz, U.S.S.R. (h = 70 km).				
"	17	Up	iP		16 31 50	
			i		16 32 00	
			iS		16 41 21	
				microns	sec	
			P	N	0.1	2
			P	Z	0.2	2
			P	Z	0.2	1.5
			S	E	0.3	6
			S	N	0.3	5
			M	E	3.1	18
			M	N	3.3	19

1961 July cont.	17	Up	M	Z	3.0	16
			D = 8100 km = 73°.			
		Ki	iP		16 31 05	
			i		16 31 12	
			i		16 31 21	
			iPP		16 33 40	
			iS		16 40 09	
				microns	sec	
			P	Z	0.3	4
			P	Z	0.2	1.9
			PP	Z	0.1	1.5
			S	E	0.5	6
			S	N	0.3	7
			M	E	4.5	17
			M	N	1.8	17
			M	Z	6.6	17
			D = 7450 km = 67°.			
		Sk	iP		16 31 45	
			i		16 31 54	
			iPP		16 34 29	
		Gb	iP		16 32 11	
			i		16 32 20	
		Um	iP		16 31 24	
			i		16 31 33	
		Near coast of Honshu, Japan (h = 80 km).				
		Magn. = 5.9 (Up, Ki).				
"	17	Up	iP		22 17 04	
"	18	Um	e(P)		06 53 40	
"	18	Up	iPKP		07 36 35	
		Sk	iPKP		07 36 27	
		Gb	iPKP		07 36 43	
		Tonga Islands region (h = 60 km).				
"	18	Up	iP		14 15 23	D
			iS		14 25 00	
				microns	sec	
			P	E	1.3	2
			P	N	1.6	2
			P	Z	5.6	2
			P	Z	1.6	0.6
			S	E	16	8
			S	N	5.3	9
			S	Z	0.1	1.0
			M	E	104	21
			M	N	95	19
			M	Z	76	15
			D = 8350 km = 75°.			

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 July cont.	18	Sk	iP	14 15 21	D	
			i	14 25 22		
			iScS	14 25 30		
		Gb	iP	14 15 43	D	
			iS	14 25 41		
			eP'P'	14 42 27		
			i	14 42 32		
			D = 8800 km = 79°.			
		Um	iP	14 15 06	D	
			i	14 15 13		
			iP'P'	14 42 44		
		Northern Ryukyu Islands (h = 20 km). Magn.= 7,3 (Up).				
"	18	Sk	iP	14 25 22		
			i	14 25 30		
"	18	Up	iP	14 45 46	D	
			i	14 46 08		
				microns sec		
			P	Z' 0.5	0.8	
		Ki		microns sec		
			M	E 11	16	
			M	N 7.0	15	
			M	Z 14	16	
		Gb	iP	14 46 06	D	
		Um	iP	14 45 30	D	
		Northern Ryukyu Islands (h = 70 km).				
"	18	Up	iP	14 54 30		
		Um	iP	14 54 13		
"	18	Up	iP	14 55 24		
			i	14 55 32		
				microns sec		
			P	Z' 0.1	1.0	
		Sk	iP	14 55 22		
			i	14 55 30		
		Gb	iP	14 55 44		
		Um	iP	14 55 08		
		Northern Ryukyu Islands.				
"	18	Sk	iP	15 15 45	D	
"	18	Up	iP	15 27 58	D	
			i	15 28 07		
				microns sec		
			P	Z' 0.1	1.0	
		Ki	iP	15 27 25	D	
			i	15 27 35		
				microns sec		
			P	Z' 0.1	1.0	

1961 July cont.	18	Sk	iP	15 27 57		
			i	15 28 06		
		Gb	iP	15 28 18	D	
			i	15 28 28		
		Um	iP	15 27 40	D	
			i	15 27 51		
		Northern Ryukyu Islands (h = 25 km).				
"	18	Up	iP	15 48 33		
			i	15 48 43		
		Ki	iP	15 48 06		
			i	15 48 11		
		Sk	iP	15 48 31		
		Gb	iP	15 48 52		
		Um	iP	15 48 19		
			i	15 48 26		
		Northern Ryukyu Islands (h = 25 km).				
"	18	Up	iP	16 31 50		
		Ki	iP	16 31 18	D	
		Sk	iP	16 31 40		
		Gb	iP	16 32 11		
		Um	iP	16 31 31		
		Northern Ryukyu Islands (h = 60 km).				
"	18	Up	iP	17 00 20		
			i	17 00 24		
		Ki	iP	16 59 49		
		Gb	iP	17 00 42	C	
		Um	iP	17 00 03		
		Northern Ryukyu Islands (h = 60 km).				
"	18	Up	iP	18 28 29		
"	18	Up	iP	18 45 21		
		Ki	iP	18 44 49		
		Sk	eP	18 45 21		
		Um	iP	18 45 01		
		Northern Ryukyu Islands (h = 80 km).				
"	18	Up	iP	19 40 51		
			i	19 40 54		
				microns sec		
			M	E 0.6	16	
			M	N 1.0	17	
			M	Z 0.5	16	
		Ki	iP	19 40 21		
			i	19 40 24		

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 July cont.

18 Ki
P Z 0.3 6
P Z' 0.1 1.0
M E 1.1 16
M N 1.1 16
M Z 1.7 20
Sk iP 19 40 52
Gb iP 19 41 11
i 19 41 16
Um iP 19 40 30
i 19 40 47
Northern Ryukyu Islands (h = 60 km).

" 18 Up iP 19 41 43
Ki iP 19 41 12
Um iP 19 41 23
Northern Ryukyu Islands.

" 18 Up iP 19 44 24
i 19 45 33
Ki iP 19 45 01

" 18 Up iP 20 04 12
Ki iP 20 03 40
Um iP 20 03 51
Northern Ryukyu Islands.

" 18 Up iP 21 35 56
Ki iP 21 36 28
microns sec
P Z' 0.1 1.5
Sk iP 21 36 26
Um iP 21 36 06
i 21 36 15
Arabian Sea (h = 40 km).

" 18 Up iP 22 08 21

" 18 Up iP 23 54 21 D
microns sec
P Z' 0.1 1.0
M E 0.6 17
M N 0.7 17
M Z 0.5 17
Ki iP 23 53 50
microns sec
P Z' 0.1 1.3
M E 0.6 16
M N 0.7 16
M Z 0.7 14
Sk iP 23 54 19
Gb iP 23 54 42

1961 July cont.

18 Um iP 23 54 02
Northern Ryukyu Islands (h = 40 km).

" 19 Ki iP 00 21 04
Um iP 00 21 22
Off west coast of Honshu, Japan (h = 25 km).

" 19 Up iPKP 04 09 36
Ki iPKP 04 09 50
Sk iPKP 04 09 43
Um iPKP 04 09 43 D
Sandwich Islands (h = 40 km).

" 19 Up iP 05 41 42
i 05 41 51
microns sec
P Z' 0.1 1.1
Ki iP 05 41 10 C
microns sec
M E 0.4 13
M N 0.2 13
M Z 0.5 14
Sk iP 05 41 38
Um iP 05 41 21
i 05 41 31
Northern Ryukyu Islands (h = 60 km).

" 19 Up iP 06 45 06
i 06 45 14
iS 06 54 44
microns sec
S E 0.1 3
M E 1.3 15
M N 1.3 16
M Z 1.3 14
D = 8400 km = 75½°.
Ki iP 06 44 34
i 06 44 43
iS 06 53 45
microns sec
P Z' 0.1 1.1
S E 0.6 6
M E 1.2 17
M N 1.4 15
M Z 1.8 16
D = 7800 km = 70°.
Sk iP 06 45 06
Gb iP 06 45 25
Um iP 06 44 45
Northern Ryukyu Islands (h = 30 km).

Up = Uppsala, Ki= Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 July	19	Um	iP	09 30 30	
			i	09 30 43	
		Off coast of Honshu, Japan (h = 25 km).			
"	19	Ki	iP	10 22 22	
"	19	Ki	iP	10 45 53	
		Sk	iP	10 45 18	
"	19	Up	iP	10 47 26	
			i	10 49 03	
				microns	sec
			M E	0.3	17
			M N	0.5	18
			M Z	0.5	16
		Ki	iP	10 46 59	
			eS	10 56 06	
				microns	sec
			S E	0.3	5
			M E	0.4	18
			M N	0.4	16
			M Z	0.7	17
			D = 7800 km = 70°.		
		Sk	eP	10 47 19	
		Gb	iP	10 47 50	
		Um	iP	10 47 08	
		Northern Ryukyu Islands (h = 20 km).			
"	19	Up	iP	12 10 29	
			iS	12 20 06	
				microns	sec
			P Z'	0.2	1.0
			S E	0.2	3
			M E	0.7	12
			M N	1.4	14
			M Z	1.0	13
			D = 8350 km = 75°.		
		Ki	iP	12 09 57	C
			iS	12 19 09	
				microns	sec
			P Z'	0.1	1.0
			S E	0.7	5
			M E	1.4	15
			M N	1.0	15
			M Z	1.7	18
			D = 7800 km = 70°.		
		Sk	iP	12 10 28	
		Gb	iP	12 10 50	
			i	12 10 58	
		Um	iP	12 10 10	C
			i	12 10 25	

1961 July cont.	19	Northern Ryukyu Islands (h = 30 km). Magn. = 6.0 (Up, Ki).			
"	19	Ki	iP	19 56 44	
		Sk	iP	19 57 16	
		Gb	iP	19 57 37	
		Um	eP	19 56 55	
		Northern Ryukyu Islands (h = 40 km).			
"	19	Up	iP	23 05 51	
			iS	23 09 55	
				microns	sec
			P E	0.1	4
			P N	0.3	4
			P Z	0.4	3
			S E	0.4	4
			S N	0.7	5
			M E	2.3	10
			M N	2.2	11
			M Z	2.8	13
			D = 2450 km = 22°.		
		Ki	iP	23 07 06	
			iPP	23 07 59	
			e	23 12 57	
				microns	sec
			PP Z'	0.2	1.5
			M E	3.5	13
			M N	2.1	13
			M Z	3.4	12
			D = 3350 km = 30°.		
		Sk	iP	23 06 29	
			iPP	23 07 01	
			i	23 08 31	
		Gb	iP	23 05 37	
		Um	iP	23 06 29	D
			i	23 06 39	
		Near coast of Greece (h = 40 km). Magn. = 5.5 (Up, Ki).			
"	20	Sk	iPP	00 58 33	
		Tadzhik, U.S.S.R.			
"	20	Ki	iP	02 25 03	D
		Sk	iP	02 25 20	
		Gb	iP	02 25 19	
		Um	iP	02 24 56	
			i	02 25 10	
"	20	Ki	iP	03 15 55	D
				microns	sec
			P Z'	0.1	1.5
		Sk	iP	03 16 17	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 July cont.	20	Sk	i		03 16 27	
		Gb	iP		03 16 47	C
			i		03 16 56	
		Um	iP		03 16 08	
		Northern Ryukyu Islands (h = 50 km).				
"	20	Up		microns	sec	
			M	E 0.4	21	
			M	N 3.4	22	
		Ki	i		07 10 46	
				microns	sec	
			M	E 0.4	18	
			M	N 1.0	19	
			M	Z 0.7	17	
		Sk	iP		07 06 53	D
"	20	Up	iP		08 47 53	
		Sk	iP		08 48 32	
"	20	Sk	iP		08 56 53	
		Um	iP		08 57 06	
		Off coast of Jalisco, Mexico (h = 15 km).				
"	20	Up	iP		09 14 25	
			eS		09 24 03	
				microns	sec	
			M	E 0.3	14	
			M	N 0.6	15	
			M	Z 0.6	18	
			D = 8450 km = 76°.			
		Ki	iP		09 13 54	
			iS		09 23 06	
				microns	sec	
			P	Z' 0.1	1.0	
			S	E 0.4	6	
			M	E 0.5	16	
			M	N 0.6	16	
			M	Z 0.5	14	
			D = 7900 km = 71°.			
		Sk	iP		09 14 23	
		Gb	iP		09 14 46	C
		Um	iP		09 14 07	
		Northern Ryukyu Islands (h = 25 km).				
"	20	Up	iP		10 20 36	
"	20	Ki	ePn		12 01 32	
			iSn		12 02 16	
			iSg		12 02 37	
			D = 420 km = 3.8°.			

1961 July cont.	20	Northwest Russia. Origin time = 12 00 30. Probably explosion.			
"	20	Ki	iPn	12 09 02	
			iSn	12 09 45	
			iSg	12 10 00	
			D = 390 km = 3.5°.		
		Sk	e(Sg)	12 12 48	
			i	12 12 56	
		Northwest Russia. Origin time = 12 08 05. Probably explosion.			
"	20	Sk	iSKP	15 31 22	
		Fiji Islands (h = 570 km).			
"	20	Up	iP	15 59 38	
"	20	Up	iPKP	20 17 52	
		Ki	iPKP	20 17 33	
		Sk	iPKP	20 17 45	
			i	20 18 12	
		Gb	iPKP	20 17 59	
		Um	iPKP	20 17 39	
			i	20 17 53	
		Kermadec Islands (h = 40 km).			
"	20	Ki	iP	20 37 03	
"	20	Sk	iP	22 12 33	
"	20	Up	iP	23 04 05	D
			i	23 04 22	
		Ki	iP	23 03 59	
			i	23 04 17	
		Sk	iP	23 04 20	
			i	23 04 38	
		Gb	iP	23 04 25	
		Um	iP	23 03 54	
			i	23 04 12	
"	21	Ki	iPn	06 12 17	
			iSn	06 13 12	
			iSg	06 13 35	
			D = 500 km = 4.5°.		
		Sk	iSg	06 16 11	
			D = 1020 km = 9.2°.		
		Um	iSn	06 13 58	
			eSg	06 14 35	
			i	06 14 45	
			D = 700 km = 6.3°.		

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 July cont. 21 Northwest Russia, 67.7°N, 32.4°E. Origin time = 06 11 06.

" 21 Um iP 12 34 14

" 21 Up iP 18 10 58
Ki iP 18 10 26
Um iP 18 10 37
Northern Ryukyu Islands
(h = 40 km).

" 21 Up iP 18 46 03
Ki iP 18 45 32
Sk iP 18 46 02
Um iP 18 45 41
Northern Ryukyu Islands.

" 21 Up iP 19 02 37

		microns	sec
P	Z'	0.1	1.1
M	E	0.6	16
M	N	0.5	17
M	Z	0.5	15

Ki iP 19 02 05
i 19 02 14
eS 19 11 20

		microns	sec
P	Z'	0.1	1.2
M	E	0.8	16
M	N	1.1	15
M	Z	1.3	16

D = 7800 km = 70°.
Sk iP 19 02 37
Gb iP 19 02 57
Um iP 19 02 16 C
Northern Ryukyu Islands
(h = 20 km).

" 21 Up iP 19 09 34
Ki iP 19 09 03

" 21 Up iP 22 51 39

		microns	sec
M	E	0.2	13
M	N	0.5	13

Ki iP 22 51 07 D
iS 23 00 21

		microns	sec
S	E	0.4	5
M	E	0.3	15
M	N	0.6	15
M	Z	0.6	13

D = 7800 km = 70°.

1961 July cont. 21 Sk iP 22 51 37
Gb iP 22 51 59
Um iP 22 51 19
Northern Ryukyu Islands
(h = 30 km).

" 22 Up iP 14 01 17 D

		microns	sec
P	Z'	0.1	0.5

Ki iP 14 01 27 C
Sk iP 14 01 43 D
Um iP 14 01 18
Northeastern Afganistan
(h = 100 km).

" 22 Ki iPKP 18 32 19
Sk ePKP 18 32 27
South of Tasmania
(h = 80 km).

" 22 Up ePP 21 01 39
Ki iP 21 00 43 C
Sk iP 21 01 02
iPP 21 02 24
Um iP 21 00 32
Kirghiz, U.S.S.R.
(h = 220 km).

" 22 Sk iP 21 12 28

" 22 Ki iP 22 39 16

" 22 Up iP 22 41 14
Ki iP 22 40 41

		microns	sec
P	Z'	0.1	1.0

Sk iP 22 41 14
Gb iP 22 41 36
Northern Ryukyu Islands.

" 23 Up e(P) 05 47 40

" 23 Up e 14 24 38
iPP 14 25 40
ePKS 14 26 24

		microns	sec
PKS	E	0.7	9
PKS	N	0.8	8
M	E	2.8	22
M	N	4.5	23
M	Z	3.4	23

Ki iPKP 14 22 39
i(PP) 14 24 34
i(PKS) 14 25 54

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Uneå

1961 July 23 cont. Ki i 15 02 24

		microns	sec
PKP	Z'	0.1	1.1
(PP)	Z	0.5	9
(PKS)	E	0.3	9
(PKS)	N	0.2	9
M	E	4.4	23
M	N	2.6	22
M	Z	7.3	21

D = 14100 km = 127°.

Sk iPKP 14 22 51
iPKS 14 26 18
Um iPKP 14 22 49
iPKS 14 26 11

New Hebrides Islands
(h = 40 km).
Magn. = 6.2 (Up, Ki).

" 23 Ki iPKP 14 35 36
New Hebrides Islands
(h = 50 km).

" 23 Ki iP 14 51 44
iPP 14 55 55

		microns	sec
P	Z'	0.1	1.5

Pacific Ocean, about 2000 miles northwest of Galapagos Islands
(h = 90 km).

" 23 Ki iP 15 08 16

" 23 Up iPKP 15 49 35
iPKS 15 53 00

		microns	sec
PKS	E	0.2	6
PKS	N	0.4	5
M	E	1.7	22
M	N	3.8	23
M	Z	2.5	22

Ki iPKP 15 49 17

		microns	sec
PKP	Z'	0.1	1.2
M	E	3.2	23
M	N	2.0	22
M	Z	1.9	21

Sk iPKP 15 49 32 D
iPKS 15 52 53
Gb iPKP 15 49 42
Um iPKP 15 49 24
iPKS 15 52 45

New Hebrides Islands
(h = 110 km).

1961 July 23 Up iP 17 16 13
Ki i(P) 17 15 58

" 23 Up iPKP 22 10 20
i 22 10 29
i(PP) 22 12 47
iPKS 22 13 49

		microns	sec
PKP	N	0.5	5
PKP	Z	3.3	7
(PP)	E	6.7	16
(PP)	N	4.7	8
(PP)	Z	12	10
PKS	E	21	11
PKS	N	29	11
PKS	Z'	0.7	2.0
M	E	83	22
M	N	180	24
M	Z	130	22

D = 14950 km = 134½°.

Ki iPKP 22 10 07
i 22 10 10
iPP 22 11 59
iPKS 22 13 22

		microns	sec
PKP	Z	1.5	5
PKP	Z'	0.2	1.0
PP	E	2.8	8
PP	N	3.5	9
PP	Z	10	9
PP	Z'	1.0	2.5
PKS	E	11	11
PKS	N	7.7	11
M	E	150	23
M	N	100	22
M	Z	170	23

D = 14100 km = 127°.

Sk iPKP 22 10 16
i 22 10 21
i 22 12 30
iPKS 22 13 45
Gb iPKP 22 10 30
i(PP) 22 13 08
Um iPKP 22 10 13
i 22 10 17
iPKS 22 13 34

New Hebrides Islands
(h = 40 km).
Magn. = 7.4 (Up, Ki).

" 23 Up i(PKP) 22 21 03
i 22 22 34

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 July cont.	23	Up		microns sec	
			(PKP) Z'	0.1	1.5
		Ki	iPKP	22	20 57
				microns sec	
			PKP Z'	0.2	1.1
		Sk	iPKP	22	21 08
			iPKS	22	24 33
		Um	iPKP	22	21 01
			iPKS	22	24 23
		New Hebrides Islands (h = 40 km).			
"	23	Sk	ePKP	23	41 39
		New Hebrides Islands (h = 50 km).			
"	24	Ki	iPKP	00	05 20
		New Hebrides Islands (h = 25 km).			
"	24	Up	iP	00	09 02
		Sk	iP	00	08 57 C
		Um	iP	00	08 48
			i	00	08 58
"	24	Up	iPKP	01	49 09
			iPP	01	51 55
		Ki	iPKP	01	49 02
			iPP	01	51 32
			microns sec		
			PP Z	0.4	4
			PP Z'	0.3	1.5
			M Z	0.7	20
		Sk	iPKP	01	49 03
			iPP	01	51 48
		Gb	iPKP	01	49 19 D
		Um	iPP	01	51 42
		Fiji Islands region (h = 640 km).			
"	24	Ki	iPKP	02	17 52
		New Hebrides Islands (h = 20 km).			
"	24	Ki	iP	09	01 21
			microns sec		
			P Z'	0.1	0.9
			M E	0.4	16
			M Z	0.2	17
		Sk	iP	09	01 40
		Um	iP	09	01 24
		Northern Celebes region (h = 160 km).			

1961 July	24	Um	iP	10	21 26
"	24	Ki	iP	16	31 24
"	25	Up	i(P)	01	43 00
"	25	Ki	iP	03	00 52
		Sk	iP	03	00 36 C
			i	03	02 44
		Western Brazil (h = 640 km			
"	25	Ki	iP	06	09 06 D
		Near east coast of Kamchatka (h = 25 km).			
"	25	Up	iP	12	13 04
		Ki	iP	12	12 39
		Sk	iP	12	13 07
		Off east coast of Formosa (h = 60 km).			
"	25	Up	iP	18	52 05
		Ki	iP	18	51 24 D
			microns sec		
			P Z'	0.1	1.0
		Sk	iP	18	51 58
		Um	iP	18	51 42
"	25	Ki	iP	18	52 47
			microns sec		
			P Z'	0.1	1.4
			M E	0.4	17
			M N	0.2	17
			M Z	0.5	17
		Sk	iP	18	53 07
		Um	iP	18	52 53
		Northern Celebes (h = 40 km).			
"	25	Ki	iP	19	33 42
"	25	Ki	iP	23	49 15
"	26	Up	iP	01	12 26
"	26	Up	iPKP	09	38 54 D
			i	09	38 58
			microns sec		
			PKP Z'	0.1	0.5
		Ki	iPKP	09	38 28 C
			i	09	38 35
			microns sec		
			PKP Z'	0.2	1.2

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 July cont.	26	Sk	iPKP	09 38 41	C
		Um	iPKP	09 38 34	
			i	09 38 42	
			i	09 38 56	
		North Island, New Zealand (h = 100 km).			
"	26	Ki	i(P)	20 49 32	
			i	20 49 46	
"	27	Up	iPKP	02 26 24	
			i	02 26 37	
		Sk	iPKP	02 26 26	
			i	02 26 42	
		Um	iPKP	02 26 10	
			i	02 26 22	
		Kermadec Islands (h = 480 km).			
"	27	Ki	eP	02 41 17	
			e	02 41 31	
"	27	Gb	iPKP	11 53 04	
		New Hebrides Islands (h = 160 km).			
"	27	Um	iP	13 45 43	
			i	13 45 56	
"	27	Up	iP	14 10 15	
		Ki	iP	14 09 32	D
			i	14 09 43	
			microns sec		
			P Z'	0.1 0.9	
		Sk	iP	14 09 46	
			i	14 09 56	
"	27	Um	iP	14 46 05	
"	27	Ki	iP	15 09 56	C
			i	15 10 07	
			microns sec		
			P Z'	0.1 1.0	
		Sk	iP	15 10 11	
"	27	Um	iP	15 29 24	
			i	15 29 29	
			i	15 29 35	
"	27	Ki	iP	15 42 55	
			i	15 43 07	
		Sk	iP	15 43 38	

1961 July	27	Ki	iP	15 53 15	D
			i	15 53 26	
			microns sec		
			P Z'	0.2 1.1	
		Sk	iP	15 53 29	
			i	15 53 41	
"	27	Ki	iP	16 09 44	C
			microns sec		
			P Z'	0.1 0.7	
"	27	Up	iP	18 41 10	
			i	18 41 22	
		Ki	iP	18 42 16	
			microns sec		
			M E	1.0 19	
		Sk	iP	18 41 47	
		Um	iP	18 41 42	
		Aegean Sea (h = 70 km).			
"	27	Ki	iP	20 45 20	
			i	20 45 25	
			microns sec		
			P Z'	0.1 1.0	
		Sk	iP	20 45 34	
		Um	eP	20 45 28	
"	28	Ki	iP	00 07 13	
		Sk	iP	00 07 54	
		Lake Baikal region, U.S.S.R. (h = 60 km).			
"	28	Ki	iP	00 14 12	
		North of Celebes (h = 90 km).			
"	28	Up	iP	00 45 50	C
			ipP	00 46 29	
			microns sec		
			P Z'	0.1 0.6	
		Ki	iP	00 45 22	
			i	00 45 32	
		Sk	iP	00 45 51	
			i	00 45 59	
		Um	iP	00 45 32	
		Ryukyu Islands (h = 140 km).			
"	28	Up	iP	01 18 34	
			i	01 18 48	
			ipP	01 19 12	
			i	01 21 43	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 July 28 cont.

Up iPP 01 22 18
iSKS 01 28 52
iS 01 29 30

		microns	sec
P	Z	0.3	3
P	Z'	0.1	0.9
PP	Z	0.5	3
PP	Z'	0.1	1.0
SKS	E	2.1	5
S	N	0.3	5
M	E	1.9	20
M	N	2.6	23
M	Z	1.7	21

D = 10400 km = 93½°.

Ki iP 01 18 38
ipP 01 19 15
i 01 21 44
ipPP 01 23 00
iSKS 01 29 01
iS 01 29 37

		microns	sec
P	Z	0.6	5
P	Z'	0.2	1.7
SKS	E	6.8	8
SKS	N	1.1	8
SKS	Z	1.0	7
S	E	1.3	5
S	N	0.6	5
M	E	0.8	15
M	N	0.7	19
M	Z	1.0	17

D = 10550 km = 95°.

Sk iP 01 18 24
i 01 18 33
ipP 01 19 00
iPP 01 22 00

Gb iP 01 18 23
ipP 01 18 59

Um iP 01 18 34
i 01 18 51
ipP 01 19 14
i 01 22 28
ipPP 01 22 56

Ecuador, h= 150 km (Up, Ki, Sk, Gb, Um).
Magn. = 6.1 (Up, Ki).

" 28 Ki iP 01 35 32
Sk iP 01 35 41

" 28 Up iPKS 06 34 25

		microns	sec
PKS	E	0.4	8
PKS	N	0.7	7
M	E	0.4	22
M	N	0.9	22
M	Z	1.1	22

Ki iPKP 06 30 40
i 06 30 49
iPP 06 32 37

		microns	sec
PP	N	0.3	8
PP	Z	0.3	5
M	E	0.7	17
M	N	0.4	14
M	Z	0.7	17

Sk iPKP 06 30 54
New Hebrides Islands (h = 40 km).

" 28 Up iPg 08 30 44
iSg 08 31 25

		microns	sec
Sg	Z'	0.1	0.5

D = 340 km = 3.1°.

Ki e(Sn) 08 33 24
eSg 08 34 08
D = 890 km = 8.0°.

Sk e(S^x) 08 32 54
iSg 08 33 22
i 08 33 33
D = 730 km = 6.6°.

Gb iSg 08 33 21
D = 730 km = 6.6°.

Um i(Sg) 08 32 07
D = 460 km = 4.2°.

Southwest Finland, 60.0°N, 23.8°E. Origin time = 08 29 43.

" 28 Up iSg 08 39 07
Ki i 08 41 41
iSg 08 41 58
Sk eSg 08 41 03
Southwest Finland.

" 28 Up

		microns	sec
M	E	1.8	19
M	N	1.4	20
M	Z	1.5	19

Ki iP 10 26 22
iS 10 36 55

		microns	sec
P	Z'	0.1	1.5
S	E	0.4	6
S	N	0.3	6

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
July 28 Ki M E 2.2 21
cont. M N 1.4 19
M Z 2.8 18
D = 9350 km = 84°.
Pacific Ocean, west of
Jalisco, Mexico (h = 40 km).
Magn. = 5.8 (Up, Ki).

" 28 Ki iP 10 50 53
Pacific Ocean, west of
Jalisco, Mexico (h = 110 km).

" 28 Ki eL 14 05
microns sec
M E 0.4 17
M N 0.6 20
M Z 0.3 19
Celebes (h = 40 km).

" 28 Up iP 15 30 43
i 15 30 54
Ki iP 15 29 58 C
microns sec
P Z' 0.1 1.1
M E 0.5 19
M N 0.5 20
M Z 0.9 19
Sk iP 15 30 34
Gb iP 15 31 05
i 15 31 15
Um iP 15 30 18 C
i 15 30 28
Kurile Islands (h = 30 km).

" 28 Ki iP 19 14 25

" 28 Ki i(P) 19 41 51

" 28 Ki i(P) 20 08 15

" 28 Ki iP 23 59 54 D
i 00 00 07

" 29 Up iPKP 16 46 48
i 16 47 00
microns sec
M E 0.4 20
M N 0.6 21
Ki iPKP 16 46 39
i 16 46 50
iPKS 16 50 10
microns sec
PKS N 0.3 4
M E 0.5 19

1961
July 29 Ki M N 0.4 21
cont. M Z 0.7 20
Sk iPKP 16 46 41
Gb iPKP 16 46 58
i 16 47 11
Um iPKP 16 46 39
Tonga Islands region
(h = 25 km).

" 29 Ki iP 19 04 18
i 19 04 35
microns sec
P Z' 0.2 0.6

" 30 Up iP 00 12 08

" 30 Jp iP 02 43 59
Ki iP 02 43 58 D
Sk iP 02 44 12
Sumatra (h = 150 km).

" 30 Up iP 16 18 41
Ki iP 16 18 26
Sk iP 16 18 41
Um iP 16 18 33
i

" 31 Ki ipP 00 29 49
Off north coast of Java
(h = 240 km).

" 31 Up iP 06 39 19 C

" 31 Up e(P) 23 15 59

" 31 Ki iP 23 58 25

Ingrid Pettersson Markus Båth

July 24, 1962

1961

Seismological Institute
Uppsala

PRELIMINARY

SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, SKALSTUGAN, GÖTEBORG, and UMEÅ

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°49.0'N,	20°14.1'E;	h = 20 km

AUGUST 1 - 31, 1961

NOTE. The operation of the Umeå station was temporarily interrupted from August 7, 1961, onwards. Construction works were started in order to house a complete installation of six seismographs, long- and short-period.

1961					
Aug	1	Up	iPKP	01 14 28	C
			i	01 14 39	
		Ki	iPKP	01 14 13	C
		Sk	iPKP	01 14 23	C
			i	01 14 20	
		Gb	iPKP	01 14 39	
		Um	iPKP	01 14 17	C
			i	01 14 20	
		New Hebrides Islands region.			
"	1	Up	iPKP	01 36 55	
			i	01 36 59	
		Ki	iPKP	01 36 40	
			i	01 36 45	
		Sk	iPKP	01 36 51	
		Um	iPKP	01 36 45	
		New Hebrides Islands region (h = 25 km).			
"	1	Up	iPKP	05 58 48	
			i	05 58 57	
			iPP	06 00 30	
			i	06 06 40	
			iPS	06 10 17	
				microns	sec
			PP N	0.4	10
			PP Z	0.9	10
			M E	7.1	21
			M N	10	21
			M Z	12	22

1961					
Aug	1	Up	D = 13650 km = 123°.		
cont.		Ki	iPKP	05 58 35	
			i	05 58 45	
			ePP	05 59 41	
			iSKS	06 05 28	
				microns	sec
			PP N	0.3	8
			PP Z	1.1	8
			SKS E	0.6	7
			M E	19	22
			M N	8.9	23
			M Z	24	23
			D = 12950 km = 116½°.		
		Sk	iPKP	05 58 46	
			i	05 58 55	
		Gb	iPKP	05 58 54	
			i	05 59 05	
		Um	iPKP	05 58 42	
			i	05 58 52	
		Solomon Islands region (h = 50 km). Magn. = 6.5 (Up, Ki).			
"	1	Up		microns	sec
			M E	4.7	19
			M N	5.2	19
			M Z	7.9	19
		Ki	iPKP	07 40 18	
			i	07 40 25	
			i(SKP)	07 43 37	
			iPKS	07 43 46	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961

Aug 1 cont. Ki

		microns	sec
(SKP)	Z	1.6	9
PKS	E	1.1	10
PKS	N	0.8	10
M	E	5.0	18
M	N	2.1	18
M	Z	6.9	17

D = 14350 km = 129°.

Sk ePKP 07 40 25
Um iPKP 07 40 22
Sandwich Islands region
(h = 40 km).
Magn. = 6.4 (Up, Ki).

" 1 Ki iPKP 09 43 20
i 09 43 27
i(PPS) 09 57 00
Sandwich Islands region
(h = 60 km).

" 1 Up ePS 10 04 53

		microns	sec
M	E	1.1	20
M	N	1.7	19
M	Z	1.8	19

Ki iPKP 09 53 44
i 09 54 08

		microns	sec
PKP	Z	0.6	5
M	E	1.3	18
M	N	1.3	17
M	Z	2.4	16

Sk iPKP 09 53 36
Um iPKP 09 53 36
Sandwich Islands
(h = 30 km).
Magn. = 5.9 (Up, Ki).

" 1 Ki iP 14 43 08
Sk iP 14 43 08
Um iP 14 43 19
Near coast of Mexico
(h = 60 km).

" 1 Ki iP 15 01 33
i 15 01 43

" 1 Up iPKP 16 37 26 C

		microns	sec
PKP	Z'	0.1	0.5

South of Fiji Islands
(h = 530 km).

" 1 Ki iP 21 17 48

1961

Aug 1 cont. Sk iP 21 17 13
North of Ascension Island
(h = 25 km).

" 2 Ki ePKP 02 23 03
New Hebrides Islands region
(h = 20 km).

" 2 Up eL 02 33

		microns	sec
M	E	0.3	18
M	N	0.4	21
M	Z	0.6	19

South Pacific Ocean
(h = 20 km).

" 2 Up microns sec

M	E	0.3	16
M	N	0.9	17
M	Z	0.5	17

Ki iPKP 02 50 34
ePKPPKS 03 12 34

		microns	sec
M	E	0.7	18
M	N	0.7	17
M	Z	1.1	18

Sandwich Islands (h = 25 km
Magn. = 5.6 (Up, Ki).

" 2 Up iP 12 23 02 D

		microns	sec
P	Z'	0.2	0.8

Ki iP 12 22 15 D

		microns	sec
P	Z'	0.1	1.0

Sk iP 12 22 50 D
Gb iP 12 23 23
Um iP 12 22 36 D
Kurile Islands (h = 70 km)

" 2 Up i(P) 13 43 56

" 2 Up iP 14 42 59 D
Ki iP 14 42 06
Sk iP 14 42 13
Gb iP 14 43 19 D
Um iP 14 42 30
Near coast of Kamchatka
(h = 50 km).

" 2 Ki e(P) 18 23 22

" 2 Up iPKP 23 57 05
Fiji Islands region (h =
330 km).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Aug 3 Up iP 00 50 41
i 00 50 48
Ki iP 00 51 19
i 00 51 37
microns sec
M E 0.4 17
M N 0.2 14
Sk iP 00 51 13
i 00 51 22
Um iP 00 50 56
Gulf of Aden (h = 80 km).

" 3 Up iP 03 19 12 D
microns sec
P Z' 0.1 0.7
Ki iP 03 19 16 D
iS 03 28 28
iSP 03 29 10
microns sec
P Z' 0.3 1.0
S E 0.1 6
S N 0.2 6
Sk iP 03 18 57 D
Gb iP 03 18 56
Um iP 03 19 17 D
i 03 19 34
Puerto Rico (h = 140 km).

" 3 Ki eL 07 41
microns sec
M E 1.3 22
M N 0.7 21
M Z 1.2 19
Ceram (h = 20 km).

" 3 Up iP 14 35 47
Ki iP 14 34 53
Sk iP 14 35 28
Near Islands, Aleutian Islands (h = 40 km).

" 3 Sk iPKP 15 38 16
Kermadec Islands region (h = 50 km).

" 3 Ki iP 22 46 39

" 3 Up microns sec
M E 0.6 17
M N 0.8 19
M Z 1.0 20
Ki iSKS 23 57 09

1961
Aug 3 Ki microns sec
cont. SKS E 0.4 6
M E 0.7 18
M N 0.5 17
M Z 0.7 16
Um iP 23 46 52
Mariana Islands region (h = 20 km).

" 4 Ki iP 03 03 05

" 4 Sk i(P) 04 39 08

" 4 Sk eP 07 28 40
Eastern Hokkaido, Japan (h = 20 km).

" 4 Up iP 10 47 31
Andreanof Islands, Aleutian Islands (h = 20 km).

" 4 Up i(P) 13 50 52
i(Sg) 13 51 07
Local? Seismic?

" 4 Up iPKP 18 38 36
Loyalty Islands region (h = 120 km).

" 4 Up iSS 18 53 27
microns sec
M E 0.3 17
M N 1.0 19
M Z 1.0 20
Ki iP 18 43 53
i 18 44 00
eS 18 50 47
microns sec
S E 0.3 10
M E 1.2 18
M N 1.0 22
M Z 0.6 18
D = 5200 km = 47°.
Sk iP 18 43 28
North Atlantic Ocean (h = 25 km).
Magn. = 5.3 (Ki).

" 4 Up iP 19 42 32

" 4 Up iP 23 03 53
i 23 04 00
microns sec

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Aug cont.	4	Up	P	Z'	0.1	0.9
			M	E	3.8	24
			M	N	4.0	24
			M	Z	3.0	23
		Ki	iP		23 03 06	
			i		23 03 15	
			oS		23 11 16	
				microns	sec	
			S	N	0.2	9
			M	E	4.3	17
			M	N	2.9	19
			M	Z	5.3	16
			D = 6800 km = 61°.			
		Sk	iP		23 03 41	
		Um	iP		23 03 27	
		Kurile Islands (h = 20 km).				
		Magn. = 5.7 (Up, Ki).				
"	4	Up	iPKP		23 51 04	
				microns	sec	
			PKP	Z'	0.1	0.5
		Ki	iPKP		23 50 54	
			iSKP		23 53 41	
		Um	iSKP		23 53 52	
		South of Fiji Islands (h = 500 km).				
"	5	Up	iP		02 36 17	C
		Ki	iP		02 35 21	
		Sk	iP		02 35 49	
		Gb	iP		02 36 29	C
		Um	iP		02 35 50	
			i		02 35 59	
		Kenai Peninsula, Alaska (h = 110 km).				
"	5	Sk	iPKP		07 02 34	
		Kermadec Islands region (h = 70 km).				
"	5	Up	iP		07 13 14	
		Ki	e(P)		07 13 16	
"	5	Up	iP		19 10 53	
			i		19 11 14	
		Ki	iP		19 10 48	
			i		19 11 45	
		Sk	iP		19 11 09	
		Burma (h = 50 km).				
"	6	Up	iP		03 33 00	
			i		03 33 12	
				microns	sec	

1961 Aug cont.	6	Up	P	Z'	0.1	1.0
		Ki	iP		03 32 27	
		Sk	iP		03 32 55	
			iPP		03 35 59	
		Um	iP		03 32 42	
		Bonin Islands region (h = 40 km).				
"	6	Up	iP		09 09 28	D
		Ki	iP		09 10 36	D
		Sk	iP		09 10 07	
		Um	iP		09 09 59	D
		Crete (h = 40 km).				
"	7	Up	iP		03 38 44	
		Sk	iP		03 39 23	
"	7	Up	iP		04 13 13	
		Ki	iP		04 12 30	
		Sk	iP		04 13 04	
		Gb	iP		04 13 35	
		Um	iP		04 12 44	
		Hokkaido, Japan (h = 25 km).				
"	7	Up	iP		04 36 04	
			eSKS		04 46 40	
				microns	sec	
			M	E	0.9	19
			M	N	1.4	20
			M	Z	1.1	22
			D = 11000 km = 99°.			
		Ki	iP		04 35 51	
			iSKS		04 46 28	
			iS		04 47 11	
				microns	sec	
			S	N	0.3	9
			SKS	E	0.4	8
			M	E	1.2	19
			M	N	0.9	19
			M	Z	1.4	18
			D = 10650 km = 96°.			
		Sk	iP		04 36 10	
		Um	iP		04 35 50	
		Celebes (h = 20 km).				
		Magn. = 5.7 (Up, Ki).				
"	7	Ki	iP		10 56 38	D
		Um	iP		10 56 40	
		Celebes (h = 80 km).				
"	7	Up	iPKP		12 42 03	
			i		12 42 08	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Aug cont.	7	Up		microns	sec	
			TKP	Z'	0.1	0.7
		Ki	iPKP		12 41 46	
		Sk	iPKP		12 41 54	
		Gb	iPKP		12 42 12	
		Um	iPKP		12 41 53	
		Kermadec Islands region (h = 40 km).				
"	7	Ki	iPKP$_2$		16 32 28	
		North of Balleny Islands (h = 50 km).				
"	7	Up	iPKP		17 17 26	
			i		17 17 35	
		Ki	iPKP		17 17 09	
		Sk	iPKP		17 17 19	
		Gb	iPKP		17 17 35	
			i		17 17 41	
		Um	iPKP		17 17 11	
		Kermadec Islands region (h = 60 km).				
"	7	Up	iP		20 36 18	
"	7	Up	iPKP		23 49 45	
		Sk	iPKP		23 49 37	
		Kermadec Islands region (h = 25 km).				
"	8	Up	iPKP		00 38 31	
			i		00 38 34	
		Ki	ePKPPKS		00 59 27	
				microns	sec	
			M E	0.1	18	
			M N	0.3	19	
			M Z	0.3	19	
		Sk	iPKP		00 38 23	
		Gb	iPKP		00 38 39	
		Kermadec Islands region (h = 50 km).				
"	8	Up	eP		05 47 23	
		Ki	iP		05 46 30	
		Andreanof Islands, Aleutian Islands (h = 60 km).				
"	8	Up	iPKP		08 09 03	
		West of Eastern Island (h = 40 km).				
"	8	Up	iP		09 21 05	
		Banda Sea (h = 440 km).				

1961 Aug	8	Up	iP		10 28 11	
"	8	Up	iP		12 29 28	D
			iS		12 38 27	
			iP'P'		12 57 33	
				microns	sec	
			P N	0.5	2	
			P Z	0.9	2	
			P Z'	0.3	0.5	
			S E	2.0	9	
			S N	4.4	8	
			M E	6.8	19	
			M N	8.7	18	
			M Z	12	18	
			D = 7650 km = 69°.			
		Ki	iP		12 28 35	D
			i		12 28 47	
			iPP		12 30 56	
			i		12 31 07	
			iS		12 36 50	
				microns	sec	
			P N	1.7	7	
			P Z	3.6	7	
			P Z'	1.3	1.0	
			S E	3.5	9	
			S N	4.9	9	
			S Z	2.7	8	
			M E	11	17	
			M N	6.2	18	
			M Z	9.0	19	
			D = 6800 km = 61°.			
		Sk	iP		12 29 05	D
		Gb	iP		12 29 43	D
			i		12 29 57	
			iPoP		12 30 07	
		Fox Islands, Aleutian Islands (h =25 km). Magn. = 6.6 (Up, Ki).				
"	8	Up	iP		12 57 34	
				microns	sec	
			P Z'	0.1	1.0	
		Ki	iP		12 57 56	
		Sk	iP		12 57 44	
"	8	Ki	iP		13 48 17	
		Fox Islands, Aleutian Islands (h = 40 km).				
"	8	Up	iP		15 14 59	
			i		15 15 01	
		Local? Seismic?				

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Aug 8 Up iP 15 54 28 D
Ki iP 15 53 35
Sk iP 15 54 05
Gb iP 15 54 43
Fox Islands, Aleutian Islands (h = 60 km).

" 8 Up iP 19 01 30 D
Ki iP 19 01 37 D
Sk iP 19 01 54
Gb iP 19 01 51
Northern India (h = 25 km).

" 8 Up iP 23 56 19 C
Ki iP 23 55 26
(Aleutian Islands).

" 8-9 Up iP 00 00 20 C
Ki iP 23 59 27
Gb iP 00 00 35
Fox Islands, Aleutian Islands (h = 25 km).

" 9 Up iP 00 18 36

" 9 Up iP 04 13 36
i 04 13 43
Ki iP 04 12 54
Sk iP 04 13 21
Near coast of northern Honshu, Japan (h = 110 km).

" 9 Up iPKP 06 13 30
New Hebrides Islands region (h = 20 km).

" 9 Up iPKP 16 21 45
i 16 21 50
i(PP) 16 24 18
iPKS 16 25 18

		microns	sec
PKS	N	0.2	2
M	E	0.6	22
M	N	1.2	23
M	Z	1.1	22

D = 15000 km = 135°.
Ki iPKP 16 21 35 C
i 16 21 49

		microns	sec
PKP	Z'	0.1	0.8
M	E	1.2	21
M	N	0.9	21
M	Z	2.1	22

1961
Aug 9 cont. Sk i(PKP) 16 21 35
iPKP 16 21 46
iPP 16 24 24
New Hebrides Islands region (h = 70 km)

" 9 Sk i(P) 17 46 48

" 9 Up iP 21 37 20
Ki i(P) 21 37 04
Sk i(P) 21 37 29

" 10 Ki eLg2 02 01 09

		microns	sec
M	E	0.3	14
M	N	0.3	12
M	Z	0.4	12

Eastern U.S.S.R. (h = 25 km).

" 10 Up iPKP 02 03 09
Sk ePKP 02 03 03
Kermadec Islands region (h = 300 km).

" 10 Up iP 10 33 00

" 10 Up i(P) 10 36 23

" 10 Sk iP 12 08 55

" 10 Up iP 12 14 41
Sk iP 12 14 33
Near west coast of Honshu, Japan (h = 50 km).

" 10 Up iP 12 16 25
i 12 16 30
i 12 16 57
Ki

		microns	sec
M	E	0.5	14
M	N	0.3	12
M	Z	0.4	12

Northern Hokkaido, Japan (h = 25 km).

" 11 Up eP 00 53 47
i 00 53 53
Ki

		microns	sec
M	E	0.2	14
M	N	0.2	14
M	Z	0.6	15

Sk i(P) 00 53 19
Kamchatka (h = 25 km).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Aug 11 Up i(P) 03 55 08

" 11 Ki eL 05 06

		microns	sec
M	E	0.3	13
M	N	0.1	13
M	Z	0.3	13

Kyushu, Japan (h = 25 km).

" 11 Up

		microns	sec
M	E	0.6	15
M	N	1.0	17
M	Z	1.0	16

Ki eLg_2 06 45 21

		microns	sec
M	E	1.0	14
M	N	0.6	13
M	Z	1.2	15

Eastern Kyushu, Japan (h = 25 km).

" 11 Up iPKS 10 47 38
Ki iPKP 10 44 00
Sk iPKS 10 47 35
New Hebrides Islands (h = 25 km).

" 11 Up iP 11 17 59
i 11 18 04
iPP 11 21 53
Ki iP 11 17 45
i 11 17 53
iSKS 11 28 09

		microns	sec
SKS	E	0.2	6
M	E	0.2	15

Sk iP 11 18 05
Gb e(P) 11 18 16
Northern Celebes (h = 140 km).

" 11 Ki i(P) 13 36 46

" 11 Up iP 16 02 35 C
iS 16 11 30
iSP 16 11 51
iP'P' 16 30 39
i 16 30 57

		microns	sec
P	E	4.2	4
P	N	7.0	4
P	Z	15	4
P	Z'	2.0	1.0
S	E	13	5
S	N	27	6
S	Z	9.8	7
M	E	72	18
M	N	110	19
M	Z	110	20

D = 7550 km = 68°.

1961
Aug 11 Up cont.
Ki iP 16 01 50 C
iS 16 10 02
iPn 16 05 47
iScS 16 11 27
iP'P' 16 31 06

		microns	sec
P	E	8.4	6
P	N	8.5	6
P	Z	25	6
P	Z'	2.8	1.0
S	E	20	8
S	N	34	9
S	Z	14	8
M	E	150	21
M	N	120	20
M	Z	200	20

D = 6800 km = 61°.
Sk iP 16 02 26 C
Gb iP 16 02 56 C
i 16 03 08
iS 16 12 13
D = 7900 km = 71°.
Eastern Hokkaido, Japan (h = 70 km).
Magn. = 7.5 (Up, Ki).

" 11 Up eP 22 51 00
iSKS 23 01 43
iS 23 02 31

		microns	sec
SKS	E	0.2	3
S	N	0.6	10
M	E	0.8	21
M	N	1.4	20

D = 10950 km = 98½°.
Ki iP 22 50 54
iSKS 23 01 30
iS 23 02 13

		microns	sec
SKS	E	0.7	10
S	N	0.4	8
M	E	1.5	18
M	N	0.9	19
M	Z	2.5	18

D = 10700 km = 96½°.
Sk iP 22 51 17
Eastern Celebes (h = 20 km).
Magn. = 5.8 (Up, Ki).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Aug 11 Up iP 23 22 44
ipP 23 23 07
Ki iP 23 22 02
Sk iP 23 22 37
Off north coast of Honshu, Japan (h = 120 km).

" 11 Up iP 23 44 52 C
i 23 45 04
microns sec
P Z' 0.6 0.6
Ki iP 23 44 08 C
i 23 44 18
i 23 44 33
microns sec
P Z' 0.4 1.0
M E 0.7 18
M N 0.6 20
M Z 0.8 18
Sk iP 23 44 43 C
i 23 45 08
Gb iP 23 45 13 C
i 23 45 25
Eastern Hokkaido, Japan (h = 70 km).

" 12 Ki i(P) 02 09 16

" 12 Ki iP 22 20 49

" 13 Up iP 02 47 09
Ki iP 02 46 54
Banda Sea (h = 40 km).

" 13 Up iP 03 31 57
i 03 32 05
Ki iP 03 32 28

" 13 Up iPKP 04 07 48
i 04 07 51
Kermadec Islands (h = 600 km).

" 13 Up iP 06 12 51
i 06 12 59
microns sec
M E 0.8 18
M N 1.5 21
M Z 1.3 17
Ki iP 06 12 22
i 06 12 32
microns sec
M E 0.8 16
M N 0.2 14
M Z 0.6 15

1961
Aug 13 Sk iP 06 12 57
cont. Near north coast of Formosa (h = 25 km).

" 13 Up iP 13 47 44
Ki eP 13 47 49
Sk iP 13 47 31 C
Windward Islands (h = 160 km).

" 13 Up i(P) 15 03 23

" 13 Ki iP 16 04 23
Fox Islands, Aleutian Islands (h = 80 km).

" 13 Up iP 22 38 01
Ki iP 22 39 39
Sk iP 22 38 36
Northern Italy (h = 20 km).

" 14 Sk eP 01 04 29
Italy.

" 14 Up iP 01 06 38
Ki iP 01 08 05
Sk iP 01 07 12
Italy.

" 14 Sk i(P) 07 24 15

" 14 Up i(P) 10 36 11

" 14 Ki iP 13 55 28
Sk iP 13 55 56
Gb iP 13 56 40
Alaska Peninsula (h = 90 km).

" 14 Up iP 17 33 16 C
microns sec
P Z' 0.1 0.5
Local? Seismic?

" 14 Gb i(P) 18 14 34

" 14 Up iPKP 19 10 21
microns sec
M E 0.6 22
M N 1.8 22
M Z 1.4 22
Ki iPKP 19 10 08
e 19 10 23
eKKS 19 13 43

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Aug 14 Ki microns sec
cont.
PKS N 0.4 11
M E 0.6 21
M N 1.4 22
M Z 1.3 22
Sk iPKP 19 10 15
Gb iPKP 19 10 30
Tonga Islands region
(h = 20 km).
Magn. = 6.0 (Up, Ki).

" 14 Up iP 22 16 43
microns sec
M E 1.0 14
M N 1.3 15
M Z 1.4 18
Ki iP 22 16 09
iS 22 25 09
microns sec
M E 1.9 18
M N 1.0 20
M Z 2.0 17
D = 7650 km = 69°.
Sk iP 22 16 41
Gb iP 22 17 05
Off south coast of Kyushu,
Japan (h = 15 km).

" 14 Up iPKP 23 48 00
i 23 48 15
ePP 23 50 38
iPKS 23 51 32
microns sec
PP Z 0.2 3
PKS E 0.3 4
PKS N 0.4 4
M E 3.0 22
M N 5.4 22
M Z 5.0 22
D = 15000 km = 135°.
Ki iPKP 23 47 47
i 23 47 58
iPP 23 49 46
iPKS 23 51 06
microns sec
PKP Z' 0.3 1.1
PP E 0.1 5
PP N 0.2 6
PP Z 1.0 7
PKS E 0.5 7
PKS N 0.4 7
M E 4.9 23
M N 2.2 21
M Z 4.6 21

1961
Aug 14 Ki D = 14200 km = 128°.
cont.
Sk iPKP 23 47 50
i 23 47 58
Gb iPKP 23 48 06
New Hebrides Islands
region (h = 100 km).
Magn. = 6.2 (Up, Ki).

" 15 Ki i(P) 00 10 19
i 00 10 32

" 15 Up eP 02 06 42

" 15 Up iP 03 26 50 C

" 15 Sk iP 08 34 51

" 15 Sk iP 12 34 05
i 12 34 09

" 15 Up iP 19 15 48 D
i 19 16 14
iPP 19 18 41
iS 19 25 32
microns sec
P Z' 0.7 0.8
S E 0.9 6
S N 0.4 6
M E 1.7 18
M N 2.9 16
M Z 2.0 18
D = 8450 km = 76°.
Ki iP 19 15 11 D
iS 19 21 23
microns sec
P E 0.5 4
P N 0.3 5
P Z 1.1 4
S E 1.1 7
S N 0.3 8
M E 3.3 19
M N 2.2 18
M Z 2.5 19
D = 7800 km = 70°.
Sk iP 19 15 43
i 19 15 52
Gb iP 19 16 06
i 19 16 21
iPP 19 19 10
South of Honshu, Japan
(h = 40 km).
Magn. = 6.4 (Up, Ki).

" 16 Up iP 01 05 08

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Aug 16 Up i 01 05 20
cont.
" 16 Up i(P) 02 06 27
" 16 Up iPKP 03 53 37
i 03 53 43
i 03 53 59
Sk iPKP 03 53 32
Gb ePKP 03 53 47
i 03 53 57
Kermadec Islands
(h = 70 km).

" 16 Sk iP 08 58 31

" 16 Up iP 09 09 33
i 09 09 47
Ki iP 09 08 56
Sk iP 09 09 29
South of Honshu, Japan
(h = 30 km).

" 16 Up iPg 10 03 58
iSn 10 04 19
iSg 10 04 23
D = 230 km = 2.1°.
Ki eS^x 10 06 41
eSg 10 07 00
Sk iSg 10 05 48
D = 500 km = 4.5°.
Baltic, 61.4°N, 20.8°E.
Origin time = 10 03 20.
Explosion?

" 16 Ki iP 12 30 45
Hindu Kush (h = 260 km).

" 16 Up i(P) 15 03 58
i 15 04 06
i 15 04 17
Local? Seismic?

" 16 Up iP 16 04 44
Ki iP 16 04 09
Sk iP 16 04 40
Off south coast of Honshu,
Japan (h = 330 km).

" 16 Up iP 16 27 57
microns sec
M E 0.8 17
M N 0.7 18
M Z 0.9 19
Ki iP 16 28 37

1961
Aug 16 Ki i 16 28 44
cont. iS 16 39 11
microns sec
S N 0.3 8
M E 1.5 23
M N 0.5 16
M Z 0.6 15
D = 9450 km = 85°.
Sk iP 16 28 12
Gb iP 16 27 38
South of Ascension Island
(h = 25 km).

" 16 Up iPKP 19 38 48
Sk ePKP 19 38 41
Kermadec Islands
(h = 50 km).

" 16 Ki iP 22 34 41
i 22 34 55
Philippine Islands
(h = 310 km).

" 17 Sk iPKP 01 24 31
Kermadec Islands
(h = 50 km).

" 17 Up iP 03 43 07
Sk iP 03 43 33
Hindu Kush (h = 180 km).

" 17 Ki iP 11 47 39
Central Honshu, Japan
(h = 110 km).

" 17 Sk iPKP 13 14 37
Kermadec Islands
(h = 25 km).

" 17 Up iP 21 27 06 D
iPcP 21 27 36
i 21 27 49
iS 21 35 43
i 21 36 45
i 21 37 58
iP'P' 21 55 14
microns sec
P E 0.6 6
P N 1.6 5
P Z 0.7 6
P Z' 0.5 0.6
S E 0.8 4
S N 1.6 5
M E 0.9 17

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Aug 17 cont.	Up	M	N	5.1	20	
		M	Z	5.7	17	
		D = 7550 km = 68°.				
	Ki	iP		21 26 19		D
		iPcP		21 27 00		
		iS		21 34 17		
		i		21 35 03		
		isS		21 35 29		
		i		21 35 54		
		iP'P'		21 56 30		
				microns	sec	
		P	E	1.6	7	
		P	N	2.0	7	
		P	Z	4.9	7	
		P	Z'	1.1	1.0	
		S	E	3.1	6	
		S	N	2.7	7	
		M	E	6.8	18	
		M	N	5.0	18	
		M	Z	8.7	19	
		D = 6650 km = 60°.				
	Sk	iP		21 26 55		D
		iPcP		21 27 27		
		iP'P'		21 55 34		
		i		21 56 18		
	Gb	iP		21 27 28		D
		i		21 27 51		
	Kurile Islands (h = 190 km). Magn. = 6.6 (Up, Ki).					
" 17	Up	i(P)		22 03 52		
" 18	Ki	iP		03 03 19		
" 18	Ki	iPn		05 22 12		
		iSn		05 23 07		
		iSg		05 23 30		
		D = 500 km = 4.5°.				
	Sk	eSn		05 25 08		
		i		05 26 00		
		iSg		05 26 07		
		D = 1020 km = 9.2°.				
	Northwest Russia, 67.7°N, 32.4°E. Origin time = 05 21 02. Explosion?					
" 18	Ki	iP		06 49 31		
" 18	Up	iPKP		11 19 59		
				microns	sec	
		PKP	Z'	0.1	0.6	
	Ki	ePP		11 22 15		

1961 Aug 18 cont.	Ki	iSKP		11 22 31		
	Sk	e(PP)		11 22 30		
	Gb	iPKP		11 20 09		
	Kermadec Islands region (h = 520 km).					
" 18	Up	iP		16 03 21		
		i		16 03 26		
" 19	Up	iP		02 54 01		C
		i		02 54 15		
	Sk	iP		02 53 52		C
	Gb	iP		02 54 23		C
	Eastern Hokkaido, Japan (h = 30 km).					
" 19	Up	iP		05 22 24		D
		ipP		05 24 36		
		iPP		05 26 34		
		i		05 29 25		
		iSKS		05 31 58		
		iSKKS		05 32 32		
		iS		05 32 59		
		iPKKP		05 38 51		
				microns	sec	
		P	E	0.6	5	
		P	Z	4.8	7	
		P	Z'	0.2	0.7	
		PP	Z	2.4	5	
		S	E	5.1	5	
		S	N	3.5	5	
		SKS	E	7.2	6	
		SKS	N	1.9	5	
		SKKS	N	3.9	6	
		PKKP	Z'	0.2	1.0	
		D = 11100 km = 100°.				
	Ki	iP		05 22 34		D
		ipP		05 24 45		
		iPP		05 26 46		
		iSKS		05 32 14		
		iS		05 33 16		
		iSP		05 34 43		
				microns	sec	
		P	E	1.3	5	
		P	Z	3.1	6	
		PP	E	1.6	6	
		PP	Z	2.8	6	
		S	N	5.2	6	
		D = 11200 km = 101°.				
	Sk	iP		05 22 16		D
		ipP		05 24 31		
		iSKS		05 31 54		

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Un = Umeå

1961
Aug 19 Sk iPKKP 05 38 56
cont. i 05 41 20
D = 10800 km = 97°.
Gb iP 05 22 10 D
ipP 05 24 22
i 05 28 12
iSKS 05 32 02
i 05 32 07
iPKKP 05 39 00
iP'P' 05 47 11
D = 10600 km = 95½°.
Peru-Brazil border
(h = 650 km).
Magn. = 7.1 (Up, Ki).

" 19 Up iP 05 44 56 C
i 05 47 06
iS 05 54 16
microns sec
P Z 2.6 6
P Z' 0.4 1.3
S E 8.8 8
M E 69 18
M N 79 13
M Z 41 13
D = 7950 km = 71½°.
Ki iP 05 44 19
iS 05 53 08
iSS 05 57 12
microns sec
P Z 4.8 6
S E 16 8
S N 3.9 9
M E 120 16
M N 87 13
M Z 81 18
D = 7300 km = 65½°.
Sk iP 05 44 52
i(PKKP) 06 04 17
Gb iP 05 45 17 C
Off west coast of Honshu,
Japan (h = 15 km).
Magn. = 7.0 (Up, Ki).

" 19 Ki iP 08 18 06
Near west coast of Honshu,
Japan (h = 25 km).

" 19 Up iP 12 56 01
Ki iP 12 55 17
Sk iP 12 55 51
Near east coast of Hokkaido,
Japan (h = 20 km).

1961
Aug 19 Ki eL 14 00
microns sec
M E 0.4 15
M N 0.2 12

" 19 Up iP 15 03 49 D
ipP 15 04 14
microns sec
M E 0.6 20
M Z 0.7 21
Ki iP 15 03 51 D
ipP 15 04 17
iS 15 13 13
microns sec
P Z 0.4 3
S E 1.0 9
S N 0.3 8
M E 0.2 16
D = 8000 km = 73°.
Sk iP 15 03 32
ipP 15 03 58
Gb iP 15 03 32
Mona Passage. h = 100 km
(Up, Ki, Sk).

" 19 Up i(P) 19 52 43

" 19 Up iP 20 38 43
microns sec
P Z' 0.1 0.5
Ki iP 20 38 43
microns sec
P Z' 0.1 1.0
Sk iP 20 38 56
Gb iP 20 38 56
Off west coast of Sumatra
(h = 25 km).

" 19 Ki iP 21 10 48

" 19 Ki iP 21 35 00
Near south coast of
Mindanao, P.I.
(h = 220 km).

" 19 Ki iPKP 22 05 42
New Hebrides Islands
(h = 100 km).

" 20 Up i(P) 03 12 58
i 03 15 03

" 20 Up iPKP 05 22 24 D
i 05 22 34

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Aug. cont.	20	Ki	iPKP	05 22 09	
			i	05 22 20	
			iSKP	05 24 51	
		Sk	iPKP	05 22 18	
			i	05 22 30	
			iSKP	05 25 08	
		Gb	iPKP	05 22 32	
			i	05 22 41	
			iSKP	05 25 26	
			iPP	05 25 51	
		Fiji Islands (h = 590 km).			
"	20	Sk	eP	09 22 23	
		Peru - Brazil border (h = 680 km).			
"	20	Up	iP	18 07 25	
		Sk	iP	18 07 26	
"	21	Gb	iPKP	02 25 19 C	
		Fiji Islands region (h = 550 km).			
"	21	Up	iP	07 07 57 D	
			i(pP)	07 08 27	
				microns sec	
			P Z'	0.1 0.5	
		Ki	iP	07 08 05 D	
			i(pP)	07 08 32	
		Sk	iP	07 08 22 D	
			ipP	07 09 00	
		Gb	iP	07 08 19 D	
		Hindu Kush (h = 150 km).			
"	21	Up	eP	09 52 36	
"	21	Gb	ePKP	16 26 20	
		Tonga Islands (h = 70 km).			
"	21	Up	iP	17 11 39 C	
			iPcP	17 12 04	
				microns sec	
			P Z'	0.1 0.8	
		Ki		microns sec	
			E	0.8 15	
			N	0.3 17	
		Sk	iP	17 11 33 C	
			i	17 13 37	
		Gb	iP	17 12 01	
		Off coast of northern Honshu, Japan (h = 50 km).			

1961 Aug	21	Up	iP	20 34 05	
				microns sec	
			P Z'	0.1 0.5	
"	21	Ki	eP	20 59 19	
"	22	Ki	i(P)	00 52 11	
"	22	Ki	eP	01 03 07	
"	22	Ki	iP	02 12 24 D	
"	22	Up		microns sec	
			M E	0.4 22	
			M N	0.7 22	
			M Z	0.7 21	
		Sk	iPKP	09 18 27	
		New Hebrides Islands (h = 60 km).			
"	22	Up	i(P)	10 28 33	
"	22	Up	iP	14 30 28	
"	23	Up	eP	01 34 39	
"	23	Ki	i(P)	03 24 28	
			i	03 24 35	
"	23	Up	iP	04 19 55	
			iPP	04 21 24	
			i	04 25 18	
			i	04 27 37	
			iLg1	04 32 56	
				microns sec	
			P Z'	0.2 0.5	
			M E	3.6 18	
			M N	1.7 12	
			M Z	4.0 17	
		D = 4200 km = 38°.			
		Ki	iP	04 20 05	
			iPP	04 21 50	
			iSS	04 29 09	
			iSoS	04 30 08	
			iLg1	04 32 45	
			iLg2	04 33 46	
				microns sec	
			P Z'	0.3 0.6	
			M E	3.2 10	
			M N	2.0 13	
			M Z	3.1 11	
		D = 4350 km = 39°.			

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961					
Aug	23	Sk	iP	04 20 22	
cont.			i	04 20 32	
			i(PP)	04 22 07	
			i	04 23 51	
		Gb	iP	04 20 19	
			i	04 20 27	
			iPP	04 21 46	
		Tadzhik, U.S.S.R. (h = 25 km). Magn. = 6.4 (Up, Ki).			
"	23	Up	iP	20 37 37	
"	23	Ki	i(P)	22 45 19	
		Seismic?			
"	24	Up	i(P)	00 55 50	
"	24	Up	iP	05 03 24	D
			i	05 03 35	
			i(pP)	05 03 47	
				microns sec	
			P Z'	0.1 0.5	
		Ki	iP	05 02 39	
			i(pP)	05 03 04	
		Sk	iP	05 03 15	
"	24	Ki	iP	07 03 14	
			i	07 04 00	
"	24	Up	iP	10 02 03	D
"	24	Up	iP	22 51 55	C
			i	22 52 07	
				microns sec	
			P Z'	0.1 0.6	
		Ki	iP	22 51 11	
				microns sec	
			P Z'	0.1 1.2	
		Sk	iP	22 51 46	
			i	22 51 59	
		Gb	iP	22 52 16	C
		Eastern Hokkaido, Japan (h = 20 km).			
"	25	Ki	iP	07 09 29	
		Sk	iP	07 10 00	
			i	07 10 08	
"	25	Ki	i(P)	07 49 23	
"	25	Ki	i(P)	09 04 43	

1961					
Aug	25	Ki	iP	12 26 40	
		Sk	iP	12 25 48	
		The Alps.			
"	25	Ki	eP	12 32 59	
"	25	Up	i(P)	16 35 02	
"	25	Up	e(P)	19 47 20	
"	25	Ki	iP	21 40 06	
		Flores Sea (h = 190 km).			
"	26	Up	iP	02 06 41	
"	26	Ki	ePKP	18 21 21	
		Sk	iPKP	18 21 33	
		New Hebrides Islands (h = 70 km).			
"	26	Up	iP	19 02 52	
		Ki	iP	19 02 24	
				microns sec	
			P Z'	0.2 1.3	
		Sk	iP	19 02 50	
		Mariana Islands (h = 50 km).			
"	27	Up	iP	02 03 55	
			i	02 04 01	
		Ki	iP	02 04 34	
			i	02 04 44	
			iS	02 15 19	
			e	02 15 35	
				microns sec	
			S N	0.5 4	
			M E	0.7 19	
			M N	0.6 19	
			M Z	0.8 18	
			D = 9600 km = 86½° .		
		Sk	iP	02 04 07	
		Gb	iP	02 03 38	
		South of Ascension Island (h = 50 km).			
"	27	Up	iP	16 33 07	C
			i	16 33 16	
			iPa	16 38 00	
			iS	16 42 02	
				microns sec	
			P N	1.4 4	
			P Z	2.6 4	
			P Z'	0.5 0.7	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Aug cont 27 Up S E 0.8 11
S N 1.2 10
M E 4.4 20
M N 7.2 18
M Z 4.3 19
D = 7500 km = 67½°.
Ki iP 16 32 18 C
iPa 16 36 00
iS 16 40 31
microns sec
P E 0.5 7
P N 0.7 7
P Z 2.0 7
P Z' 1.3 2.2
S E 1.8 11
S N 0.7 8
M E 6.0 16
M N 4.8 17
M Z 6.9 17
D = 6650 km = 60°.
Sk iP 16 32 54 C
i 16 33 14
Gb iP 16 33 27 C
Kurile Islands (h = 30 km).
Magn. = 6.5 (Up, Ki).

" 27 Up iP 17 00 52 C
i 17 00 57
i 17 01 18
iSKS 17 11 18
D = 10050 km = 90½°.
Ki iP 17 02 23 C
i 17 01 06
iS 17 10 48
microns sec
P Z' 0.5 1.0
S N 1.8 9
D = 9450 km = 85°.
Sk iP 17 00 49
i 17 01 14
i(PP) 17 04 35
Gb iP 17 01 08
Mariana Islands
(h = 30 km).

" 27 Ki iP 17 35 51
Mariana Islands
(h = 110 km).

" 27 Up iP 18 11 00
Ki iP 18 10 32
Sk iP 18 10 56
Mariana Islands (h = 70 km).

1961 Aug 27 Up iP 20 01 41
microns sec
P Z' 0.1 0.5
Ki eP 20 00 53
Sk iP 20 01 28
Kurile Islands
(h = 50 km).

" 27 Up iP 21 07 15 C
i 21 07 28
microns sec
P Z' 0.6 0.8
Ki iP 21 06 26
Sk iP 21 07 02 C
Gb iP 21 07 36
i 21 07 48
Kurile Islands
(h = 25 km).

" 27 Up iP 21 10 39 C
Sk iP 21 10 27
(Kurile Islands).

" 27 Ki iP 21 24 12

" 27 Up iP 22 14 03 D
iPP 22 14 27
iS 22 18 20
microns sec
P N 0.4 3
P Z 0.4 2
P Z' 0.1 0.9
S N 0.5 5
M E 3.0 22
M N 3.1 23
M Z 1.7 15
D = 2650 km = 21°.
Ki iP 22 15 12 D
i 22 15 33
i(SSS) 22 22 40
microns sec
P Z' 0.2 0.6
M E 3.9 19
M N 0.9 12
M Z 2.2 16
Sk iP 22 14 42 D
i 22 14 54
Gb iP 22 13 52
i 22 13 59
iPP 22 14 18
Near west coast of Crete
(h = 70 km).
Magn. = 5.7 (Up, Ki).

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961 Aug	28	Sk	iP		00 25 13
"	28	Up	iSKP		08 21 45
				microns sec	
			SKP	Z' 0.1	0.5
		Ki	iPKP		07 59 08
		Sk	iPKP		07 59 19
		Gb	iSKP		08 01 57
		Santa Cruz Islands (h = 660 km).			
"	28	Ki	iP		09 19 41
		Kamchatka (h = 25 km).			
"	28	Up	iPKP		10 02 29
			i		10 02 38
		Ki	iPKP		10 02 21
		Sk	iPKP		10 02 33
		Gb	iPKP		10 02 36
		Fiji Islands (h = 570 km).			
"	28	Up	iP		12 24 46
			i		12 24 57
				microns sec	
			P	Z' 0.1	0.5
		Ki	iP		12 23 57
		Sk	iP		12 24 33
			i		12 24 40
		Gb	iP		12 25 07
		Kurile Islands (h = 20 km).			
"	28	Ki	iP		13 03 40
"	28	Up	iP		13 19 01
		Ki	iP		13 18 12
		Kurile Islands (h = 30 km).			
"	28	Up	i(P)		15 45 59
		Ki	i(P)		15 45 41
			i		15 45 47
"	28	Ki	iP		17 45 08
"	28	Up	iP		18 12 55 D
			i		18 13 06
				microns sec	
			P	Z' 0.1	1.0
		Ki	iP		18 12 06 D
		Sk	iP		18 12 42
		Kurile Islands (h = 30 km).			
"	28	Ki	eP		22 54 48

1961 Aug	28	Up	iP		23 15 25
		Ki	eP		23 15 28
		Sk	iP		23 15 41
"	29	Up	iP		06 06 39 D
		Ki	eP		06 05 49
			i		06 05 54
		Sk	iP		06 06 30
		Kurile Islands (h = 25 km).			
"	29	Ki	i(P)		08 11 29
"	29	Up	i(P)		10 29 35
"	29	Up	iPg		12 44 45
			iSg		12 44 55
"	29	Up	iP		15 02 12
				microns sec	
			N	E 0.5	18
			N	N 0.9	17
			N	Z 0.9	18
		Sk	iP		15 01 51
			i		15 02 17
		Gb	iP		15 02 27
		Fox Islands, Aleutian Islands (h = 40 km).			
"	29	Up	iP		15 31 30
"	29	Up	i(P)		15 53 53
"	29	Up	iP		20 00 53 C
				microns sec	
			P	Z' 0.1	0.5
		Sk	iP		20 00 41
		Gb	iP		20 01 15
		Kurile Islands (h = 15 km).			
"	29	Ki	iPKP		21 52 38
		New Hebrides Islands (h = 25 km).			
"	29	Sk	eP		23 28 28
"	30	Ki	iP		01 08 44
"	30	Up	iP		02 36 32
		Ki	iP		02 35 38
		Fox Islands, Aleutian Islands (h = 70 km).			

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961
Aug 30 Up iP 03 45 52
i 03 45 59
microns sec
N E 1.0 20
N N 0.9 21
N Z 1.1 22
Ki eP 03 46 29
i 03 46 34
eS 03 55 34
microns sec
M E 1.2 23
M N 0.4 16
M Z 1.4 23
D = 7900 km = 71°.
Sk eP 03 46 01
Gb eP 03 45 34
North Atlantic Ocean
(h = 70 km).

" 30 Up iSg 14 19 12
i 14 19 26
iSg 14 19 28
iL 14 19 37
i 14 19 50
microns sec
Sg Z' 0.2 0.5
D = 130 km = 1.2°.
Sk iSg 14 22 23
D = 660 km = 5.9°.
Gb iSg 14 20 55
D = 420 km = 3.8°.
Baltic, 58.7°N, 18.8°E.
Origin time = 14 18 48.
Explosion?

" 30 Ki iP 14 59 24
Sinkiang Province, China.

" 31 Up iPKP 00 42 25 C
i 00 42 35
i 00 42 51
i(PcPPKP) 00 54 07
microns sec
PKP Z' 0.1 0.7
Sk iPKP 00 42 17 D
i 00 42 24
Gb iPKP 00 42 33 C
i 00 42 39
Kermadec Islands
(h = 60 km).

" 31 Up iP 02 01 13
ipP 02 03 24

1961
Aug 31 Up iPP 02 05 22
cont. iSKS 02 10 51
iS 02 11 48
i 02 18 45
iSS 02 19 20
i 02 21 40
microns sec
P Z 0.8 4
P Z' 0.2 1.0
PP E 0.6 5
PP Z 1.9 6
SKS E 3.3 5
SKS N 1.1 4
S E 3.9 6
S N 4.4 7
D = 11100 km = 100°.
Sk iP 02 01 05 D
ipP 02 03 15
i 02 03 59
isP 02 04 12
iS 02 11 46
D = 10800 km = 97°.
Gb iP 02 00 59 D
i 02 01 00
i 02 01 04
ipP 02 03 09
i 02 03 27
iPP 02 04 59
D = 10600 km = 95½°.
Peru - Brazil border
(h = 630 km).
Magn. = 6.6 (Up).

" 31 Up iP 02 09 44
i 02 09 45
i 02 10 11
ipP 02 12 01
iSKKS 02 19 49
iS 02 20 17
iPKKP 02 26 11
iP'P' 02 34 27
i 02 40 17
microns sec
P E 1.7 6
P N 0.7 6
P Z 4.9 6
P Z' 0.5 1.0
S E 17 7
S N 7.1 8
SKKS E 7.7 6
M E 19 17
M N 23 23
M Z 22 19
D = 11100 km = 100°.

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Um = Umeå

1961					
Aug	31	Sk	iP	02	09 33
cont.			i	02	23 30
			iPKKP	02	26 19
			i	02	28 33
			iP'P'	02	34 25
			D = 10800 km = 97°.		
		Gb	iP	02	09 27
			i	02	09 31
			ipP	02	11 46
			i	02	11 53
			i	02	12 05
			iSKS	02	19 09
			iSP	02	21 06
			iPKKP	02	26 22
			iP'P'	02	34 31
			D = 10600 km = 95½°.		

Peru - Brazil border
(h = 630 km).
Magn. = 7.5 (Up).

Seweryn Duda Markus Båth
July 31, 1962

Seismological Institute
Uppsala

1961
Dec.

PRELIMINARY
SEISMOLOGICAL BULLETIN
UPPSALA, KIRUNA, SKALSTUGAN, GÖTEBORG and KARLSKRONA

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
Karlskrona	(Ka):	56°09.8'N,	15°35.5'E;	h = 11 m

DECEMBER 1 - 31, 1961

1961
Dec 1 Up iP 05 49 59
i 05 50 36

" 1 Up iP 07 44 28 C
Ki iP 07 43 35 C
microns sec
M E 1.1 15
M N 0.4 14
Sk eP 07 44 23
Kamchatka (h = 20 km).

" 1 Ki iP 08 11 27
Off coast of Negros, Philippine Islands (h = 40 km).

" 1 Gb e(P) 09 10 33
e 09 10 45

" 1 Gb e(P) 10 12 39
Seismic?

" 1 Sk iP 12 06 43

" 1 Gb iPg 14 08 01
iSg 14 08 03
Explosion?

" 1 Up iP 20 29 58
microns sec
P Z' 0.1 0.6
Ki iP 20 29 25
Sk iP 20 29 54
i 20 30 05
Volcano Islands region (h = 25 km).

1961
Dec 1 Up iP 21 24 27 D
iPcP 21 24 42
ipP 21 25 20
iS 21 33 47
isS 21 35 25
microns sec
P Z' 0.3 1.2
pP Z' 1.0 1.0
S E 1.9 8
M E 1.6 19
M N 4.7 20
M Z 2.4 14
D = 8350 km = 75°.
Ki iP 21 24 00 D
ipP 21 24 52
iS 21 32 57
isS 21 34 33
microns sec
P Z' 0.6 1.5
pP Z' 1.1 1.0
S E 2.5 10
M E 4.0 20
M N 2.9 17
M Z 2.5 18
D = 7850 km = 70½°.
Sk iP 21 24 29 D
ipP 21 25 22
Gb iP 21 24 47
ipP 21 25 40
Ka iP 21 24 43
ipP 21 25 31
East China Sea. h = 210 km (Up,Ki,Sk,Gb,Ka).
Magn. = 6.1 (Up, Ki).
The pP and sS waves have exceptionally large amplitudes.

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Ka = Karlskrona

1961 Dec	2	Up	iP	07 23 06	
"	2	Up	iP	12 45 30	C
			i	12 45 41	
			eS	12 49 47	
				microns sec	
			P N	0.9 4	
			P Z	0.7 3	
			S E	0.7 5	
			M E	2.2 16	
			M N	2.0 12	
			M Z	2.4 13	
			D = 2650 km = 24°.		
		Ki	iP	12 46 40	C
				microns sec	
			M E	3.0 16	
			M N	2.2 16	
			M Z	2.6 14	
		Sk	iP	12 45 58	
		Gb	iP	12 45 04	
		Ka	iP	12 44 51	
			Northern Tunisia (h = 60 km). Magn. = 5.5 (Up).		
"	2	Up	e(P)	18 31 35	
			i	18 32 25	
"	2	Up	iP	19 31 19	
"	3	Up	iP	08 52 02	D
			i	08 52 38	
		Ki	iP	08 51 37	D
			ipP	08 52 12	
		Sk	eP	08 52 05	
			Off coast of Formosa (h = 90 km).		
"	3	Ki	iP	09 39 53	
			Kirghiz, U S.S.R. (h = 25 km).		
"	3	Up	iP	18 37 18	D
			ipP	18 37 32	
			i	18 42 15	
				microns sec	
			P Z'	0.1 0.6	
			M E	3.4 18	
			M N	3.2 16	
		Ki	iP	18 38 02	
			ipP	18 38 16	
			i	18 40 32	

1961 Dec 3 cont.		Ki		microns sec	
			M E	2.2 13	
			M N	1.7 11	
			M Z	2.7 11	
		Sk	eP	18 38 20	
			i	18 40 28	
		Gb	iP	18 37 43	
		Ka	iP	18 37 07	
			Armenia, U.S.S.R.-Turkey border region (h = 50 km).		
"	3	Up	iP	20 05 05	D
			i	20 05 20	
			iPcP	20 05 33	
			iS	20 13 15	
				microns sec	
			P Z'	0.1 0.5	
			D = 7150 km = 64 1/2 °.		
		Ki	iP	20 04 24	D
			i	20 04 51	
			iScP	20 08 32	
			iS	20 12 08	
			D = 6550 km = 59°.		
		Sk	iP	20 05 01	D
		Gb	iP	20 05 28	D
			Near Vladivostok, U.S.S.R. (h = 420 km).		
"	4	Ki	iP	03 52 20	D
			Off south coast of Alaska Peninsula (h = 110 km).		
"	4	Sk	eP	11 21 45	
			i	11 21 50	
"	4	Up	iP	12 47 49	D
			i	12 47 58	
			iS	12 55 36	
				microns sec	
			P Z'	0.3 1.0	
			S E	1.0 5	
			M E	6.4 12	
			M N	18 18	
			M Z	6.3 12	
			D = 6150 km = 61 1/2 °.		
		Ki	iP	12 47 34	
			i	12 47 40	
			iS	12 55 11	
			iSS	12 59 13	
				microns sec	
			P Z'	0.1 1.0	
			S E	1.0 9	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Ka = Karlskrona

1961
Dec 4 cont. Ki S N 0.8 8
M E 13 13
M N 14 15
D = 5950 km = 53½°.
Sk eP 12 48 01
i 12 48 07
Gb iP 12 48 12
Tibet (h = 50 km).
Magn. = 6.2 (Up, Ki).

" 4 Up iP 17 41 08 D
i 17 43 40
iS 17 43 44
iSS 17 44 00
i 17 44 29
D = 1560 km = 14.0°.
Ki iP 17 40 01 D
i 17 40 08
i(S) 17 41 51
e(SSS) 17 42 07
D = 1010 km = 9.1°.
Sk iP 17 40 06 D
iS 17 41 56
D = 1070 km = 9.6°.
East of Jan Mayen, 70.6°N, 4.0°W. Origin time = 17 37 46. The solution is based on both Swedish and Finnish observations (Nurmijärvi, Kajaani, Sodankylä).

" 5 Up iPKP 13 20 45 C
microns sec
PKP Z' 0.2 1.0
M E 3.2 18
M N 3.9 20
M Z 4.5 20
Ki iPKP 13 20 43
microns sec
M E 4.4 20
M N 2.9 21
Sk iPKP 13 20 50
Ka ePKP 13 20 39
Southwest of Tasmania (h = 60 km).
Magn. = 6.3 (Up, Ki).

" 5 Up i(PKP) 13 21 48
iSKP 13 24 32
New Hebrides Islands (h = 150 km).

" 5 Gb i(P) 14 51 27

1961
Dec 5 Up i(P) 18 35 49

" 6 Ki iP 02 26 44 C
Off east coast of Honshu, Japan (h = 50 km).

" 6 Up iP 05 59 57 D
microns sec
P Z 2.2 5
P Z' 0.2 0.5
M E 2.7 16
M N 8.5 23
M Z 3.0 16
Ki iP 05 59 57 D
iS 06 09 19
microns sec
P Z' 0.7 1.5
S N 1.1 12
M E 4.9 19
M N 3.7 20
M Z 3.9 17
D = 7900 km = 71°.
Sk iP 06 00 14 D
Gb iP 06 00 11 D
Ka iP 05 59 58
Andaman Islands (h = 50 km).
Magn. = 6.4 (Up, Ki).

" 6 Up iPKP 13 55 14
microns sec
PKP Z' 0.1 0.7
Ki ePKP 13 55 03
microns sec
M E 1.8 20
M N 1.0 19
M Z 2.8 20
Gb iPKP 13 55 23
i 13 55 34
Tonga Islands region (h = 20 km).

" 6 Ka iP 14 37 25

" 6 Up e(P) 15 46 15
i 15 48 45

" 6 Up iP 16 50 19 C
i 16 50 30
iPa 16 54 35
iS 16 59 02
microns sec
P Z' 0.1 0.5
S N 1.1 5
M E 17 21

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Ka = Karlskrona

1961 Dec cont.	6	Up	M	N	35	22
			M	Z	40	24
			D = 7300 km = 65½°.			
		Ki	iP		16 49 27	
			i		16 51 13	
			iPa		16 53 06	
			microns sec			
			M	E	26	20
			M	N	11	18
			M	Z	12	18
		Sk	iP		16 50 05	
			iPcP		16 50 43	
		Gb	iP		16 50 36	
			iPcP		16 51 01	
		Kurile Islands (h = 20 km). Magn. = 6.4 (Up, Ki).				
"	7	Gb	iPKP		00 38 02	
			i		00 38 13	
		Tonga Islands region (h = 50 km).				
"	7	Up	i(P)		06 03 14 C	
			i		06 03 54	
"	8	Up	iP		10 29 13	
			i		10 29 17	
			i		10 29 23	
		Ki	iP		10 29 11	
			microns sec			
			M		1.1 14	
		Sk	iP		10 29 34	
		Gb	iP		10 29 32	
		Ka	iP		10 29 23	
		Tibet (h = 50 km).				
"	8	Ki	iP		10 50 31	
		Gulf of Aden (h = 25 km).				
"	8	Up	i(P)		17 13 57 D	
"	8	Ki	iP		20 41 30	
"	9	Up	iP		00 09 06 D	
"	9	Up	iP		02 25 56 C	
			i		02 26 06	
			i		02 27 10	
			iS		02 34 34	
			microns sec			
			P	Z'	0.1 0.6	
			S	E	0.7 5	
			S	N	1.2 6	

1961 Dec cont.	9	Up	M	E	2.5	18
			M	N	2.9	18
			M	Z	2.6	18
			D = 7050 km = 63½°.			
		Ki	iP		02 25 02 C	
			i		02 25 13	
			iS		02 32 48	
			i(PS)		02 33 04	
			microns sec			
			P	Z'	0.3 1.0	
			S	E	1.7 6	
			S	N	1.6 7	
			M	E	4.0 21	
			M	N	3.2 21	
			M	Z	5.1 22	
			D = 6150 km = 55½°.			
		Sk	iP		02 25 29 C	
			i		02 25 32	
		Gb	iP		02 26 04 C	
			i		02 26 14	
		Ka	iP		02 26 15	
			i		02 26 34	
		Kodiak Island, Alaska region (h = 30 km). Magn. = 6.1 (Up, Ki).				
"	9	Up	iP		04 45 48 D	
			i		04 46 01	
			i(pP)		04 46 09	
			i		04 46 22	
		Ki	iP		04 45 30 C	
			i(pP)		04 45 51	
			microns sec			
			P	Z'	0.1 0.7	
		Sk	iP		04 45 43 C	
			i(pP)		04 46 04	
"	9	Up	iP		10 31 33 D	
			ipP		10 32 30	
		Ki	iP		10 31 25	
		Java (h = 300 km).				
"	9	Up	iPKP		11 37 13 C	
			i		11 37 22	
			i		11 37 27	
			i(PKS)		11 40 32	
			iPS		11 49 23	
			microns sec			
			(PKS)	E	1.2 6	
			M	E	12 18	
			M	N	12 21	
			M	Z	13 24	
			D = 14350 km = 129°.			

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Ka = Karlskrona

1961					
Dec 9 cont.	Ki	iPKP		11 37 18	C
		i		11 37 21	
		i		11 37 25	
		iPP		11 39 43	
		iPKS		11 40 49	
			microns	sec	
		PKP	Z	1.6	7
		PP	Z	1.8	5
		PKS	E	6.2	6
		PKS	Z	1.7	5
		M	E	10	20
		M	N	6.5	21
		M	Z	9.7	18
		D = 14650 km = 132°.			
	Sk	ePKP		11 37 09	
		i		11 37 15	
		i		11 37 26	
	Gb	iPKP		11 37 05	
		i		11 37 21	
	Ka	iPKP		11 37 05	C
		i		11 37 22	
		Near coast of southern Chile (h = 30 km). Magn. = 6.8 (Up, Ki).			
" 9	Gb	iPg		12 25 01	
		iSg		12 25 03	
		Explosion? Same source as for Dec. 1, 1961, at 14 08.			
" 9	Ki	iP		16 49 20	
		South of Java (h = 40 km).			
" 9	Up	iPKP		20 07 58	D
		i		20 08 07	
		iPP		20 11 08	
			microns	sec	
		PP	Z'	0.1	1.0
	Ki	iPKP		20 07 40	D
		i		20 07 52	
	Sk	iPKP		20 07 50	D
		i		20 08 02	
	Gb	iPKP		20 08 02	D
	Ka	iPKP		20 08 05	D
		Fiji Islands (h = 620 km).			
" 9	Ki	iP		21 31 29	
	Sk	iP		21 31 55	
" 10	Up	iP		04 35 02	
" 10	Up	iP		04 42 38	C
	Ki	iP		04 42 20	

1961					
Dec 10	Up	iP		05 09 07	
	Ki	iP		05 08 13	
	Sk	iP		05 08 39	C
		Kodiak Island region (h = 70 km).			
" 10	Up	iP		08 44 36	
		i		08 45 25	
		iS		08 49 03	
		D = 2850 km = 25½°.			
	Ki	iP		08 45 44	
			microns	sec	
		M	E	1.1	13
		M	N	0.7	15
	Sk	i(PP)		08 45 11	
	Ka	iP		08 44 16	
		i		08 44 37	
		Aegean Sea (h = 80 km).			
" 10	Up	iP		11 34 47	
		i		11 35 34	
" 10	Up	iP		14 39 00	
" 10	Up	iP		19 11 51	C
	Ki	iP		19 11 25	
	Sk	iP		19 11 24	
		New Mexico, U.S.A. Underground nuclear explosion of 5 kiloton (Project Gnome).			
" 11	Ki	iP		09 50 11	
" 11	Up	iP		10 02 40	C
	Ki	iP		10 02 34	C
	Sk	eP		10 03 02	
		i		10 03 22	
		Burma (h = 90 km).			
" 11	Up	iP		16 58 17	C
		i		16 58 25	
		iS		17 02 25	
		i		17 02 45	
		D = 2600 km = 23½°.			
	Ki	iP		16 59 27	C
		i(SS)		17 06 00	
	Sk	iP		16 58 56	C
		eS		17 03 37	
		i(SS)		17 05 04	
		D = 3050 km = 27½°.			
	Gb	iP		16 58 04	C
		i		16 58 20	
	Ka	iP		16 57 39	C

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Ka = Karlskrona

1961
Dec 11 cont. Ka iS 17 01 20
D = 2200 km = 20°.
Near coast of southern Greece (h = 25 km).

" 12 Up iP 03 48 35 C

" 12 Ki iP 05 56 46

" 12 Ki i(P) 09 21 58

" 12 Ki iP 11 52 32

" 12 Up iP 14 41 06

" 12 Up iP 17 35 56
i 17 36 03
microns sec
P Z' 0.1 0.7
Ki iP 17 35 27
microns sec
M E 1.1 15
M N 0.7 13
Sk eP 17 35 54
Northern Mariana Islands region (h = 25 km).

" 12 Up iP 20 35 18
Gb i(P) 20 34 46

" 12 Ki i(P) 21 17 23

" 12 Ki iP 21 31 08

" 12 Up iP 23 17 20 C
i 23 17 25
iPP 23 19 52
microns sec
P Z' 1.3 1.0
Ki iP 23 16 35 D
microns sec
P Z' 1.0 1.0
M E 1.2 16
M N 1.2 17
M Z 3.2 17
Sk iP 23 17 10
Gb iP 23 17 43 C
i 23 17 58
Ka iP 23 17 42 C
Near east coast of Hokkaido, Japan (h = 40 km).

" 13 Up i(P) 00 47 45

1961
Dec 13 Up i(P) 01 58 24

" 13 Up iP 08 52 49
i 08 53 02
Sk iP 08 52 49
Gb iP 08 52 56
i 08 53 10
Ryukyu Islands (h = 160 km).

" 13 Up ePKP 17 09 20
New Hebrides Islands (h = 30 km).

" 13 Up iP 17 40 18
i 17 40 26
Sk eP 17 41 00
Greece.

" 13 Up iP 20 54 27

" 14 Up ————
microns sec
M E 2.3 19
M N 2.2 20
M Z 3.0 19
Ki iSKS 07 35 10
microns sec
SKS E 1.2 8
M E 2.4 18
M N 1.3 18
M Z 3.6 18
Near north coast of New Guinea (h = 40 km).
Magn. = 6.0 (Up, Ki).

" 14 Gb i(P) 15 59 34
i 15 59 37

" 14 Gb iP 17 50 58

" 14 Up iPKP 23 44 42 D
microns sec
PKP Z' 0.1 0.6
South of Fiji Islands (h = 500 km).

" 15 Up eP 22 08 44
iPP 22 09 20
Sk eP 22 09 15
i 22 09 29
Gb iP 22 08 39
Crete.

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Ka = Karlskrona

1961					
Dec	16	Up	cP	01 41 20	
			i	01 41 32	
"	16	Up	iP	13 51 00	D
			i	13 51 13	
			microns	sec	
			P Z'	0.1 1.0	
		Ki	iP	13 50 07	D
			i	13 50 17	
		Sk	iP	13 50 57	
		Gb	iP	13 51 18	
			i	13 51 33	
			iPcP	13 51 42	
		Ka	iP	13 51 23	
			i	13 51 35	
		Near east coast of Kamchatka (h = 25 km).			
"	16	Up	iPKP	20 54 32	D
			i	20 54 49	
			microns	sec	
			PKP Z'	0.1 0.6	
		Ki	iPKP	20 54 20	
		Sk	iPKP	20 54 25	D
		Gb	iPKP	20 54 41	D
			i	20 54 48	
		Ka	iPKP	20 54 42	D
			i	20 54 50	
		Kermadec Islands (h = 420 km).			
"	17	Up	iPKP	22 32 29	D
		Ki	iPKP	22 32 12	
			i	22 32 24	
		South of Tasmania (h = 50 km).			
"	17	Ki	iP	22 40 20	
			i	22 40 23	
"	18	Up	iP	02 30 39	
		Ki	iP	02 30 24	
		Off north coast of Luzon, P.I. (h = 30 km).			
"	18	Up	iP	03 14 32	
		Sk	e(P)	03 13 38	
		Gb	i(P)	03 14 04	
"	18	Gb	i(P)	05 58 15	
"	18	Up	i(P)	13 03 43	

1961					
Dec	18	Up	iP	16 52 34	C
			microns	sec	
			P Z'	0.1 0.5	
		Sk	iP	16 52 47	C
		Ka	iP	16 52 38	C
		Burma-India border (h = 90 km).			
"	18	Up	iP	20 36 00	D
"	18	Up	iP	21 40 22	
			i	21 40 25	
		Sk	iP	21 41 05	
		Gb	eP	21 40 04	
		Ionian Islands.			
"	19	Up	iP	03 18 12	
"	19	Gb	i(P)	14 09 57	
"	19	Up	iP	17 42 06	
		Ki	iP	17 41 32	
		Sk	eP	17 42 07	
		Gb	iP	17 42 17	
		Near east coast of Formosa (h = 90 km).			
"	20	Up	i(Sn)	03 23 02	
			iLg1	03 23 28	
			iSg	03 23 38	
			D = 780 km = 7.0°.		
		Ki	iPg	03 20 44	
			iSg	03 21 20	
			D = 310 km = 2.8°.		
		Sk	e(P^x)	03 20 44	
			i(S^x)	03 21 25	
			iSg	03 21 28	
			D = 340 km = 3.1°.		
		West coast of Norway, 66.8°N, 14.0°E. Origin time = 03 19 47.			
"	20	Up	iP	13 38 04	D
			ipP	13 38 45	
			ipPP	13 42 34	
			iS	13 48 31	
			iSP	13 49 41	
			microns	sec	
			P E	1.6 5	
			P N	1.9 5	
			P Z	1.7 5	
			P Z'	0.2 0.5	

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Ka = Karlskrona

1961
Dec 20 Up S E 1.2 4
cont. S N 15 11
M E 4.1 18
M N 6.3 22
M Z 5.8 20
D = 9800 km = 88°.

Ki iP 13 38 06 D
ipP 13 38 48
iS 13 48 37
iSP 13 49 36
iSS 13 54 27
i(SSS) 13 57 43
microns sec
P Z' 0.8 0.7
S E 4.3 8
S N 15 9
M E 4.1 16
M N 4.3 16
M Z 7.4 16
D = 9850 km = 88½°.

Sk iP 13 37 52 D
i 13 38 22

Gb iP 13 37 49 D
ipP 13 38 32
isP 13 38 58
D = 9350 km = 84°.

Ka iP 13 37 58 D
West-central Colombia.
h = 170 km (Up,Ki,Gb).
Magn. = 6.9 (Up, Ki).

" 21 Ki iP 00 57 24 C
Near coast of Mindanao, P.I. (h = 25 km).

" 21 Up iP 20 09 02
i 20 09 59

" 21 Ki iP 21 58 15

" 21 Up iP 22 14 05 D
Ki eP 22 13 19 D

" 22 Ki iP 15 08 15 C
Sk iP 15 08 42 C
Kodiak Island, Alaska
(h = 25 km).

" 22 Ki iP 19 01 57
i 19 02 11

" 22 Up i(P) 21 11 58

1961
Dec. 22 Ki iP 22 58 44
Mariana Islands
(h = 160 km).

" 22 Ki iP 23 55 41

" 23 Up i(P) 03 48 46 S

" 23 Up iP 09 22 26

" 23 Up iP 18 16 34 D
Ki iP 18 16 43 D
Gb iP 18 16 48 D
Ka iP 18 16 32
Hindu Kush (h = 180 km).

" 23 Up iP 19 23 03
Near east coast of Honshu, Japan (h = 270 km).

" 23 Up iP 22 49 41 D
Ki iP 22 49 41 D

" 24 Up iP 06 32 54

" 24 Up iP 07 01 43
i 07 01 58
i 07 02 07
microns sec
P Z' 0.8 1.0

Ki iP 07 01 00
microns sec
P Z' 0.5 1.4

Sk iP 07 01 34
Gb iP 07 02 03
Ka iP 07 02 03
Near coast of northern Hokkaido, Japan (h = 80 km).

" 24 Up iP 07 22 33 D
i 07 22 55
microns sec
P Z' 0.1 0.9
M E 2.4 17
M N 2.4 20
M Z 2.6 20

Ki iP 07 22 35 D
microns sec
P Z' 0.2 0.7
M E 3.3 18
M N 2.3 17

Sk iP 07 22 55 D

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Ka = Karlskrona

1961 Dec	24	Gb	iP		07 22 54	D
cont.		Ka	iP		07 22 37	D
		Nepal (h = 20 km).				
		Magn. = 5.7 (Up, Ki).				
"	24	Ki	iP		20 30 05	
"	25	Up	eL		00 40	
				microns	sec	
			M	E	3.1	18
			M	N	2.7	19
			M	Z	3.0	19
		Ki	eL		00 42	
				microns	sec	
			M	E	4.2	20
			M	N	3.2	19
			M	Z	4.1	18
		Near coast of Chile				
		(h = 30 km).				
		Magn. = 6.2 (Up, Ki).				
"	25	Ki	iP		08 14 10	
		Ceram (h = 50 km).				
"	25	Ki	iP		09 22 50	
"	25	Up	iP		11 29 05	
		Ki	eP		11 29 06	
		Bhutan-India border				
		(h = 50 km).				
"	25	Up	iP		15 55 40	
			i		15 55 44	
"	25	Up	iP		21 37 42	D
"	25	Up	iP		21 58 17	D
		Ki	iP		21 57 33	
		Hokkaido, Japan				
		(h = 250 km).				
"	25	Up	iP		21 58 42	
		Ki	iP		21 58 41	
		Sinkiang Province, China.				
"	26	Up	iP		04 37 29	C
				microns	sec	
			P	Z'	0.1	0.5
		Ki	iP		04 37 22	C
		Sk	iP		04 37 40	
		Java Sea (h = 570 km).				
"	26	Up	iP		21 54 46	D
		Ki	iP		21 53 28	

1961 Dec	27	Up	iP		02 13 06	
"	27	Up	iP		16 57 16	
		Ki	iP		16 58 09	
		Sk	eP		16 57 32	
		Gb	iP		16 56 48	
		Ka	iP		16 56 44	
			i		16 56 51	
		Atlantic Ocean, north of Ascension Island				
		(h = 40 km).				
"	27	Up	iP		19 16 29	
"	27	Up	iP		22 19 30	
"	27/28	Up	iPKP2		00 08 22	
			i		00 08 27	
			i		00 08 33	
				microns	sec	
			M	E	6.8	18
			M	N	8.1	20
			M	Z	9.5	21
		Ki	iPKP		00 07 48	
			i		00 08 02	
				microns	sec	
			PKP	Z'	0.6	1.5
			M	E	12	21
			M	N	6.1	20
			M	Z	14	18
		Near coast of North Island, New Zealand (h = 60 km).				
		Magn. = 6.7 (Up, Ki).				
"	28	Ki	e(P)		09 07 03	
"	28/29	Ki	iPKP		00 14 38	
		Sk	ePKP		00 14 51	
		Santa Cruz Islands region				
		(h = 100 km).				
"	29	Ki	iP		08 10 25	
		Hokkaido, Japan				
		(h = 40 km).				
"	30	Up	iP		00 20 10	
			i		00 20 28	
"	30	Up	iP		00 50 17	C
			i		00 50 19	
			iS		00 59 14	
				microns	sec	
			P	Z	2.4	5
			P	Z'	1.0	1.0

Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Gb = Göteborg, Ka = Karlskrona

1961
Dec 30 Up S E 4.5 5
cont. S N 2.7 5
M E 21 21
M N 39 21
M Z 36 23
D = 7450 km = 67°.

Ki iP 00 49 23 C
i 00 49 29
iS 00 57 33
i(PPS) 00 57 52
microns sec
P N 2.8 5
P Z 3.8 5
P Z' 0.5 1.3
S E 13 11
S N 3.4 8
M E 28 16
M N 14 18
M Z 54 17
D = 6550 km = 59°.

Sk iP 00 49 58 D
Gb iP 00 50 37 C
i 00 51 12
Ka iP 00 50 45 C
Rat Islands, Aleutian Islands (h = 50 km).
Magn. = 6.8 (Up, Ki).

" 30 Up iP 00 57 14

" 30 Up iP 01 22 12
Ki iP 01 21 19

" 30 Up iP 01 53 17

" 30 Up iP 02 35 59

" 30 Up iP 04 11 41
Greece.

" 30 Ki eP 04 41 27

" 30 Up iP 04 56 02 D

" 30 Up iP 07 16 21 C
iPP 07 18 00
iSS 07 25 28
D = 4600 km = 41½°.
Ki iP 07 16 20 C
iLg1 07 30 08
i 07 30 31
microns sec
P Z' 0.1 0.7

1961
Dec 30 Ki M E 5.7 14
cont. M N 2.6 8
M Z 8.3 14
Sk iP 07 16 42
Sinkiang Province, China.

" 30 Gb iP 09 19 20 D

" 30 Up iP 09 28 06 C
Ki iP 09 27 16
Rat Islands, Aleutian Islands (h = 60 km).

" 30 Up iP 10 25 31 C
i 10 25 40
Ki iP 10 24 37 C
Sk iP 10 25 23
Gb iP 10 25 49 C
Rat Islands, Aleutian Islands (h = 60 km).

" 30 Up iP 16 52 46
i 16 52 48
Ki iP 16 51 51
microns sec
M E 1.1 15
M N 0.8 14
M Z 1.4 15
Rat Islands, Aleutian Islands (h = 60 km).

" 31 Up e(P) 03 20 26

" 31 Ki iP 13 59 07 C
microns sec
P Z' 0.1 1.3

" 31 Up i(P) 16 21 19
Ki eP 16 21 10
Sk iP 16 21 24
Near coast of Java (h = 70 km).

" 31 Ki eL 16 30
microns sec
M E 0.5 15
M N 0.3 14
M Z 1.0 15

" 31 Ki iP 17 58 34
Fox Islands, Aleutian Islands (h = 50 km).

Seweryn Duda Markus Båth

August 28, 1962