

SEISMOLOGICAL BULLETIN
 UPPSALA, KIRUNA, SKALSTUGAN, UMEÅ,
 UDDEHOLM and DELARY

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

NOTE Starting with this bulletin, magnitudes of regional events, M_L , will be calculated according to improved formulae given in Report No 3-78 from our institute. The average difference in magnitudes calculated from Swedish events, 1963 - 1976, is M_L (Report No 3-78) - M_L (Report No 5-76) = 0.07.

JANUARY 1 - 31, 1977

1977					1977				
Jan.	1	Up	iP	06 35 34.1	Jan.	1	Up	iP	17 49 16.7 C
		Ki	eP	06 35 04					micr sec
		Um	iP	06 35 14.5			P	Z'	0.1 0.7
		Ud	iP	06 35 44.2			Ki	iP	17 49 13.1 C
		Ryukyu Islands (h = N).							micr sec
"	1	Ud	iP	10 50 33.4			P	Z'	0.2 0.6
"	1	Ud	iP	11 05 45.1			Sk	iP	17 49 29.1
		Mindanao (h = 55 km).					Um	iP	17 49 13.0 C
"	1	Up	iP	11 44 44.1 C			Ud	iP	17 49 25.9 C
		Ki	iP	11 44 11.2 C			De	iP	17 49 25.9
				micr sec			Java (h = 110 km).		
		P	Z'	0.1 0.8	"	1	Up	Mx	20 02
		Sk	iP	11 44 41.4					micr sec
		Um	iP	11 44 25.0 C			Mx	E	2.7 20
		Ud	iP	11 44 52.1 C			Mx	N	3.6 20
			iPP	11 47 58.4			Mx	Z	5.7 24
		De	iP	11 45 05.0			Ki	iP	19 15 15.3
		Japan (h = 480 km).						i	19 15 23.8
"	1	Ki	i	12 32 05.2				iPP	19 19 20.1
		Ud	iP	12 32 22.2					micr sec
			i	12 32 33.9				i	Z' 0.2 1.3
		Philippine Islands (h = 90 km).						Mx	E 6.1 21
"	1	Ud	iPKP1	14 44 05.7				Mx	N 3.9 20
		Kermadec Islands (h = N).					Um	iP	19 15 19.7
"	1	Ud	iP	15 56 09.6				i	19 15 27.5
"	1	Ki	eP	16 13 35				iSKS	19 25 58
		Panama (h = N).					Ud	iP	19 15 38.0
"	1	Ud	eP	16 29 09				i	19 15 45.7
								iPP	19 19 55.3
							Ceram Sea (h = N).		
							M = 6.1 (Up,Ki).		

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

1977				1977						
Jan.	1	Up	iP	21 48 32.7	Jan.	3	Up	iP	06 08 42.2	
			i	21 48 34.3			Um	iP	06 08 17.3	
			iS	21 55 47		"	3	Ud	iP	12 46 46.9
				micr sec						
			i	Z' 0.5 1.0		"	3	Ud	iPKP1	14 11 41.8
			Mx	E 11 17		"	3	De	iPKP1	14 11 52.7
			Mx	N 36 15						Tonga-Kermadec Islands
			Mx	Z 27 15						(h = 540 km).
		Ki	iP	21 48 19.8 C		"	3	Up	iPKP2	21 15 59.5
			i	21 48 22.3				Ud	iPKP1	21 15 55.4
				micr sec						
			i	Z' 0.5 1.5		"	4	Ud	iP	00 46 30.2
			Mx	E 14 13						00 46 39.3
			Mx	N 19 15		"	4	De	iP	00 46 39.9
		Sk	iP	21 48 48.9 C						
		Um	iP	21 48 21.3 C		"	4	Up	iP	02 51 42.5
			iS	21 55 25				Ud	iP	02 51 48.4
		Ud	iP	21 48 47.7						Kurile Islands (h = 55 km).
			i	21 48 49.1		"	4	Up	iSgl	12 27 21.6
			i	21 49 09.2				Ud	iSgl	12 26 17.9
		De	iP	21 48 53.7						Off coast of southwest
				Tsinghai, China (h = 25 km).						Norway.
				m = 6.3, M = 6.4 (Up,Ki).						Origin time = 12 23 56.
"	2	Um	iP	08 17 31.2						M _L = 2.7 (Up,Ud).
		Ud	i	08 17 55.3						By combination with Bergen
"	2	Up	iPP	10 13 58.4						readings.
			iSKS	10 20 14		"	4	Up	iP	15 09 33.8
				micr sec				Ki	iP	15 09 21.6
			Mx	E 10 25				Sk	iP	15 09 15.7
			Mx	N 11 24				Um	iP	15 09 30.6
			Mx	Z 14 25				Ud	iP	15 09 24.6
		Ki	iP	10 09 24.9				De	iP	15 09 31.7
			iPP	10 13 47.1						Mexico (h = N).
				micr sec		"	4	Up	iP	16 16 33.2
			Mx	E 8.1 22						micr sec
			Mx	N 8.2 20						P Z' 0.1 1.0
			Mx	Z 5.8 22				Um	iP	16 16 48.5
		Sk	i(PP)	10 14 00.7				Ud	iP	16 16 48.6
		Um	iSKS	10 20 05				De	iP	16 16 31.0
		Ud	iP	10 09 41.9						Iran (h = 45 km).
			iPP	10 14 13.1						
				Sumba Island (h = 20 km).		"	5	Up	iP	05 52 26.7 C
				M = 6.4 (Up,Ki).				iPP		05 54 04.5
"	2	Up	iPKP1	12 02 59.0						micr sec
		Ud	iPKP1	12 03 00.1						P Z' 0.3 1.3
"	2	Ud	iP	17 25 27.3				Ki	iP	05 53 00.3
				Philippine Islands (h = 25 km).						micr sec
"	2	Up	iP	22 40 44.0						P Z' 0.7 1.5
		Um	iP	22 40 22.7				Sk	eP	05 53 01
				Japan (h = 30 km).						(cont.)

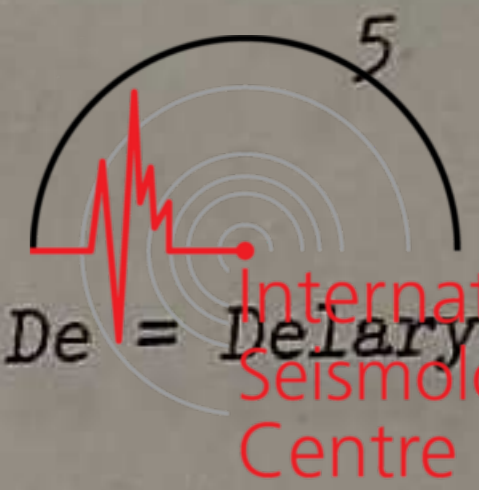
Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1977				1977					
Jan.	5	(cont.)		Jan.	6	Up	iPP	06 30 49	
		Um	iP	05 52 39.8			iPS	06 40 12	
		Ud	iP	05 52 42.5 C			iPKKP	06 41 09	
			i	05 54 32.2			iSS	06 46 39	
		De	iP	05 52 27.8 C				micr sec	
		Iran (h = 30 km).				Mx	E	36 18	
		m = 6.1 (Up,Ki).				Mx	N	35 19	
"	5	Ud	iP	09 32 46.1		Ki	Mx	07 13	
		De	iP	09 32 45.9				micr sec	
						Mx	E	32 20	
"	5	Ud	iPKP1	10 38 55.4			Mx	N	38 20
		Tonga-Kermadec Islands				New Guinea (h = N).			
		(h = 540 km).				M = 6.4 (Up,Ki).			
"	5	Up	iP	10 49 50.0	"	6	Up	iP	08 06 43.1
		Ki	iP	10 49 19.4			Um	iP	08 06 15.3
		Um	iP	10 49 32.2			Ud	iP	08 06 45.8
		Ud	iP	10 49 57.1				i	08 06 48.2
		De	iP	10 50 09.1			De	eP	08 07 07
		Bonin Islands (h = 20 km).				Kurile Islands (h = N).			
"	5	Up	iPKP1	13 48 02.2	"	6	Ud	iP	15 10 56.4
		Ki	iPKP	13 47 56.3	"	6	Up	iP	16 13 07.6
		Ud	iPKP1	13 48 04.1				micr sec	
		De	iPKP1	13 48 15.1 D			P	Z'	0.1 1.0
		Fiji Islands (h = 580 km).				Ki	eP	16 12 15	
"	5	Up	iP	14 21 08.5			Um	iP	16 12 41.9
			i	14 21 20.1				i	16 12 54.0
			ipP	14 21 29.4			Ud	iP	16 13 07.4
		Ki	iP	14 20 59.7			De	iP	16 13 29.3
			ipP	14 21 20.9			Aleutian Islands (h = 40 km).		
		Sk	iP	14 21 22.2	"	6	Up	iPKP1	16 16 47.6
			ipP	14 21 44.1			Ud	iPKP1	16 16 48.8
		Um	iP	14 20 58.2	"	6	Up	iPKP1	16 18 44.2
			ipP	14 21 20.2			Ud	iPKP1	16 18 45.8
		Ud	iP	14 21 21.6	"	6	Ki	eP	18 45 01
			ipP	14 21 43.8			Um	iP	18 44 32.4
		De	iP	14 21 23.8			Ud	iP	18 44 13.5
			ipP	14 21 45.0			De	iP	18 43 50.3
		Burma-India.				Lake Tanganyika (h = 20 km).			
		h = 90 km (Up,Ki,Sk,Um,Ud,De).							
"	5	Up	iP	22 57 37.0	"	6	Up	iP	21 59 29.7
				micr sec			Ud	iP	21 59 43.1
			P	Z' 0.1 1.0			Tibet (h = N).		
		Ki	iP	22 57 07.0					
				micr sec	"	7	Up	iP	06 39 04.9 C
			P	Z' 0.2 0.8			Ki	iP	06 39 15.8
		Sk	iP	22 57 34.3			Um	iP	06 39 04.4
		Um	iP	22 57 20.2 C			Ud	iP	06 39 22.1
		Ud	iP	22 57 44.2			De	iP	06 39 19.1
		De	iP	22 57 55.3			Pakistan (h = 45 km).		
		Volcano Islands (h = N).							
		m = 6.1 (Up,Ki).							



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1977				1977							
Jan.	7	Ud	iPKP1	17 34 12.3	Jan.	8	Ki	eP	13 28 48		
		De	iPKP1	17 34 22.6				i	13 29 06.5		
		Tonga-Kermadec Islands						i	13 29 59.4		
		(h = 80 km).						iTPgl	13 34 21.9		
"	7	Up	iP	19 48 44.4			Sk	iS	13 31 02.9		
				micr sec			Um	iP	13 29 31.9		
		P	Z'	0.4 1.4				iS	13 31 38.3		
		Mx	E	3.3 12			Ud	iP	13 30 08.5		
		Mx	Z	6.9 13				iS	13 32 52.6		
		Ki	iP	19 48 21.4			Norwegian Sea, near 73 1/2°N, 2°E.				
				micr sec			Origin time = 13 26 49.				
		P	Z'	0.1 1.0							
		Um	iP	19 48 30.4			"	8	Up	iP	23 30 48.1
		Ud	iP	19 48 54.3					ipP	23 31 03.2	
		Formosa (h = N).						Ki	ipP	23 30 32.3	
		m = 6.0 (Up,Ki).						Sk	eP	23 30 46	
"	7	Up	iP	21 43 34.4			Um	iP	23 29 30.5		
			i	21 43 44.7				ipP	23 29 45.1		
				micr sec			Ud	iP	23 30 55.2		
		i	Z'	0.2 1.3				ipP	23 31 10.3		
		Ki	iP	21 43 13.8			De	iP	23 31 07.7		
			i	21 43 25.1			Volcano Islands.				
		Um	iP	21 43 19.1			h = 55 km (Up,Um,Ud).				
			i	21 43 30.9			"	9	Ud	iP	05 01 27.7
		Ud	iP	21 43 43.3					i	05 01 31.1	
			i	21 43 55.0				De	iP	05 01 37.9	
		Luzon (h = 50 km).					"	9	Ud	i(P)	08 47 11.2
"	8	Ud	eP	01 19 39			"	9	Um	iPKP1	08 51 50.1
		Mariana Islands (h = 45 km).						Ud	iPKP1	08 52 03.9	
"	8	Up	iP	06 53 30.9			"	9	Up	iP	09 39 05.1
				micr sec						micr sec	
		P	Z'	0.1 1.0					P	Z'	0.1 1.5
		Ki	iP	06 53 12.2				Ki	iP	09 39 41.7	
				micr sec				Um	iP	09 39 26.5	
		P	Z'	0.1 1.1					i	09 39 31.6	
		Sk	iP	06 53 36.0				Ud	iP	09 39 00.7	
		Um	iP	06 53 18.4					i	09 39 06.0	
		Ud	iP	06 53 40.0 C				South Atlantic Ocean (h = N).			
		Luzon (h = 35 km).					"	9	Um	ipP	17 42 21.5
		m = 5.8 (Up,Ki).						Ud	ipP	17 42 47.3	
"	8	Up	iPKP	07 59 40.0				Japan (h = 70 km).			
		Ki	iPKP	07 59 26.9			"	9	Um	iP	21 11 02.0
			i	07 59 39.7				Ud	iP	21 11 31.2	
		Um	iPKP	07 59 32.2				Japan (h = 30 km).			
		Ud	iPKP	07 59 42.2							
		De	iPKP	07 59 48.8							
		Santa Cruz Islands (h = 40 km).									
"	8	De	iPKP	12 43 28.4							
		New Britain (h = 60 km).									



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

1977				1977					
Jan.	10	Up	iP	03 41 20.3	Jan.	12	Ud	iP	18 16 13.8
				micr sec					
			P	Z' 0.1 1.0	"	12	Up	iP	18 50 44.6
		Ki	iP	03 41 02.1			Ki	eP	18 49 59
		Sk	iP	03 41 25.2			Um	iP	18 50 19.9
		Um	iP	03 41 07.2 C			Ud	iP	18 50 50.3
		Ud	iP	03 41 29.2 C			Kurile Islands (h = 120 km).		
		Luzon (h = 45 km).			"	12	Ud	i(P)	19 47 46.1
"	10	Ki	eP	08 31 47	"	12	Up	iP	23 47 33.9 C
		Um	iP	08 31 52.1				ipP	23 48 18.1
			i	08 31 55.5				iS	23 57 39.0
		Ud	iP	08 32 13.0					micr sec
		Mindanao (h = 40 km).						P	Z' 0.2 1.0
"	10	Ki	iPKP	09 49 49.5				pP	Z' 1.1 1.5
		Um	iPKP	09 49 54.5			Ki	iP	23 47 33.6 C
		Ud	iPKP1	09 49 57.0				ipP	23 48 17.4
		De	iPKP1	09 50 08.6				iS	23 57 42.7
		Fiji Islands (h = 650 km).							micr sec
"	10	Up	iPKP1	23 03 20.4				P	Z' 0.6 1.3
			i	23 03 30.3				pP	Z' 1.2 1.8
		Sk	iPKP1	23 03 15.7			Sk	iP	23 47 48.0
			i	23 03 26.7				ipP	23 48 32.8
		Um	iPKP1	23 03 10.0			Um	iP	23 47 30.2 C
		Ud	iPKP1	23 03 22.5				ipP	23 48 14.7
		De	iPKP1	23 03 31.5				iS	23 57 33
		Kermadec Islands (h = N).					Ud	iP	23 47 44.1 C
"	10	Ud	iP	23 34 18.5				ipP	23 48 28.5
"	11	Um	iPKP	07 21 19.1			De	iP	23 47 42.2 C
		Chile (h = 35 km).						ipP	23 48 27.3
"	11	Ud	iP	13 05 13.8	"	13	Ki	iP	06 02 51.3
"	11	Up	iP	15 00 36.4			Um	iP	06 02 43.2
		Ki	iP	15 01 08.7			Ud	iP	06 03 05.8
		Um	iP	15 00 48.8			China (h = N).		
		Ud	iP	15 00 48.3	"	13	Up	iP	09 22 58.6 C
		Arabian Sea (h = N).							micr sec
"	12	Up	iP	01 55 56.4				P	Z' 0.7 1.5
		Ki	eP	01 56 35				Mx	E 1.7 10
		Um	iP	01 56 11.1				Mx	N 2.3 9
		Ud	iP	01 56 11.8				Mx	Z 2.8 10
		De	iP	01 55 54.7			Ki	iP	09 24 24.1 C
		Iran (h = 70 km).							micr sec
"	12	Up	iP	17 54 02.0				P	Z' 0.3 1.0
		Ki	eP	17 53 47				Mx	E 1.6 11
		Um	iP	17 53 50.6				Mx	N 1.5 11
		Ud	iP	17 54 14.2				Mx	Z 1.4 12
		Szechwan, China (h = N).					Sk	iP	09 23 41.2
							Um	iP	09 23 43.1 C
							Ud	iP	09 23 01.3 C
							Yugoslavia (h = 20 km).		
							m = 5.8 (Up, Ki).		

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1977				1977			
Jan.	13	Ki eP	14 40 38	Jan.	15	(cont.)	
			Talaud Island (h = 160 km).			Up	micr sec
"	13	Ki iP	21 20 11.3			P	Z' 0.1 1.0
		Ud iP	21 21 06.8			Ki iP	11 08 13.9
			Aleutian Islands (h = 50 km).			ipP	11 08 25.5
"	14	Up i(P)	11 01 09.7				micr sec
"	14	Ki ePKP	11 07 23			P	Z' 0.2 1.0
		De iPKP	11 07 39.4			Um iP	11 08 20.2
			New Ireland (h = 80 km).			ipP	11 08 32.2
"	14	Up iP	12 18 14.3			Ud iP	11 08 41.6
			micr sec			ipP	11 08 53.9
		Ki Mx N	1.2 14	"	15	Um iPKP	21 28 54.7
			micr sec				New Hebrides Islands (h = N).
		Ud Mx N	1.8 13	"	15	Um iP	22 13 51.3
			micr sec			Ud iP	22 14 18.7
		Ud iP	12 18 28.9				Japan (h = N).
			Tibet (h = N).	"	16	Up iP	00 37 46.2
			M = 5.1 (Up,Ki).			Ki iP	00 37 56.1
"	14	Up iP	15 53 41.4			Sk iP	00 38 13.2
		Um iP	15 53 39.2			Um iP	00 37 45.4 C
		Ud iP	15 53 57.6			ipP	00 38 10.3
		De eP	15 53 55			Ud iP	00 38 03.1 C
			Afghanistan-USSR (h = 150 km).			ipP	00 38 26.9
"	14	Ki ePKP	18 17 02			De eP	00 37 56
		iSKP1	18 19 57.5				Hindu Kush.
		Um iPKP	18 17 02.7				h = 110 km (Um,Ud).
		iSKP1	18 20 10.1	"	16	Um iP	04 15 23.6
		Ud ePKP	18 17 13			Ud iP	04 15 44.5
		De iPKP	18 17 21.7				Hindu Kush (h = 50 km).
			Fiji Islands (h = 350 km).	"	16	Up iP	09 21 41.3
"	14	Um eP	22 56 50			Ki eP	09 22 54
			China (h = N).			Sk iP	09 27 22.0
"	15	Up iP	11 01 51.9			i	09 22 29.6
		i	11 02 07.0			Um iP	09 22 18.0
		Ki iP	11 01 32.6			Ud iP	09 21 48.8
		ipP	11 01 45.0				Greece (h = 50 km).
			micr sec	"	16	Up iP	10 42 51.4
		P	Z' 0.2 0.9			Ki iP	10 43 15.0
		Um iP	11 01 39.9			Um iP	10 43 06.8
		ipP	11 01 51.7			Ud iP	10 42 36.9
		Ud iP	11 02 00.6				North Atlantic Ocean (h = N).
		ipP	11 02 12.2	"	16	Um eP	15 58 34
			Philippine Islands.			Ud iP	15 58 38.9
			h = 40 km (Ki,Um,Ud).				Caucasus (h = N).
"	15	Up iP	11 08 32.7 C				
		(cont.)					



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 International Seismological Centre

1977				1977						
Jan. 17 (cont.)				Jan. 18 (cont.)						
Up	iPP	21 46	08.5	Up			micr sec			
	iS	21 53	46		Mx	Z	5.0 24			
	i	21 57	05.2	Ki	iPKP		06 01 28.6			
			micr sec		iPKP1		06 01 34.2			
	PP	Z'	0.4 1.6				micr sec			
	Mx	E	3.8 20		PKP	Z'	0.1 1.0			
	Mx	N	5.4 20		PKP1	Z'	0.3 1.0			
	Mx	Z	8.9 21		Mx	N	2.2 22			
Ki	iPKP	21 45	44.8		Mx	Z	5.1 23			
	i	21 45	54.0	Sk	iPKP1		06 01 46.8			
	iPKKP	21 56	42.8	Um	iPKP		06 01 33.4 C			
	i	21 56	52.1		iPKP1		06 01 40.9			
			micr sec	Ud	iPKP		06 01 39.3			
	i	Z'	0.6 2.0		i		06 02 11.1			
	Mx	E	2.6 22	De	iPKP		06 01 43.1			
	Mx	Z	4.7 23	New Zealand (h = 50 km).						
Sk	iPKP	21 45	41.5	M = 6.0 (Up,Ki).						
	iPKKP	21 56	59.1	"	18	Up	iP	08 55 27.8		
	iP'P'	22 05	22.5				iPP	08 56 34.1		
Um	iPKP	21 45	44.1					micr sec		
	i	21 45	52.4				P	Z' 0.1 0.8		
	iS	21 54	03	Ki	iP		08 56 10.6			
	iPKKP	21 56	47.4		iPP		08 57 23.9			
	i	21 56	56.2					micr sec		
	iP'P'	22 05	16.9				P	Z' 0.2 1.0		
Ud	iPKP	21 45	33.1	Sk	iP		08 56 05.1			
	i	21 46	30.9	Um	iP		08 55 43.5			
	iPKKP	21 57	03.7	Ud	iP		08 55 43.9			
	i	21 57	09.7	De	iP		08 55 25.5			
De	iP	21 41	30.7	Iran (h = 50 km).						
	iPKP	21 45	34.1	m = 5.8 (Up,Ki).						
	i	21 45	43.2	"	18	Up	iP	09 01 52.6 C		
	iP'P'	22 05	23.5			Ki	iP	09 02 08.8		
Chile-Argentina (h = N).						Sk	iP	09 02 01.5		
M = 6.0 (Up,Ki).						Um	iP	09 01 58.5		
"	17	Up	iP	21 57	29.9	Ud	iP	09 01 58.5		
			i	21 57	41.0	De	iP	09 01 51.8		
		Ud	iP	21 57	38.9	"	18	Sk	iSgl	11 04 04.1
			i	21 57	49.5			Um	iSgl	11 05 39.1
"	17	Up	iPKP1	23 01	46.4			Ud	i	11 03 40.9
		Um	iPKP	23 01	40.4				i	11 03 49.7
		Ud	iPKP1	23 01	48.6	Off coast of southwest Norway,				
		De	iPKP1	23 01	59.5	near 60 1/2°N, 4 1/2°E.				
Tonga-Kermadec Islands				Origin time = 11 01 25.						
(h = 510 km).				M _L = 2.9 (Ud).						
"	17	Um	iP	23 04	26.4	By combination with Bergen				
"	18	Up	iPKP1	06 01	48.8	readings				
					micr sec	"	18	Um	iSgl	11 06 42.5
		Mx	E	2.4	24			Ud	i	11 04 43.4
		Mx	N	2.8	22	(cont.)				
(cont.)										

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

1977				1977			
Jan.	18	(cont.)		Jan.	19	(cont.)	
		Ud	i 11 04 53.0			Ki	iS 01 02 33
			Same location as the preceding event.				micr sec
			Origin time = 11 02 28.				P Z' 0.6 1.5
			$M_L = 2.7$ (Ud).				i Z' 0.6 1.3
			By combination with Bergen readings.				Mx E 7.0 13
							Mx N 6.8 10
							Mx Z 7.5 13
"	18	Ud	ePKP1 14 53 50			Sk	iP 00 55 45.8 C
		De	iPKP1 14 54 00.1				i 00 55 51.5
			Tonga-Kermadec Islands			Um	iP 00 55 19.4 C
			(h = 540 km).				i 00 55 25.4
							iS 01 02 39
"	18	Up	iP 17 52 39.9			Ud	iP 00 55 47.4 C
		Ki	iP 17 52 10.2				i 00 55 53.5
		Um	iP 17 52 22.9			De	iP 00 55 53.6 C
		Ud	iP 17 52 45.9				i 00 55 59.7
		De	iP 17 52 58.1				Tsinghai, China (h = N).
			Mariana Islands (h = 100 km).				m = 6.6, M = 6.1 (Up, Ki).
							Double P, in average 6.0 sec apart. The second phase can be interpreted as pP, implying a focal depth of 20 km.
"	18	Sk	eSgl 19 25 32	"	19	Up	iP 01 04 52.3
		Ud	iPgl 19 24 29.7				
			eSgl 19 25 34	"	19	Ki	eP 02 19 52
			Off coast of southwest Norway, 61°N, 4°E.			Ud	eP 02 20 39
			Origin time = 19 23 08.				Alaska Peninsula (h = 45 km).
			By combination with Bergen readings.				
"	18	Up	iP 20 52 14.9	"	19	Up	iP 02 25 27.7
		Ud	iP 20 52 24.1			Ud	iP 02 25 42.2
		De	eP 20 51 56	"	19	Up	iPKP 03 53 35.8
			Mediterranean Sea (h = 55 km).			Ki	iPKP 03 53 24.2
						Sk	ePKP 03 53 36
"	18	Up	iPKP2 23 03 43.3			Um	iPKP 03 53 28.7
		Ki	iPKP1 23 03 11.3			Ud	iPKP 03 53 38.3
		Sk	iPKP1 23 03 25.9			De	iPKP 03 53 44.2
		Um	iPKP1 23 03 19.9				ipPKP 03 54 08.3
		Ud	iPKP1 23 03 31.3				Solomon Islands.
			North Island, New Zealand				h = 90 km (De).
			(h = 140 km).				
"	19	Up	iP 00 55 33.8 C	"	19	Ki	iP 12 05 40.6
			i 00 55 39.7			Um	iP 12 06 08.9
			iS 01 03 05	"	19	Um	iPKP1 12 58 55.9
			micr sec				i 12 59 07.4
			P Z' 0.6 1.0			Ud	iPKP1 12 59 08.6
			i Z' 1.3 1.2				i 12 59 19.7
			Mx E 9.0 16	"	19	Ki	eP 13 07 58
			Mx N 5.7 13			Um	iP 13 08 16.9
			Mx Z 17 17				i 13 08 27.2
		Ki	iP 00 55 16.6 C			Ud	i 13 09 06.8
			i 00 55 22.6				Japan (h = N).
			(cont.)				

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


1977				1977							
Jan.	19	Up	iP	14 07 22.9	Jan.	20	Ki	eP	04 38 04		
			i	14 07 28.4				i	04 38 15.9		
			iSKS	14 17 53			Sk	iP	04 37 38.2		
				micr sec				iS	04 39 52.9		
			P	Z' 0.2 1.5			Um	iP	04 38 22.3		
			Mx	E 3.2 21				i	04 38 25.2		
			Mx	N 2.8 22				i	04 38 37.5		
			Mx	Z 9.6 22			Ud	iP	04 38 07.0		
		Ki	iP	14 07 05.1				i	04 38 15.0		
			i	14 07 10.8					Iceland (h = 10 km).		
				micr sec							
			P	Z' 0.3 1.4	"	20	Up	iPKP1	12 52 22.9		
			Mx	E 6.6 26			Ki	iPKP	12 52 12.8		
			Mx	N 7.8 24			Sk	ePKP1	12 52 15		
			Mx	Z 13 28			Um	ePKP1	12 52 12		
		Sk	eP	14 07 30			Ud	iPKP1	12 52 25.1 D		
		Um	iP	14 07 11.4			De	iPKP1	12 52 35.8		
			i	14 07 15.4					Tonga-Kermadec Islands		
			iSKS	14 17 41					(h = 550 km).		
		Ud	iP	14 07 29.8							
			i	14 07 36.8			"	20	Up	iSgl	14 27 32.4
		De	eP	14 07 38			Sk	eSgl	14 27 31		
				Mindanao (h = 50 km).				i	14 27 42.6		
				m = 6.4, M = 6.0 (Up, Ki).			Ud	iSgl	14 26 32.6		
							De	eSgl	14 26 48		
"	19	Ud	iPKP1	15 13 17.2					Coast of south Norway,		
		De	iPKP1	15 13 28.0					58.3°N, 6.4°E.		
				Fiji Islands (h = 630 km).					Origin time = 14 24 26.		
									M _L = 2.8 (Ud).		
"	19	Up	iP	20 52 05.9					By combination with Bergen		
			i	20 52 22.7					and Kongsberg readings.		
		Ki	iP	20 53 17.9			"	20	De	ePKP	14 45 29
		Um	iP	20 52 44.2 C						Solomon Islands (h = 70 km).	
		Ud	iP	20 52 03.5							
		De	iP	20 51 29.2 C			"	20	Up	iP	20 22 07.7
				Tunisia (h = N).					Ki	iP	20 21 46.0
"	20	Up	iP	01 17 14.0 D					Um	iP	20 21 53.3 D
		Ki	iP	01 16 42.2					Ud	iP	20 22 17.1 D
		Sk	iP	01 17 11.2						i	20 26 36.7
		Um	iP	01 16 55.8 D					De	iP	20 22 24.2
		Ud	iP	01 17 21.5							Formosa (h = 30 km).
		De	iP	01 17 33.4			"	20	Up	iP	21 04 12.5 C
				Japan (h = 500 km).						i	21 04 19.5
"	20	Ud	i(P)	01 43 07.6							micr sec
"	20	Ki	e	03 00 47					P	Z' 0.1 1.0	
		Sk	iP	03 00 10.7					Ki	iP	21 03 57.9
			iS	03 02 26.9						i	21 04 04.1
		Um	iP	03 00 54.7					Sk	eP	21 04 18
		Ud	eP	03 00 43					Um	iP	21 04 02.0
				Iceland.					Ud	iP	21 04 21.4 C
				Origin time = 02 57 16.						i	21 04 28.7
				Compare with the following							(cont.)
				event.							



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

1977				1977			
Jan.	23	Ki iP Ud iP	15 46 38.1 15 47 05.9	Jan.	25	Up Mx	03 30
		Philippine Islands (h = N).				Mx N	4.2 28
"	23	Ki iP Sk iP Um iP Ud iP	17 13 08.7 17 13 01.6 17 13 16.6 17 13 10.0			Ki Mx	03 12
		Guatemala (h = 90 km).				Mx N	2.4 18
						New Guinea (h = N).	
						M = 5.7 (Up, Ki).	
"	23	Ud iP De iP	19 51 45.2 19 51 10.7	"	25	Up iP Um iP Ud iP	05 32 19.3 05 32 00.2 05 32 27.5
		Greece (h = 70 km).				Japan (h = N).	
"	23	Um iP	21 12 51.7	"	25	Up iP Ki iP	06 45 40.5 06 46 12.0
		Ryukyu Islands (h = N).				Ud eP	06 45 32
"	23	Up iP Ki eP Ud iP De iP	22 30 22.3 22 30 31 22 30 39.1 22 30 36.4			Atlantic Ocean (h = N).	
		Afghanistan-USSR (h = 220 km).		"	25	Up iPKP1 Ud iPKP1 De iPKP1	08 36 55.3 08 36 57.7 08 37 06.7
"	24	Ki iP Um iP Ud iP	06 21 32.9 06 21 55.2 06 22 25.4	"	25	Up iSgl Sk iSgl Um iSgl Ud iPgl iSgl	10 15 51.2 10 15 05.0 10 16 45.8 10 13 51.7 10 14 48.5
		Kurile Islands (h = N).				Coast of southwest Norway, 60.2°N, 5.0°E.	
"	24	Ki iP De iP	06 44 32.6 06 43 02.7			Origin time = 10 12 35.	
		Crete (h = 110 km).				M _L = 2.9 (Ud).	
"	24	Up iPKP1 Um iPKP1 Ud iPKP1 De iPKP1	20 02 17.7 20 02 05.2 20 02 20.8 20 02 30.5 C			By combination with Kongsberg readings.	
		Tonga-Kermadec Islands (h = 460 km).		"	25	Um iPKP De iPKP	10 49 56.7 10 50 12.0
						Santa Cruz Islands (h = 25 km)	
"	25	Um iP	00 33 46.7	"	25	De iPKP1	17 16 49.6
		Sea of Japan (h = 420 km).				Fiji Islands (h = 600 km).	
"	25	Um iPKP	01 09 35.0	"	25	Um iP Ud iP	23 59 41.3 23 59 21.0
		Argentina (h = 15 km).				Turkey (h = 25 km).	
"	25	Up iP Ki iP ipP Um iP ipP Ud iP ipP	02 16 53.0 02 16 51.2 02 16 56.3 02 16 48.2 02 16 53.7 02 17 05.9 02 17 11.4	"	26	Ud iP	14 45 42.2
		Burma. h = 20 km (Ki, Um, Ud).		"	27	Ud iP	00 30 43.8
				"	27	Ud iSgl	12 55 06.7
						Near Bergen, Norway. Origin time = 12 52 53. (cont.)	

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



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1977		1977	
Jan.	27	Jan.	28
	(cont.) $M_L = 2.5$ (Ud). By combination with Bergen and Kongsberg readings.	28	Up i(P) 20 41 40.0
"	27 Up iP 16 26 20.1 Ki iP 16 25 34.5 Um iP 16 25 54.8 Ud iP 16 26 26.4 Kurile Islands (h = 40 km).	"	29 Um iPKP 01 11 21.3 De iPKP 01 11 35.9 New Britain (h = 55 km).
"	27 Up iP 17 03 13.4 Ki iP 17 02 27.8 Um iP 17 02 48.3 Ud iP 17 03 19.6 Kurile Islands (h = 40 km).	"	29 Up iP 05 22 09.8 i 05 22 34.9 Ki eP 05 22 07 Um iP 05 22 04.4 Ud iP 05 22 20.7 i 05 22 35.3 Burma (h = 40 km).
"	28 Ud eP 01 18 17 North Atlantic Ocean (h = N).	"	29 Up iPKP1 05 46 49.6 Um iPKP1 05 46 38.5 Ud iPKP1 05 46 51.8
"	28 Ki iP 03 57 37.8 Ud iP 03 57 48.8 Tibet-India (h = 55 km).	"	29 Um iPKP1 06 14 31.4 Ud iPKP1 06 14 43.9 South of Kermadec Islands (h = N).
"	28 Up iP 04 36 31.8 Ki iP 04 35 58.9 Um iP 04 36 13.1 Ud iP 04 36 39.0 De iP 04 36 50.8 Japan (h = 410 km).	"	29 Up iPKP1 07 22 30.6 Um iPKP1 07 22 20.4 Ud iPKP1 07 22 32.5 South of Kermadec Islands (h = N).
"	28 Ud iSgl 10 15 15.4 Near Bergen, Norway. Origin time = 10 13 02. $M_L = 2.4$ (Ud). By combination with Bergen and Kongsberg readings.	"	29 Up iSgl 09 39 21.6 Ki iSgl 09 38 29.3 Sk iSgl 09 39 33.3 Um iSgl 09 37 43.0 Ud iSgl 09 39 57.1 Central Finland, 64.2°N, 27.2°E. Origin time = 09 36 09. $M_L = 2.6$ (Up,Um,Ud). By combination with Finnish station readings.
"	28 Up iP 14 17 01.6 Sk iP 14 16 28.9 Um iP 14 17 04.4 Ud iP 14 16 39.6 i 14 16 44.0 De iP 14 16 53.8 North Atlantic Ocean (h = N).	"	29 Um iPKP 10 37 17.4 New Hebrides Islands (h = 170 km).
"	28 Ki iPKP 18 19 52.6 ipPKP 18 19 57.0 Um ipPKP 18 20 03.2 Ud i 18 20 18.3 De ipPKP 18 20 17.0 New Hebrides Islands. h = 15 km (Ki).	"	29 Up iPKP1 10 41 52.4 Um iPKP1 10 41 08.9 Ud iPKP1 10 41 54.0 De iPKP1 10 42 03.5 iPKP2 10 42 10.6 Kermadec Islands (h = 70 km).
		"	29 Um iP 23 47 40.6 Ud iP 23 47 42.9 Iran (h = 60 km).

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



1977

Jan. 30 Up iP 10 43 39.2
 Ki iP 10 43 40.6
 Sk eP 10 44 04
 Um iP 10 43 32.6
 Ud iP 10 43 54.5
 De iP 10 43 53.7
 Tadzhik-Sinkiang (h = 35 km).

" 30 Um iP 15 51 54.6

" 31 Ud iP 06 19 49.1

" 31 Up iP 14 33 34.7 C
 iPP 14 35 03.7
 iS 14 39 24

micr sec

P Z' 1.7 1.3

Mx E 20 11

Mx N 18 8

Mx Z 43 12

Ki iP 14 33 40.0 C

iPP 14 35 14.8

micr sec

P Z' 0.9 1.5

Mx E 26 11

Mx N 28 8

Mx Z 21 11

Sk iP 14 33 59.3 C

iPP 14 35 32.7

Um iP 14 33 30.6 C

iPP 14 34 56.9

iS 14 39 21

Ud iP 14 33 51.4 C

De iP 14 33 49.2 C

Tadzhik SSR (h = 20 km).

m = 6.4 (Up, Ki).

" 31 Ki iP 18 12 17.8

Um iP 18 12 22.5

Ud iP 18 12 42.0

Molucca Passage (h = 35 km).

" 31 Ud iP 21 15 39.3

" 31 Um iP 23 41 07.0

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November 10, 1978

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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, U M E Å

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

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

F E B R U A R Y 1 - 28, 1977

1977					1977				
Feb.	1	Ki	iP	00 05 46.1	Feb.	2	Ki	i(P)	12 53 29.0
		Ud	iP	00 06 10.6			Um	i(P)	12 53 38.8
		Mindanao (h = 140 km).							
"	1	Up	iPKP1	03 10 15.8	"	2	Um	iP	15 48 16.7
		Sk	iPKP1	03 10 08.5			Kodiak Island (h = 70 km).		
		Um	iPKP1	03 10 03.2	"	2	Um	iPKP	23 07 41.2 C
		Ud	iPKP1	03 10 17.7			Ud	iPKP1	23 07 44.9
		De	iPKP1	03 10 27.0			Fiji Islands (h = 650 km).		
"	1	Up	i(P)	10 30 20.1	"	3	Ki	iP	04 10 39.6
"	1	Up	iP	13 13 50.8			Um	iP	04 10 43.7
		Ki	eP	13 13 01			Ud	iP	04 11 06.5
		Um	iP	13 13 24.9			Philippine Islands (h = N).		
		Ud	iP	13 13 56.0	"	3	Um	iP	04 52 22.9
		De	iP	13 14 15.3			New Hebrides Islands		
		Kurile Islands (h = 40 km).					(h = 130 km).		
"	1	Ud	iP	14 51 10.6	"	3	Um	iP	06 30 35.5
		Peru-Brazil (h = 160 km).					Ud	iP	06 31 03.4
"	1	Up	iPKP	17 03 38.4			Japan (h = 360 km).		
		Ud	iPKP	17 03 39.7	"	3	Up	iP	10 49 21.1
"	1	Um	iP	22 40 13.2			Ki	iP	10 48 33.5
		Ud	iP	22 41 03.2			Um	iP	10 48 55.7
		South of Svalbard, near					Ud	iP	10 49 26.6
		75 1/4° N, 12 1/2° E.					Kurile Islands (h = N).		
		Origin time = 22 37 31.			"	3	Up	iP	10 59 39.6
		Solution from Helsinki					Ki	iP	10 59 28.6
		regional bulletin.					Um	iP	10 59 28.3
"	2	Up	iPKP1	05 19 19.4			Ud	iP	10 59 50.1
		Ud	iPKP1	05 19 21.7			Burma.		
"	2	Ud	iP	11 13 55.1	"	3	Up	iP	16 07 27.4
		Tadzhik SSR (h = 55 km).					Sk	eP	16 08 07
							Um	iP	16 08 07.2

(cont.)

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

1977				1977			
Feb.	3	(cont.) Ud iP 16 07 34.2 Ionian Sea (h = 60 km).		Feb.	5	Up iP 03 16 45.8 Ki iP 03 16 54.1 Um iP 03 16 44.4 Ud iP 03 17 02.3 De iP 03 16 59.1 Hindu Kush (h = 170 km).	
"	3	Um iPKP 20 31 31.3 Loyalty Islands (h = N).		"	5	Up iPKP1 03 48 53.5 C i 03 49 05.9 micr sec PKP1 Z' 3.7 1.6 Mx E 1.7 18 Mx N 1.6 18 Mx Z 3.8 19 Ki iPKP 03 49 01.5 iPKP1 03 49 09.5 i 03 49 22.3 micr sec PKP Z' 0.9 2.1 PKP1 Z' 1.0 1.2 i Z' 2.7 1.9 Mx E 1.6 15 Mx N 1.9 16 Mx Z 1.0 17 Sk iPKP1 03 48 56.1 C i 03 49 07.5 Um iPKP 03 49 00.9 iPKP1 03 49 02.9 Ud iPKP1 03 48 48.9 C i 03 49 01.9 De iPKP1 03 48 41.8 South Pacific Ocean (h = N). M = 6.1 (Up,Ki).	
"	3	Up iP 21 41 31.9 C Ki iP 21 40 53.1 Um iP 21 41 09.2 C Ud iP 21 41 40.3 USSR-China (h = 510 km).		"	5	Up iSKP1 09 49 12.5 Ki iPKP 09 45 35.7 ipPKP 09 45 39.3 Um iPKP 09 45 41.5 ipPKP 09 45 44.5 Ud iPKP 09 45 51.3 iSKP1 09 49 17.9 De ipPKP 09 45 59.9 iSKP1 09 49 26.0 New Hebrides Islands. h = 10 km (Ki,Um).	
"	3	Um iP 22 45 43.3		"	5	Ki iP 15 54 08.1 Um iP 15 54 10.4 Ud iP 15 53 55.4 De iP 15 53 58.4 Dominican Republic (h = N).	
"	4	Up iPP 08 04 09.9 iSKS 08 09 34 iPKKP 08 15 33.3 micr sec PP Z' 0.3 1.3 Mx E 1.1 19 Mx N 1.4 20 Ki iPKP 08 04 03.6 iPP 08 04 43.8 iPKKP 08 15 17.8 micr sec PP Z' 0.8 2.0 Mx E 1.7 16 Mx N 1.0 16 Sk iPP 08 04 09.9 iPKKP 08 15 37.8 Um iPKP 08 04 00.8 iPP 08 04 37.4 iPKKP 08 15 22.8 Ud iPP 08 04 02.5 iPKKP 08 15 41.8 Argentina (h = 550 km). M = 5.7 (Up,Ki). M not corrected for focal depth.		"	5	Up iP 18 51 58.6 Ki iP 18 51 49.9 Ud iP 18 52 12.0 Burma (h = 55 km).	
"	4	Up iP 10 34 22.9 Ki iP 10 34 05.6 Um iP 10 34 09.8 Ud iP 10 34 30.8 Luzon (h = 60 km).		"	4	Up iPKP1 21 56 29.7 C iPKP2 21 56 35.2 Ki ePKP1 21 56 10 Sk iPKP1 21 56 22.7 C Um iPKP1 21 56 17.3 C Ud iPKP1 21 56 31.7 C De iPKP1 21 56 40.2 C Kermadec Islands (h = 40 km).	

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

1977				1977			
Feb.	5	Um iP	20 56 45.4	Feb.	7	Um iP1	00 22 17.5
		Japan (h = 40 km).				Ud iP1	00 21 40.2
						iP2	00 21 42.2
"	6	Up iP	00 41 16.3			De iP2	00 21 06.6
		Ki iP	00 41 35.7 D			Tunisia (h = N).	
			micr sec	"	7	Up iP	01 08 01.6
		P Z'	0.1 1.0			i	01 08 04.7
		Sk iP	00 41 07.2			Ki iP	01 07 46.6
		i	00 41 20.8			Um iP	01 07 49.5
		Um iP	00 41 30.0			i	01 07 53.5
		Ud iP	00 41 04.1 D			Ud iP	01 08 14.5
		De iP	00 40 59.0 D			i	01 08 18.0
		North Atlantic Ocean (h = N).				Szechwan, China (h = N).	
"	6	Up iPKP1	03 28 35.4	"	7	Up iPKP1	06 01 24.5
		Ki iPKP	03 28 27.2			Sk iPKP1	06 01 16.9
		Sk iPKP1	03 28 28.9			Ud iPKP1	06 01 25.0
		Um iPKP	03 28 33.9			De iPKP1	06 01 34.7
		Ud i(PKP)	03 28 35.1	"	7	Up iP	08 53 49.5
		iPKP1	03 28 37.1			i	08 54 05.6
		De iPKP1	03 28 46.9			Ki iP	08 53 11.7
		Tonga Islands (h = N).				Sk iP	08 53 44.1
"	6	Up iP	03 33 28.3			Um iP	08 53 28.0 C
		Um iP	03 33 09.0			Ud iP	08 53 56.6 C
		Ud iP	03 33 35.2			De iP	08 54 11.5
		Japan (h = 430 km).				Japan (h = 45 km).	
"	6	Ud iP	04 03 47.8	"	7	Up iPKP2	12 20 11.9
		De iP	04 03 58.6			Sk ePKP1	12 20 02
"	6	Ud iP	04 08 28.9			Um iPKP1	12 19 55.5
		Afghanistan-USSR (h = 190 km).				Ud iPKP1	12 20 09.4
						De ePKP1	12 20 19
"	6	Up iP	05 19 25.7	"	7	Um iP	21 42 41.1
			micr sec			Ud iP	21 43 11.9
		Mx Z	2.8 15			Kurile Islands (h = 280 km).	
		Ki iP	05 19 04.2	"	8	Ud iPKP1	03 08 45.1
		Um iP	05 19 12.0			Tonga-Kermadec Islands (h = 530 km).	
		Ud iP	05 19 36.0				
		Philippine Islands (h = N).		"	8	Up iP	03 13 17.5
"	6	Up i(P)	07 50 42.9			Sk iP	03 13 01.1
"	6	Up iP	17 04 14.2			Um iP	03 13 49.3
		ipP	17 04 25.2			Ud iP	03 13 21.5
		Sk epP	17 04 44			De iP	03 13 42.2
		Um iP	17 04 07.0			Kamchatka (h = N).	
		ipP	17 04 19.0	"	8	Um iP	19 16 04.6
		Ud iP	17 04 28.1			Kurile Islands (h = 60 km).	
		ipP	17 04 39.1	"	9	Ki iP	12 18 35.8
		De iP	17 04 29.6			Um iP	12 18 31.4
		India-Bangladesh.				i	12 18 38.6
		h = 40 km (Up,Um,Ud).				(cont.)	

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

1977				1977			
Feb.		(cont.)		Feb.	10	(cont.)	
	9	Ud iP	12 18 47.1			Ki iPKP	23 00 16.4
		Andaman Islands (h = N).					micr sec
						Mx N	1.7 16
"	9	Ud iP	14 00 15.1			Mx Z	1.5 18
		Tunisia (h = N).				Sk iPKP	23 00 06.3
						Um iPKP	23 00 09.4
"	9	Up iPKP2	16 39 05.8			Ud iPKP	22 59 59.6
		Ki iPKP	16 38 30.1			South Sandwich Islands (h = N).	
		iPKP1	16 38 31.9				
		Sk iPKP1	16 38 47.6	"	10	Up iPKP1	23 24 49.9
		Um iPKP1	16 38 42.6			iPKP2	23 24 52.6
		Ud iPKP1	16 38 55.7			Sk iPKP1	23 24 42.7 C
		North Island, New Zealand				Um iPKP1	23 24 37.3
		(h = 90 km).				Ud iPKP1	23 24 51.0 C
						iPKP2	23 24 55.1
"	9	Ki iP	21 47 06.3			De iPKP1	23 24 00.6
		Um iP	21 46 55.1			Kermadec Islands (h = 55 km).	
		Ud iP	21 47 13.8	"	10	Up iPKP1	23 39 53.0
		De eP	21 47 11			Sk iPKP1	23 39 45.9
		Hindu Kush (h = 220 km).				i	23 39 57.2
"	10	Um i	03 46 15.8			Um iPKP1	23 39 40.7
		i	03 46 22.6			i	23 39 52.2
		Ud i	03 46 27.9			Ud iPKP1	23 39 54.6
		De iPKP	03 46 25.7			De iPKP1	23 40 03.3
		Loyalty Islands (h = 40 km).				Kermadec Islands (h = 50 km).	
"	10	Up iPKP1	08 15 07.4	"	10	Up iPKP1	23 46 51.3
		Ki i	08 15 06.7			Sk iPKP1	23 46 40.7
		Sk ePKP	08 15 14			Um iPKP1	23 46 36.8
		Um iPKP	08 15 09.5			Ud iPKP1	23 46 53.3
		iSKP1	08 18 36.5			De iPKP1	23 47 01.6
		Ud iPKP1	08 15 10.7			Kermadec Islands.	
		De iPKP1	08 15 19.7	"	11	Ud iP	04 48 16.3
		Loyalty Islands (h = 40 km).				i	04 48 21.3
"	10	Um iP	10 17 12.4	"	11	Up iPKP1	11 20 34.6
		Ud iP	10 17 44.9			Sk iPKP1	11 20 27.3
"	10	Um iSgl	12 08 34.8			Um iPKP1	11 20 21.9
						i	11 20 33.3
"	10	Up iSgl	14 20 26.6			Ud iPKP1	11 20 35.6
		Sk iSgl	14 20 31.9			Kermadec Islands (h = 55 km).	
		Ud iSgl	14 19 24.3	"	11	Up iPKP1	11 32 22.4
		Coast of south Norway,				i	11 32 32.6
		58.2°N, 6.6°E.				Sk iPKP1	11 32 12.3
		Origin time = 14 17 22.				i	11 32 25.0
		M _L = 2.8 (Sk,Ud).				Um iPKP1	11 32 08.4
		By combination with Bergen				Ud iPKP1	11 32 24.3
		readings.				i	11 32 33.3
"	10	Up iPKP	23 00 00.8			Kermadec Islands (h = 70 km).	
		(cont.)		"	11	Um iP	20 33 08.7
						Molucca Sea (h = 70 km).	

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

1977				1977			
Feb.	Day	Station	Time	Feb.	Day	Station	Time
Feb.	11	Ud	iP 21 43 25.8	Feb.	13	(cont.)	
"	11	Up	eP 21 45 16			Up	Mx E 2.0 15
		Ki	eP 21 46 19				Mx N 4.0 16
		Um	iP 21 45 47.7				Mx Z 3.0 15
		Ud	iP 21 45 21.3			Ki	iP 04 19 14.5
		Crete (h = N).					micr sec
"	11	Ki	eP 22 07 45			P	Z' 0.3 1.2
		Sk	iP 22 07 06.2			Mx	E 1.7 12
		Um	iP 22 07 36.8			Mx	N 1.6 13
			i 22 07 43.3			Mx	Z 2.2 12
		Ud	eP 22 07 08			Sk	iP 04 19 39.0
		North Atlantic Ocean (h = N).				Um	iP 04 19 20.1
"	12	Um	iP 02 35 05.4				iS 04 29 22
		Japan (h = 40 km).				Ud	iP 04 19 41.9
"	12	Up	iP 04 56 48.4 C			De	iP 04 19 47.5
			ipP 04 57 11.5			Luzon (h = N).	
			micr sec			m = 6.2, M = 5.8 (Up, Ki).	
		Ki	P Z' 0.2 0.9	"	13	Um	iP 05 01 06.3
			iP 04 56 55.5 C			Ud	eP 05 01 26
			ipP 04 57 18.7	"	13	Up	iPKP1 05 41 36.5
			micr sec			Sk	ePKP1 05 41 28
		Sk	P Z' 0.1 1.0			Um	iPKP1 05 41 22.3
			iP 04 57 13.7 C			Ud	iPKP1 05 41 38.9
			ipP 04 57 37.5	"	13	Up	iPKP1 05 44 42.3
		Um	iP 04 56 46.5 C			Sk	iPKP1 05 44 34.0
			i 04 57 08.3			Um	iPKP1 05 44 30.4
		Ud	iP 04 57 04.8 C			Ud	iPKP1 05 44 44.4
			ipP 04 57 28.8	"	13	Up	iP 06 01 49.7
			i 04 57 37.8			Sk	iP 06 01 32.8
		De	iP 04 57 01.3 C			Um	iP 06 01 21.3
			i 04 57 34.5			Ud	iP 06 01 52.5
		Afghanistan-USSR.				Kamchatka (h = 170 km).	
		h = 100 km (Up, Ki, Sk, Um, Ud).		"	13	Up	iP 11 06 49.3
		m = 5.8 (Up, Ki).				Ki	eP 11 06 02
"	12	Ud	iPKP1 13 05 16.2			Um	iP 11 06 24.5
		De	iPKP1 13 05 26.7			Ud	iP 11 06 55.5
"	12	Ud	iP 20 13 33.3			Kurile Islands (h = N).	
		De	eP 20 13 17	"	13	Up	iP 13 20 27.5
		Iran (h = 40 km).					micr sec
"	13	Up	iP 04 19 04.6			Ki	Mx N 1.4 26
		Ki	iP 04 18 45.8				iP 13 20 13.2 C
		Sk	eP 04 19 12				micr sec
		Um	iP 04 18 52.4			P	Z' 0.1 1.0
		Ud	iP 04 19 14.0			Mx	E 1.4 17
		Luzon (h = 45 km).				Mx	N 1.2 18
						Mx	Z 1.2 18
"	13	Up	iP 04 19 31.9			Sk	iP 13 20 33.5
			iS 04 29 47			Um	iP 13 20 17.7
			micr sec			Ud	iP 13 20 36.0
		P	Z' 0.3 1.3			De	iP 13 20 39.6
		(cont.)				Molucca Sea (h = N).	
						M = 5.5 (Up, Ki).	

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

1977				1977									
Feb.	13	Ki	iP	13 23	13.7	Feb.	15	(cont.)					
		Um	iP	13 23	24.9			Ki	iP	21 59	55.6		
		Ud	iP	13 23	20.7			Sk	iP	22 00	18.4		
"	13	Ki	iPn	15 11	18.3			Um	iP	22 00	01.8		
			eSn	15 13	29			Ud	iP	22 00	20.6		
		Sk	iSn	15 13	28.1			Mindanao (h = 70 km).					
		Um	iSn	15 14	18.8		"	15	Ud	ePKP1	23 00	18	
		Ud	iP	15 12	03.6				De	ePKP1	23 00	29	
		Jan Mayen (h = N).							Tonga Islands (h = 90 km).				
"	13	Um	iP	17 46	10.7		"	16	Up	iP	00 57	46.8 C	
		Japan (h = 50 km).										micr sec	
"	13	Um	iP	19 07	04.5				P	Z'	0.2	0.8	
"	14	Up	iP	00 30	47.3 D				Mx	Z	1.5	18	
			i	00 30	50.9			Ki	iP	00 58	26.5 C		
			iPP	00 32	28.8							micr sec	
									P	Z'	0.3	1.1	
			i	Z'	0.1	1.0		Sk	iP	00 57	46.5 C		
		Ki	iP	00 30	54.8 D			Um	iP	00 58	10.3 C		
			i	00 30	59.1			Ud	iP	00 57	34.2 C		
								De	iP	00 57	20.1 C		
								North Atlantic Ocean (h = N).					
								m = 6.1 (Up,Ki).					
"	16	Ki	iP	01 18	09.4		"	16	Ki	iP	01 18	09.4	
		Um	iP	01 18	21.5				Um	iP	01 18	21.5	
		Ud	iP	01 18	44.3				Ud	iP	01 18	44.3	
		Pakistan (h = N).							Mariana Islands (h = 270 km).				
		m = 5.7 (Up,Ki).					"	16	Ki	iP	02 47	20.8	
"	14	Um	iP	05 39	09.5				Um	iP	02 48	09.5	
		Ud	iP	05 38	15.1					i	02 48	16.5	
		De	eP	05 37	59				Ud	iP	02 48	49.3	
		Iran (h = N).							North of Svalbard (h = N).				
"	14	Up	iP	09 19	52.3		"	16	Ki	iP	06 43	24.0	
		Ki	iP	09 19	14.1				Um	iP	06 43	34.5	
		Um	iP	09 19	30.7				South of Mariana Islands (h = 50 km).				
		Ud	iP	09 19	59.7			"	16	Up	iP	10 53	56.4 C
		Japan (h = 80 km).								i	10 54	02.0	
"	14	Um	iP	13 37	21.9					i	10 54	14.8	
		Ud	iP	13 37	43.4					iSKS	11 04	32	
		Luzon (h = 45 km).										micr sec	
"	15	Ud	i(P)	12 21	18.4				P	Z'	0.1	1.2	
"	15	Up	iP	22 00	14.1				i	Z'	0.1	1.0	
		(cont.)							Mx	E	1.9	20	
									Mx	N	1.8	20	
									Mx	Z	4.7	23	
								Ki	iP	10 53	41.6 C		
									i	10 54	00.9		
								cont.)					

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

1977				1977			
Feb.	16	(cont.)		Feb.	17		
		Ki	iPKKP		Up	iP	13 42 26.1
					Ki	iP	13 41 28.7
							micr sec
			P			P	Z' 0.1 0.9
			Mx		Sk	iP	13 42 07.0
			E		Um	iP	13 41 55.9
			N		Ud	iP	13 42 28.7 C
			Z		De	iP	13 42 52.1
		Sk	iP		Kamchatka (h = N).		
			i				
		Um	iP		"	17	Up iP 16 39 00.5
			iSKS				Um iP 16 38 49.0
			iPKKP				Yunnan, China (h = N).
		Ud	iP		"	17	Um iP 19 08 02.5
			i				Afghanistan-USSR (h = 60 km).
			i		"	18	Up iP 00 14 19.7
			iPKKP				Um eP 00 14 37
		De	iP				Ud iP 00 14 34.9
		Molucca Passage (h = N).					De iP 00 14 14.4
		m = 6.3, M = 5.8 (Up, Ki).					Turkey (h = N).
"	16	Um	iP		"	18	Um iP 00 20 19.1
		Ud	iP				Ud iP 00 20 39.7
		Japan (h = 200 km).			"	18	Up ePKP1 02 16 17
"	16	Ud	i(P)				Um ePKP 02 16 10
							Ud iPKP1 02 16 17.3
"	16	Um	iP				De iPKP1 02 16 28.0
		Ud	iP				Tonga-Kermadec Islands
		Aleutian Islands (h = 30 km).					(h = 35 km).
"	16	Um	eP		"	18	Ud i(P) 02 59 29.1
		Yugoslavia (h = 15 km).					" 18 Ud i(P) 03 45 15.5
"	16	Ki	eP		"	18	Up iP1 04 19 16.9
		Um	iP				iP2 04 19 21.8
		Ud	eP				micr sec
							P2 Z' 0.1 1.0
							Mx E 2.1 22
"	17	Up	iP				Mx N 3.0 21
		Um	iP				Mx Z 5.1 22
		Ud	iP				Ki iP1 04 18 34.5
		De	eP				iP2 04 18 39.4
		Tadzhik-Sinkiang (h = N).					micr sec
"	17	Up	eP				P2 Z' 0.1 1.0
		Ud	iP				Mx E 1.8 18
		De	iP				Mx N 3.5 18
		Mediterranean Sea (h = N).					Mx Z 2.1 16
"	17	De	i(P)				Sk iP2 04 19 14.0
							Um iP2 04 18 58.1

(cont.)

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

1977				1977			
Feb.	19	(cont.)		Feb.	19	(cont.)	
			micr sec				micr sec
		Ki				Ki	
		Mx	N 2.3 19			i	Z' 2.6 1.5
		Mx	Z 2.4 20			Mx	E 30 18
		Mid-Indian Ocean (h = N).				Mx	N 37 17
		M = 5.8 (Up,Ki).				Mx	Z 43 19
"	19	Up	iPgl 09 59 53.2			Sk	iP 22 44 19.6
			iSgl 10 00 38.8			i	22 44 21.3
		Sk	eSgl 10 00 02			i	22 44 26.3
		Um	iSgl 10 01 26.1			iS	22 52 43.3
		Ud	iPgl 09 59 18.8			Um	iP 22 44 10.4
			iSgl 09 59 42.1			i	22 44 12.1
		De	iSgl 10 01 13.7			i	22 44 17.1
		Southeast Norway, 61.2°N, 11.0°E.				iS	22 52 32.6
		Origin time = 09 58 49.				iP'P'	23 13 25.6
		M _L = 2.5 (Up,Um,Ud,De).				Ud	iP 22 44 40.2
"	19	Up	iP 10 46 06.2			i	22 44 42.2
		Ki	iP 10 46 07.9			i	22 44 46.7
		Um	iP 10 46 03.1			iS	22 53 27.9
		Ud	iP 10 46 18.0			De	iP 22 45 03.0
		Nicobar Islands (h = N).				i	22 45 04.5
						i	22 45 10.1
"	19	Up	iP 13 01 21.4			Aleutian Islands (h = N).	
		Um	iP 13 01 44.8			m = 7.1, M = 6.8 (Up,Ki).	
		Ud	iP 13 01 43.6			Multiple event with successively increasing amplitudes.	
"	19	Ki	eP 14 11 29			"	19
		Um	iP 14 11 42.1			Up	iP 22 58 17.3
"	19	Ki	eP 17 45 42			ipP	22 58 26.0
		Um	iP 17 45 19.1				micr sec
		Ud	iP 17 45 20.8			pP	Z' 0.1 1.0
		De	iP 17 45 04.0			Ki	iP 22 57 22.3
		Iran (h = 15 km).				ipP	22 57 31.5
"	19	Up	iP 22 44 38.8				micr sec
		i	22 44 40.5			pP	Z' 0.1 1.0
		i	22 44 45.5			Sk	eP 22 57 59
		iS	22 53 22.2			Um	iP 22 57 48.7
			micr sec			ipP	22 57 57.7
		i	Z' 0.2 0.9			Ud	iP 22 58 19.7
		i	Z' 2.3 1.3			ipP	22 58 28.3
		Mx	E 39 17			Aleutian Islands.	
		Mx	N 57 20			h = 30 km (Up,Ki,Um,Ud).	
		Mx	Z 80 21			"	19
		Ki	iP 22 43 44.9			Up	iP 23 52 03.0
		i	22 43 46.4			ipP	23 52 07.8
		i	22 43 51.3				micr sec
		iS	22 51 39			P	Z' 0.1 0.9
			micr sec			pP	Z' 0.2 1.1
		i	Z' 1.1 1.8			Ki	iP 23 52 00.9
		(cont.)				ipP	23 52 05.5
						Sk	iP 23 52 23.4
						ipP	23 52 28.2
						Um	iP 23 51 55.8
						(cont.)	

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

1977				1977			
Feb.	19	(cont.)		Feb.	21	(cont.)	
		Um ipP	23 52 00.4			Sk iP	17 49 50.1
		Ud iP	23 52 18.7			i	17 49 58.6
		ipP	23 52 23.0			Ud iP	17 49 16.8
		De iP	23 52 18.5			i	17 49 23.6
		Tibet.				De iP	17 48 41.5
		h = 15 km (Up,Ki,Sk,Um,Ud).				Ionian Sea (h = 55 km).	
"	20	Ud iP	01 54 21.5	"	21	Ki eP	18 00 22
		Tibet (h = N).				Venezuela (h = 20 km).	
"	20	Ki iP	06 59 27.7	"	21	Up iP	20 12 25.3
		Um iP	06 59 32.6				micr sec
		Banda Sea (h = 190 km).				P	Z' 0.1 1.0
"	20	Up iP	07 12 44.5			Ki iP	20 11 31.0 C
		Ki iP	07 11 49.3 C			ipP	20 12 09.3
		Sk iP	07 12 17.6				micr sec
		Um iP	07 12 18.2			P	Z' 0.1 1.0
		Ud iP	07 12 41.2			Sk iP	20 12 00.2
		De eP	07 13 06			Um iP	20 11 58.2 C
		Kodiak Island (h = 50 km).				ipP	20 12 41.7
"	20	Ki iP	08 10 41.4			Ud iP	20 12 23.6
		Um iP	08 11 06.8			ipP	20 13 02.9
		Ud iP	08 11 37.6			De iP	20 12 46.9 C
		Aleutian Islands (h = 40 km).				Alaska Peninsula. h = 180 km (Ki,Um,Ud). m = 5.6 (Up,Ki).	
"	20	Ud eP	09 19 06	"	22	Ki iP	01 42 48.0
"	20	Ki iP	22 39 33.2			Um iP	01 43 11.8
		Um iP	22 39 39.9			Ud iP	01 43 45.7
		Ud iP	22 39 57.5			Kamchatka (h = 100 km).	
		Mindanao (h = 120 km).		"	22	Um iPKP	03 18 53.5
"	21	Ki iP	00 35 45.0			Ud ePKP	03 18 50
		Um iP	00 35 51.7			South Sandwich Islands (h = N).	
		Ud iP	00 36 20.0	"	22	Ud iP	04 42 04.4
"	21	Ki eP	03 19 35	"	22	Ud iP	06 35 44.7
		Ud iP	03 19 17.6			California-Nevada (h = 5 km).	
"	21	Ki iP	13 08 37.1	"	22	Ud i(P)	07 55 06.9
		Um iP	13 08 07.7	"	22	Ud i(P)	08 46 27.6
		Ud iP	13 08 01.4	"	22	Ki iP	09 26 27.0
		De iP	13 07 42.0			West Irian (h = 40 km). The P-arrival is about 12 sec early compared with the NEIS solution.	
"	21	Um iPKP1	15 15 17.0	"	22	De i(P)	14 35 08.9
		Ud iPKP1	15 15 30.6				
"	21	Up iP	17 49 10.7				
		i	17 49 17.4				
		Ki iP	17 50 24.0				
		(cont.)					

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

1977				1977				
Feb.	22	Up	Mx	15 27	Feb.	23	Um eP	08 15 57
				micr sec			Ud iP	08 16 16.3
			Mx E	1.5 20			Luzon (h = N).	
			Mx N	1.1 20		"	23	Um iP
			Mx Z	2.1 19				10 47 11.7
		Ki	Mx	15 26				10 47 24.9
				micr sec				10 47 42.8
			Mx E	0.7 15			Philippine Islands (h = 50 km).	
			Mx N	0.7 16		"	23	Up iP
		Chile (h = N).						12 49 27.0
		M = 5.7 (Up,Ki).						12 49 03.4
"	22	Ud	eP	17 52 27				12 49 14.4
		Talaud Islands (h = 55 km).						12 49 38.0
"	22	Up	iP	19 57 02.6				12 49 43.1
				micr sec				Luzon (h = 70 km).
			P Z'	0.1 1.5		"	23	Up iP
		Ki	iP	19 57 23.7				14 18 48.2
				micr sec				14 19 30.6
			P Z'	0.1 1.0				14 19 04.4
		Sk	iP	19 56 50.6				14 19 03.8
		Um	iP	19 57 16.5 D				14 18 45.1
		Ud	iP	19 56 46.7		"	23	Ki iP
		De	iP	19 56 42.1				18 16 09.3
		North Atlantic Ocean (h = N).						18 16 19.9
		m = 5.6 (Up,Ki).						South of Mariana Islands (h = N).
"	22	Ki	iP	20 02 25.2		"	23	Up iP
		Um	iP	20 02 18.4				19 48 35.2
"	23	Um	iPKP	00 26 26.9				19 48 22.7
			i	00 26 43.9				19 48 31.9
		Ud	i	00 26 47.2				19 48 31.9
		Tonga Islands (h = N).						19 49 08.4
"	23	Ki	iPKP	00 40 52.1				19 48 25.4
		Um	i(PKP)	00 40 53.9		"	23	Um iP
			iPKP	00 40 59.6				20 06 09.4
			iSKP1	00 43 36.4				South Sandwich Islands (h = N).
		Ud	iPKP1	00 40 01.6		"	23	Up iP
			iSKP1	00 43 47.9				20 26 16.2 C
		De	iPKP1	00 41 12.8 C				20 27 28.5
			iSKP1	00 43 58.0				20 26 55.2
		Tonga-Kermadec Islands (h = 640 km).						20 26 52.0
"	23	Um	iP	01 47 07.4				20 26 22.9
		Japan (h = 40 km).						20 25 47.2
"	23	Up	iP	06 42 34.5		"	23	Up iP
		Ki	iP	06 43 04.6				20 57 40.3
		Um	iP	06 42 53.4				20 57 27.3
		Ud	eP	06 42 18				20 57 50.3
		Azores Islands (h = N).						Luzon (h = 130 km).
"	23	Um	iP	21 27 20.6		"	23	Um iP
		South of Mariana Islands (h = N).						21 27 20.6

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

1977				1977					
Feb.	23	Ud	iP	21 58 16.5	Feb.	24	Up	iP	16 48 25.8
"	24	Ud	iP	07 25 05.7			Ki	iP	16 47 38.2
				Peru-Brazil (h = 140 km).			Um	iP	16 47 59.2
"	24	Up	iP	09 02 59.3			Ud	iP	16 48 30.4
			iS	09 12 44	"	24			Kurile Islands (h = 45 km).
				micr sec			Ud	i(P)	18 16 54.6
		Mx	E	2.0 21	"	24	Um	iP	18 23 25.5
		Mx	N	2.8 22			Ud	iP	18 23 47.3
		Mx	Z	3.8 23				i	18 24 36.0
		Ki	eP	09 03 40	"	24	Up	iP	20 52 13.0
				micr sec				iS	20 56 22
		Mx	E	3.0 23					micr sec
		Mx	N	2.2 22				P	Z' 0.2 1.5
		Mx	Z	1.7 22				Mx	E 3.5 17
		Um	iP	09 03 22.3				Mx	N 2.1 15
			iS	09 13 27				Mx	Z 1.5 11
		Ud	iP	09 02 54.6			Ki	iP	20 53 22.9
		De	iP	09 02 36.7					micr sec
				Ascension Island (h = N).				P	Z' 0.1 1.2
				M = 5.7 (Up,Ki).				Mx	E 1.7 10
"	24	Ki	eP	11 47 02				Mx	N 0.8 12
		Um	iP	11 47 21.2				Mx	Z 1.0 10
			i	11 47 30.4			Sk	iP	20 52 55.7
				Sea of Japan (h = 30 km).			Um	iP	20 52 46.6
"	24	Up	iP	11 50 54.9				iS	20 57 25
			ipP	11 51 09.7			Ud	iP	20 52 23.9
				micr sec			De	iP	20 51 51.5
			P	Z' 0.1 1.0					Turkey (h = 45 km).
			pP	Z' 0.1 1.0					m = 5.4, M = 5.0 (Up,Ki).
		Ki	iP	11 50 11.0	"	24	Ud	iPKP1	22 23 08.7
			ipP	11 50 27.2			De	iPKP1	22 23 19.8
				micr sec					Fiji Islands (h = 600 km).
			pP	Z' 0.1 1.0	"	25	Ud	iP	00 22 27.8
			Mx	E 1.8 22	"	25	Up		micr sec
			Mx	N 1.2 21				Mx	E 5.1 22
		Sk	iP	11 50 46.7				Mx	N 3.9 24
			ipP	11 51 02.2				Mx	Z 4.4 23
		Um	iP	11 50 30.5			Ki		micr sec
			ipP	11 50 46.1				Mx	E 2.3 22
		Ud	iP	11 51 01.3				Mx	N 2.6 22
			ipP	11 51 17.7				Mx	Z 5.0 24
		De	iP	11 51 18.4			Um	iPKP	01 37 22.2
				Japan.			Ud	ePKP	01 37 28
				h = 60 km (Up,Ki,Sk,Um,Ud).			De	ePKP	01 37 34
				m = 5.8 (Up,Ki).					New Guinea (h = 50 km).
"	24	Ud	i(P)	12 20 29.4					M = 6.0 (Up,Ki).
"	24	Ud	eP	16 17 44	"	25	Um	iP	01 40 57.4
				Dodecanese Islands (h = N).					

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

1977				1977				
Feb.	Day	Station	Type	Time	Time	Time	Time	
Feb.	25	Um	iP	02 03	07.5			
"	25	Up	iP	04 43	58.4			
		Ki	iP	04 44	39.1			
		Sk	iP	04 44	35.5			
		Um	iP	04 44	13.5			
		Ud	iP	04 44	14.1	C		
		De	iP	04 43	57.2	C		
			i	04 44	03.0			
		Iran (h = 70 km).						
"	25	Up	iP	06 13	26.2			
		Ki	iP	06 13	13.1			
		Um	iP	06 13	15.0			
		Ud	eP	06 13	38			
		Szechwan, China (h = N).						
"	25	Up	iPKP1	07 57	07.9			
		Ud	iPKP1	07 57	08.1			
"	25	Up	iP	08 13	22.8			
"	26	Up	iPKP1	03 43	10.9			
		Ud	iPKP1	03 43	12.6			
"	26	Ki	iP	09 19	38.9			
		Um	iP	09 19	47.6			
		Ud	iP	09 20	12.7			
		Ryukyu Islands (h = 40 km).						
"	26	Um	iP	19 28	57.1			
		Ud	iP	19 28	42.0			
"	26	Up	iP	22 51	30.8			
			i	22 51	42.3			
		Ki	iP	22 52	15.7			
		Um	iP	22 51	57.4			
			i	22 52	09.0			
		Ud	iP	22 51	18.7			
			i	22 51	30.8			
		De	iP	22 51	02.3			
		Canary Islands (h = 10 km).						
"	27	Up	iP	00 03	10.2			
		Um	iP	00 03	06.7			
		Ud	iP	00 03	27.0			
"	27	Um	iP	00 16	15.0			
		Kurile Islands (h = 70 km).						
"	27	Ki	iP	04 10	57.3			
		Um	iP	04 10	46.2			
		Azores Islands (h = N).						
Feb.	27	Up	iP	08 43	13.5			
		Ki	iP	08 43	12.5			
			P	Z'	0.1	1.0		
		Um	iP	08 43	10.7			
		Ud	iP	08 43	23.1			
		Sunda Strait (h = 60 km).						
"	27	Up	iP	09 29	27.4	D		
			iPP	09 31	01.1			
			P	Z'	0.1	0.9		
		Ki	iP	09 29	32.1	D		
			P	Z'	0.1	0.9		
		Sk	iP	09 29	51.5	D		
			iPP	09 31	32.9			
		Um	iP	09 29	23.7	D		
		Ud	iP	09 29	43.8	D		
			iPP	09 31	18.6			
		De	iP	09 29	41.8	D		
			iPP	09 31	18.6			
		Tadzhik SSR (h = 110 km).						
		m = 5.6 (Up,Ki).						
"	27	Um	iP	12 37	55.3			
		Ud	iP	12 38	27.1			
		Kamchatka (h = 45 km).						
"	27	Ud	iP	13 18	37.7			
"	27	Um	iP	13 39	33.7			
"	27	Ud	iP	15 03	25.9			
"	27	Um	iP	15 43	08.2			
		Ud	iP	15 43	38.7			
		Japan (h = 80 km).						
"	27	Ki	eP	16 32	04			
			i	16 32	17.2			
		Um	iP	16 32	30.7			
			i	16 32	43.7			
		Ud	iP	16 32	55.6			
			i	16 33	08.7			
		Aleutian Islands (h = N).						
"	27	Up	iP	18 46	10.5			
			P	Z'	0.1	1.4		
		Ki	iP	18 45	43.0	D		
			P	Z'	0.2	1.4		
		Sk	eP	18 46	08			
		(cont.)						



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

1977
Feb. 27 (cont.)
Um iP 18 45 53.9 D
Ud iP 18 46 16.3
Mariana Islands (h = 580 km).
m = 5.6 (Up,Ki).

1977
Feb. 28 Up iP 18 01 54.0
Um iP 18 01 27.8
Ud iP 18 01 59.3
Kurile Islands (h = 10 km).

" 28 Um iP 01 45 10.3
il 01 45 16.3
Ud il 01 45 03.6
South of Panama (h = N).

" 28 Up iP 02 03 30.0 C
micr sec
P Z' 0.1 1.0
Ki iP 02 03 12.4 C
micr sec
P Z' 0.1 0.9
Sk iP 02 03 34.6
Um iP 02 03 18.5 C
Ud iP 02 03 38.1 C
De iP 02 03 44.5
Mindanao (h = 60 km).
m = 6.1 (Up,Ki).

" 28 Up iP 02 38 19.3
Ki iP 02 37 48.2
Um iP 02 37 58.6
Ud eP 02 38 19

" 28 Up iP 08 53 06.6
Ki iP 08 53 42.1
Sk eP 08 53 39
Um iP 08 53 20.1
Ud iP 08 53 18.5
De iP 08 53 02.6
Arabian Sea (h = N).

" 28 Up iPKP 12 59 12.0
Ud iPKP 12 59 16.7
i 12 59 26.1
De iPKP 12 59 28.3

" 28 Up iP 17 44 18.6
iS 17 51 44
micr sec
P Z' 0.1 0.6
Ki eP 17 44 54
micr sec
P Z' 0.1 1.0
Um iP 17 44 32.4
Ud iP 17 44 30.8
De iP 17 44 14.8
Arabian Sea (h = N).
m = 5.9 (Up,Ki).

November 15, 1978

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SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, SKALSTUGAN, UMEÅ,

UDDEHOLM and DELARY

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

MARCH 1 - 31, 1977

1977				1977				
Mar.				Mar.				
1	Up	iP	00 48 07.4	2	(cont.)			
		i	00 48 15.6		Up	micr	sec	
	Ki	eP	00 47 49		pP	Z'	0.9 1.5	
	Um	iP	00 47 55.6 C		Mx	E	7.4 17	
	Ud	iP	00 48 14.8		Mx	N	8.4 17	
		ipP	00 48 24.4		Mx	Z	13 18	
	Mindanao (h = 45 km).				Ki	iP	10 06 11.6 C	
"	1	Up	iP	01 56 06.3		ipP	10 06 26.9	
		Ki	i	01 56 35.1		iPP	10 09 47.7	
		Um	iP	01 56 15.4		iS	10 16 58	
		Ud	iP	01 56 16.5			micr sec	
	Mid-Indian Ocean (h = N).				P	Z'	0.6 1.5	
"	1	Ud	i(P)	08 49 13.5		pP	Z'	2.6 2.3
"	1	Ki	iP	20 50 11.5 C		Mx	E	9.7 18
			ipP	20 50 15.7		Mx	N	8.7 17
		Um	iP	20 50 14.4		Mx	Z	8.5 19
	Colombia (h = 23 km).				Sk	iP	10 06 32.6 C	
"	2	Up	iPKP1	00 15 43.8		ipP	10 06 48.3	
		Ud	iPKP1	00 15 46.3 C		Um	iP	10 06 16.4 C
		De	iPKP1	00 15 56.8		ipP	10 06 32.4	
	Tonga-Kermadec Islands (h = 480 km).					ePP	10 09 57	
"	2	Ud	i(P)	01 38 04.4		iSKS	10 16 42	
"	2	Um	iP	09 57 36.4		iS	10 17 05	
	Sumatra (h = N).				Ud	iP	10 06 35.6	
"	2	Up	iP	10 06 27.1 C		ipP	10 06 50.7	
			ipP	10 06 42.4		iPP	10 10 29.0	
			iPP	10 10 10.5		De	iP	10 06 41.1 C
			iSKS	10 16 56		ipP	10 06 56.4	
			iS	10 17 30		i(P)	10 10 06.5	
			micr sec			iPP	10 10 44.8	
		P	Z'	0.5 1.4		Mindanao.		
	(cont.)					h = 55 km (Up,Ki,Sk,Um, Ud,De).		
"	2	Ud	iP	12 03 43.5		m = 6.7, M = 6.4 (Up,Ki).		
"	2	Ki	i	14 48 09.1				
		Um	iP	14 48 03.4				
	(cont.)							

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

1977				1977			
Mar.		(cont.)		Mar.		(cont.)	
	2	Ud iP	14 48 21.0		4	Up iSgl	11 14 34.2
		Mindanao (h = 80 km).				Sk iSgl	11 13 43.1
"	2	Um iPgl	15 44 48.8			Um iSgl	11 15 21.2
		iSgl	15 45 04.3			Ud iPn	11 12 14.6
		i	15 45 07.9			i	11 13 23.5
		iRg	15 45 10.2			iSgl	11 13 32.3
		Regional, near-surface event.				De iSgl	11 14 19.3
		Origin time = 15 44 28.				Off coast of southwest Norway,	
"	2	Up iP	23 21 21.7			near 60 1/4°N, 4 1/2°E.	
		ipP	23 21 34.2			Origin time = 11 11 10.	
		Ki iP	23 20 27.9		4	M _L = 2.9 (Up,Um,Ud).	
		ipP	23 20 39.6			Ki iP	13 57 05.5
		Um iP	23 20 51.0			Um iP	13 57 31.5
		Ud iP	23 21 25.5			Ud iP	13 58 00.1
		ipP	23 21 37.1			Aleutian Islands (h = 10 km).	
		Kamchatka.		"	4	Up iP	19 25 17.9 D
		h = 40 km (Up,Ki,Ud).				i	19 25 20.2
"	3	Ud i(P)	11 48 26.0			iS	19 28 00
						micr sec	
"	3	Um i(PKP)	12 14 26.7			P Z'	0.7 1.5
		iPKP	12 14 28.9			i Z'	4.2 0.8
		De iPKP1	12 14 40.6			Mx E	376 13
		Fiji Islands (h = 380 km).				Mx N	382 12
"	3	Ud i(P)	13 12 18.7			Ki iP	19 26 43.1 D
						i	19 26 46.1
"	3	Ki iP	14 02 22.2			iS	19 30 32
		Kurile Islands (h = 150 km).				micr sec	
"	3	Up iPKP	20 06 22.6			P Z'	0.2 0.5
		Ud iPKP	20 06 25.0			i Z'	8.5 0.7
		De iPKP	20 06 34.5			Sk iP	19 26 13.9
"	4	Ki iP	01 35 48.7			i	19 26 16.4
		Um iP	01 36 02.6 C			Um iP	19 25 58.9 D
		Ud iP	01 36 28.0			Ud iP	19 25 34.1
		Bonin Islands (h = 500 km).				i	19 25 36.4
"	4	Sk eP	05 26 21			De iP	19 24 54.9 D
		Um iP	05 26 37.5 C			Romania (h = 90 km).	
		Ud iP	05 26 05.9			Double P, small and large	
		Ascension Island (h = N).				average separation 2.5 s.	
"	4	Um iP	06 57 29.7			Up surface wave ground	
		Ud iP	06 57 03.5			amplitudes obtained from	
		Sakhalin Island (h = N).				Wiechert.	
"	4	Ud i(P)	10 41 32.7	"	4	Ki iP	20 00 30.5
						micr sec	
"	4	Up i	11 14 23.4			P Z'	0.1 1.0
		(cont.)				Sk eP	20 00 48
						Um iP	20 00 24.5
						Ud iP	20 00 55.3
"	4	Um iP	20 14 45.9	"	4	Um iP	20 14 45.9
						i	20 14 53.1
						North Atlantic Ocean (h = N).	

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

1977			1977		
Mar.	7	(cont.) De eP 14 01 06 Celebes Sea (h = 60 km).	Mar.	8	Up iP 23 30 04.4 iS 23 40 36.5 micr sec P Z' 1.1 2.0 Mx E 4.5 28 Mx N 14 30 Mx Z 7.9 28 Ki iP 23 30 05.0 ipP 23 30 10.6 micr sec P Z' 0.1 1.0 pP Z' 0.8 1.6 Mx E 3.9 16 Mx N 11 20 Mx Z 3.3 13 Sk iP 23 30 20.2 ipP 23 30 24.9 Um iP 23 30 02.7 ipP 23 30 07.7 iS 23 40 32 Ud iP 23 30 13.7 ipP 23 30 19.1 iPP 23 33 50.0 De iP 23 30 14.9 C ipP 23 30 21.0 Sumatra. h = 15 km (Ki,Sk,Um,Ud,De). m = 6.7, M = 6.3 (Up,Ki).
"	7	Up iSgl 14 27 58.9 Sk iSgl 14 28 06.7 Ud iPgl 14 26 04.3 iSgl 14 26 59.9 Coast of south Norway, 58.2°N, 6.2°E. Origin time = 14 24 50. M _L = 2.8 (Up,Ud).	"	8	Up iP 04 10 24.8 ipP 04 10 35.2 micr sec P Z' 0.2 1.3 Ki iP 04 09 36.4 C micr sec P Z' 0.1 1.2 Sk eP 04 10 11 Um iP 04 09 58.6 C ipP 04 10 09.1 Ud iP 04 10 29.9 C ipP 04 10 40.2 De iP 04 10 48.8 Kurile Islands. h = 35 km (Up,Um,Ud). m = 5.9 (Up,Ki).
"	7	Sk iP 14 46 15.3 Um iP 14 46 10.1	"	8	Up iP 04 25 56.5 ipP 04 26 08.3 micr sec P Z' 0.3 1.5 Ki iP 04 25 07.8 micr sec P Z' 0.1 1.0 Sk iP 04 25 43.4 Um iP 04 25 30.8 C (cont.)
"	8	Ki iP 03 07 54.9 Um iPP 03 08 19.2 Ud eP 03 06 58 De iP 03 06 29.0 i 03 06 43.8 Dodecanese Islands (h = 60 km).	"	8	Up iP 20 06 47.4 C Um iP 20 06 25.7 Ud i 20 06 53.0 Japan (h = 45 km).
"	8	Ud iP 03 20 41.5 iSKP1 03 23 33.4 De iP 03 20 51.0 Fiji Islands (h = 570 km).	"	8	Sk iP 22 59 46.4 Ud iP 22 59 48.0 Peru (h = 15 km).
"	8	Ud iP 05 21 48.4 Celebes (h = 60 km).	"	8	Um iP 19 22 50.9 Ud i 19 22 25.8 Yugoslavia (h = 35 km).
"	8	Um iP 08 26 00.8 Solomon Islands (h = N).	"	8	Um iP 15 36 13.4 i 15 36 39.2 Ud iP 15 36 31.4 Tadzhik SSR (h = 10 km).
"	8	Ud iP 13 22 34.4 Peru (h = 40 km).	"	8	Um iP 19 22 50.9 Ud i 19 22 25.8 Yugoslavia (h = 35 km).

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

1977				1977			
Mar.	9	(cont.)		Mar.	9	(cont.)	
		Um ipP	04 25 43.8			Up	micr sec
		Ud iP	04 26 01.7			P	Z' 0.4 1.1
		ipP	04 26 15.3			i	Z' 6.9 1.4
		De iP	04 26 21.7			Mx	E 12 18
		Kurile Islands.				Mx	N 15 19
		h = 50 km (Up,Um,Ud).				Mx	Z 14 16
		m = 6.0 (Up,Ki).				Ki iP	14 37 04.0 D
"	9	Um iP	04 54 24.1			i	14 37 05.6
"	9	Up iP	06 17 24.0			ipP	14 38 55.9
		Ki iP	06 16 30.4 C			iPP	14 39 22.0
		Sk iP	06 17 00.0			iS	14 44 28.4
		Um iP	06 16 57.8			i	14 44 39.6
		Ud iP	06 17 22.8 C			iP'P'	15 06 21.8
		De iP	06 17 45.8			i	15 06 39.3
		Aleutian Islands (h = N).					micr sec
"	9	Up iP	06 41 28.1			P	Z' 0.7 1.3
		Sk iP	06 41 22.3			i	Z' 2.5 1.0
		Um iP	06 41 05.6 C			Mx	E 29 17
		Ud iP	06 41 36.4			Mx	N 14 12
		De iP	06 41 52.3			Mx	Z 4.6 11
		Sea of Japan (h = N).				Sk iP	14 37 37.9 D
"	9	Um iP	07 39 24.4			i	14 37 39.5
		Peru (h = 30 km).				ipP	14 39 33.9
"	9	Ud iP	10 34 31.4			iPP	14 40 04.1
"	9	Up iP	10 41 01.3			iS	14 45 32.5
		Um iP	10 41 46.9			iP'P'	15 06 08.6
		Ud iP	10 41 19.3			Um iP	14 37 20.3 D
		De iP	10 40 46.1			ipP	14 39 14.2
		Romania (h = 110 km).				iS	14 44 58.6
"	9	Ud iP	11 07 00.3			iP'P'	15 06 14.8
		Tadzhik SSR (h = 15 km).				Ud iP	14 37 50.1 D
"	9	Up iP	12 46 05.0			i	14 37 51.9
		Um iP	12 45 46.8			iPP	14 40 23.5
		Ud iP	12 46 18.2			iS	14 45 54.1
		De eP	12 46 37			iScS	14 46 45.0
						iP'P'	15 06 02.1
"	9	Up iP	14 37 41.7 D			i	15 06 20.3
		i	14 37 43.5			De iP	14 38 04.7 D
		ipP	14 39 34.8			i	14 38 06.2
		iPP	14 40 15.1			iPP	14 40 46.7
		iS	14 45 38.4			iS	14 46 22.7
		i	14 45 57.3			iP'P'	15 06 07.8
		iScS	14 46 36.1				Korea.
		iP'P'	15 06 07.1				h = 620 km (Up,Ki,Sk,Um).
		i	15 06 16.1				m = 6.6, M = 6.5 (Up,Ki).
		i	15 06 24.7				M uncorrected for focal depth.
		(cont.)					Double P, small and large,
							average separation 1.6 s.
"	9	Sk iP	15 05 37.5				
		Um iP	15 05 51.2				
		Ud iP	15 05 30.3				
"	9	Up iP	15 35 32.7				
		(cont.)					

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

1977				1977			
Mar.	Day	Station	Time	Mar.	Day	Station	Time
	9	(cont.)			11	(cont.)	
		Um	iP 15 35 13.8			Up	micr sec
		Ud	iP 15 35 37.9			Mx	E 2.0 15
"	9	Ud	iP 15 38 48.0			Mx	N 1.3 15
"	9	Up	iP 21 44 00.9			Mx	Z 4.0 15
		Ki	iP 21 43 24.8			Ki	iP 07 09 48.7
		Um	iP 21 43 42.6			ipP	07 09 55.3
		Ud	iP 21 44 07.2				micr sec
		Bonin Islands (h = N).				P	Z' 0.1 0.6
"	9	Ki	iP 23 14 28.8			pP	Z' 0.1 0.8
		Um	iP 23 14 31.8			Sk	iP 07 10 11.7
		Ud	iP 23 14 54.6			Um	iP 07 09 55.1
		Molucca Passage (h = 60 km).				ipP	07 10 02.4
"	9	Um	iP 23 44 21.3			iS	07 19 43
		Ud	i 23 44 56.2			Ud	iP 07 10 18.3 C
		Afghanistan-USSR (h = 70 km).				ipP	07 10 25.8
"	10	Up	iP 04 02 31.2			De	ipP 07 10 32.4
		Um	iP 04 02 11.7			Philippine Islands.	
		Ud	iP 04 02 36.9			h = 25 km (Ki,Um,Ud).	
		Japan (h = 320 km).				m = 5.8 (Up,Ki).	
"	10	Um	ipP 04 09 09.0	"	11	Up	iP 10 47 37.2
		Japan (h = N).				Um	iP 10 47 33.6
"	10	Ki	i(P) 10 46 04.5			Ud	iP 10 47 53.7
		Ud	i(P) 10 46 49.5			Tadzhik SSR (h = N).	
"	10	Ud	iP 10 49 24.0	"	11	De	i(P) 12 27 28.5
		Greece-Bulgaria (h = 35 km).				i	12 28 02.1
"	10	Um	iP 15 22 32.8	"	11	Ud	i(P) 12 28 38.4
		Ud	iP 15 22 23.9	"	11	Up	iP 13 25 17.6
		Mexico (h = 110 km).				Um	iP 13 25 14.6
"	10	Up	iP 17 26 57.0			Ud	iP 13 25 39.4
		Um	iP 17 27 28.5	"	11	Ud	iP 18 20 15.8
		Ud	iP 17 27 05.9			Molucca Passage (h = 90 km).	
		Greece (h = N).		"	12	Up	iP 02 15 58.9
"	10	Um	iP 17 49 48.8			Ki	iP 02 16 05.5
		i	17 49 56.4			Um	iP 02 15 55.0
		De	iP 17 49 41.4			i	02 15 57.0
		Caribbean Sea (h = N).				Ud	iP 02 16 14.1
"	10	Ud	iP 20 26 47.5			i	02 16 17.7
						Hindu Kush (h = 200 km).	
"	11	Up	iP 07 10 09.3 C	"	12	Up	iP 03 07 28.0
			micr sec			iS	03 15 20
		P	Z' 0.1 1.0				micr sec
		(cont.)				P	Z' 0.3 1.6
						Mx	E 3.1 20
						Mx	N 3.2 22
						Mx	Z 8.1 20
						Ki	iP 03 07 49.0
						(cont.)	

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

1977					1977				
Mar.	12	(cont.)			Mar.	13	(cont.)		
		Ki		micr sec			Ki	iP	21 27 57.0
		P	Z'	1.7 2.6			Sk	eP	21 27 39
		Mx	E	1.1 20			Um	iP	21 27 56.6
		Mx	Z	2.5 16				ipP	21 28 35.6
		Sk	iP	03 07 18.3			Ud	iP	21 27 41.4
		Um	iP	03 07 43.0 C				ipP	21 28 22.7
			iS	03 15 50			De	iP	21 27 40.9
		Ud	iP	03 07 14.1 C				iPP	21 31 32.5
		De	iP	03 07 09.2 C			Peru-Brazil.		
		North Atlantic Ocean (h = N).					h = 160 km (Up,Um,Ud).		
		m = 6.4, M = 5.3 (Up,Ki).							
"	12	Ud	iP	06 15 54.1	"	13	Um	iP	22 26 34.6
		Mindanao (h = 100 km).			"	13	Up	iPKP1	22 45 30.2
							Sk	iPKP1	22 45 23.3
"	12	Um	iP	14 52 33.0			Um	iPKP1	22 45 18.1
		Ud	iP	14 53 09.1			Ud	iPKP1	22 45 31.8
			i	14 53 20.2			De	iPKP1	22 45 42.7
		Kurile Islands (h = 15 km).						iPKP2	22 45 56.4
"	13	Um	iP	02 51 59.0	"	14	Up	iP	08 51 28.7
			i	02 52 08.1				i	08 51 40.4
		Aleutian Islands (h = N).					Sk	iP	08 52 12.3
"	13	Up	iPKP1	10 14 55.8			Um	eP	08 52 09
		Ud	iPKP1	10 14 58.6			Ud	iP	08 51 38.3
		De	iPKP1	10 15 11.1			Greece-Albania (h = 50 km).		
"	13	Um	iP	11 07 23.6	"	14	Up	iP	10 07 14.0
		Ud	iP	11 07 40.5			Sk	iP	10 07 56.5
"	13	Up	iP	15 33 17.1			Um	iP	10 07 52.6
		Ki	iP	15 32 59.9 C			Ud	iP	10 07 18.1
		Um	iP	15 33 06.3			Greece-Albania (h = 55 km).		
		Ud	eP	15 33 26	"	14	Up	iP	11 27 00.5
		De	iP	15 33 32.5			Um	iP	11 26 37.0 C
		Talaud Islands (h = 90 km).					Ud	iP	11 27 07.1
							Japan (h = 70 km).		
"	13	Up	iP	19 10 24.3	"	14	Up	iPKP2	12 51 49.4
		Um	iP	19 09 53.6			Ki	iPKP1	12 51 17.8
			i	19 09 58.3			Um	i(PKP)	12 51 14.3
"	13	Up	iP	19 54 06.4				iPKP	12 51 18.6
		Um	iP	19 53 49.6				iPKP1	12 51 24.7
"	13	Up	iP	20 47 06.8				iPKP2	12 51 33.8
		Ud	i	20 47 27.3			Ud	iPKP2	12 51 45.4
		De	i	20 46 57.4			De	iPKP2	12 52 06.9
		Aegean Sea (h = N).					New Zealand (h = 210 km).		
"	13	Up	iP	21 27 51.2	"	14	De	iPKP	16 52 39.4
		ipP		21 28 29.9			Solomon Islands (h = 130 km).		
		ePP		21 31 47	"	14	Ud	iP	17 56 50.1
		(cont.)					Hindu Kush (h = 70 km).		

Up = Uppsala, Ki = Kiruna, Sk = Skalistugan, Um = Umeå, Ud = Uddeholm, De = Delnye

1977				1977					
Mar.	14	Up	i(PKP)	19 21 20.6	Mar.	15	Up	iP	01 11 05.0 C
			iPKP1	19 21 22.6					micr sec
			iSKP1	19 24 11.0			Mx	N	0.9 16
				micr sec			Ki		micr sec
			PKP1	Z' 0.1 0.9			Mx	N	3.6 20
		Ki	iPKP	19 21 13.7			Sk	eP	01 11 22
		Sk	i(PKP)	19 21 18.1			Um	iP	01 10 56.3
			iPKP	19 21 22.9			Ud	iP	01 11 19.6 C
			iSKP1	19 24 04.1			De	iP	01 11 21.2
		Um	i(PKP)	19 21 09.0			Tibet (h = N).		
			iPKP	19 21 21.2			M = 5.2 (Up,Ki).		
			iSKP1	19 23 59.2					
		Ud	iPKP1	19 21 22.7	"	15	Sk	iP	02 04 55.4
			iSKP1	19 24 12.6			Um	iP	02 04 53.3
		De	iPKP1	19 21 33.9			Ud	eP	02 04 20
			iSKP1	19 24 21.4					
		Fiji Islands (h = 580 km).			"	15	Um	iP	07 34 00.3
							Ud	iP	07 34 30.2
"	14	Up	i	19 48 26.2			Ryukyu Islands (h = 10 km).		
		Ki	iP	19 49 01.6					
		Um	i	19 48 37.2	"	15	Up	iP	09 09 05.4
		Ud	iP	19 48 35.1				iSKS	09 19 42
			i	19 48 44.0					micr sec
		De	i	19 48 24.4			Mx	E	0.7 18
		Caucasus (h = 15 km).					Mx	N	0.8 21
"	14	Up	iP	20 53 24.4			Mx	Z	1.4 21
			i	20 56 24.8			Ki	iP	09 08 49.7
		Ki	iPn	20 52 06.0				iPP	09 13 06.0
		Sk	iPn	20 52 24.5					micr sec
			iSn	20 54 18.7			P	Z'	0.1 1.0
		Um	iP	20 52 45.8			Mx	E	1.4 22
			iS	20 55 13.2			Mx	N	2.4 23
		Ud	iP	20 53 10.6			Sk	iP	09 09 10.6
		Jan Mayen Island (h = N).						iPP	09 13 37.6
"	14	Up	iPKP1	21 11 40.9 D			Um	iP	09 08 54.8 C
			iPKP2	21 11 46.9				i	09 13 16.3
				micr sec				iSKS	09 19 30
			PKP1	Z' 0.1 0.7			Ud	iP	09 09 14.0 C
			PKP2	Z' 0.1 0.7				i(PP)	09 13 27.9
		Ki	iPKP1	21 11 19.2			De	iP	09 09 19.3 C
			iPKP	21 11 24.6			Banda Sea (h = 40 km).		
		Sk	iPKP1	21 11 35.4			M = 5.6 (Up,Ki).		
		Um	iPKP1	21 11 30.4 D	"	15	Up	iP	11 14 10.7
		Ud	iPKP1	21 11 43.1			Um	iP	11 13 44.5
			iPKP2	21 11 49.7			Ud	iP	11 14 11.0
		De	iPKP1	21 11 51.9			Aleutian Islands (h = 50 km).		
			iPKP2	21 12 03.8	"	15	Up	iP	13 59 46.9
		Kermadec Islands (h = 370 km).					Ki	iP	13 58 41.1
"	15	Um	iP	00 05 41.4			Um	iP	13 59 24.8
		Ud	iP	00 06 00.9	"	15	Ud	iP	14 14 35.7
		Mindanao (h = N).					Kirgiz SSR (h = N).		



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

1977				1977									
Mar.	18	Up	iP	22 22 44.7	Mar.	18	Up	iP	22 41 14.9				
			i	22 22 49.7			Ud	iP	22 41 23.0				
				micr sec				i	22 41 29.7				
			P	Z' 0.1 0.8			Luzon.						
		Ki	iP	22 22 25.0			Origin time = 22 28 54.						
				micr sec			"	18	Up	iP	22 41 59.0		
			P	Z' 0.1 1.0					Ki	iP	22 41 39.3		
		Sk	iP	22 22 49.7					Um	iP	22 41 45.5		
		Um	iP	22 22 31.4					Ud	iP	22 42 09.0		
		Ud	iP	22 22 54.3					Luzon.				
		De	iP	22 23 01.0					Origin time = 22 29 39.				
		Philippine Islands (h = N).					"	18	Up	iP	22 46 22.0		
		m = 5.8 (Up,Ki).								i	22 46 25.5		
		Late arrivals when compared with the NEIS solution.									micr sec		
"	18	Up	iP	22 28 54.4						i	Z' 0.1 0.8		
		Ki	iP	22 28 34.4					Ki	iP	22 46 05.4		
		Sk	iP	22 28 58.9					Sk	iP	22 46 28.9		
		Um	iP	22 28 41.2					Um	iP	22 46 07.4		
		Ud	iP	22 29 04.0 C						i	22 46 12.4		
		De	iP	22 29 09.9					Ud	iP	22 46 30.8		
		Luzon.								i	22 46 34.7		
		Origin time = 22 16 34.							De	eP	22 46 39		
"	18	Up	iP	22 31 56.0						i	22 46 42.3		
			i	22 32 04.2					Luzon (h = N).				
		Ud	iP	22 32 06.0					Double P, small and large, average separation 3.9 s.				
		Luzon.							The second phase when interpreted as pP, gives a focal depth of 10 km.				
		Origin time = 22 19 36.					"	18	Up	iP	22 47 17.4		
"	18	Up	iP	22 32 42.4					Sk	iP	22 47 25.8		
			i	22 32 51.1					Um	iP	22 47 03.3		
		Ki	eP	22 32 22					Ud	iP	22 47 24.6		
		Um	iP	22 32 28.9					De	iP	22 47 34.7		
		Ud	iP	22 32 50.9					Luzon.				
			i	22 32 59.4					Origin time = 22 34 57.				
		Luzon.					"	18	Up	iP	22 50 20.7 D		
		Origin time = 22 20 22.									micr sec		
"	18	Up	iP	22 33 13.8						P	Z' 0.1 0.9		
			i	22 33 22.0					Ki	i	22 50 07.2		
		Ud	iP	22 33 24.8					Sk	iP	22 50 26.5		
			i	22 33 33.7					Um	iP	22 50 07.8		
		Luzon.							Ud	iP	22 50 31.2		
		Origin time = 22 20 54.							De	iP	22 50 37.0		
"	18	Up	iP	22 35 39.1					Luzon (h = N).				
		Ud	iP	22 35 48.7					"	18	Up	iP	22 51 07.3
		Luzon.									i	22 51 21.6	
		Origin time = 22 23 19.									Ud	i	22 51 29.7
"	18	Up	iP	22 39 19.3					"	18	Up	iP	22 55 08.5
		Ud	iP	22 39 27.7							Ud	iP	22 55 19.1
		Luzon.									Luzon.		
		Origin time = 22 26 59.									Origin time = 22 42 41.		

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

1977				1977				
Mar.	Day	Station	Type	Time	Time	Time	Time	
Mar.	18	Up	iP	23 07 23.2	Mar.	19	(cont.)	
"	18	Up	iP	23 13 07.1		Ki	iP 00 09 40.5	
"	18	Ud	iP	23 14 07.6			ipP 00 09 49.1	
"	18	Up	iP	23 16 01.1			micr sec	
"	18	Ud	iP	23 16 05.0		P	Z' 0.1 1.0	
"	18	Up	iP	23 21 56.2		Sk	iP 00 10 04.6	
			i	23 22 04.6			ipP 00 10 13.2	
		Um	iP	23 21 41.5		Um	iP 00 09 47.4	
			i	23 21 56.9		Ud	iP 00 10 09.0 C	
				Probably Luzon.			ipP 00 10 18.1	
						De	iP 00 10 16.3	
							Luzon.	
							h = 30 km (Up,Ki,Sk, Ud).	
							m = 6.0 (Up,Ki).	
"	18	Um	iP	23 33 39.9	"	19	Up	iP 00 12 20.0
"	18	Ud	iP	23 34 03.3			Ki	iP 00 12 00.6 C
				Probably Luzon.				micr sec
"	18	Up	iP	23 35 02.0			P	Z' 0.1 1.0
"	18	Um	iP	23 34 50.9		Sk	iP 00 12 25.3	
				Probably Luzon.			ipP 00 12 32.9	
"	18	Up	iP	23 37 00.6		Um	iP 00 12 07.3	
"	18	Up	iP	23 38 53.5		Ud	iP 00 12 29.2 C	
"	18	Up	iP	23 40 32.9			ipP 00 12 37.2	
"	18	Um	iP	23 40 22.0		De	iP 00 12 36.4	
				Probably Luzon.			Luzon.	
							h = 25 km (Sk,Ud).	
							Origin time = 00 00 00.	
"	18	Up	iP	23 52 01.0	"	19	Up	iP 00 15 28.0
"	18	Um	iP	23 51 44.9			Um	iP 00 15 16.6
				Probably Luzon.			Ud	iP 00 15 38.3
"	18	Up	iP	23 54 21.1 D				Luzon.
"	18		i	23 54 30.6				Origin time = 00 03 08.
"	18	Um	iP	23 54 07.9	"	19	Up	iP 00 23 24.4
"	18	Ud	iP	23 54 30.2			Ki	eP 00 23 04
				Luzon.			Um	iP 00 23 11.9
				Origin time = 23 42 01.			Ud	iP 00 23 33.2
"	18	Up	iP	23 59 43.0				Luzon.
"	19	Ud	iP	00 01 48.3				Origin time = 00 11 04.
"	19	Up	iP	00 09 11.7	"	19	Up	iP 00 26 21.8
"	19	Ud	iP	00 09 20.1			Um	iP 00 26 06.8
				Probably Luzon.			Ud	iP 00 26 31.2
"	19	Up	iP	00 10 00.3				Luzon.
"	19		ipP	00 10 08.8				Origin time = 00 14 02.
				micr sec	"	19	Up	iP 00 27 37.1
				P Z' 0.2 0.9			Um	iP 00 27 24.1
				(cont.)			Ud	iP 00 27 46.3
								Luzon.
								Origin time = 00 15 17.

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

1977				1977						
Mar.	19	Up	iP	00 30 46.7	Mar.	19	(cont.)			
		Ki	iP	00 30 26.7			Um	iP	00 55 44.9	
		Um	iP	00 30 31.5			Ud	iP	00 56 06.5	
		Ud	iP	00 30 55.0		"	19	Up	iP	00 56 28.7
		De	iP	00 30 01.9				i	00 56 41.4	
		Luzon.						Um	iP	00 56 15.9
		Origin time = 00 18 27.						Probably Luzon.		
"	19	Ki	iP	00 30 52.6	"	19	Up	iP	01 03 34.0	
		Tadzhik SSR (h = 5 km).						ipP	01 03 44.3	
"	19	Up	iP	00 37 47.2			Ki	iP	01 03 15.1	
		Ud	iP	00 37 39.5			Um	iP	01 03 21.9	
"	19	Up	iP	00 44 07.7			Ud	iP	01 03 44.7	
		Um	iP	00 43 55.5				ipP	01 03 53.4	
		Ud	iP	00 44 21.6			Luzon.			
		Luzon.					h = 30 km (Up,Ud).			
		Origin time = 00 31 48.		"	19	Um	iP	01 09 20.4		
"	19	Up	iP	00 45 30.9			Ud	iP	01 09 43.2	
		Probably Luzon.		"	19	Up	iP	01 16 36.1		
"	19	Up	iP	00 53 29.8			i	01 16 44.1		
			ipP	00 53 44.1			Ki	eP	01 16 20	
				micr sec			Um	iP	01 16 26.3	
		P	Z'	0.2 1.0			Ud	iP	01 16 49.6	
		Ki	iP	00 53 11.0 C			Luzon (h = 45 km).			
				micr sec	"	19	Up	iP	01 28 22.3	
		P	Z'	0.1 1.0				i	01 28 28.7	
		Sk	iP	00 53 34.9 C	"	19	Up	iP	01 29 52.5	
		Um	iP	00 53 17.7 C			Um	iP	01 29 39.0	
		Ud	iP	00 53 39.3 C			Ud	iP	01 30 01.4	
			ipP	00 53 53.4			Luzon.			
		De	iP	00 53 46.2 C			Origin time = 01 17 33.			
		Luzon.		"	19	Ki	iP	01 35 09.5		
		h = 50 km (Up,Ud).				Sk	iP	01 35 34.7		
		m = 6.0 (Up,Ki).				Um	iP	01 35 16.7		
"	19	De	iPKP1	00 54 10.7			Ud	iP	01 35 39.4	
		Fiji Islands (h = 580 km).				De	iP	01 35 46.3		
"	19	Up	iP	00 54 52.4			Luzon (h = 70 km).			
			ipP	00 55 00.8	"	19	Up	iP	01 42 21.4	
		Ki	iP	00 54 32.5			Ki	iP	01 42 00.3	
		Sk	iP	00 54 56.4			Sk	iP	01 42 25.9	
		Um	iP	00 54 38.4			Um	iP	01 42 06.9	
		Ud	iP	00 55 01.4			Ud	iP	01 42 30.1	
			ipP	00 55 09.5			Luzon (h = N).			
		De	iP	00 55 11.7	"	19	Up	iP	01 46 12.6	
		Luzon.					Ud	iP	01 46 21.1	
		h = 30 km (Up,Ud).								
		Origin time = 00 42 32.								
"	19	Up	iP	00 56 06.4						
		(cont.)								

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

1977				1977			
Mar.	19	Up iP Ud iP	01 47 41.3 01 47 49.8	Mar.	19	Up iP Ud iP	03 02 06.0 03 02 15.5
		Probably Luzon.				Probably Luzon.	
"	19	Up iP	01 58 11.9	"	19	Up iP	03 15 03.2
"	19	Up iP Um iP	01 59 22.1 01 59 09.4			i	03 15 14.3
		Probably Luzon.				P	Z' 0.1 1.0
"	19	Up iP ipP	02 05 37.9 02 05 45.5			Ki iP	03 14 42.9
			micr sec			Sk eP	03 15 07
		P	Z' 0.2 0.9			Um iP	03 14 49.5 C
		Ki iP	02 05 17.4 C			Ud iP	03 15 12.0 C
			micr sec			De iP	03 15 19.3
		P	Z' 0.1 1.0			Luzon (h = 35 km).	
		Sk iP	02 05 41.8 C	"	19	Up iP	03 30 05.7
		Um iP	02 05 24.4 C			i	03 30 09.3
		ipP	02 05 30.9	"	19	Up iP	03 36 22.2
		Ud iP	02 05 46.8 C			iPP	03 37 52.3
		De iP	02 05 53.3 C			Um iP	03 36 26.4
		Luzon.				Ud iP	03 36 38.3
		h = 25 km (Up,Um).				Iran (h = 30 km).	
		m = 6.0 (Up,Ki).		"	19	Up iP	03 44 56.0
"	19	Up iP	02 12 48.3			i	03 45 03.4
"	19	Up iP	02 27 15.7	"	19	Up iP	03 58 38.3
		i	02 27 21.0			Ki iP	03 58 17.9
		Ud iP	02 27 24.6			Um iP	03 58 24.9
		Probably Luzon.				Ud iP	03 58 46.8
						Luzon (h = N).	
"	19	Up iP	02 27 57.7	"	19	Up iP	04 19 14.9
		i	02 28 02.9			i	04 19 18.2
		Um iP	02 27 41.9			Ki iP	04 18 54.8
		Ud iP	02 28 06.5			Sk i	04 19 35.0
		Luzon.				Um iP	04 19 02.9
		Origin time = 02 15 38.				Ud iP	04 19 26.3
"	19	Um iP	02 32 38.0			i	04 19 30.2
		Ud iP	02 33 05.3			Luzon.	
		Probably Luzon.				Origin time = 04 06 55.	
"	19	Up iP	02 43 09.5	"	19	Up iP	04 31 13.1
"	19	Ud iP	02 44 14.0			i	04 31 19.8
"	19	Up iP	02 55 26.1	"	19	Ud iP	04 44 35.2
		i	02 55 30.9	"	19	Up iP	05 04 32.5
		Um iP	02 55 12.2	"	19	Up iP	05 12 26.7
		Ud iP	02 55 34.7			ipP	05 12 30.9
		i	02 55 42.8			Ki eP	05 12 07
		Luzon (h = 35 km).				(cont.)	

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

1977				1977					
Mar.	19	(cont.)		Mar.	19	Ud	iP	08 24 23.1	
		Um	iP		"	19	Up	iP	08 31 28.6
			ipP		"	19	Up	iP	08 33 54.7
		Ud	iP				Ki	iPn	08 32 17.2
			ipP					i	08 32 24.4
		Luzon.					Sk	iP	08 33 03.7
		h = 15 km (Up,Um,Ud).					Um	iP	08 33 08.6
		Origin time = 05 00 07.						i	08 33 15.4
"	19	Up	iP				Ud	iP	08 33 49.0
			i				De	iP	08 34 32.4
		Ki	eP				Svalbard (h = 10 km).		
		Sk	iP						
			i						
		Um	iP		"	19	Up	iP	08 34 37.4
		Ud	iP					ipP	08 34 44.0
			i						micr sec
		Luzon (h = N).						P	Z' 0.1 0.8
"	19	Ud	iP				Ki	iP	08 34 17.1
								ipP	08 34 23.8
"	19	Up	iP				Sk	iP	08 34 42.0
								ipP	08 34 49.0
"	19	Up	iP				Um	iP	08 34 23.9 C
							Ud	iP	08 34 46.3 C
		Ki	iP					ipP	08 34 53.4
		Um	iP				De	iP	08 34 53.0
		Ud	iP					ipP	08 34 59.5
		De	iP				Luzon.		
		Luzon (h = N).					h = 20 km (Up,Ki,Sk,Ud,De).		
"	19	Up	iP		"	19	Ud	iP	08 41 50.7
		Um	iP						
		Ud	iP		"	19	Ud	iP	09 05 26.2
		Tadzhik SSR (h = 35 km).			"	19	Up	iP	09 13 35.9
"	19	Up	iP						
			ipP		"	19	Um	iPKP	09 41 37.5
		Um	iP				Ud	iPKP	09 41 45.3
		Ud	iP				De	iPKP1	09 41 48.2
			ipP					i	09 41 53.6
		Luzon.					Tonga Island (h = 180 km).		
		h = 20 km (Up,Ud).			"	19	Up	iP	10 24 54.6
		Origin time = 06 59 02.					Um	iP	10 24 39.6
"	19	Up	iPKP				Ud	iP	10 25 02.2
		Ud	iPKP					i	10 25 10.0
		De	iPKP				Luzon.		
							Origin time = 10 12 35.		
"	19	Up	iP		"	19	Up	iP	10 45 42.9
		Ki	iP					i	10 45 51.1
		Sk	iP						
		Um	iP						
		Ud	iP		"	19	Up	iP	11 07 20.2 C
		De	iP					i	11 07 28.9
		Luzon (h = N).					(cont.)		

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

1977				1977					
Mar. 19 (cont.)				Mar. 19 (cont.)					
Up	iPcP	11 07	45.8	Luzon.					
	iS	11 16	14.7	h = 15 km (Up,Ki,Um,Ud).					
			micr sec	m = 6.2 (Up,Ki).					
	P	Z'	0.1 0.7	"	19	Ki	iP	12 32 49.7	
	Mx	E	1.2 21			Um	iP	12 32 58.8	
	Mx	N	1.4 20			Ud	iP	12 33 19.9 C	
	Mx	Z	2.7 20	Luzon.					
Ki	iP	11 06	34.4	Origin time = 12 20 30.					
	iPcP	11 07	16.6						
			micr sec	"	19	Up	iP	13 08 25.4	
	P	Z'	0.2 1.1					micr sec	
Sk	iP	11 07	10.3			P	Z'	0.2 0.8	
	i	11 07	39.4			Mx	E	2.1 22	
Um	iP	11 06	55.4			Mx	N	3.2 22	
	i	11 07	02.6			Mx	Z	3.2 23	
	iPcP	11 07	29.4			Ki	iP	13 08 05.6	
Ud	iP	11 07	26.1					micr sec	
	iPcP	11 07	49.8			P	Z'	0.1 1.0	
De	iP	11 07	44.9 C			Mx	N	2.9 18	
	iPcP	11 08	06.4			Sk	iP	13 08 30.8	
Kurile Islands (h = 70 km).						Um	eP	13 08 13	
m = 6.0 (Up,Ki).						Ud	iP	13 08 34.7	
"	19	Up	iP	11 35 31.1		De	iP	13 08 41.2	
		Ki	iP	11 36 17.6		Luzon (h = N).			
		Um	iP	11 35 47.2		m = 6.0, M = 5.7 (Up,Ki).			
		Ud	iP	11 35 27.2	"	19	Up	iP	13 12 45.5
"	19	Up	iP	12 06 27.2				micr sec	
		i	12 06 32.8			P	Z'	0.1 1.0	
		Ki	iP	12 06 07.8		Ki	iP	13 12 26.2 C	
		Um	iP	12 06 13.6				micr sec	
		Ud	iP	12 06 36.2 C					
Luzon (h = N).						P	Z'	0.2 1.4	
"	19	Up	iP	12 20 53.6		Sk	iP	13 12 51.6	
		Ud	iP	12 21 00.4		Um	iP	13 12 31.4	
"	19	Up	iP	12 29 26.6 D		Ud	iP	13 12 55.4	
		ipP	12 29 32.7			De	iP	13 13 03.1	
			micr sec			Luzon (h = N).			
		P	Z'	0.2 1.1		m = 5.9 (Up,Ki).			
		Mx	N	1.7 23	"	19	Up	iP	13 15 40.4
Ki	iP	12 29	06.2			Um	iP	13 15 27.4	
	ipP	12 29	11.0			Ud	iP	13 15 49.7	
			micr sec			Luzon.			
	P	Z'	0.4 1.4			Origin time = 13 03 20.			
Sk	iP	12 29	30.4	"	19	Up	iP	13 17 06.5	
Um	iP	12 29	12.9			Ki	eP	13 16 46	
	ipP	12 29	18.9			Um	iP	13 16 52.9	
Ud	iP	12 29	35.2			Ud	iP	13 17 15.6	
	ipP	12 29	40.3			Luzon.			
De	iP	12 29	41.6			Origin time = 13 04 47.			
(cont.)									

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

1977				1977					
Mar.	19	Ud	iP	13 24 01.8	Mar.	19	Up	iP	17 11 13.1
"	19	Ud	iP	13 31 02.4			Ud	iP	17 11 21.9
"	19	Up	iP	13 39 30.1	"	19	Ud	iP	17 40 55.1
			i	13 39 33.7	"	19	Up	iP	17 56 01.5
				micr sec			Ud	iP	17 56 11.4
		P	Z'	0.1 1.0	"	19	Up	iP	18 35 31.6
		i	Z'	0.1 0.9	"	19	Up	iP	19 47 28.8 C
		Ki	iP	13 39 10.7			ipP		19 47 35.1
				micr sec			i		19 48 10.0
		P	Z'	0.1 1.0			iS		19 57 43.3
		Sk	iP	13 39 34.9					micr sec
		Um	iP	13 39 17.4			P	Z'	0.8 0.9
			i	13 39 20.0			Mx	E	4.8 17
		Ud	iP	13 39 39.4			Mx	N	12 24
			i	13 39 42.8			Mx	Z	9.8 17
		De	iP	13 39 45.3			Ki	iPcP	19 47 08.9 C
			i	13 39 49.3			i		19 47 21.3
		Luzon (h = 55 km).					iS		19 57 03
		m = 5.8 (Up,Ki).							micr sec
		Double P, small and large,					PcP	Z'	0.3 1.0
		average separation 1.9 s.					Mx	E	3.3 17
"	19	Ud	iP	13 48 27.1			Mx	N	8.2 22
"	19	Ud	iP	14 07 09.1			Mx	Z	3.7 16
"	19	Ud	iP	14 16 07.4			Sk	iP	19 47 33.6 C
"	19	Up	iP	14 24 54.7			ipP		19 47 40.0
		Ki	iP	14 24 33.3			Um	iP	19 47 15.7 C
		Um	iP	14 24 42.9			iS		19 57 18
		Ud	iP	14 25 04.0			Ud	iP	19 47 38.2 C
			i	14 25 06.9			ipP		19 47 43.8
"	19	Up	iP	14 43 14.9			De	iP	19 47 44.4 C
			i	14 43 18.6			ipP		19 47 51.3
		Ki	iP	14 42 55.4			Luzon.		
				micr sec			h = 20 km (Up,Sk,Ud,De).		
		P	Z'	0.1 1.0			m = 6.6, M = 6.2 (Up,Ki).		
		Sk	iP	14 43 19.8	"	19	Ud	iP	20 53 39.8
		Um	iP	14 42 59.9			Greece-Bulgaria (h = N).		
		Ud	iP	14 43 24.6	"	19	Up	iP	21 36 53.5
			i	14 43 27.6			Ki	eP	21 36 33
		De	iP	14 43 32.5			Um	iP	21 36 39.4
		Luzon (h = N).					Ud	iP	21 37 01.6
"	19	Ud	eP	15 44 28			Luzon.		
"	19	Up	iPKP1	16 30 26.1			Origin time = 21 24 34.		
		Ud	iPKP1	16 30 28.6	"	19	Ud	iP	22 26 17.2
		De	iPKP1	16 30 38.7	"	19	Up	i(PKP)	23 20 11.9
		Fiji Islands (h = 540 km).					Ki	iPKP	23 20 11.2
							(cont.)		

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

1977				1977			
Mar.	19	(cont.)		Mar.	20	(cont.)	
		Ki i	23 20 15.1			Um iP	07 58 06.4 C
		Sk ePKP	23 20 17			ipP	07 58 14.0
		Um i(PKP)	23 20 11.1			Ud iP	07 58 28.2 C
		iPKP	23 20 22.5			ipP	07 58 35.8
		Ud i(PKP)	23 20 14.0			Luzon.	
		iPKP	23 20 22.7			h = 25 km (Up,Ki,Um,Ud).	
		De iPKP	23 20 27.5				
		i	23 20 29.8				
		Tuamotu Archipelago (h = 0).					
"	19	Ud iP	23 25 22.6	"	20	Up iP	08 45 28.5
"	19	Ud iP	23 53 09.5			Sk iP	08 45 46.6
"	20	Um iP	00 18 52.1			Um iP	08 45 21.9
		Japan (h = 70 km).				Ud iP	08 45 42.7
"	20	Um iP	00 29 15.0			De iP	08 45 43.3
		Japan (h = 70 km).				Tibet (h = N).	
"	20	Up iP	02 09 13.2	"	20	Up iP	09 42 53.6
		Ki iP	02 08 51.7	"	20	Ud iP	10 14 40.3
		Sk i	02 09 22.7			Kurile Islands (h = N).	
		Um iP	02 08 58.5	"	20	Up iP	10 51 28.8
		Ud iP	02 09 23.5			i	10 51 38.2
		De iP	02 09 31.8			Ki iP	10 51 09.5
		Philippine Islands (h = N).				i	10 51 18.8
"	20	Up iP	02 44 06.3			Um iP	10 51 15.5
		Um iP	02 43 51.5			Ud iP	10 51 37.6
		Ud iP	02 44 14.5			Luzon (h = N).	
		Luzon.		"	20	Ki eP	11 13 00
		Origin time = 02 31 46.				Um iP	11 14 07.4
"	20	Ki iP	05 57 14.9			Ud iP	11 14 29.6
		i	05 57 34.9			Luzon (h = 25 km).	
		Chile-Bolivia (h = 140 km).		"	20	Ud iP	13 49 30.9
"	20	Up iP	06 46 34.5	"	20	Up iP	14 27 41.1
		Um iP	06 46 21.5			Um iP	14 27 27.5
		Ud iP	06 46 43.7			Ud iP	14 27 50.6
		Luzon.				Luzon (h = N).	
		Origin time = 06 34 15.		"	20	Um i(P)	15 16 08.4
"	20	Ud iP	07 16 04.6	"	20	Um iP	15 21 27.5
"	20	Um iP	07 46 12.9			Japan (h = 55 km).	
		Yugoslavia (h = N).		"	20	Up iP	15 37 20.8
"	20	Up iP	07 58 19.2			ipP	15 37 25.9
		ipP	07 58 27.6			Um iP	15 37 07.5
		Ki iP	07 58 00.3			ipP	15 37 12.5
		ipP	07 58 07.5			Ud iP	15 37 30.4
		(cont.)				ipP	15 37 35.1
						Luzon.	
						h = 15 km (Up,Um,Ud).	
				"	20	Ki iP	23 01 08.7
						(cont.)	

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

1977				1977			
Mar.	20	(cont.)		Mar.	21	(cont.)	
		Ki	micr sec			Ki	micr sec
		P	Z' 0.1 1.3			Mx E	0.7 20
		Um i	23 02 09.2			Mx N	2.5 20
		Ud iP	23 02 37.7			Sk iP	07 11 09.0
		Greenland Sea (h = 10 km).				Um iP	07 10 52.1 C
"	20	Up iP	23 40 46.7			iSKS	07 21 27
		Ud iP	23 40 54.3			Ud iP	07 11 12.9 C
						Mariana Islands (h = N). m = 6.1, M = 5.6 (Up, Ki).	
"	21	Up eP	00 42 55	"	21	Up iP	07 43 03.2
		Ki iP	00 42 35.9				micr sec
		Um iP	00 42 40.6			P	Z' 0.1 1.3
		Ud iP	00 43 04.4			Ki iP	07 43 10.9 C
		Luzon.				Sk iP	07 43 23.4
		Origin time = 00 30 35.				Um iP	07 43 00.8 C
"	21	Up iP	02 52 04.9			Ud iP	07 43 19.5 C
						Afghanistan-USSR (h = 120 km).	
"	21	Up iPKP1	04 22 51.4	"	21	Up iP	08 04 58.6
		Um iPKP	04 22 47.4			Ki i	08 04 37.8
		Ud iPKP1	04 22 54.1			Um iP	08 04 42.7
		De iPKP1	04 23 04.6			Ud iP	08 05 04.0
		Tonga-Kermadec Islands (h = 570 km).				Mariana Islands (h = 55 km).	
"	21	Up iP	04 49 21.6	"	21	Up iP	08 17 55.7
		Ki iP	04 48 55.6			Ki iP	08 17 35.8
			micr sec			Sk iP	08 18 00.8
		P	Z' 0.2 1.6			Um iP	08 17 42.1
		Um iP	04 49 06.6 C			Ud iP	08 18 04.4
		Ud iP	04 49 28.2			De iP	08 18 10.2
		Mariana Islands (h = 55 km).				Luzon (h = 40 km).	
"	21	Ud iP	06 21 32.1	"	21	Up iP	08 53 52.6 C
"	21	Ud iP	06 31 18.1			Ki iP	08 53 31.2
"	21	Up iP	06 41 03.3			Um iP	08 53 38.0
		i	06 41 09.0			Ud iP	08 54 00.3
		Ki eP	06 40 41			De iP	08 54 07.1
		Um iP	06 40 48.1			Luzon (h = 55 km).	
		Ud iP	06 41 11.9	"	21	Ud i(P)	12 25 46.2
		i	06 41 17.8	"	21	Um iP	16 01 32.9
		Luzon (h = N).				Turkey (h = 5 km).	
"	21	Up iP	07 11 09.0	"	21	Up iP	20 27 38.8
			micr sec			Ud iP	20 27 41.7 D
		P	Z' 0.1 1.2	"	21	Up iP	20 53 48.4
		Mx E	1.1 19			Um iP	20 53 35.6
		Mx N	1.3 18			Ud iP	20 53 57.3
		Mx Z	3.8 19			Luzon.	
		Ki iP	07 10 40.8			Origin time = 20 41 28.	
			micr sec	"	21	Ud iP	20 56 28.6
		P	Z' 0.1 1.1				
		(cont.)					

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

1977				1977									
Mar.	21	Up	iP	21 02	31.0	Mar.	21	(cont.)					
		Ud	iP	21 02	39.7			Um	iP	21 49	25.1		
"	21	Up	iP	21 26	39.7 C			Ud	iP	21 49	28.6		
			i	21 26	41.9			De	iP	21 49	14.2		
			iPP	21 28	16.4			Iran (h = N).					
			iS	21 32	55.2		"	21	Ki	iP	21 59	05.4	
				micr sec					Sk	iP	21 59	08.5	
			i	Z'	1.9 0.9				Um	iP	21 58	45.1	
			Mx	E	44 13				Ud	iP	21 58	49.8	
			Mx	N	54 13			Iran (h = N).					
			Mx	Z	62 12		"	21	Up	iP	21 59	25.0	
		Ki	iP	21 27	12.5 C						micr sec		
			i	21 27	14.6					P	Z'	0.1 0.9	
			iPP	21 28	59.2				Ki	iP	21 59	58.5	
			iS	21 33	57				Sk	iP	21 59	58.9	
				micr sec					Um	iP	21 59	37.1	
			i	Z'	3.4 0.9				Ud	iP	21 59	40.7	
			Mx	E	125 13				De	iP	21 59	26.1	
			Mx	N	139 12			Iran (h = N).					
			Mx	Z	128 13		"	21	Up	iP	22 17	13.3	
		Sk	eP	21 27	14				De	iP	22 17	49.9	
			i	21 27	15.6			"	21	Up	iP	22 17	13.3
		Um	iP	21 26	51.5 C						22 17	49.9	
			i	21 26	53.6			"	21	Ud	iP	22 19	51.3
			iPP	21 28	35.7			"	21	Ud	iP	22 19	51.3
			iS	21 33	09			"	21	Um	iP	22 20	40.0
		Ud	iP	21 26	55.0 C					Ud	iP	22 20	44.2
			i	21 26	57.3			"	21	Um	iP	22 20	40.0
			iPP	21 28	35.2					Ud	iP	22 20	44.2
		De	iP	21 26	40.3 C			"	21	Up	iP	22 25	28.1
			i	21 26	42.3					Um	iP	22 25	40.2
				Iran (h = 30 km).						Ud	iP	22 25	43.2
				m = 7.1, M = 7.0 (Up,Ki).						Iran.			
				Double P, small and large,						Origin time = 22 17 43.			
				average separation 2 s.						Approximate origin times,			
"	21	Up	iP	21 36	13.0					based upon the same focal			
"	21	Up	iP	21 39	05.9					coordinates as for the			
"	21	Up	iP	21 41	04.4 C					earthquake at 21 18 54,			
				micr sec						March 21 are given for those			
			P	Z'	0.3 1.4					Iran aftershocks, which have			
		Ki	iP	21 41	37.1					not been reported by NEIS.			
				micr sec				"	21	Um	iP	22 30	07.1
			P	Z'	0.3 1.5					Ud	iP	22 30	11.4
		Sk	iP	21 41	38.6			"	21	Up	iP	22 35	35.5
		Um	iP	21 41	16.0					Ki	iP	22 36	05.8
		Ud	iP	21 41	20.0 C					Um	iP	22 35	42.8
		De	iP	21 41	05.6 C					Ud	iP	22 35	49.2
				Iran (h = N).						De	iP	22 35	35.6
				m = 5.9 (Up,Ki).						Iran (h = N).			
"	21	Up	iP	21 49	13.6			"	21	Up	iP	22 49	53.0 C
				(cont.)							iPP	22 51	29.1
				(cont.)							iS	22 56	06.1
				(cont.)						(cont.)			

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

1977				1977			
Mar. 22 (cont.)				Mar. 22 (cont.)			
Sk	iPKP	02 42	20.6	Um	iP	04 55	56.1
	iPKP1	02 42	26.1	Ud	iP	04 55	56.3
Um	iPKP	02 42	18.2	De	iP	04 55	43.7
	iPKP1	02 42	21.1	Iran (h = N).			
	ipPKP1	02 43	37.1	"	22	Up	iP 04 56 27.5
Ud	iPKP	02 42	25.0	"	22	Ud	iP 05 15 25.3
	iPKP1	02 42	32.9			De	iP 05 15 11.1
	iPKP2	02 42	42.2	"	22	Up	iP 05 39 18.3
	ipPKP1	02 43	51.4			Ki	iP 05 39 56.5
De	i(PKP)	02 42	25.8			Ud	iP 05 39 33.6 C
	iPKP	02 42	30.4			De	iP 05 39 16.4
	iPKP1	02 42	39.6	Iran (h = 40 km).			
	i	02 43	00.8	"	22	Up	iPKP1 06 19 03.3
South of Kermadec Islands. h = 310 km (Up,Um,Ud).						Ud	iPKP1 06 19 04.9
"	22	Up	iP 02 49 52.6			De	iPKP1 06 19 15.4
			micr sec	"	22	Up	iP 06 43 16.9
		P	Z' 0.1 0.9			Ki	iP 06 44 22.9
Ki	iP	02 50	25.2	"	22	Sk	iP 06 43 56.3
Sk	iP	02 50	26.7			Um	iP 06 43 49.2
Um	iP	02 50	03.8			Ud	iP 06 43 25.5
	iPP	02 51	40.1			De	iP 06 42 58.9
Ud	iP	02 50	07.9	Crete (h = N).			
De	iP	02 49	54.0	"	22	Up	iP 07 09 30.0
Iran (h = 60 km).						Ki	iP 07 09 07.9
"	22	Up	iP 02 52 31.1			Sk	iP 07 09 36.7
		Ud	iP 02 52 28.6			Um	iP 07 09 15.7
"	22	Ki	iP 03 26 46.0			Ud	iP 07 09 39.5
		Um	iP 03 26 26.1	Luzon (h = 70 km).			
		Ud	iP 03 26 28.2	"	22	Up	iP 07 37 23.5
		De	iP 03 26 13.8			Ki	iP 07 37 56.1 D
Iran (h = N).						Um	iP 07 37 34.6
"	22	Um	iP 03 28 42.7			Ud	iP 07 37 38.5
		Ud	iP 03 28 46.7			De	iP 07 37 23.5
"	22	Up	iP 04 16 50.8	Iran (h = 55 km).			
		Ki	iP 04 15 42.0	"	22	Up	iP 09 22 25.9
		Sk	iP 04 15 48.5			i	09 22 27.0
		Um	iP 04 16 13.1				micr sec
		Ud	iP 04 16 35.1			i	Z' 0.1 0.9
"	22	Up	iP 04 23 26.5			Ki	iP 09 22 58.2
		Um	iP 04 23 49.6			Sk	iP 09 22 59.3
		Ud	iP 04 23 21.5			Um	iP 09 22 37.1
		i	04 23 34.6			Ud	iP 09 22 41.2
South Atlantic Ocean (h = N).						i	09 22 42.7
"	22	Up	iP 04 55 41.8			De	iP 09 22 26.6
		Ki	iP 04 56 13.7	Iran (h = N).			
		Sk	eP 04 56 17	"	22	Up	iP 09 23 08.5 C
(cont.)				(cont.)			

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

1977				1977			
Mar.	22	(cont.)		Mar.	22	(cont.)	
		Up	micr sec			De	iP 12 05 16.7
		P	Z' 0.2 1.0			i	12 05 17.9
		Mx	E 0.8 20			iS	12 11 33.8
		Mx	N 1.6 18				Iran (h = 40 km).
		Mx	Z 1.5 18				m = 6.4, M = 5.9 (Up,Ki).
		Ki	iP 09 23 40.4 C				Double P, small and large,
			micr sec				average separation 1.3 s.
		P	Z' 0.1 0.9		"	22	Ki iP 12 15 32.5
		Mx	E 1.6 15				Ud iP 12 15 15.0
		Mx	N 3.7 15				De iP 12 15 00.1
		Mx	Z 2.9 14				Iran.
		Sk	iP 09 23 41.6				Origin time = 12 07 14.
		Um	iP 09 23 19.7 C		"	22	Ud iP 12 25 26.0
		Ud	iP 09 23 24.0		"	22	Up iP 12 40 41.4
		De	iP 09 23 09.2				micr sec
			Iran.				P Z' 0.1 1.0
			Origin time = 09 15 23				Ki iP 12 41 13.4
			m = 5.8, M = 5.2 (Up,Ki).				micr sec
"	22	Up	iP 10 35 44.2				P Z' 0.1 1.0
		Ud	iP 10 35 52.8				Sk iP 12 41 14.3
			Probably Luzon.				Um iP 12 40 52.6 C
"	22	Ud	iP 10 45 19.9				Ud iP 12 40 56.3
"	22	Um	iP 10 56 11.5				De iP 12 40 41.9 C
			Japan (h = 55 km).				Iran (h = 60 km).
"	22	Up	iP 12 05 16.2				m = 5.6 (Up,Ki).
		i	12 05 17.4	"	22	Ki	i(P) 13 54 35.0
		iS	12 11 31.5	"	22	Up	i(P) 14 12 33.0
			micr sec	"	22	Ud	i(P) 15 48 01.8
		i	Z' 0.6 0.9	"	22	Um	iP 15 54 24.6
		Mx	E 5.1 18	"	22	Up	iP 16 44 47.2
		Mx	N 6.6 15			Ki	iP 16 45 19.5
		Mx	Z 7.5 16			Sk	iP 16 45 20.4
		Ki	iP 12 05 49.0			Um	iP 16 44 58.1
		i	12 05 50.0			Ud	iP 16 45 02.1
		iS	12 12 31			De	iP 16 44 47.9
			micr sec				Iran (h = 60 km).
		i	Z' 0.8 1.2	"	22	Um	iP 19 08 22.1
		Mx	E 7.7 13			Ud	iP 19 08 24.9
		Mx	N 8.5 13	"	22	Um	iP 19 42 07.6
		Mx	Z 9.8 12				El Salvador (h = 80 km).
		Sk	iP 12 05 50.7	"	22	Up	iP 20 06 35.2
		Um	iP 12 05 27.6	"	22	Up	iP 20 06 55.5
		i	12 05 29.1				(cont.)
		iPP	12 07 14.7				
		iS	12 11 48.7				
		Ud	iP 12 05 31.1				
		i	12 05 32.6				
		iPP	12 07 22.0				
		iS	12 11 59.6				
		(cont.)					



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

1977

Mar.	22	(cont.)								1977	Mar.	23	Up	iP	00 25 37.9							
		Sk	i	20 07 40.8										i	00 25 42.2							
		Um	iP	20 07 35.5									Ki	iP	00 26 09.5							
		Ud	iP	20 07 02.1										i	00 26 13.1							
		Greece (h = 80 km).											Sk	iP	00 26 10.9							
"	22	Up	iP	20 17 10.7 C									Um	iP	00 25 48.8							
		Ki	iP	20 17 19.1										i	00 25 54.7							
		Um	iP	20 17 08.5									Ud	iP	00 25 51.8							
		Ud	iP	20 17 27.4 C										i	00 25 56.8							
		De	iP	20 17 24.4									De	iP	00 25 37.3							
		Afghanistan-USSR (h = 130 km).											Iran (h = 35 km).									
"	22	Up	iP	21 35 56.0						"	23	Up	iP	02 23 30.1								
		Ki	iP	21 36 38.3										micr sec								
		Sk	iP	21 36 29.6									P	Z'	0.1 1.0							
		Um	iP	21 36 06.6								Ki	iP	02 23 33.4								
		Ud	iP	21 36 10.9										micr sec								
		De	iP	21 35 56.3									P	Z'	0.4 1.5							
		Iran (h = 55 km).										Sk	iP	02 23 16.9								
"	22	Up	iP	21 38 48.2									Um	iP	02 23 34.6							
			i	21 38 51.6									Ud	iP	02 23 19.0							
				micr sec									De	iP	02 23 20.6							
			i	Z' 0.1 1.0									Colombia (h = 160 km).									
		Ki	iP	21 39 20.2									m = 5.8 (Up,Ki).									
			i	21 39 23.8							"	23	Ki	iP	02 33 22.8							
				micr sec										Ud	iP	02 33 05.4						
			i	Z' 0.1 0.9										De	iP	02 32 50.5						
		Sk	iP	21 39 22.0										Iran.								
			i	21 39 25.0										Origin time = 02 25 05.								
		Um	iP	21 38 59.1							"	23	Up	iP	02 39 23.3							
		Ud	iP	21 39 02.9										i	02 39 27.8							
			i	21 39 07.0									Ki	iP	02 39 55.7 C							
		De	iP	21 38 48.6											micr sec							
		Iran (h = N).												P	Z'	0.1 0.5						
		m = 5.6 (Up,Ki).											Sk	iP	02 39 57.3							
		Double P, average separation											Um	iP	02 39 34.6 C							
		3.5 s.												i	02 39 39.6							
"	22	Up	iP	23 40 33.8									Ud	iP	02 39 38.7 C							
		Ki	iP	23 40 04.4										i	02 39 43.7							
		Um	iP	23 40 17.6 C										De	iP	02 39 24.2						
		Mariana Islands (h = 55 km).													i	02 39 27.7						
"	22	Ki	iP	23 48 02.6										Iran (h = 55 km).								
		Um	iP	23 47 44.1										Double P, average separation								
		Ud	iP	23 47 45.2										4.5 s.								
		De	iP	23 47 30.1								"	23	Ud	iP	03 28 37.2						
		Iran.																				
		Origin time = 23 39 44.											"	23	Up	iP	03 57 03.6					
"	23	Ud	iPKP1	00 05 18.5											i	03 57 27.2						
		De	iPKP1	00 05 30.2												micr sec						
		Fiji Islands (h = 570 km).													P	Z'	0.1 1.0					
													Ki	iP	03 56 17.8							
													(cont.)									

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



1977
Mar.

23

(cont.)
Ki
P Z' 0.1 1.0
Sk iP 03 56 54.7
Um iP 03 56 39.1
Ud iP 03 57 09.9
De iP 03 57 27.3 C
Kurile Islands (h = 35 km).
m = 5.9 (Up,Ki).

" 23 Sk iP 04 36 29.7
Um iP 04 36 04.1
Ud iP 04 36 34.8

" 23 Up
Mx E 2.0 21
Mx N 5.8 23
Mx Z 11 23
Ki iPKP 07 38 06.0
micr sec
Mx E 2.9 21
Mx N 5.2 19
Mx Z 2.4 20
Um iPKP 07 38 17.1
Ud iPKP 07 38 22.0
De i 07 38 45.4
Fiji Islands (h = N).
M = 6.3 (Up,Ki).

" 23 Up iP 07 54 42.9 C
micr sec
P Z' 0.1 0.9
Ki iP 07 55 14.8 C
micr sec
P Z' 0.1 1.0
Sk iP 07 55 16.5 C
Um iP 07 54 54.1 C
Ud iP 07 54 57.8 C
De iP 07 54 43.8 C
Iran (h = 55 km).
m = 5.7 (Up,Ki).

" 23 Ud i(P) 08 38 20.5

" 23 Up iP 10 14 02.1
Ud iP 10 14 11.9
Philippine Islands (h = 110 km).

" 23 Up iP 10 18 51.7
Ki iP 10 19 24.3
Um iP 10 19 03.1
Ud iP 10 19 07.4
De iP 10 18 52.6
Iran (h = N).

1977
Mar.

23

Up iP 12 00 40.0
Ki eP 12 01 47
Um iP 12 01 08.6
Ud iP 12 00 55.8 C
Turkey (h = 25 km).

" 23 Ud iP 13 38 47.7

" 23 Up iP 13 52 56.3
Ki iP 13 53 29.3
Um iP 13 53 10.6
Ud iP 13 53 11.6 C
De iP 13 52 56.7
Iran (h = 60 km).

" 23 Ud iP 13 59 36.6

" 23 Ud iPKP 15 36 05.4
De iPKP 15 36 17.1

" 23 Ud iP 16 33 37.1

" 23 Ud iP 16 36 51.3
Tadzhik SSR (h = 35 km).

" 23 Up iSgl 16 39 46.7
Um eSgl 16 41 53
Ud iSgl 16 40 35.8
De eSgl 16 39 51

Coast of Latvia.
Approximate location 56 1/2°N,
21°E.
Explosion?

" 23 Up iPKP 17 29 35.1
micr sec
Mx E 0.8 21
Mx N 5.0 23
Mx Z 7.0 23
Ki iPKP 17 29 20.1
micr sec
Mx E 1.7 19
Mx N 3.2 19
Mx Z 3.4 18

Sk iPKP 17 29 29.3
Um iPKP 17 29 31.1
Ud i 17 29 39.7
De iPKP 17 29 43.5
Fiji Islands (h = 0).
M = 6.1 (Up,Ki).

" 23 Up iP 18 04 34.1
Um iP 18 04 09.6
Ud iP 18 04 40.7
(cont.)

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



1977

Mar. 23 (cont.)
 De iP 18 04 56.1
 Japan (h = N).

" 23 Um iPKP 19 16 43.4
 Ud iPKP 19 16 50.8
 De ePKP 19 16 56
 Tonga Islands (h = 35 km).

" 23 Up iP 20 48 43.9
 micr sec
 P Z' 0.1 1.1
 Ki iP 20 49 16.6 C
 micr sec
 P Z' 0.1 1.0
 Sk iP 20 49 17.6
 Um iP 20 48 55.1 C
 Ud iP 20 48 59.3 C
 De iP 20 48 44.0 C
 i 20 48 49.7
 Iran (h = 40 km).
 m = 5.6 (Up, Ki).

" 23 Um iP 21 32 15.8
 Ud iP 21 32 45.7
 Japan (h = 40 km).

" 23 Ud iP 23 24 42.8

" 23 Up iP 23 28 24.3
 Ki iP 23 28 04.2
 Um iP 23 28 11.1
 Ud iP 23 28 33.6
 Luzon (h = 80 km).

" 23 Up iP 23 59 02.4 C
 iS 24 05 22.7
 micr sec
 P Z' 0.6 1.0
 Mx E 1.4 11
 Mx N 1.2 17
 Mx Z 1.9 11
 Ki iP 23 59 34.7 C
 iPP 24 01 26.5
 micr sec
 P Z' 0.4 1.2
 Mx E 3.9 11
 Mx N 3.5 11
 Mx Z 3.5 11
 Sk iP 23 59 35.6 C
 Um iP 23 59 13.6 C
 iPP 24 01 04.0
 iS 24 05 37
 Ud iP 23 59 17.8 C
 (cont.)

1977

Mar. 23 (cont.)
 Ud iS 24 05 45.2
 De iP 23 59 03.4 C
 Iran (h = 35 km).
 m = 6.3, M = 5.4 (Up, Ki).

" 24 Up iP 00 12 35.8
 micr sec
 P Z' 0.1 1.0
 Ki iP 00 13 06.5
 Sk iP 00 13 09.4
 Um iP 00 12 47.2 C
 Ud iP 00 12 51.2 C
 De iP 00 12 36.5 C
 Iran (h = N).

" 24 Up iP 00 21 37.3 C
 i 00 21 41.0
 micr sec
 P Z' 0.1 1.0
 i Z' 0.2 0.9
 Ki iP 00 22 10.0 C
 i 00 22 14.7
 micr sec
 P Z' 0.1 1.0
 i Z' 0.2 1.0
 Sk iP 00 22 10.9 C
 i 00 22 14.8
 Um iP 00 21 48.9 C
 i 00 21 52.6
 Ud iP 00 21 52.7 C
 i 00 21 56.2
 i(PP) 00 23 29.9
 De iP 00 21 37.8 C
 i 00 21 41.8
 Iran (h = 45 km).
 m = 5.9 (Up, Ki).

" 24 Up iP 00 27 46.4 C
 Ki iP 00 28 18.7
 Sk iP 00 28 19.6
 Um iP 00 27 58.2
 Ud iP 00 28 01.7 C
 De iP 00 27 47.4
 Iran.
 Origin time = 00 20 00.

" 24 Up iP 01 26 03.8
 Um iP 01 25 42.6
 Japan (h = 55 km).

" 24 Ud iP 02 20 23.9

" 24 Up i(P) 04 12 04.7



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

1977
Mar. 24 Up iP 04 50 11.3 C
i 04 50 15.7
P Z' 0.2 1.0 micr sec
Ki iP 04 50 43.5 C
i 04 50 47.1
P Z' 0.2 1.3 micr sec
Mx N 0.9 13
Sk iP 04 50 45.0
i 04 50 48.4
Um iP 04 50 22.7 C
i 04 50 25.7
Ud iP 04 50 27.0 C
i 04 50 31.0
De iP 04 50 12.3
Iran (h = 30 km).
m = 5.8 (Up,Ki).
Double P, average separation
3.7 s.

" 24 Ud iP 05 52 41.6

" 24 Up iP 06 25 19.3
Ki iP 06 25 02.0
Um iP 06 25 07.9
Ud iP 06 25 27.5 C
De iP 06 25 33.6
Talaud Islands (h = N).

" 24 Ud iP 06 56 37.0

" 24 Up iP 07 16 11.6
Ud iP 07 16 21.9
Banda Sea (h = 35 km).

" 24 Up iPn 07 34 29.4
i 07 34 38.3
i 07 36 23.8
i 07 36 36.6
iS* 07 36 56.1
iSg1 07 37 03.7
iSg2 07 37 12.7
Pn Z' 0.1 1.0 micr sec
Ki iP 07 36 15.7
Sk iP 07 35 19.5
iS 07 37 34.7
Um iP 07 35 25.3
iS 07 37 59.6
Ud iPn 07 34 31.3
i 07 34 41.4
iSn 07 36 10.7
iSg2 07 37 13.8

(cont.)

1977
Mar. 24 (cont.)
De iPn 07 33 42.5
Poland (h = N).

" 24 Ki i(P) 07 35 09.4

" 24 Ud iP 07 54 26.1
Tadzhik-Sinkiang (h = 120 km).

" 24 Up iP 09 29 34.8
Sk eP 09 28 47
Um iP 09 29 34.8
Ud iP 09 29 21.4
Iceland (h = 10 km).

" 24 Ki iP 10 51 16.1
Sk iP 10 51 10.3
Um iP 10 51 35.3
Ud iP 10 51 55.2

" 24 Ud iP 12 00 40.9
Formosa (h = 30 km).

" 24 Up iP 14 05 43.4
Um iP 14 05 55.3 C
Ud iP 14 05 58.7
De iP 14 05 43.7
Iran (h = N).

" 24 Up iP 14 18 29.2
Um iP 14 18 37.7
Ud iP 14 18 44.6 C
De iP 14 18 30.2 C
Iran (h = 60 km).

" 24 Up iSg1 14 23 11.1
Sk iSg1 14 23 13.4
Ud iSg1 14 22 10.3
South Norway, 58.4°N, 6.5°E.
Origin time = 14 20 07.
M_L = 2.7 (Up,Ud).
By combination with Bergen
and Kongsberg readings.

" 24 Up iP 14 30 33.8
Ud iP 14 30 41.6
Philippine Islands
(h = 160 km).

" 24 Ud i(P) 15 02 31.5

" 24 Ud iP 15 10 05.3

" 24 Um iPKP 18 00 15.9
New Hebrides Islands
(h = 120 km).

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



1977
Mar. 24 Ki iSgl 19 27 03.9
Sk i 19 27 15.1
iSgl 19 27 20.6
Um iSn 19 27 19.7
iSgl 19 27 33.8
Ud iSgl 19 29 01.3
Nordland, Norway, 66.5°N,
14.6°E.
Origin time = 19 25 43.
M_L = 2.7 (Ki,Sk,Um).
Explosion?

1977
Mar. 25 (cont.)
Ki
P
Um iP 02 45 47.9
i 02 45 52.2
iPP 02 46 44.6
iS 02 50 54
Ud iP 02 45 42.4
De iP 02 45 20.7
Turkey (h = 20 km).
m = 5.5 (Up,Ki).

" 24 Up iP 19 45 54.9
i 19 46 06.4
Ki iP 19 45 33.9
micr sec
P Z' 0.2 1.5
Um iP 19 45 42.8 C
Ud iP 19 46 04.3 C
De iP 19 46 10.9
Luzon (h = N).

" 25 Um iP 02 49 46.0
" 25 Ud iP 03 01 10.4
" 25 Up iP 03 03 28.6
Ud iP 03 03 36.5
Probably Luzon.
" 25 Ki iP 04 09 11.4
iS 04 10 24.3
Norwegian Sea. Approximate
location 73 1/2°N, 16°E.
Origin time = 04 07 37.
Location from Helsinki
regional bulletin.

" 24 Up iP 20 18 10.0
Ud iP 20 18 21.6
Probably Iran.

" 24 Um iP 20 36 43.8
Ud iP 20 36 51.9

" 24 Ud iP 21 47 02.3

" 24 Up iPKP 22 32 11.2 C
Um iPKP 22 31 54.2 C
Ud iPKP 22 32 14.4

" 24 Up iP 22 53 28.9
Ud iP 22 53 31.0 C
De iP 22 53 30.3

" 24 Up iP 23 04 27.7
Ud iP 23 04 36.0
Mindanao (h = N).

" 25 Ud iP 02 06 59.2

" 25 Up iP 02 45 28.1
i 02 45 39.7
iPP 02 45 57.9
iS 02 50 04
micr sec
i Z' 0.1 1.0
Mx E 1.9 20
Mx N 0.9 17
Ki iP 02 46 17.4
(cont.).

" 25 Up iP 05 44 35.2
Um iP 05 44 48.6
Ud iP 05 44 49.1
De iP 05 44 36.8

" 25 Up iP 08 38 34.7
Ud iP 08 38 37.9

" 25 Ud iP 10 21 46.7

" 25 Up iP 12 08 08.5
Um iP 12 08 53.7 C
Probably Luzon.

" 25 Ki iP 13 38 35.3
Ud iP 13 37 35.1
De iP 13 37 03.5

" 25 Up iP 13 49 41.3
Ki iP 13 48 45.0
Um iP 13 49 13.7
Ud iP 13 49 37.5
De iP 13 50 01.6
Alaska (h = 55 km).

" 25 Up iPn 15 16 53.2
iPgl 15 16 59.6
(cont.)

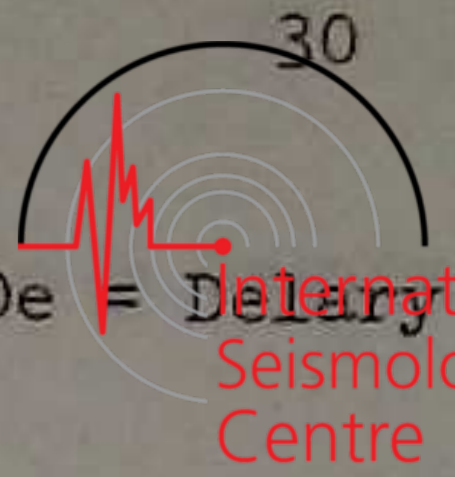
Up = Uppsala, Ki = Kiruna, Sk = Skalstugan, Um = Umeå, Ud = Uddeholm, De = Delary

1977

Date	Time	Station	Type	Time	Time	Time
Mar. 25	(cont.)	Up	iSn	15	17	33.2
			iSgl	15	17	44.3
			i	15	17	51.1
		Sk	iSgl	15	20	08.1
			iSn	15	19	04.6
		Um	iSgl	15	19	46.1
			iSgl	15	18	32.6
		Ud	iSgl	15	18	32.6
			iPn	15	16	55.0
			iPgl	15	17	03.4
De	iSgl	15	17	54.0		
Off coast of Latvia. Approximate location 57°N, 21°E. Origin time = 15 15 58. M _L = 2.9 (Up,Um,Ud,De). Explosion?						
"	25	Ud	iP	16	19	10.3
"	25	Up	iP	16	26	43.1
			iP	16	26	17.1
			iP	16	26	48.6
"	25	Ud	iP	17	51	28.9
			Iran-USSR (h = 20 km).			
"	25	Ki	iP	18	24	52.3
			iP	18	25	11.3
"	25	Up	iP	23	03	07.4 C
		P	Z'	0.1	1.0	
		Ki	iP	23	03	39.8
		Sk	iP	23	03	41.4
		Um	iP	23	03	18.7 C
		Ud	iP	23	03	22.9 C
		De	iP	23	03	07.8
		i		23	03	15.6
Iran (h = 55 km).						
"	26	Ud	iP	00	37	28.4
			North Atlantic Ocean (h = N).			
"	26	Up	iP	00	40	23.3
		P	Z'	0.1	1.0	
		Ki	iP	00	40	55.2
		Sk	iP	00	39	56.2
		Um	iP	00	40	34.8
		Ud	iP	00	40	38.5
		De	iP	00	40	23.5
		Iran (h = 45 km).				

1977

Date	Time	Station	Type	Time	Time	Time		
Mar. 26		Up	iP	04	47	11.1		
			iS	04	56	17		
								micr sec
		P	Z'	0.6	1.1			
		Mx	E	3.1	18			
			N	5.7	18			
		Mx	Z	5.7	17			
		Ki	iP	04	46	16.6		
iS	04		54	40				
						micr sec		
P	Z'	0.8	1.0					
Mx	E	4.9	17					
	N	5.7	20					
Mx	Z	4.1	17					
Sk	iP	04	46	47.3				
Um	iP	04	46	44.3				
	iS	04	55	28				
						iP'P'		
						05 15 34.9		
Ud	iP	04	47	10.2				
De	iP	04	47	32.6				
Aleutian Islands (h = 40 km). m = 6.7, M = 5.9 (Up,Ki).								
"	26	Ki	iP	05	06	27.5		
			iP	05	06	54.3		
			iP	05	07	20.3		
"	26	Ki	iP	05	10	55.8		
			iP	05	10	27.8		
			iP	05	10	26.7		
Turkey (h = 20 km).								
"	26	Ud	iP	05	53	45.7		
			Greece (h = 35 km).					
"	26	Ki	iPKP	08	38	17.2		
			i(PKP)	08	38	21.3		
		Um	iPKP	08	38	24.6		
			iPKP1	08	38	23.8		
		Ud	i	08	38	32.9		
			iPKP1	08	38	36.5		
		De	i	08	38	42.2		
			Tonga Islands (h = 90 km).					
		"	26	Ud	i(P)	08	43	37.1
					i(P)	08	44	02.8
"	26	Up	iPKP1	12	50	10.9		
			iPKP1	12	50	04.2		
		Sk	iPKP1	12	49	58.8 C		
			i	12	50	03.1		
		Um	iPKP1	12	50	11.9 C		
			i	12	50	21		
		Ud	ePKP1	12	50	21		
			Kermadec Islands (h = 60 km).					



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

1977

Mar. 26 Ki iP 14 19 24.7
 Um iP 14 19 54.1
 Ud iP 14 20 19.8
 Aleutian Islands (h = 45 km).

1977

Mar. 26 (cont.)
 Um iP 22 37 59.8 C
 i 22 38 04.8
 iS 22 47 07
 Ud iP 22 37 28.4 C
 i 22 37 32.9
 De iP 22 37 08.6
 Ascension Island (h = N).
 m = 6.0, M = 5.3 (Up, Ki).
 Double P, average separation
 4.9 s.

" 26 Ki iP 14 36 14.6
 Um i 14 35 59.0
 Ud iP 14 35 57.1
 De eP 14 35 47
 Iran (h = 35 km).

" 27 Up iP 05 45 26.4
 micr sec
 P Z' 0.1 1.0
 Ki iP 05 45 29.5
 micr sec
 P Z' 0.1 0.6
 Sk iP 05 45 48.7
 Um iP 05 45 21.8
 Ud iP 05 45 41.4
 De iP 05 45 40.9
 Kashmir-Tibet (h = 25 km).
 m = 5.9 (Up, Ki).

" 26 Ud iP 15 07 09.6
 Hindu-Kush (h = 190 km).

" 26 Ud iP 16 12 33.3

" 26 Up iP 16 40 32.1
 Ki iP 16 39 39.9
 Um iP 16 40 09.8
 Ud iP 16 40 35.4
 Aleutian Islands (h = 30 km).

" 26 Um iP 16 41 45.3
 Ud iP 16 42 10.7

" 26 Um iP 17 24 55.3
 Ud iP 17 25 20.8

" 26 Up iPKP1 19 15 54.6
 Sk iPKP1 19 15 48.4
 Um iPKP 19 15 48.6
 i 19 15 53.1
 Ud iPKP1 19 15 55.1
 De iPKP1 19 16 05.7
 i 19 16 09.2
 Tonga-Kermadec Islands
 (h = 400 km).

" 27 Up iP 07 27 28.3
 Um iP 07 27 39.4
 Ud iP 07 27 43.9
 De iP 07 27 30.6
 Iran (h = 70 km).

" 27 Up iPKP1 07 44 07.0
 Ud iPKP1 07 44 09.2 C
 De iPKP1 07 44 19.9
 Tonga-Kermadec Islands
 (h = 440 km).

" 26 Up iP 22 37 34.1 C
 i 22 37 39.1
 iS 22 46 20
 micr sec
 P Z' 0.2 1.5
 Mx E 1.1 19
 Mx N 0.8 21
 Mx Z 2.7 17
 Ki iP 22 38 18.8
 micr sec
 P Z' 0.2 1.6
 Mx E 1.1 15
 Mx N 1.6 17
 Mx Z 1.0 17
 Sk iP 22 37 46.6
 i 22 37 51.6

" 27 Up iP 12 06 49.8
 Ki iP 12 07 27.2
 Um iP 12 07 04.6
 Ud iP 12 07 02.7
 De iP 12 06 45.3
 Iran (h = 45 km).

" 27 Ki iP 18 51 27.8
 Um iP 18 51 55.3
 Ud iP 18 52 22.7
 De iP 18 52 47.6
 Pribilof Islands (h = N).
 Late arrivals compared with
 NEIS solutions.

" 27 Ud iP 20 53 15.7
 Alaska (h = 35 km).

(cont.)



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

Year	Date	Station	Type	Time	Depth (km)	Magnitude	Notes
1977	Mar. 27	Um	iP	22 47 10.9			Mariana Islands (h = 70 km).
"	28	Ud	iP	01 05 12.2			Luzon (h = 40 km).
"	28	Up	iPKP	01 34 38.7			New Hebrides Islands (h = 110 km).
			iSKP1	01 37 52.1			
				micr sec			
			SKP1	Z' 0.5 1.1			
		Ki	iPKP	01 34 24.5			
		Sk	iPKP	01 34 36.1			
		Um	iPKP	01 34 31.2			
			iSKP1	01 37 39.2			
		Ud	iPKP	01 34 40.4			
			iSKP1	01 37 55.0			
		De	iPKP	01 34 46.9			
			iSKP1	01 38 06.1			
"	28	Up	iP	03 13 20.8			Iran (h = 50 km).
		Ud	iP	03 13 35.3			
		De	iP	03 13 18.8 C			
"	28	Up	iP	04 17 33.2			Iran (h = 55 km).
				micr sec			
			P	Z' 0.1 1.0			
		Ki	iP	04 18 05.4			
		Sk	iP	04 18 06.3			
		Um	iP	04 17 44.3			
		Ud	iP	04 17 48.0			
		De	iP	04 17 33.9			
"	28	Up	iP	05 01 52.6 C			Iran (h = 50 km).
		Ki	iP	05 02 24.9 C			
		Sk	iP	05 02 26.2			
		Um	iP	05 02 03.8 C			
		Ud	iP	05 02 08.1 C			
		De	iP	05 01 53.9			
"	28	Um	iP	05 26 09.8			Japan (h = 50 km).
		Ud	iP	05 26 38.4			
"	28	Ud	iPKP1	08 23 10.1 C			Tonga-Kermadec Islands (h = 530 km).
		De	iPKP1	08 23 21.3			
"	28	Um	iP	08 25 49.4			
1977	Mar. 28	Up	iP	10 55 30.8			Dodecanese Islands (h = 25 km). M = 4.4 (Up,Ki).
				micr sec			
			Mx	E 0.4 11			
			Mx	N 0.6 12			
			Mx	Z 1.7 14			
		Ki	iP	10 56 37.3 C			
				micr sec			
			Mx	E 0.3 11			
			Mx	N 0.3 10			
		Sk	iP	10 56 12.0			
		Um	iP	10 56 05.8			
			iS	11 00 56			
		Ud	iP	10 55 40.4 C			
		De	iP	10 55 10.3 C			
"	28	Up	iP	16 33 51.3			Italy (h = 10 km).
		Ud	iP	16 33 52.9			
			i	16 34 07.2			
"	29	Um	iP	01 22 37.8			Italy (h = 10 km).
		Ud	iP	01 21 58.4			
"	29	Up	iP	04 03 52.3 C			Kazakh SSR. m = 6.1 (Up,Ki). Underground explosion.
			iPn	04 04 52.8			
				micr sec			
			P	Z' 0.1 0.5			
		Ki	iP	04 03 36.6 C			
				micr sec			
			P	Z' 0.3 0.9			
		Sk	iP	04 04 08.4			
		Um	iP	04 03 37.8 C			
			iPP	04 04 51.8			
		Ud	iP	04 04 10.0 C			
		De	iP	04 04 16.2			
"	29	Um	i	04 30 55.3			Kurile Islands (h = 110 km).
		Ud	iP	04 30 52.0			
"	29	Um	iP	09 24 53.2			
"	29	Ud	iP	09 25 42.0			
"	29	Um	iP	12 02 41.8			
"	28	Ud	iPKP1	15 44 11.6			Tonga-Kermadec Islands (h = 610 km).



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

1977

Mar.	29	Um	iPKP	18 01 39.8	
		Ud	iPKP1	18 01 41.9	
		De	iPKP1	18 01 52.4	
			Fiji Islands (h = 540 km).		
"	29	Up	iP	22 37 03.4	
			i	22 37 35.5	
			iPP	22 38 34.9	
				micr sec	
			P	Z' 0.3 1.4	
		Ki	iP	22 37 35.0	
			i	22 37 37.2	
				micr sec	
			i	Z' 0.2 0.7	
		Sk	iP	22 37 38.4	
		Um	iP	22 37 13.8	C
			i	22 37 17.9	
		Ud	iP	22 37 17.9	
		De	iP	22 37 03.0	
			Iran (h = 35 km).		
			m = 6.0 (Up,Ki).		
"	29	Um	iP	22 43 40.4	
		Ud	iP	22 43 43.4	
			Probably Iran.		
"	29	Um	iP	23 33 09.3	
		Ud	iP	23 33 13.0	
		De	iP	23 32 58.9	
			Iran (h = 55 km).		
"	29	Um	iP	23 56 38.8	
		Ud	iP	23 57 07.5	
			Japan (h = 80 km).		
"	30	Ud	iP	03 19 23.0	
"	30	Um	iP	06 39 51.4	
		Ud	iP	06 39 54.0	
		De	iP	06 39 42.5	
			Iran.		
			Origin time = 06 31 56.		
"	30	Ud	iP	08 37 15.8	
		De	iP	08 37 01.7	
			Iran (h = 45 km).		
"	30	Up	iP	11 32 29.9	
		Ki	iP	11 31 54.8	
				micr sec	
			P	Z' 0.4 1.9	
		Um	iP	11 32 08.9	
		Ud	iP	11 32 35.9	
		De	iP	11 32 49.8	
			Japan (h = 35 km).		

1977

Mar.	30	Up	iPKP1	11 52 36.1	C
		Um	iPKP1	11 52 24.9	
		Ud	iPKP1	11 52 35.6	
		De	iPKP1	11 52 47.7	
			Kermadec Islands (h = N).		
"	30	Up	i(P)	13 40 10.8	
"	30	Up	iP	17 52 22.6	
				micr sec	
			P	Z' 0.1 1.0	
		Ki	iP	17 51 28.9	C
				micr sec	
			P	Z' 0.1 0.9	
		Sk	i	17 52 10.9	
		Um	iP	17 51 55.0	C
		Ud	iP	17 52 24.8	C
		De	iP	17 52 46.3	C
			Aleutian Islands (h = 30 km).		
			m = 5.9 (Up,Ki).		
"	30	Ud	eP	21 33 49	C
		De	iP	21 33 41.6	
			North Atlantic Ocean (h = N).		
"	30	Ud	iP	21 45 37.3	
			North Atlantic Ocean (h = N).		
"	31	Um	iP	00 18 31.1	
		Ud	i	00 19 17.1	
			Japan (h = 50 km).		
"	31	Um	i(P)	01 02 21.2	
			Japan (h = 40 km).		
"	31	Up	iPKP2	01 59 51.0	
		Um	iPKP	01 59 32.3	
			i	01 59 36.9	
		Ud	iPKP1	01 59 45.3	
			i	01 59 52.4	
		De	iPKP2	02 00 07.5	
			Kermadec Islands (h = 70 km).		
"	31	Um	iP	02 02 04.4	
"	31	Up	iP	02 03 53.2	
		Um	iP	02 03 35.4	D
		Ud	iP	02 03 55.5	D
"	31	Up	iPKP1	05 27 28.2	C
			i	05 27 32.6	
				micr sec	
			PKP1	Z' 0.1 1.1	
		Sk	iPKP1	05 27 21.2	
		Um	iPKP1	05 27 15.9	C

(cont.)

