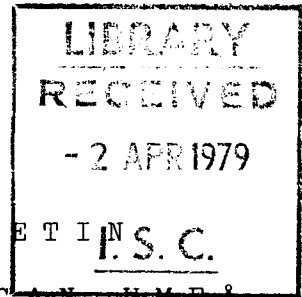


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SEISMOLOGICAL BULLETIN P.S.C.
 UPPSALA, KIRUNA, SKALSTUGAN, UMEÅ,

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

APRIL 1 - 30, 1977

1977					1977						
Apr.	1	Ud	iP	10 49 52.3	Apr.	1	Up	iP	15 34 50.9		
		De	iP	10 49 38.1			Ud	iP	15 35 01.9		
							Ionian Sea (h = N).				
"	1	Up	iP	13 44 10.9	"	1	Up	iP	16 08 10.4		
			iS	13 50 26.5			Ki	iP	16 08 43.7		
				micr sec			Sk	eP	16 08 44		
		P	Z'	1.3 1.0			Um	iP	16 08 21.5		
		Mx	E	6.1 11			Ud	iP	16 08 25.9		
		Mx	N	6.8 10			De	iP	16 08 10.9		
		Mx	Z	9.8 10			Iran (h = N).				
		Ki	iP	13 44 43.9							
				micr sec			"	1	Um	iP	16 28 18.6
		P	Z'	1.9 1.3			Ud	iP	16 28 08.0		
		Mx	E	18 12			Costa Rica (h = 50 km).				
		Mx	N	14 11			"	1	Up	iP	20 51 12.4
		Mx	Z	16 12			Ki	iP	20 51 45.5		
		Sk	iP	13 44 45.0			Ud	iP	20 51 26.2		
		Um	iP	13 44 22.4			Iran (h = N).				
			iS	13 50 48.2			"	2	Up	iP	00 14 53.3
		Ud	iP	13 44 26.1 C			Sk	iP	00 14 18.5		
			iS	13 50 56.0			Um	iP	00 13 51.5		
		De	iP	13 44 11.3			Ud	iP	00 14 09.5 C		
			iS	13 50 28.8			De	iP	00 14 06.3		
		Iran (h = 30 km).					Afghanistan-USSR (h = 220 km).				
		m = 6.7, M = 6.1 (Up,Ki).					"	2	Ud	iP	06 44 09.7
"	1	Up	iPg1	14 23 42.9	"	2	Up	iP	07 01 19.2		
			iSg1	14 24 30.1			Ki	iP	07 01 52.1		
		Um	iSg1	14 26 17.2			Sk	iP	07 01 53.0		
		Ud	ePg1	14 24 09			Um	iP	07 01 31.0		
			iSg1	14 25 16.6			Ud	iP	07 01 34.1		
		De	iPg1	14 23 46.5			De	eP	07 01 22		
			iSg1	14 24 38.1			Iran (h = N).				
		Coast of Latvia, near					"	2	Ki	iP	07 05 46.5
		56 3/4°N, 21°E.					Ud	iP	07 06 01.0		
		Origin time = 14 22 38.									
		M _L = 2.8 (Up,Um,Ud,De).									
		Explosion?									

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

1977				1977			
Apr.	4	Up	iPKP	02 48 27.2	Apr.	4	(cont.)
			i	02 48 33.8			Sk iP 18 03 00.8
		Ki	ePKP	02 48 45			Um iP 18 03 20.3 C
			i	02 48 46.9			i 18 03 28.8
		Um	iPKP	02 48 36.0			i 18 03 35.9
			i	02 48 39.8			iS 18 12 23
		Ud	iPKP	02 48 25.7			Ud iP 18 02 50.3 C
			i	02 48 32.4			De iP 18 02 38.3 C
		South Sandwich Islands				Central Mid-Atlantic Ocean	
		(h = N).				(h = N).	
		m = 6.4, M = 5.9 (Up,Ki).					
"	4	Um	ePKP	04 49 22.1	"	4	Ud iP 18 08 40.2
		New Hebrides Islands				Mexico (h = 30 km).	
		(h = 15 km).					
"	4	Ud	iP	05 26 39.0	"	4	Up iP 19 19 19.7
"	4	Um	iP	06 43 16.7			Ki iP 19 19 18.8
		Ud	iP	06 43 39.5			ipP 19 19 50.0
							micr sec
							P Z' 0.1 0.7
"	4	Up	iP	07 19 45.8			Um iP 19 19 16.5
		Ki	eP	07 19 04			ipP 19 19 47.5
		Um	iP	07 19 24.3			Ud iP 19 19 29.3
			i	07 19 30.3			ipP 19 19 59.5
		Ud	iP	07 19 53.1			De iP 19 19 28.9
		Japan (h = 60 km).				Sumatra.	
		h = 120 km (Ki,Um,Ud).					
"	4	Ud	iPKP	07 47 26.3	"	5	Ki iP 04 42 39.9
		Fiji Islands (h = 430 km).					Um iP 04 42 44.5
"	4	Ud	iPKP1	15 44 12.3			Ud iP 04 43 06.0
		De	iPKP1	15 44 23.5			Mindanao (h = 70 km).
		Fiji Islands (h = 600 km).					
"	4	Ud	eP	15 57 10	"	5	Ud iP 07 50 11.3
		Afghanistan-USSR (h = 200 km).				Kamchatka (h = 55 km).	
"	4	Up	iP	18 03 00.6 C	"	5	Um iP 08 40 51.8
			i	18 03 16.2			ipP 08 41 46.3
			iS	18 11 42.7			Ud ipP 08 42 06.4
				micr sec			Mariana Islands (h = 230 km).
			P	Z' 0.5 1.3	"	5	Up iP 10 56 04.5
			Mx	E 5.8 18			micr sec
			Mx	N 5.4 18			Mx E 1.4 18
			Mx	Z 10 17			Mx N 2.3 21
		Ki	iP	18 03 33.0 C			Mx Z 2.2 26
			i	18 03 41.5			Ki iP 10 55 38.0
			i	18 03 48.7			micr sec
			iS	18 12 46			Mx N 1.9 17
				micr sec			Sk iP 10 56 03.4
			P	Z' 0.3 1.1			Um iP 10 55 48.8
			Mx	E 3.7 16			Ud iP 10 56 10.4
			Mx	N 3.6 16			South of Mariana Islands
			Mx	Z 3.3 20			(h = 15 km).
		(cont.)				M = 5.7 (Up,Ki).	

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

1977				1977			
Apr.	5	De	iPKP New Ireland (h = 60 km).	12 06 05.4	Apr.	6	(cont.) De iP 13 43 29.1 D Iran (h = 40 km). m = 6.4, M = 6.0 (Up,Ki).
"	5	Ud	iP	13 36 27.6	"	6	Ud i 14 22 33.4 iSgl 14 22 40.9 Coast of south Norway, near 58 1/4°N, 6 1/2°E. Origin time = 14 20 30. M _L = 2.7 (Ud). By combination with Bergen and Kongsberg readings.
"	5	Up	iP	15 11 48.8 C micr sec	"	6	Ud i 14 22 33.4 iSgl 14 22 40.9 Coast of south Norway, near 58 1/4°N, 6 1/2°E. Origin time = 14 20 30. M _L = 2.7 (Ud). By combination with Bergen and Kongsberg readings.
			P Z'	0.2 1.1			
		Ki	iP	15 11 13.6 C			
			i	15 11 33.3 micr sec			
			P Z'	0.1 1.0			
		Sk	iP	15 11 22.6 C			
		Um	iP	15 11 34.2 C			
			i	15 11 50.7			
		Ud	iP	15 11 40.7 C			
		De	iP	15 11 57.4			
			Nevada.				
			m = 6.0 (Up,Ki).				
			Underground explosion.				
"	5	Ud	iP	17 01 32.4	"	6	Up iPn 19 33 39.3 i 19 33 47.7 iSn 19 35 01.8 i 19 35 15.1 iSgl 19 35 47.1 Ki iPn 19 34 06.3 i 19 34 15.0 iSn 19 35 50.5 i 19 36 07.0 i 19 36 13.8 Sk iPn 19 33 02.2 i 19 33 08.8 i 19 33 22.0 iSn 19 33 55.7 iSgl 19 34 23.8 Um iPn 19 33 49.2 i 19 33 58.1 iSn 19 35 18.5 i 19 35 51.4 Ud iPn 19 33 12.0 i 19 33 19.3 iSn 19 34 12.5 iSgl 19 34 41.0 De iPn 19 33 42.3 i 19 33 49.1 iSn 19 35 06.8 iSgl 19 36 01.4 Off coast of west Norway, near 61 3/4°N, 2 1/2°E. Origin time = 19 31 47. M _L = 4.4 (Up,Sk,Ud,De). Felt.
"	5	Up	iP	17 19 46.6			
		Ud	iP	17 19 59.9			
			Aegean Sea (h = 35 km).				
"	5	Um	iP	19 56 42.4			
		Ud	eP	19 56 19			
			Crete (h = 55 km).				
"	6	Um	iP	00 50 18.9			
		Ud	iP	00 50 37.8			
"	6	Ki	iSgl	10 43 10.3			
		Um	iSgl	10 43 26.4			
"	6	Up	iP	13 43 30.4 D			
			iS	13 49 02.8 micr sec			
			P Z'	0.9 1.3			
			Mx E	24 20			
			Mx N	8.7 22			
			Mx Z	9.8 20			
		Ki	iP	13 44 08.5 micr sec			
			P Z'	0.7 1.5			
			Mx E	8.4 16			
			Mx N	16 16			
			Mx Z	9.8 14			
		Sk	iP	13 44 05.8			
		Um	iP	13 43 44.1			
			iS	13 49 36.9			
		Ud	iP	13 43 45.7 D			
			iS	13 49 34.3			
			(cont.)				
					"	6	Ud iSgl 19 40 51.3 Aftershock to the preceding event. Origin time = 19 37 47. M _L = 3.1 (Ud). By combination with Bergen and Kongsberg readings.

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

1977					1977				
Apr.	7	Ki	ipP	03 43 04.9	Apr.	9	(cont.)		
		Sk	iP	03 42 58.2			Up	iSKS	04 26 30
		Um	iP	03 42 35.0				iPKKP	04 33 19.9
		Ud	iP	03 42 40.3			Ki	iP	04 16 58.0
		De	iP	03 42 25.3				iPKKP	04 33 14.6
		Iran (h = N).					Sk	iP	04 16 41.1
"	7	Ud	iP	09 34 20.5				ipP	04 18 43.2
"	7	Ud	iPKP	09 52 23.1				iPKKP	04 33 25.4
		Fiji Islands (h = 620 km).					Um	iP	04 16 57.5
"	7	Um	e(P)	11 37 12				iSKS	04 26 39
"	7	Um	iP	17 40 17.8				iS	04 27 39
		Ud	iP	17 40 07.3				iPKKP	04 33 11.5
		Costa Rica (h = N).						iP'P'	04 41 30.1
"	7	Um	iP	20 41 07.1			Ud	iP	04 16 40.5
		Ud	iP	20 41 00.3				ipP	04 18 45.0
		Guatemala (h = N).						iPKKP	04 33 26.8
"	7	Ud	iP	22 29 19.1			De	iP	04 16 38.4
		Banda Sea (h = 120 km).						iPKKP	04 33 27.7
"	8	Ud	iP	00 50 41.8				ipPKKP	04 35 36.7
"	8	Ud	iP	02 32 30.6			Peru-Brazil. h = 560 km (Sk,Ud,De).		
"	8	Ud	iP	02 52 52.4	"	9	Ki	eP	04 56 16
"	8	Up	iP	04 53 23.1			Um	iP	04 55 56.6
		Ki	iP	04 53 31.3 C			Ud	iP	04 55 28.4
		Sk	iP	04 53 48.4			De	iP	04 55 07.3
		Um	iP	04 53 21.3 C			Ascension Island (h = N).		
		Ud	iP	04 53 39.5 C	"	9	Ud	iP	05 09 05.2
		De	iP	04 53 36.6	"	9	Ud	iP	06 24 38.8
		Afghanistan-USSR (h = 240 km).			"	9	Ud	iP	08 58 09.3
"	8	Up	iP	16 57 31.2	"	9	Up	iP	14 22 24.9
		Ki	iP	16 58 03.9			Ud	iP	14 22 34.2
		Um	iP	16 57 44.0			Luzon (h = 70 km).		
		Ud	iP	16 57 46.8	"	9	Um	iP	15 24 43.5
		De	eP	16 57 34	"	9	Up	iP	17 41 48.9
		Iran (h = 20 km).					Ki	iP	17 42 27.0
"	8	Ud	iP	17 55 12.4			Sk	iP	17 42 24.4
"	9	Um	iP	00 50 51.9			Um	iP	17 42 04.0
"	9	Ud	iP	03 37 04.2			Ud	iP	17 42 04.3
		Kirgiz SSR (h = 45 km).					De	iP	17 41 47.1
"	9	Up	iP	04 16 48.7			Iran (h = 20 km).		
		(cont.)			"	9	Ki	iPKP	21 35 17.8
							Um	iPKP	21 35 24.4
							Ud	iPKP	21 35 33.4
							New Hebrides Islands (h = 25 km).		
"	9	Up	iP	04 16 48.7	"	10	Ki	iP	04 34 20.4
		(cont.)					(cont.)		

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

1977				1977			
Apr.	10	(cont.)		Apr.	11	(cont.)	
		Ki	micr sec			Um	iP 03 18 03.1
		P	Z' 0.1 1.0			Ud	iP 03 18 07.1
		Um	iP 04 34 26.9			Iran (h = N).	
		Ud	iP 04 34 47.6				
		Philippine Islands (h = N).			"	11	Ki iP 05 12 13.0
							Ud iP 05 11 15.7
	"	10	Ki iP 05 10 42.7				Crete (h = 70 km).
			Um iP 05 10 21.5			"	11
			Ud iP 05 10 25.3				Ki eP 10 14 01
			Iran (h = N).				Um iP 10 14 07.0
	"	10	Um iP 05 20 10.8				El Salvador (h = 10 km).
	"	10	Up iP 08 42 23.8 D		"	11	Um iP 11 59 09.8
			i 08 42 34.9			"	11
			iPcP 08 42 50.6				Ki iP 13 04 52.6
			micr sec				Um iP 13 05 05.8
			P Z' 0.1 0.7				Ud iP 13 05 33.8
		Ki	iP 08 41 37.8		"	11	Up iP 16 23 15.6
			i 08 41 49.9				Um iP 16 23 37.7
			iPcP 08 42 20.1				i 16 23 49.6
			micr sec				Ud iP 16 23 20.3
			P Z' 0.1 1.0				i 16 23 31.7
		Sk	iP 08 42 14.6				Lake Tanganyika (h = N).
			iPcP 08 42 43.7		"	11	Up iP 16 28 13.8
		Um	iP 08 41 58.6 D				i 16 28 26.7
			iPcP 08 42 34.2				iScP 16 35 21.4
		Ud	iP 08 42 29.9				micr sec
			ipP 08 42 48.9				P Z' 0.1 1.0
		De	iP 08 42 49.3				Ki iP 16 29 15.3
		Kurile Islands.					iScP 16 35 42.2
		h = 80 km (Ud).					Sk eP 16 28 53
		m = 5.9 (Up,Ki).					iScP 16 35 34.1
	"	10	Ud iP 09 37 44.6				Um iP 16 28 41.6
			Tadzhik SSR (h = 10 km).				iScP 16 35 29.9
	"	10	Ud iPcP 18 28 07.8				Ud iP 16 28 24.2
			De iPcP 18 28 19.5 D				De iP 16 27 57.1
			Fiji Islands (h = 650 km).				Turkey (h = 90 km).
	"	10	Ud iP 18 55 39.5				Clear ScP-phases at Up,Ki, Sk and Um!
			Kamchatka (h = 35 km).		"	11	Um iP 17 19 12.6
	"	10	Ud iP 21 29 06.6				Ud iP 17 19 34.8
			Iran (h = N).		"	11	Up iP 17 27 36.5
	"	11	Sk iPcP 02 34 42.6				Ki iP 17 27 06.7
			Um iPcP 02 34 38.6				Um iP 17 27 20.0
			South of Australia (h = N).				Ud iP 17 27 43.0
	"	11	Ki iP 03 18 25.1				Volcano Islands (h = N).
			Sk iP 03 18 26.3		"	11	Sk iP 18 09 07.1
			(cont.)				Um iP 18 09 39.4
							Ud iP 18 09 19.9
							North Atlantic Ocean (h = N).

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

1977				1977						
Apr.	11	Um	iP	18 26 17.5	Apr.	11	(cont.)			
"	11	Up	iP	18 57 11.4			Ki	micr sec		
		Um	iP	18 56 45.5			P	Z' 0.3 2.1		
		Ud	iP	18 57 15.7			Sk	iP 22 32 06.5		
		De	iP	18 57 36.2			Um	iP 22 32 39.6		
		Kurile Islands (h = 35 km).					Ud	iP 22 32 20.2		
							De	eP 22 32 34		
"	11	Up	iP	19 34 07.4			North Atlantic Ocean			
		Ki	iP	19 33 14.5			(h = N).			
		Um	iP	19 33 40.5			m = 5.5 (Up,Ki).			
		Ud	iP	19 34 08.6	"	11	Ki	iP 22 49 48.2		
		De	iP	19 34 30.2				micr sec		
		Aleutian Islands (h = 60 km).					P	Z' 0.2 1.5		
"	11	Ud	iP	19 36 01.0			Sk	iP 22 49 19.6		
"	11	Um	iP	19 50 34.6			Um	iP 22 49 52.1		
"	11	Up	iP	20 10 20.9			Ud	iP 22 49 33.1		
		Ki	iP	20 09 50.9			North Atlantic Ocean			
		Um	iP	20 10 03.5			(h = N).			
		Ud	iP	20 10 27.9	"	11	Sk	eP 23 07 36		
		Volcano Islands (h = N).					Um	iP 23 08 11.2		
"	11	Um	iP	20 39 14.2			Ud	iP 23 07 51.4		
"	11	Ud	iP	20 49 18.7			North Atlantic Ocean			
		De	iP	20 49 04.1			(h = N).			
"	11	Um	iP	21 11 12.5	"	11	Up	iP 23 09 21.1		
"	11	Um	iP	22 19 36.1			Ki	iP 23 08 50.9		
		Ud	iP	22 19 17.4				micr sec		
		North Atlantic Ocean					P	Z' 0.1 1.0		
		(h = N).					Sk	iP 23 09 18.5		
"	11	Up	iP	22 31 36.6			Um	iP 23 09 03.0		
		Ki	iP	22 31 35.4			Ud	iP 23 09 26.8		
				micr sec			De	eP 23 09 40		
		P	Z' 0.2 1.5				Volcano Islands (h = N).			
		Sk	iP	22 31 05.1	"	11	Ki	iP 23 25 49.5		
		i		22 31 09.1			Sk	iP 23 25 18.3		
		Um	iP	22 31 39.1			Um	iP 23 25 52.4		
		Ud	iP	22 31 19.3			Ud	iP 23 25 32.9		
		De	iP	22 31 33.3			North Atlantic Ocean			
		North Atlantic Ocean					(h = N).			
		(h = N).				"	12	Ki	iPKP1 00 42 11.2	
"	11	Up	eP	22 32 36				Um	iPKP1 00 42 20.0 C	
		i		22 32 40.9			"	12	Ud	iP 01 02 02.0
				micr sec			"	12	Up	iP2 04 05 05.2
		i	Z' 0.2 1.6					Ki	iP2 04 04 09.2	
		Ki	eP	22 32 37				Um	iP2 04 04 38.6	
		(cont.)						Ud	iP1 04 05 03.2	
								iP2	04 05 08.0	
								De	iP2 04 05 30.3	
								Komandorsky Islands		
								(h = 40 km).		

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

1977				1977					
Apr.	12	Up	iP	10 50 19.7	Apr.	13	Up	iP	11 41 16.3 C
			ipP	10 50 31.2				ipP	11 42 01.9
				micr sec				i	11 42 21.6
			P	Z' 0.1 1.2					micr sec
			pP	Z' 0.1 1.2				P	Z' 1.3 1.4
		Ki	iP	10 49 46.4			Ki	iP	11 41 25.4 C
			ipP	10 49 58.0					micr sec
		Sk	eP	10 50 19				P	Z' 0.6 1.0
		Um	iP	10 50 00.3			Sk	iP	11 41 41.0 C
			ipP	10 50 11.6			Um	iP	11 41 14.8 C
		Ud	iP	10 50 28.3			Ud	iP	11 41 33.0 C
			ipP	10 50 39.8				ipP	11 42 18.7
		De	iP	10 50 41.9				i	11 42 39.0
		Japan.					De	iP	11 41 29.4 C
		h = 40 km (Up,Ki,Um,Ud).					ipP	11 42 14.2	
							i	11 42 37.0	
"	12	Ud	iP	16 33 33.7			Hindu Kush.		
			i	16 33 58.8			h = 210 km (Up,Ud,De).		
		De	i	16 34 44.9			m = 6.2 (Up,Ki).		
"	12	Ki	iP	16 41 07.7	"	13	Ud	iPKP1	12 22 05.7
		Um	iP	16 41 05.2			De	iPKP1	12 22 16.3
		Ud	iP	16 41 18.8			Tonga-Kermadec Islands		
		De	iP	16 41 17.6			(h = 130 km).		
"	12	Up	iP	23 18 59.3	"	13	Um	i(P)	12 28 59.5
		Ki	iP	23 19 38.3	"	13	Um	iPgl	12 41 27.9
		Um	iP	23 19 14.3				iSgl	12 41 29.6
		Ud	iP	23 19 15.2			Västerbotten, Sweden,		
		De	iP	23 18 58.5			63.9°N, 20.5°E.		
		Iran (h = N).					Origin time = 12 41 26.		
"	13	Up	eP	04 46 52	"	13	Up	iP	12 59 07.8
		Ud	iP	04 47 07.1			Ki	iP	12 58 49.8
		Iran (h = N).						micr sec	
"	13	Up	iP	05 42 07.5				P	Z' 0.1 1.3
		Ki	iP	05 41 49.8				Mx	N 1.1 20
		Um	eP	05 41 56			Um	iP	12 58 55.6
		Ud	iP	05 42 15.3			Ud	iP	12 59 14.7
		Mindanao (h = 60 km).					Talaud Islands (h = 45 km).		
"	13	Ud	iP	07 25 10.8	"	13	Um	iP	14 07 32.6
		India-Pakistan (h = 70 km).					Yugoslavia (h = 10 km).		
"	13	Up	iP	08 53 32.9	"	13	Ki	iP	17 19 58.6
		Ud	iP	08 53 49.4			Sk	eP	17 20 20
		De	eP	08 53 45			Um	iP	17 19 52.3
		Hindu Kush (h = 190 km).					Ud	iP	17 20 12.6
"	13	Ud	iP	09 35 58.7			De	iP	17 20 12.0
		Ionian Sea (h = N).					Tadzhik-Sinkiang		
							(h = 150 km).		
"	13	Um	iPKP1	10 48 22.1	"	13	Up	iP	18 31 37.7
		Ud	iPKP1	10 48 35.5				i	18 31 47.2
		Kermadec Islands (h = 100 km).					(cont.)		

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

1977				1977						
Apr.	16	(cont.)		Apr.	17	Ki	iP	13 13 07.3		
		Um	iP			Um	iP	13 12 46.0		
		Ud	iP			Ud	iP	13 12 49.6		
		De	iP					Iran (h = N).		
		Fox Islands (h = 15 km).								
		m = 5.8 (Up,Ki).		"	17	Ki	iP	13 56 23.4		
"	16	Ud	iP			Ud	iP	13 56 49.1		
		Pakistan (h = N).				Mindanao (h = 90 km).				
"	16	Up	iPKP1			Um	iP	14 53 44.7		
			iSKP1			El Salvador (h = 210 km).				
		Ki	iSKP1			"	17	Ud	iP	15 26 25.8
		Um	i(PKP)			"	17	Um	iP	17 22 44.4
			iPKP			Kurile Islands (h = 70 km).				
			iSKP1			"	17	Ki	iP	17 23 30.9
		Ud	iPKP1					Sk	eP	17 23 32
			iSKP1					Ud	iP	17 23 13.9
		De	iPKP1					De	iP	17 22 59.1
		Fiji Islands (h = 600 km).				Iran (h = 60 km).				
"	16	Ud	iP			"	18	Up	iP	00 20 27.6 C
									ipP	00 21 17.4
"	16	Um	iP						iPP	00 22 00.0
		Mexico-Guatemala (h = N).								micr sec
"	16	Up	iP						P	Z' 1.1 1.2
		Um	iP			Ki	iP			00 20 36.4 C
		Ud	iP				ipP			00 21 22.1
		Afghanistan-USSR (h = 15 km).					iPP			00 22 11.0
"	16	Up	iP							micr sec
		Ud	iP						P	Z' 1.0 1.2
"	16	Up	ePKP			Sk	iP			00 20 53.0 C
		Um	ePKP				iPP			00 22 37.5
			ipPKP			Um	iP			00 20 25.8 C
		Ud	ipPKP				iPP			00 21 59.7
			iSKP1			Ud	iP			00 20 43.8 C
		De	iSKP1				iPP			00 22 21.2
		New Hebrides Islands				De	iP			00 20 39.9 C
		(h = 10 km).					i			00 21 51.3
"	16	Ud	iP				iPP			00 22 15.0
						Hindu Kush.				
"	17	Up	iP							h = 230 km (Up,Ki).
		Um	iP							m = 6.2 (Up,Ki).
		Ud	iP			"	18	Up	iPKP1	00 29 33.8
		Bonin Islands (h = 490 km).						Um	iPKP1	00 29 19.4
								Ud	iPKP1	00 29 35.8
"	17	Up	iP			"	18	Ud	iP	00 45 29.9
		Um	iP			"	18	Ki	iSg1	08 21 38.2
		Ud	iP					Sk	iSg1	08 20 30.4
		Iran (h = N).				(cont.)				

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

1977

Apr. 21 (cont.)
 Sk iPKP 00 01 44.0
 i 00 01 56.3
 Um iPKP 00 01 38.3
 i 00 01 50.7
 Ud iPKP 00 01 47.2
 i 00 02 00.2
 De iPKP 00 01 54.2
 i 00 02 01.3
 Solomon Islands (h = 20 km).

" 21 ✓ Up iPKP 00 08 05.5
 ipPKP 00 08 11.5
 i 00 08 16.0
 iPP 00 09 43.4
 micr sec
 i Z' 0.3 1.3
 PP Z' 0.9 2.0
 Mx E 58 20
 Mx N 90 22
 Mx Z 137 20
 Ki iPKP 00 07 52.4
 i 00 08 03.3
 micr sec
 PKP Z' 0.1 1.0
 i Z' 0.2 1.0
 Mx E 72 19
 Mx N 138 22
 Mx Z 148 22
 Sk ipPKP 00 08 07.3
 i 00 08 14.7
 Um iPKP 00 07 58.4
 i 00 08 09.7
 Ud iPKP 00 08 07.7
 i 00 08 18.0
 De iPKP 00 08 14.2
 Solomon Islands (h = 20 km).
 M = 7.5 (Up,Ki).

" 21 Sk iPKP 00 15 11.7
 Ud iPKP 00 15 15.5
 Solomon Islands (h = N).

" 21 Um iPKP 00 24 12.3
 Solomon Islands (h = N).

" 21 Ki iPKP 01 03 24.0
 Um ePKP 01 03 29
 Ud iPKP 01 03 40.7
 De iPKP 01 03 45.1
 Solomon Islands (h = N).
 Late arrivals by about
 10 s when compared with
 NEIS solution.

1977

Apr. 21 Ud iPKP 01 39 22.1
 De iPKP 01 39 27.7
 Solomon Islands (h = 80 km).

" 21 ✓ Up iP 01 58 10.5 C
 iPP 02 01 30.2
 iS 02 08 24
 micr sec
 P Z' 0.6 1.1
 Ki iP 01 57 37.7 C
 iPP 02 00 35.3
 micr sec
 P Z' 0.3 0.9
 Sk iP 01 58 06.6 C
 Um iP 01 57 51.9 C
 Ud iP 01 58 17.1 C
 De iP 01 58 29.1 C
 Bonin Islands (h = N).
 m = 6.4 (Up,Ki).

" 21 Up iP 04 03 52.3
 Ki iP 04 02 53.9
 Sk iP 04 02 57.5
 Um eP 04 03 29
 Ud iP 04 03 35.6 C
 De iP 04 04 15.9 C
 Jan Mayen Island (h = 10 km).

" 21 Up iPKP 04 43 03.6
 i 04 43 13.0
 iPP 04 44 44.3
 micr sec
 PKP Z' 0.1 0.8
 i Z' 0.1 0.8
 PP Z' 1.1 2.0
 Mx E 40 22
 Mx N 75 20
 Mx Z 70 20

Ki iPKP 04 42 50.5
 i 04 42 59.7
 micr sec

PKP Z' 0.1 0.9
 i Z' 0.2 0.9
 Mx E 30 18
 Mx N 59 19
 Mx Z 67 20

Sk iPKP 04 43 01.4
 i 04 43 10.6
 Um iPKP 04 42 54.2
 i 04 43 05.7
 Ud iPKP 04 43 03.4
 i 04 43 14.9
 De iPKP 04 43 11.0
 i 04 43 20.5

Solomon Islands (h = N).
 M = 7.3 (Up,Ki).

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

1977					1977						
Apr.	21	Up	iP	04 56 11.9	Apr.	21	(cont.)				
"	21	Up	iP	05 03 15.3			Ki	iP	10 11 17.0		
		Ki	iP	05 02 27.4				i	10 11 21.7		
		Um	iP	05 02 50.4			Sk	iP	10 11 36.6		
		Ud	iP	05 03 18.0				i	10 11 41.6		
"	21	Up	iPKP	05 25 21.4			Um	iP	10 11 08.4		
		Ki	iPKP	05 25 08.8				i	10 11 12.4		
		Sk	iP	05 25 19.6			Ud	iP	10 11 29.4		
		Um	iPKP	05 25 14.9				i	10 11 33.5		
		Ud	iPKP	05 25 24.6			De	iP	10 11 27.1		
		De	iPKP	05 25 29.9			Tadzhik SSR (h = 45 km).				
		Solomon Islands (h = N).			"	21	Sk	iP	12 04 30.7		
"	21	Up	iPKP	05 33 45.7	"	21	Up	iP	13 02 13.4		
		Um	iPKP	05 33 35.8			Ki	iP	13 01 56.5		
		Ud	iPKP	05 33 47.3			Sk	iP	13 02 17.9		
"	21	Up	iPKP	07 37 44.6			Um	iP	13 02 03.0		
				micr sec			Ud	iP	13 02 22.1		
		Mx	E	1.2 21			De	iP	13 02 29.1		
		Mx	N	1.5 21			Mindanao (h = N).				
		Mx	Z	3.8 20			"	21	Up	iP	13 45 34.4
		Ki	ePKP	07 37 29			Ki	iP	13 45 48.5		
				micr sec			Sk	iP	13 46 03.5		
		Mx	N	2.9 19			Um	iP	13 45 35.0		
		Mx	Z	3.8 21			Ud	iP	13 45 51.0		
		Um	iPKP	07 37 37.2			De	iP	13 45 47.4		
		Ud	iPKP	07 37 46.2			Uzbek SSR (h = N).				
		De	iPKP	07 37 53.0			"	21	Um	iP	14 25 08.8
		Solomon Islands (h = N).					Ud	iP	14 25 17.8		
		M = 5.8 (Up,Ki).			"	21	Ud	iP	15 21 17.8		
"	21	Up	iP	10 01 43.5			Guatemala (h = 110 km).				
		Ki	iP	10 01 10.4			"	21	Up	iP	17 33 05.8
		Um	iP	10 01 24.6				i	17 33 13.9		
		Ud	iP	10 01 50.7					micr sec		
		Japan (h = 490 km).						P	Z'	0.1 1.0	
"	21	Up	Mx	11 00				i	Z'	0.2 1.0	
				micr sec			Ki	iP	17 32 33.3		
		Mx	N	1.0 19					micr sec		
		Mx	Z	2.4 20				P	Z'	0.1 1.0	
		Ki	Mx	10 57			Sk	iP	17 33 02.2		
				micr sec				i	17 33 13.2		
		Mx	N	1.8 20			Um	iP	17 32 47.8		
		Mx	Z	2.1 21				i	17 32 57.2		
		Ud	iPKP	10 04 36.2			Ud	iP	17 33 11.9		
		Solomon Islands (h = N).						i	17 33 21.0		
		M = 5.6 (Up,Ki).					De	iP	17 33 24.9		
"	21	Up	iP	10 11 12.3				i	17 33 34.6		
			i	10 11 16.7			Bonin Islands (h = 25 km).				
				micr sec			m = 6.0 (Up,Ki).				
			i	Z' 0.1 1.5			"	21	Ud	iP	18 02 00.7
		(cont.)									

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

1977				1977				
Apr.	21	Ud	i(P)	19 14 12.9	Apr.	22	Up iP	08 37 21.3
							Ud iP	08 37 16.5
	22	Up	iP	01 01 47.3 D			Oregon (h = 15 km).	
			P	Z' 0.2 1.0	"	22	Ud iRg	09 18 04.8
		Ki	iP	01 00 56.3 D			Regional, near-surface event.	
			P	Z' 0.2 0.8	"	22	Up iP	09 36 53.4
		Sk	iP	01 01 32.9				micr sec
		Um	iP	01 01 19.9 D			P	Z' 0.1 1.0
		Ud	iP	01 01 51.8 D			Ki iP	09 36 27.5
		De	iP	01 02 12.2			Um iP	09 36 37.4
				Kurile Islands (h = 390 km).			Ud iP	09 37 02.7
"	22	Up	i	03 29 58.2			Ryukyu Islands (h = 70 km).	
				micr sec	"	22	Up iP	14 05 15.2
		Mx	E	2.0 21			Ki eP	14 05 49
		Mx	N	2.5 20			Ud iP	14 05 38.4
		Mx	Z	4.1 20			De eP	14 05 26
		Ki	Mx	04 22	"	22	Up iP	14 19 09.2
				micr sec			ipP	14 19 22.5
		Mx	E	2.1 18				micr sec
		Mx	N	4.2 19			Mx E	1.4 15
		Mx	Z	5.1 19			Mx N	2.2 20
		Um	i	03 29 51.0			Mx Z	2.1 16
		Ud	iPKP	03 29 52.2			Ki ipP	14 18 54.0
		De	iPKP	03 29 55.9				micr sec
				Solomon Islands (h = 50 km).			Mx N	1.3 17
				M = 6.1 (Up,Ki).			Um ipP	14 19 05.5
"	22	Ki	iP	03 40 15.5			Ud ipP	14 19 32.5
		Sk	iP	03 41 02.0			China Sea (h = N).	
		Um	iP	03 41 00.2			M = 5.4 (Up,Ki).	
			i	03 41 08.2	"	22	Um iP	17 33 20.4
		Ud	iP	03 41 38.9	"	22	Ud iP	18 14 27.5
				North of Svalbard (h = N).	"	22	Up iRg	20 25 24.0
"	22	Up	iP	06 34 00.0			Ud iRg	20 25 45.1
			P	Z' 0.1 1.0			Central Sweden.	
		Ki	eP	06 33 20			Near-surface event.	
			i	06 33 23.6	"	22	Up iP	22 26 34.7
		Sk	eP	06 33 36			Ki iP	22 25 51.7
		Um	iP	06 33 40.8			Um iP	22 26 10.1 C
		Ud	iP	06 33 53.6			Ud iP	22 26 41.6 C
			i	06 33 59.8			Sea of Japan (h = 35 km).	
				Oregon (h = 15 km).	"	22	Ki iPKP	23 29 53.7
"	22	Up	iP	08 27 33.2			Um iPKP	23 30 00.4
			i	08 27 38.1			iSKP1	23 32 40.2
		Ki	eP	08 26 51			Ud iPKP	23 30 06.3
		Um	iP	08 27 14.6			De iPKP1	23 30 10.6
		Ud	iP	08 27 27.3			Fiji Islands (h = 540 km).	
			i	08 27 32.4				
				Oregon (h = 15 km).				

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

1977				1977					
Apr.	23	Up	iP	00 01 45.6	Apr.	24	(cont.)		
		Sk	iP	00 02 28.5			Ud	iPKP2	02 10 02.8
		Um	iP	00 02 25.3				ipPKP2	02 10 49.7
		Ud	iP	00 01 52.8			De	iPKP2	02 10 12.3
				Greece (h = 70 km).			Cook Strait, New Zealand. h = 200 km (Ki,Um,Ud).		
"	23	Up	iP	01 44 26.0	"	24	Ki	iP	03 39 13.4
		Um	i	01 44 14.3			Um	iP	03 39 40.2
		Ud	iP	01 44 34.8			Ud	iP	03 40 05.3
				Ryukyu Islands (h = N).			Aleutian Islands (h = 60 km).		
"	23	Um	iPKP	09 46 57.6	"	24	Ud	iPKP	06 47 49.3
			iSKP1	09 49 31.5			Solomon Islands (h = 30 km).		
		Ud	iPKP1	09 47 00.5	"	24	Ud	iP	07 34 44.0
		De	iPKP1	09 47 11.1 D	"	24	De	iPKP	15 17 16.0
				Fiji Islands (h = 560 km).			New Britain (h = 70 km).		
"	23	Up	iP	11 48 49.0	"	24	Up	iP	16 23 13.4
		Ud	iP	11 49 00.3			Ki	iP	16 23 13.0
				Chagos Archipelago (h = N).			Sk	iP	16 23 26.9
"	23	Ud	i(P)	14 31 10.7			Um	iP	16 23 10.6
"	23	Up	iP	14 56 33.1			Ud	iP	16 23 22.5
		Sk	iP	14 56 12.7			De	eP	16 23 22
		Um	iP	14 55 59.4			Sumatra (h = N).		
		Ud	iP	14 56 37.0	"	24	Ki	iP	18 16 39.0
				Laptev Sea (h = 35 km).			Um	iP	18 16 50.2
"	23	Ud	iP	18 06 13.9			Ud	iP	18 17 12.4
				Oregon (h = 15 km).			Mariana Islands (h = 60 km).		
"	23	Up	iPKP	19 02 33.7	"	24	Up	iP	20 53 54.9
		Ki	iPKP	19 02 48.9				ipP	20 54 08.0
		Um	iPKP	19 02 41.8					micr sec
		Ud	iPKP	19 02 32.4				pP	Z' 0.1 1.0
				South Sandwich Islands (h = N).			Ki	iP	20 53 13.7 C
"	23	Ud	eP	21 59 01				ipP	20 53 26.2
				Hindu Kush (h = 270 km).			Sk	eP	20 53 48
"	24	Ud	iP	01 05 46.9			Um	iP	20 53 32.2 C
				Turkmen SSR (h = 35 km).				ipP	20 53 44.8
"	24	Up	iP	01 06 00.4			Ud	iP	20 54 02.4 C
		Ki	iP	01 06 42.9			De	iP	20 54 18.3
		Um	iP	01 06 14.3			Japan. h = 45 km (Up,Ki,Um).		
"	24	Up	iPKP2	02 09 56.0	"	24	Ud	iPKP1	21 14 26.0
		Ki	iPKP1	02 09 23.1			De	iPKP1	21 14 37.0
			ipPKP1	02 10 15.5	"	25	Up	iP	04 13 52.9
		Um	iPKP1	02 09 30.3			Ki	iP	04 13 37.1 C
			ipPKP1	02 10 19.9					micr sec
				(cont.)			P	Z' 0.1 0.6	
							(cont.)		

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

1977				1977			
Apr.	25	(cont.)		Apr.	26	(cont.)	
		Sk	iP 04 14 08.5 C			Ki	micr sec
		Um	iP 04 13 38.1			Mx	E 2.6 13
		Ud	iP 04 14 09.3 C			Mx	N 2.2 13
		De	iP 04 14 18.4			Mx	Z 3.4 14
		Kazakh SSR. Underground explosion.				Sk	iP 16 32 47.4 C
						Um	iP 16 32 25.8 C
						i	16 32 30.7
"	25	Up	iP 06 01 57.0			Ud	iP 16 32 25.9 C
		Ki	iP 06 01 38.8			i	16 32 31.3
		Um	iP 06 01 43.3			De	iP 16 32 08.6 C
		Ud	iP 06 02 09.9			i	16 32 13.6
		Szechwan, China (h = N).				Iran (h = 45 km). m = 6.0, M = 5.2 (Up,Ki).	
"	25	Ki	iP 10 55 16.9	"	26	Ud	iP 17 41 33.4
		Sk	eP 10 55 36			Iran (h = 70 km).	
		Um	iP 10 55 07.7				
		Ud	iP 10 55 28.1				
"	25	Ki	iP 11 51 45.0	"	26	Ud	iP 18 33 26.4
						Japan (h = 400 km).	
"	25	Ud	iP 14 57 46.8	"	26	Ud	iP 21 03 46.7
		Philippine Islands (h = 230 km).		"	26	Um	iP 21 13 45.1
						Ud	iP 21 13 54.4
"	25	Ud	iPKP1 15 22 33.4	"	26	Up	iP 23 17 45.0
		De	iPKP1 15 22 45.2			i	23 17 56.5
		South of Tonga Islands (h = N).				Ki	iP 23 17 00.0
						Sk	iP 23 17 36.5
"	25	Ki	iP 21 39 07.3			Um	iP 23 17 20.5
		i	21 39 23.6			i	23 17 31.8
		Um	iP 21 39 13.4			Ud	iP 23 17 50.3
						i	23 18 03.2
"	26	Ud	iP 12 40 12.4			Kurile Islands (h = 35 km).	
"	26	Ki	e(P) 12 47 41	"	27	Um	iPKP2 04 14 40.1
						South Pacific Ocean (h = N).	
"	26	Um	iP 12 48 37.1	"	27	Ud	iP 04 56 40.7
		Ud	iP 12 48 39.4			i	04 56 52.0
"	26	Ud	iP 13 37 33.4	"	27	Ud	iP 09 46 18.6
		Turkey (h = 30 km).					
"	26	Up	iP 16 32 10.7 C	"	27	Up	iP 12 11 01.6
		i	16 32 16.7				micr sec
			micr sec			P	Z' 0.1 1.0
		P	Z' 0.3 1.0			Ki	iP 12 10 27.7 C
		Mx	E 1.9 13			Sk	iP 12 10 57.7
		Mx	N 1.7 14			Um	iP 12 10 43.0 C
		Mx	Z 3.4 13			Ud	iP 12 11 08.8 C
		Ki	iP 16 32 51.3 C			i	12 11 29.1
			micr sec			Japan (h = 25 km).	
		P	Z' 0.3 1.3				
		(cont.)					

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

1977				1977					
Apr.	27	Up	iP	15 11 48.9	Apr.	29	Ud	eP	21 59 47
				micr sec					
			P	Z' 0.1 1.0	"	29	Um	iP	22 54 57.0
		Ki	iP	15 11 14.8 C	"	30	Up	iP	06 20 34.4
		Sk	iP	15 11 22.6			Ki	iP	06 21 15.1
		Um	iP	15 11 34.0 C			Um	eP	06 20 53
		Ud	iP	15 11 40.6 C			De	iP	06 20 32.4
		De	iP	15 11 57.7			Iran (h = 50 km).		
		Nevada.							
		Underground explosion.			"	30	Ud	iP	09 14 23.6
"	28	Ki	iP	04 16 10.4	"	30	Ud	iP	10 59 15.0
		Um	iP	04 16 20.9			De	iP	10 59 11.9
		South of Mariana Islands					Kirgiz SSR (h = 70 km).		
		(h = 45 km).							
"	28	Ud	iP	04 46 34.4	"	30	Ud	iSg1	14 24 31.5
							De	eSg1	14 26 02
"	28	Ud	iP	06 53 13.8	"	30	Up	iP	14 43 23.6 C
		Afghanistan-USSR (h = 140 km).					i		14 43 27.2
									micr sec
"	28	Up	iP1	13 48 44.1			P	Z' 0.2 0.9	
			iP2	13 48 57.3			Ki	iP	14 43 56.0 C
				micr sec			i		14 43 58.7
			P2	Z' 0.1 0.8					micr sec
		Ki	iP2	13 48 04.3			P	Z' 0.2 0.9	
		Um	iP1	13 48 16.5			Sk	iP	14 43 56.8 C
			iP2	13 48 30.5			Um	iP	14 43 34.8 C
		Ud	iP1	13 48 44.1			i		14 43 38.6
			iP2	13 48 57.5			Ud	iP	14 43 38.7 C
		Aleutian Islands (h = 20 km).					i		14 43 42.3
"	28	Ud	iP	14 41 28.0			De	iP	14 43 24.2 C
							i		14 43 27.8
"	28	Up	iP	23 23 44.2			Iran (h = 40 km).		
		Um	iP	23 23 18.0			m = 5.9 (Up,Ki).		
		Ud	iP	23 23 49.9	"	30	Up	iP	15 34 28.8
"	29	Up	iP	08 25 21.1			Ki	iP	15 33 45.7
		Ki	iP	08 24 27.6			Um	iP	15 34 04.6
		Sk	iP	08 24 52.8			Ud	iP	15 34 35.6
		Um	iP	08 24 55.4 D			De	iP	15 34 53.1
		Ud	iP	08 25 18.2			Japan (h = 120 km).		
		De	iP	08 25 41.3	"	30	Up	iP	16 21 43.0
		Gulf of Alaska (h = 10 km).					Um	iP	16 21 54.3
"	29	Ki	iP	13 13 36.7			Ud	iP	16 21 57.8
		Ud	iP	13 14 05.6			De	iP	16 21 43.7
		De	iP	13 14 13.0			Iran (h = 70 km).		
		Luzon (h = 70 km).			"	30	Ki	iP	16 31 31.9
"	29	Ud	iPKP1	19 26 33.9			i		16 31 37.4
		De	iPKP1	19 26 43.6			Um	iP	16 31 26.1
		Fiji Islands (h = 630 km).					De	iP	16 30 51.7
"	29	Um	iP	21 17 23.6			North Atlantic Ocean		
							(h = N).		

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

1977

Apr. 30 Up iP 16 54 55.0
Ud iP 16 54 53.3
De iP 16 55 15.2
Aleutian Islands (h = 40 km).

" 30 Up iP 18 53 20.2
i 18 53 59.0
Ki iP 18 53 03.1
i 18 53 29.2
Um iP 18 53 07.9
Ud iP 18 53 27.1
i 18 53 31.8
De iP 18 53 32.9
i 18 54 14.5
Philippine Islands
(h = 80 km).

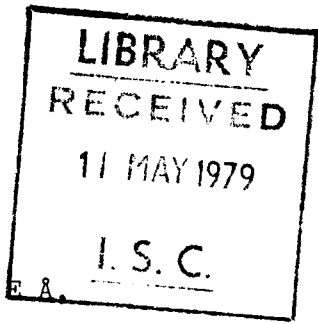
" 30 Up iP 22 00 39.0
Ki iP 21 59 45.7
Um iP 22 00 12.5
Ud iP 22 00 39.2
De iP 22 01 01.2
Aleutian Islands (h = 40 km).

" 30 Up iPn 23 34 49.4
i 23 35 01.5
iSn 23 36 23.5
iSgl 23 37 09.7
Ki iPn 23 33 40.2
i 23 33 41.7
i 23 33 48.9
i 23 33 54.6
i 23 34 07.9
iSgl 23 34 42.1
Sk iPn 23 33 52.1
i 23 33 59.7
iSn 23 34 44.5
Um iPn 23 34 09.7 D
i 23 34 14.5
i 23 35 10.7
iSn 23 35 15.5
iSgl 23 35 41.2
Ud iPn 23 34 40.0
i 23 34 47.2
i 23 34 48.9
iSn 23 36 08.0
iSgl 23 36 48.2
De e(Pn) 23 35 29
iPn 23 35 33.2
iSn 23 37 35.9
iLg1 23 38 38.3
iLg2 23 39 02.5

Norwegian Sea, near
68 1/4°N, 9 1/2°E.
Origin time = 23 32 40.
M_L = 4.3 (Up,Ki,Um,Ud,De).
Felt.

Conny Holmqvist
Ota Kulhánek
Klaus Meyer
Rutger Wahlström
December 28, 1978

BOX 517
S-751 20 UPPSALA
 SWEDEN



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

M A Y 1 - 31, 1977

1977				1977					
May	1	Up	iP	00 22 28.0	May	1	(cont.)		
		Um	iP	00 22 32.5			Ki	iP	16 33 48.7
		Ud	iP	00 22 18.9			Ud	iP	16 34 32.8
		Peru (h = 120 km).					Japan (h = 5 km).		
"	1	Up	iP	01 09 30.6	"	1	Up	iPKP	18 58 08.4
		Ki	iP	01 09 31.4			Sk	ePKP	18 58 08
		Um	iP	01 09 27.5			Um	iPKP	18 58 01.5
		Ud	iP	01 09 41.0			Ud	iPKP	18 58 11.0
		Sumatra (h = 70 km).					De	iPKP	18 58 15.5
"	1	Ud	iP	02 04 21.6			Solomon Islands (h = 30 km).		
"	1	Up	iP	02 57 49.1	"	1	Um	iSgl	19 59 12.0
		Ki	iP	02 57 35.9	"	1	Um	iP	21 45 11.0
		Sk	eP	02 58 02	"	2	Up	iP	02 38 43.1
		Um	iP	02 57 38.9			Ki	iP	02 38 23.9
		Ud	iP	02 58 01.6			Um	iP	02 38 31.0
		De	eP	02 58 09			Ud	iP	02 38 52.5
		Szechwan, China (h = 55 km).					Philippine Islands (h = 25 km).		
"	1	Up	iP	03 38 44.6	"	2	Ud	iP	02 55 32.7
		Ki	iP	03 38 45.6	"	2	Um	iP	04 08 11.1
		Sk	eP	03 37 59			Ud	iP	04 07 41.4
		Um	iP	03 38 41.2			South Atlantic Ocean (h = N).		
		Ud	iP	03 38 54.8	"	2	Ki	iP	05 16 47.9
		Sumatra (h = 50 km).					Um	iP	05 16 54.6
"	1	Ud	eP	08 54 39			i		05 17 16.6
"	1	Up	iP	12 53 45.5	"	2	Um	i(PKP)	07 43 04.4
		Um	iP	12 53 45.0			Ud	iPKP1	07 43 12.3
		Ud	iP	12 54 02.0			Fiji Islands (h = 580 km).		
"	1	Um	iPKP	14 59 00.0	"	2	Up	iP	15 24 24.5 C
		Santa Cruz Islands (h = 70 km).					i		15 24 43.2
"	1	Up	iP	16 34 24.2			(cont.)		
		(cont.)					(cont.)		

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

1977

May 2 (cont.)
 Up iPn 15 25 26.7
 micr sec
 Pn Z' 0.1 0.9
 Ki iP 15 24 54.0 C
 iPn 15 26 10.1
 micr sec
 P Z' 0.1 1.0
 Pn Z' 0.1 1.3
 Sk iP 15 24 58.3 C
 iPn 15 26 13.5
 Um iP 15 24 33.1 C
 iPn 15 25 37.7
 Ud iP 15 24 41.3 C
 Iran-USSR (h = 20 km).

" 2 Ki eP 19 01 18
 Ud iP 19 00 51.4
 Iran-USSR (h = 40 km).

" 2 Up iPn 20 36 40.1
 i 20 36 46.8
 i 20 38 10.8
 iSgl 20 38 36.3
 i 20 38 39.5
 Ki i 20 39 30.8
 iSgl 20 40 10.3
 iSg2 20 40 22.6
 Sk e 20 36 17
 i 20 36 29.0
 iSn 20 37 03.0
 i 20 37 07.1
 iSgl 20 37 27.9
 i 20 37 31.6
 Um iPn 20 36 57.6
 iSn 20 38 25.7
 i 20 38 40.9
 iSgl 20 39 12.2
 i 20 39 15.0
 Ud iPn 20 36 12.0
 i 20 36 36.7
 iSn 20 37 06.9
 iSgl 20 37 33.5
 i 20 37 38.3

Off west coast of Norway,
 near 61°N, 3 1/2°E.
 Origin time = 20 34 57.
 $M_L = 3.6$ (Up,Ki,Sk,Um,Ud).

" 2 Up iP 22 07 00.7
 iS 22 18 00
 micr sec
 P Z' 0.2 1.5
 Mx E 1.7 18
 Mx N 1.9 21
 (cont.)

1977

May 2 (cont.)
 Up micr sec
 Mx Z 5.1 19
 Ki iP 22 06 45.6
 micr sec
 P Z' 0.2 1.6
 Mx E 1.9 17
 Mx N 1.9 16
 Mx Z 1.9 18
 Sk eP 22 07 07
 Um iP 22 06 50.8
 iS 22 17 37
 Ud iP 22 07 10.0
 Mindanao (h = 25 km).
 $m = 6.2, M = 5.7$ (Up,Ki).

" 3 Up iP 03 26 48.8 D
 micr sec
 P Z' 0.1 0.6
 Ki iP 03 26 16.9 D
 micr sec
 P Z' 0.1 0.9
 Sk iP 03 26 45.5 D
 Um iP 03 26 30.7 D
 Ud iP 03 26 55.4 D
 Bonin Islands (h = 310 km).
 $m = 5.8$ (Up,Ki).

" 3 Up iP 12 37 00.7
 Ki iP 12 36 46.9
 Sk iP 12 37 13.9
 Um iP 12 36 49.7
 Ud iP 12 37 14.0
 Szechwan, China (h = N).

" 3 Um iP 13 05 08.8
 Japan (h = 70 km).

" 3 Um iP 16 34 01.7

" 3 Ki iP 20 49 52.3
 Um iP 20 49 57.8
 Halmahera (h = 120 km).

" 3 Ki iP 22 36 34.8
 Um iP 22 36 46.7
 ipP 22 36 55.7
 Ud ipP 22 37 22.6
 Ryukyu Islands.
 h = 30 km (Um).

" 3 Up iP 02 08 20.0 C
 micr sec
 P Z' 0.1 0.8
 Ki iP 02 08 58.4
 Sk iP 02 08 56.0
 (cont.)

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

1977					1977				
May	7	Ud	iP	02 27 37.0	May	7	Up	iPKP1	18 44 13.7 D
"	7	Up	iP	04 58 35.2			i	18 46 23.4	
		Ki	iP	04 57 51.0				micr sec	
		Um	iP	04 58 10.9			PKP1	Z' 0.1 0.6	
		Ud	iP	04 58 42.1		Ki	iPKP	18 44 02.7	
		De	iP	04 58 59.0			iSKP1	18 46 50.8	
		Japan (h = 220 km).				Sk	ePKP1	18 44 08	
"	7	Ud	iP	05 58 44.5		Um	iPKP1	18 44 01.3	
"	7	Um	iSgl	06 49 53.2			iSKP1	18 47 00.3	
		Ud	iSn	06 49 54.0		Ud	iPKP1	18 44 15.8 D	
			i	06 50 19.4		De	iPKP1	18 44 25.7 D	
			iSgl	06 50 22.5			ipPKP1	18 46 18.6	
		De	eSgl	06 50 45		Tonga-Kermadec Islands. h = 480 km (De).			
		Esthonia. Explosion?			"	7	Um	iP	21 39 55.8
"	7	Up	iSgl	07 59 29.7		Ud	iP	21 40 26.9	
		Sk	eSn	07 57 40	"	7	Up	iP	22 29 42.0
			eSgl	07 58 01			Ki	iP	22 28 47.8
		Ud	eSn	07 57 55			Sk	iP	22 29 19.5
			iSgl	07 58 23.4			Um	iP	22 29 14.6 D
		De	iSn	07 58 49.8			Ud	iP	22 29 41.0 D
		Off west coast of Norway, approximate location 62° N, 3° E. Origin time = 07 55 32. M _L = 2.7 (Ud). By combination with Bergen and Kongsberg readings.					De	iP	22 30 03.3
"	7	Up	i(P)	14 04 38.9		Aleutian Islands (h = 35 km).			
"	7	Um	iP	15 22 25.0	"	8	Up	iP	05 10 59.4
		Ud	iP	15 22 56.6			Ud	iP	05 11 05.1
"	7	Up	iP	16 06 11.5 C	"	8	Up	i(P)	07 56 05.7
				micr sec	"	8	Up	iPP	11 34 40.3
			P	Z' 0.1 1.0			Um	iP	11 34 25.6
		Ki	iP	16 05 24.0			Ud	iP	11 34 30.2
		Sk	iP	16 05 58.6		Caucasus (h = 35 km).			
		Um	iP	16 05 45.5 C	"	8	Ki	eP	14 22 16
		Ud	iP	16 06 16.9			Sk	eP	14 22 31
			i	16 06 26.5			Ud	eP	14 22 20
		De	iP	16 06 36.8		Uzbek SSR (h = N).			
		Kurile Islands (h = N).			"	8	Ki	iP	15 37 25.5
"	7	Up	iP	16 45 22.9 C			Ud	iP	15 36 50.2
				micr sec		North Atlantic Ocean (h = N).			
			P	Z' 0.1 1.0	"	8	Um	iPKP	19 09 13.4
		Ki	iP	16 44 35.1			i	19 09 16.5	
		Sk	iP	16 45 11.2			Ud	iPKP	19 09 26.0
		Um	iP	16 44 57.1 C	"	8	Up	eP	19 36 49
		Ud	iP	16 45 28.4			Ki	i	19 37 48.7
		De	iP	16 45 47.7			Um	iP	19 36 28.9
		Kurile Islands (h = 15 km).					i	19 38 04.0	
							i	19 38 24.3	
							Ud	iP	19 36 56

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

1977				1977										
May	8	Um	iP	20 53	16.9	May	10	Um	iPKP	02 20	38.9			
			i	20 53	22.4			De	iPKP1	02 20	47.6			
		Ud	eP	20 53	46			Fiji Islands (h = 570 km).						
		Japan (h = 90 km).							"	10	Ki	iP	12 28	35.6
"	8	Up	iP	21 11	41.5	"	10	Sk	e(P)	15 46	31			
		Ki	iP	21 10	32.2	"	10	Ud	i(P)	16 26	57.3			
				micr sec		"	10	Up	iSKP1	18 31	38.5			
		Mx	E	1.0	16	"	10	Ud	iSKP1	18 31	41.0			
		Mx	N	0.6	14			New Hebrides Islands						
		Mx	Z	1.2	16			(h = 630 km).						
		Sk	eP	21 10	39	"	10	Um	iP	20 16	51.6			
			i	21 10	53.3			Ud	iP	20 17	05.5			
		Um	iP	21 11	08.3	"	10	Up	iP	22 16	55.5			
		Ud	eP	21 11	23	"	10	Ud	iP	22 16	45.8 C			
			i	21 11	30.9	"	10	Ki	iP	22 42	01.7			
		De	iP	21 12	07.9					micr sec				
		Jan Mayen (h = N).								P	Z'	0.1 1.0		
"	8	Um	iP	23 45	09.9			Um	iP	22 42	07.6			
"	9	Ki	iP	01 56	21.7			Ud	iP	22 42	26.4			
		Ud	iP	01 56	03.7			Halmahera (h = 20 km).						
"	9	Ud	i(P)	01 59	17.2	"	10	Ki	iP	22 45	41.7			
"	9	Ki	e(Sn)	05 24	08			Um	iP	22 45	46.8			
			i(Sgl)	05 24	32.1			Ud	iP	22 46	05.2			
		Um	i(Sgl)	05 25	39.1			Halmahera (h = 10 km).						
"	9	Ki	iPKP1	10 45	43.7	"	11	Um	iP	00 12	07.5			
				micr sec				"	11	Ki	iPKP1	03 01	46.3	
				PKP1	Z'	0.3 2.5				iPKP2	03 01	53.3		
		Um	iPKP1	10 45	45.5					micr sec				
		De	iPKP1	10 45	35.6			Um	iPKP1	03 01	53.5			
		Easter Island Cordillera							Ud	iPKP2	03 02	29.2		
		(h = N).							South Island, New Zealand					
"	9	Up	iP	15 14	18.7			(h = N).						
			ipP	15 14	58.4	"	11	Up	iP	03 35	51.6			
				micr sec					i(PP)	03 39	33.3			
				pP	Z'	0.1 1.0		Ki	iP	03 35	35.3			
		Ki	iP	15 13	50.1					micr sec				
			i	15 14	10.5				P	Z'	0.1 0.9			
				micr sec				Um	iP	03 35	40.7			
				P	Z'	0.1 1.5			iPP	03 39	31.5			
		Sk	iP	15 14	19.9			Ud	iP	03 36	00.2			
		Um	iP	15 14	02.0				i	03 36	08.0			
			ipP	15 14	41.1			(cont.)						
		Ud	iP	15 14	27.9									
			ipP	15 15	07.2									
		De	iP	15 14	38.4									
		East China Sea.												
		h = 160 km (Up,Um,Ud).												

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

1977				1977			
May	13	(cont.)		May	13	(cont.)	
		Up	ipP 01 38 18.8			Ki	iP 11 24 22.0 D
		Ki	iP 01 37 21.4			i	11 24 22.6
			ipP 01 37 37.6			ipP	11 26 02.5
		Sk	iP 01 37 55.7			iPP	11 27 13.8
		Um	iP 01 37 39.4			iS	11 33 19.1
			ipP 01 37 55.6				micr sec
		Ud	iP 01 38 09.1			i	Z' 0.7 0.7
		De	iP 01 38 24.9			PP	Z' 0.5 1.9
		Japan.				Mx	E 2.8 14
		h = 60 km (Up,Ki,Um).				Mx	N 2.8 15
						Mx	Z 2.1 16
"	13	Up	iP 02 28 32.0			Sk	iP 11 24 50.7 D
			i 02 28 35.9			i	11 24 51.3
			micr sec			iPP	11 27 59.2
			i Z' 0.1 1.1			iS	11 34 16.1
		Ki	iP 02 28 13.9 C			Um	iP 11 24 35.8 D
			micr sec			i	11 24 36.5
			P Z' 0.1 1.5			ipP	11 26 13.5
		Um	iP 02 28 20.0			i	11 27 56.0
			i 02 28 24.8			iS	11 33 44.7
		Ud	iP 02 28 39.0			Ud	iP 11 25 01.1 D
			i 02 28 47.6			i	11 25 01.6
		Mindoro (h = 40 km).				ipP	11 26 40.6
		m = 5.9 (Up,Ki).				iS	11 34 34.0
						De	iP 11 25 12.8 D
"	13	Sk	iP 03 14 27.8			i	11 25 13.5
		Um	iP 03 14 43.5			ipP	11 26 57.4
		Ud	iP 03 14 36.3			iPP	11 28 35.9
		Guatemala (h = 80 km).				iS	11 34 52.5
						Bonin Islands.	
"	13	Ud	iP 07 35 29.3			h = 460 km (Up,Ki,Um,Ud,	
			i 07 35 31.9			De).	
		De	iP 07 35 13.4			m = 6.4, M = 5.9 (Up,Ki).	
		Iran (h = N).				M not corrected for focal	
						depth.	
"	13	Ki	eP 10 38 29			Double P, 0.5 s apart.	
		Um	iP 10 38 45.6				
		Ud	iP 10 39 14.3	"	13	Ud	iP 11 43 32.3
		Japan (h = 70 km).					
"	13	Ud	iP 11 10 26.5	"	13	De	iP 15 58 56.1
"	13	Up	iP 11 24 54.2 D	"	13	Up	iP 16 19 17.5
			i 11 24 54.8			Sk	i 16 20 09.5
			ipP 11 26 33.3			Ud	iP 16 19 24.8
			iPP 11 28 04.1			i	16 19 30.3
			iS 11 34 19.4			De	iP 16 18 51.1
			micr sec			Aegean Sea (h = N).	
			i Z' 0.6 0.5	"	13	Up	iP 18 18 47.0
			pP Z' 0.2 1.2			Ki	iP 18 18 26.9
			PP Z' 1.9 1.9			Ud	iP 18 18 56.2
			Mx E 3.0 16			De	iP 18 19 04.0
			Mx N 2.7 14			Luzon (h = 15 km).	
			Mx Z 5.1 16				
		(cont.)					

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

1977

May 13 Up iP 18 22 30.0
 i 18 22 33.2
 i 18 22 53.7
 iS 18 26 20
 micr sec
 P Z' 0.1 0.9
 i Z' 0.1 0.7
 Mx E 3.0 16
 Mx N 1.2 14
 Mx Z 1.9 14
 Ki iP 18 23 43.0
 i 18 23 53.8
 micr sec
 Mx E 1.7 13
 Mx N 1.4 11
 Mx Z 1.1 13
 Sk iP 18 23 12.9 C
 Um iP 18 23 08.6
 i 18 23 17.2
 Ud iP 18 22 38.5
 i 18 22 42.1
 De iP 18 22 02.2
 i 18 22 05.9
 Aegean Sea (h = 10 km).
 M = 4.9 (Up,Ki).

" 13 Ud iP 20 00 23.3
 De iP 20 00 34.6 C
 Tonga-Kermadec Islands
 (h = 630 km).

" 14 Up iP 01 02 51.7
 Um iP 01 02 32.1
 Ud iP 01 02 58.8
 Japan (h = 380 km).

" 14 Up iP 03 43 16.7
 Ki iP 03 44 42.7
 Sk eP 03 43 58
 Um iP 03 44 01.5
 i 03 44 05.1
 Ud iP 03 43 18.7
 i 03 43 30.6
 Yugoslavia (h = 45 km).

" 14 Up iP 06 17 59.6
 micr sec
 Mx N 1.9 26
 Mx Z 3.6 26
 Ki i 06 18 03.7
 micr sec
 Mx E 2.0 26
 (cont.)

1977

May 14 (cont.)
 Ki micr sec
 Mx N 1.6 24
 Sk iP 06 17 46.2
 Um iP 06 18 01.7
 i 06 18 10.1
 Ecuador (h = N).
 M = 5.5 (Up,Ki).

" 14 Up micr sec
 Mx E 1.6 26
 Mx Z 4.7 26
 Ki micr sec
 Mx E 2.0 26
 Mx N 2.1 24
 Um iP 07 12 12.3
 Ecuador (h = N).
 M = 5.5 (Up,Ki).

" 14 Ud iP 09 14 07.3

" 14 Up iP 10 17 47.0
 Sk iP 10 18 30.9
 Ud eP 10 17 55
 De iP 10 17 17.1
 Greece (h = 55 km).

" 14 Um iP 11 15 08.6
 i 11 15 19.6
 Ud iP 11 15 24.9

" 14 Um iP 13 07 06.5

" 14 Up iP 16 35 08.2
 iP 16 35 24.6
 Ki iP 16 34 48.2
 iP 16 35 04.5
 Um iP 16 34 55.1
 Ud iP 16 35 17.9
 Luzon.
 h = 60 km (Up,Ki).

" 14 Up iP 21 39 43.4
 Ki iP 21 39 01.2
 iP 21 39 10.6
 Um iP 21 39 19.9
 iP 21 39 29.2
 Ud iP 21 39 50.5
 iP 21 40 00.0
 i 21 40 04.4
 Japan.
 h = 30 km (Ki,Um,Ud).

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

1977				1977			
May	15	Up	i(PKP)	23 31 09.8	May	16	(cont.)
			i(PKP)	23 31 13.9			Ki
			iPKP	23 31 19.5			Mx Z
		Ki	i(PKP)	23 31 02.7			1.6 15
			iPKP	23 31 05.7			Sk eP
			iSKP1	23 31 44.3			16 51 25
		Sk	iPKP	23 31 16.0			i
			iSKP1	23 34 02.8			Um iP
		Um	i(PKP)	23 31 04.5			16 52 07.2
			iPKP	23 31 12.8			iS
		Ud	i(PKP)	23 31 20.8			16 55 40
			iSKP1	23 34 11.7			Ud iP
		De	iPKP1	23 31 23.6			16 51 53.8
			Fiji Islands (h = 500 km).				Iceland (h = 10 km).
"	16	Ud	iRg	03 20 44.6	"	16	Ki iP
			Regional, near-surface event.				17 02 22.0
							i
							17 02 35.7
							micr sec
							P Z'
							0.1 1.5
							Um iP
							17 02 32.7
							i
							17 02 42.3
							Iceland (h = 10 km).
"	16	Ud	iP	08 21 30.6	"	16	Um iP
		De	iP	08 20 57.8			21 37 31.3
			Crete (h = 45 km).				
"	16	De	iP	10 42 47.4	"	16	Ud eP
			Aegean Sea (h = N).				22 28 40
"	16	Up	iPKP	11 33 43.4	"	16	Um iP
		Ki	iPKP	11 33 28.5			22 28 42.8
		Sk	iPKP	11 33 40.8			De iP
		Um	iPKP	11 33 35.8			22 28 57.1
		Ud	iPKP	11 33 44.9			Hindu Kush (h = 100 km).
		De	iPKP	11 33 51.1	"	17	De iP
			New Hebrides Islands				02 38 50.4
			(h = 30 km).				New Hebrides Islands
							(h = 25 km).
"	16	Ki	iP	13 01 18.0	"	17	Ki iP
		Ud	iP	13 01 40.0			09 23 54.0
			Sinkiang, China (h = 55 km).				Kurile Islands (h = 470 km).
"	16	De	i(P)	14 44 28.3	"	17	Up iP
"	16	Sk	iSgl	14 44 28.7			Ki iP
			iRg	14 44 31.3			09 38 37.8
			Regional, near-surface event.				Sk iP
							09 38 54.6
"	16	Ud	iRg	15 40 20.0			Um iP
			Regional, near-surface event.				09 38 27.0
"	16	Up					Ud iP
			micr sec				09 38 45.9
		Mx	E	1.1 12			De iP
		Mx	N	1.1 13			09 38 42.9
		Mx	Z	1.6 13			Afghanistan-USSR (h = 120 km).
		Ki	iP	16 51 56.2	"	17	Um i(P)
			micr sec				14 18 00.7
		Mx	E	1.6 15	"	17	Ki iP
		Mx	N	2.0 14			ipP
			(cont.)				14 28 06.1
							14 28 12.2
							micr sec
							P Z'
							0.1 1.5
							pP Z'
							0.1 1.0
							Sk iP
							14 27 52.4
							ipP
							14 27 58.6
							Um iP
							14 28 08.9 C
							ipP
							14 28 15.4
							Ud iP
							14 27 57.5 C
							De i
							14 28 03.0
							Panama.
							h = 20 km (Ki,Sk,Um).

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

1977				1977					
May	17	Ud	iP	17 32 32.0	May	19	(cont.)		
		Iran (h = 55 km).				Um	i	00 17 50.1	
"	18	Up	iP	04 05 45.1		Ud	iP	00 15 42.0	
		Ki	iP	04 05 25.1			i	00 15 46.4	
			P	Z' 0.1 0.8		De	iP	00 15 25.2	
		Sk	iP	04 05 49.9			i	00 15 31.0	
		Um	iP	04 05 31.9		Iran (h = 40 km).			
		Ud	iP	04 05 53.9	"	19	Ud	iPKP1	00 28 50.0
		De	iP	04 06 00.9			De	iPKP1	00 28 59.7
		Luzon (h = N).				Fiji Islands (h = 560 km).			
"	18	Up	iP	04 07 11.3 C	"	19	Up	iPKP	17 21 49.3
			ipP	04 07 49.8			Ki	iPKP	17 22 03.6
			P	Z' 0.1 1.1			Sk	iPKP	17 21 53.2
		Ki	iP	04 06 16.1 C			Um	iPKP	17 21 56.3
			ipP	04 06 54.4			Ud	iPKP	17 21 48.4
			P	Z' 0.1 1.1				i	17 21 57.9
		Sk	iP	04 06 53.6		South Sandwich Islands			
			ipP	04 07 32.2		(h = N).			
		Um	iP	04 06 42.3	"	19	Up	iPKP	17 54 12.4
			iPcP	04 07 35.4			Ki	iPKP	17 54 28.3
		Ud	iP	04 07 14.6 C				iSKP1	17 57 53.4
			ipP	04 07 53.4			Sk	ePKP	17 54 18
		De	iP	04 07 36.6 C				i	17 54 22.4
			iPcP	04 08 07.7			Um	iPKP	17 54 20.1
		Kamchatka.					Ud	iPKP	17 54 10.7
		h = 170 km (Up,Ki,Sk,Ud).						i	17 54 13.2
		m = 5.4 (Up,Ki).				South Sandwich Islands			
"	18	Ki	iPKP	07 01 59.0	"	19	Up	iPKP1	19 07 08.8
		Sk	ePKP	07 02 10			Ki	iPKP	19 07 00.9
		Um	iPKP	07 02 05.5				iSKP1	19 09 33.0
		New Hebrides Islands					Sk	eSKP1	19 09 53
		(h = 220 km).					Um	iPKP	19 07 07.4
"	18	Um	iP	08 54 55.7				iSKP1	19 09 45.6
		Ud	iP	08 55 20.5			Ud	iPKP1	19 07 08.8
"	18	Ud	iP	11 31 33.2			De	iPKP1	19 07 18.5
		Kurile Islands				Fiji Islands (h = 590 km).			
"	18	Um	iP	12 24 25.0	"	19	Um	iP	19 31 39.1
		Ud	iP	12 24 51.9			Ud	iP	19 32 07.9
		Japan (h = N).					De	iP	19 32 21.0
"	18	Ud	iP	17 29 30.7		Japan (h = 55 km).			
		Turkey (h = N).			"	19	Up	iP	23 06 17.4
"	19	Up	iP	00 15 26.7 C				iPP	23 08 54.3
		Ki	iP	00 16 05.6 C					micr sec
			iPP	00 17 39.6			P	Z'	0.2 1.1
		Sk	iP	00 16 02.3		Ki	iP	23 06 51.5	
		Um	iP	00 15 41.1			i	23 06 54.4	
		(cont.)					iPP	23 08 41.1	
								micr sec	
							P	Z'	0.1 1.1
						(cont.)			

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

1977				1977			
May	19	(cont.)		May	20	(cont.)	
		Ki	micr sec			De	iPKP1 14 30 22.6
		PP	Z' 0.3 1.7			Fiji Islands (h = 530 km).	
		Sk	iP 23 06 51.5				
		Um	iP 23 06 29.4	"	20	Up	iP 15 22 26.8
			iPP 23 08 09.2				ipP 15 22 39.1
		Ud	iP 23 06 32.3			Ki	iP 15 22 05.2
			iPP 23 08 14.2				ipP 15 22 17.6
		De	iP 23 06 16.9			Um	iP 15 22 14.0
		Iran (h = 30 km).					ipP 15 22 26.0
		m = 5.7 (Up,Ki).				Ud	iP 15 22 35.2
							ipP 15 22 47.3
"	19	Up	iP 23 12 39.2 C			Luzon.	
			iPP 23 14 14.9			h = 40 km (Up,Ki,Um,Ud).	
			micr sec				
		P	Z' 0.1 0.6	"	20	Up	iP 17 45 27.9 C
		Ki	iP 23 13 13.4 C			Ki	iP 17 46 00.2 C
			i 23 13 16.6			Sk	iP 17 46 01.9
			micr sec			Um	iP 17 45 39.4 C
		P	Z' 0.1 0.6			Ud	iP 17 45 43.3 C
		Sk	iP 23 13 13.3 C			De	iP 17 45 28.6
		Um	iP 23 12 51.5 C			Iran (h = N).	
			iPP 23 14 32.0				
		Ud	iP 23 12 54.4 C	"	20	Up	iPKP1 21 24 21.8
			iPP 23 14 32.7			Ki	iPKP 21 24 11.6
		De	iP 23 12 38.7 C				i 21 24 22.7
		Iran (h = 30 km).				Sk	ePKP1 21 24 15
		m = 5.7 (Up,Ki).				Um	iPKP1 21 24 15.1
"	20	Up	iP 02 23 35.4			Ud	iPKP1 21 24 22.8
		Ud	iP 02 23 37.0			De	iPKP1 21 24 34.6 C
			i 02 23 45.0				i 21 24 48.9
"	20	Ud	iP 07 29 08.9			Tonga-Kermadec Islands	
						(h = 50 km).	
"	20	Ki	iPn 11 33 17.7	"	20	Up	iP 23 04 15.2 C
			iPgl 11 33 25.1				i 23 04 16.2
			iSn 11 33 48.8				iPP 23 07 53.3
			iSgl 11 34 01.8				iSKS 23 14 43
		Um	iSgl 11 36 04.4				iS 23 15 08
		Off coast of north Norway,					micr sec
		near 70 1/2° N, 18° E.				i	Z' 0.1 1.2
		Origin time = 11 32 36.				Mx	E 1.2 20
		M _L = 2.9 (Ki).				Mx	N 1.8 20
		Checked with Tromsøe reading.				Mx	Z 1.4 21
"	20	Up	iP 12 33 06.2			Ki	iP 23 04 15.3 C
		Ki	iP 12 33 39.0				i 23 04 16.3
		Ud	iP 12 33 20.0				i 23 04 28.5
			i 12 33 22.0				iPP 23 07 54.9
		Iran (h = N).					micr sec
"	20	Up	iPKP1 14 30 11.8			i	Z' 0.1 0.7
		Ud	iPKP1 14 30 11.9			Mx	E 1.0 19
			iSKP1 14 33 06.9			Mx	N 1.3 19
		(cont.)				Mx	Z 1.3 19
						Sk	iP 23 04 28.7 C
							i 23 04 29.7
						(cont.)	

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

1977

May 20 (cont.)

Sk	i	23 04 38.9
	iPP	23 08 18.5
Um	iP	23 04 12.6 C
	i	23 04 13.6
	i	23 04 24.4
	iPP	23 07 49.7
	iSKS	23 14 37
	iS	23 15 05
Ud	iP	23 04 24.6 C
	i	23 04 25.6
	i(PP)	23 08 03.0
	iPP	23 08 12.2
De	eP	23 04 24
	i	23 04 24.0

Sumatra (h = 35 km).
m = 6.2, M = 5.5 (Up,Ki).
Double P, small and large,
average separation 1 s.

" 20

Up	ePKP	23 10 32
Ki	ePKP	23 10 44
	i	23 11 09.2
Um	ePKP	23 10 41
	i	23 10 59.8
Ud	iPKP	23 10 31.7

South Sandwich Islands
(h = N).

" 21

Up	iP	05 47 26.9 D
	i	05 47 28.7
	ipP	05 48 12.7
	iPP	05 50 38.0
	iS	05 57 28.2
		micr sec
	P	Z' 0.1 1.0
	i	Z' 0.7 0.9
Ki	iP	05 47 08.5 D
	i	05 47 10.1
	ipP	05 47 53.3
	iS	05 56 52.0
		micr sec
	P	Z' 0.1 0.5
	i	Z' 0.5 1.0
	Mx	E 2.2 16
	Mx	N 2.4 16
	Mx	Z 1.7 14
Sk	iP	05 47 32.2 D
	i	05 47 33.8
	ipP	05 48 18.0
	iPP	05 50 46.9
	iS	05 57 41.2
Um	iP	05 47 14.4 D
	i	05 47 16.0

(cont.)

1977

May 21 (cont.)

Um	ipP	05 48 00.0
	iPP	05 50 21.1
	iS	05 57 06.5
Ud	iP	05 47 36.1 D
	i	05 47 37.8
	ipP	05 48 21.7
	iPP	05 50 51.4
	iS	05 57 45.2
De	iP	05 47 41.8
	i	05 47 43.5
	ipP	05 48 29.6
	iPP	05 51 03.2

Luzon.

h = 190 km (Up,Ki,Sk,Um,Ud,De).

m = 6.3 (Up,Ki).

Double P, small and large,
average separation 1.6 s.

" 21 Ud eP 07 51 34

" 21

Up	iP	10 39 58.1
Ki	iP	10 40 21.3
Sk	iP	10 40 21.0
Ud	iP	10 40 07.4

Indian Ocean (h = N).

" 21

Up	iSKP1	12 58 35.2
Ki	iPKP	12 54 53.4
Sk	ePKP	12 55 04
Um	iPKP	12 54 59.6
Ud	ePKP	12 55 09
	iSKP1	12 58 39.7
De	iSKP1	12 58 51.6

New Hebrides Islands
(h = 35 km).

" 21

Up	iP	13 52 31.8 D
	i	13 52 37.1
	iPP	13 55 43.2
	iS	14 02 07.8
		micr sec
	P	Z' 0.2 0.8
Ki	iP	13 52 00.0 D
	i	13 52 48.7
	iPP	13 54 51.0
		micr sec
	P	Z' 0.3 0.7
Sk	iP	13 52 29.1 D
	iPP	13 55 34.7
Um	iP	13 52 13.7 D
	i	13 52 20.9
Ud	iP	13 52 38.8 D
	i	13 52 43.8

(cont.)

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

1977				1977			
May	21	(cont.)		May	23	Ud	iPKP 12 32 00.2
		Ud	iPP 13 55 51.9				iSKP1 12 34 46.4
		De	iP 13 52 50.1 D			De	iPKP1 12 31 59.2
			ePP 13 55 12				Fiji Islands (h = 570 km).
		Bonin Islands (h = 340 km). m = 6.1 (Up,Ki).		"	23	Up	iPKP1 20 04 08.6
"	21	Ud	iP 16 03 46.5			i	20 04 13.0
"	21	Ud	eP 23 28 10			Ki	iPKP1 20 03 45.9
		Dodecanese Islands (h = 100 km).				Sk	iPKP1 20 04 02.2
"	22	Up	iP 02 17 37.9			i	20 04 06.2
		Um	iP 02 17 19.8			Um	iPKP1 20 03 57.0
		Ud	iP 02 17 45.3			i	20 04 00.4
		Japan (h = 430 km).				Ud	iPKP1 20 04 10.6
"	22	Up	ePKP1 04 08 17			i	20 04 18.6
		Sk	ePKP1 04 08 12			De	iPKP1 20 04 18.9
		Um	iPKP1 04 08 07.0			Kermadec Islands (h = 140 km). PKP1-onsets are about 18 s late when related to the NEIS solution.	
		Ud	iPKP1 04 08 19.2	"	23	Up	iP 20 42 19.4
"	22	Ud	eP 05 58 07			i	20 42 24.4
"	22	Ud	iP 07 03 01.3			Ki	iP 20 41 59.5
"	22	Ud	iP 09 23 40.3			i	20 42 04.1
"	22	Up	iP 13 35 29.1			Um	iP 20 42 05.9
		Ud	iP 13 35 38.1			Ud	iP 20 42 27.6
"	22	Up	iPKP1 23 45 36.4			Luzon.	
		iSKP1	23 48 48.5	"	23	Up	iP 22 08 26.3 C
		Ki	iSKP1 23 48 22.9			ipP	22 08 36.2
		Sk	eSKP1 23 48 44				micr sec
		Um	iPKP 23 45 39.0			P	Z' 0.2 0.8
		iSKP1	23 48 36.9			Ki	iP 22 08 26.7 C
		Ud	iPKP1 23 45 40.3			ipP	22 08 36.4
		iSKP1	23 48 52.7				micr sec
		De	iPKP1 23 45 50.4			P	Z' 0.3 0.8
		Fiji Islands (h = 350 km).				Sk	iP 22 08 40.8 C
"	23	Up	iP 03 13 16.7			Um	iP 22 08 23.6 C
"	23	De	iPKP 12 28 31.0			Ud	iP 22 08 36.7 C
		New Hebrides Islands (h = 10 km).				ipP	22 08 46.3
						iPP	22 11 59.2
"	23	Up	iP 12 30 02.0			De	iP 22 08 34.6 C
		i	12 30 05.0			ipP	22 08 45.3
		Ki	iP 12 29 41.6			iPP	22 12 01.0
			micr sec			Sumatra.	
		P	Z' 0.1 1.3			h = 35 km (Up,Ki,Ud,De). m = 6.5 (Up,Ki).	
		Ud	iP 12 30 10.5	"	23	Um	iPKP1 22 47 33.8
		De	eP 12 30 18			Ud	iPKP1 22 47 46.1
		Luzon (h = 50 km).		"	24	Ud	iP 05 10 22.8
						i	05 10 28.5

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

1977				1977					
May	24	(cont.)		May	25	(cont.)			
		Ki	iP	13 07 31.5		Ud	iSKP1	12 30 59.3	
		Sk	iP	13 07 31.5		De	iPKP1	12 28 19.2	
		Um	iP	13 07 12.6		Fiji Islands (h = 580 km).			
		Ud	iP	13 07 12.4					
		De	iP	13 06 57.3	"	25	Ud	i(P)	14 22 28.4
		Iran (h = 25 km).			"	25	Ud	i(P)	14 29 49.6
"	24	Ud	iP	13 17 51.7	"	25	Up	iP	15 07 51.4 C
"	25	Ud	iP	00 22 35.0			ipP	15 08 06.9	
			i	00 22 40.8			iS	15 17 49.0	
"	25	Ud	iP	01 46 24.0				micr sec	
"	25	Ki	iP	05 52 44.2			P	Z' 0.5 1.1	
		Ud	iP	05 53 12.6			Mx	E 3.1 26	
		Luzon (h = 55 km).					Mx	N 8.9 28	
							Mx	Z 9.1 29	
"	25	Up	iP	11 08 24.5 C		Ki	iP	15 07 52.5 C	
			i	11 08 31.5			ipP	15 08 08.3	
			iPP	11 09 31.6			iS	15 17 55.8	
			iS	11 13 44				micr sec	
				micr sec			P	Z' 0.4 0.8	
							Mx	E 11 25	
			P	Z' 0.2 0.9			Mx	N 11 25	
		Ki	iP	11 08 59.5 C			Mx	Z 12 23	
				micr sec		Sk	iP	15 08 06.7 C	
							ipP	15 08 22.7	
			P	Z' 0.1 1.0			iPP	15 11 23.3	
			Mx	E 0.8 12			iS	15 17 21.7	
			Mx	N 0.7 12		Um	iP	15 07 48.6 C	
			Mx	Z 0.7 11			ipP	15 08 04.4	
		Sk	iP	11 09 00.0 C			iS	15 17 45.5	
		Um	iP	11 08 36.5 C		Ud	iP	15 08 02.3 C	
		Ud	iP	11 08 40.9 C			ipP	15 08 17.9	
			i	11 08 46.0			iS	15 18 11.4	
		De	iP	11 08 25.6 C		De	iP	15 08 00.0 C	
			i	11 08 31.1			ipP	15 08 14.8	
		Iran (h = 25 km).					iPP	15 11 11.4	
		m = 5.8 (Up,Ki).				Sumatra.			
"	25	Um	iP	12 09 50.6 D		h = 55 km (Up,Ki,Sk,Um,Ud,De).			
		Ud	iP	12 09 21.6 D		m = 6.4, M = 6.1 (Up,Ki).			
"	25	Up	iSKP1	12 30 57.1		M not corrected for focal depth.			
				micr sec	"	25	Up	iP	15 24 19.0
			SKP1	Z' 0.1 1.0			Ki	iP	15 23 55.8
		Ki	iPKP	12 28 02.7			Um	iP	15 24 03.6
			iSKP1	12 30 32.2			Ud	iP	15 24 28.9
				micr sec			De	iP	15 24 39.3
			SKP1	Z' 0.1 1.2		Taiwan (h = 70 km).			
		Sk	iPKP	12 28 13.2	"	25	Up	iPKP	16 56 13.4
			iSKP1	12 30 49.9			Um	iPKP	16 56 06.5
		Um	iPKP	12 28 05.5			i	16 56 16.0	
			iSKP1	12 30 45.2		(cont.)			
		Ud	iPKP1	12 28 10.4					
		(cont.)							

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

1977

May 25 (cont.)
Ud ePKP 16 56 13
North Island, New Zealand
(h = 330 km).
PKP-arrivals are about
12 s earlier than expected
according to the NEIS solution.

" 25 Up iP 17 11 48.9
micr sec
P Z' 0.1 1.3
Ki iP 17 11 14.5 C
micr sec
P Z' 0.1 1.3
Sk iP 17 11 22.6
Um iP 17 11 34.2
Ud iP 17 11 40.8 C
Nevada.
m = 5.9 (Up,Ki).
Underground explosion.

" 25 Up iP 21 14 02.8
Ki iP 21 14 38.7
iPP 21 16 19.3
Sk iP 21 14 37.8
Um iP 21 14 16.0
Ud iP 21 14 17.9
De iP 21 14 01.7 C
Iran (h = 20 km).

" 25 Up iP 23 08 24.8
Um iP 23 07 55.0
Ud iP 23 08 19.3
Queen Elisabeth Islands
(h = N).

" 25 Ki eP 23 10 24

" 26 Up iP 00 37 03.7

" 26 Up iP 01 40 51.9 D
i 01 41 09.5
iS 01 45 28
i 01 45 45
micr sec
P Z' 0.2 1.5
i Z' 0.1 1.0
Mx E 8.2 18
Mx N 5.7 18
Mx Z 17 19
Ki iP 01 41 36.4 D
i 01 41 42.0
i 01 42 25.6
iPP 01 42 42.3
(cont.)

1977

May 26 (cont.)

Ki micr sec

P Z' 0.3 0.8

i Z' 0.2 1.0

PP Z' 0.3 1.7

Mx E 11 12

Mx N 15 13

Mx Z 13 13

Sk iP 01 41 30.1 D

iPP 01 42 29.3

Um iP 01 41 08.5 D

i 01 41 37.5

iS 01 46 02

Ud iP 01 41 08.1 D

i 01 41 14.4

De iP 01 40 49.9 D

i 01 41 00.2

Turkey-Iran (h = 35 km).

m = 5.8, M = 5.7 (Up,Ki).

" 26 Up iPKP1 05 56 50.2

Sk iPKP1 05 56 47.1

Ud iPKP1 05 56 55.4

De iPKP2 05 57 07.6

New Zealand (h = N).

" 26 Ud iP 09 19 26.6

" 26 Up i 09 56 19.0

Ki iP 09 56 46.3 C

micr sec

P Z' 0.1 1.0

Um iP 09 56 18.8 C

Ud iP 09 56 18.1 C

De iP 09 56 00.1 C

Iran-USSR (h = 40 km).

" 26 Up i(P) 13 33 07.1

Ud i(P) 13 33 19.5

" 26 Ki iPKP 14 50 50.5

Ud iPKP 14 50 32.3

South Sandwich Islands (h = N).

" 26 Up iP 14 55 27.4

Ki iP 14 55 37.0

Um iP 14 55 25.7

Ud iP 14 55 43.7

De iP 14 55 40.8

i 14 56 35.3

Hindu Kush (h = 120 km).

" 26 Ud i(P) 15 01 51.9

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

1977				1977			
May	26	Up	iP	16 50	49.9	May	27 (cont.)
		Ki	iP	16 51	29.5		De ipP 02 40 40.3
		Ud	iP	16 51	05.3		iPP 02 41 53.2
		Iran (h = 30 km).					Tadzhik, SSR.
"	26	Sk	iP	17 47	50.6		h = 140 km (Ki,Ud,De).
							m = 5.4 (Up,Ki).
"	26	Up	iSgl	20 48	49.8	"	27 Up iSKP1 05 22 52.1
		Sk	iSgl	20 48	11.9		micr sec
		Um	iSgl	20 49	46.1		SKP1 Z' 0.1 1.3
		Ud	iSgl	20 47	52.5		Sk iSKP1 05 22 46.2
		Southwest Norway, near					Um i(pPKP) 05 20 23.9
		60 1/2° N, 7 1/2° E.					iSKP1 05 22 40.0
		Origin time = 20 46 15.					Ud iSKP1 05 21 55.7
		By combination with					De iSKP1 05 23 05.0
		Bergen readings.					New Hebrides Islands
"	26	Um	iP	21 15	43.6		(h = 180 km).
		Ud	iP	21 16	15.4	"	27 Ud iSKP1 11 33 12.4
"	26	Up	iP	22 47	15.3		New Hebrides Islands
		Ki	iP	22 47	46.7		(h = 170 km).
		Sk	iP	22 47	47.7	"	27 Up iPKP1 12 37 11.6 C
		Um	iP	22 47	26.6		i 12 37 14.3
		Ud	iP	22 47	30.6		micr sec
		De	iP	22 47	16.5		i Z' 0.1 0.8
		Iran (h = 40 km).					Sk iPKP1 12 37 04.5 C
"	27	Ud	iP	00 33	30.6		Um iPKP1 12 36 59.1
"	27	Ki	iPKP	00 57	55.0		Ud iPKP1 12 37 13.4 C
		Um	iPKP	00 58	01.4		i 12 37 16.8
		New Hebrides Islands					De iPKP1 12 37 22.1 C
		(h = 120 km).					i 12 37 25.9
"	27	Up	iP	02 39	56.0 D		Kermadec Islands (h = 50 km).
			iPP	02 41	32.7	"	27 De e(P) 14 57 53
							i 14 58 02.3
			P	Z' 0.1	0.9	"	27 Ki eP 19 52 49
			PP	Z' 0.1	1.3		iS 19 54 56.7
		Ki	iP	02 40	01.6 D		Um iS 19 56 19.3
			ipP	02 40	32.6		Ud eP 19 54 44
			iPP	02 41	41.6		Svalbard region.
							By combination with Tromsøe
							and Finnish station readings.
			P	Z' 0.1	1.0	"	27 Up iP 22 37 09.4
			PP	Z' 0.2	2.0		i 22 37 37.7
		Sk	iP	02 40	20.6 D		Ki iP 22 38 16.3
			i	02 40	34.4		micr sec
			iPP	02 42	03.3		P Z' 0.1 0.7
		Um	iP	02 39	52.7 D		Sk iP 22 37 48.5
			iPP	02 41	27.7		Um iP 22 37 41.2
		Ud	iP	02 40	12.7 D		Ud iP 22 37 17.5
			ipP	02 40	42.5		De iP 22 36 45.7
			iPP	02 41	51.8		Crete (h = 70 km).
		De	iP	02 40	10.0 D		
		(cont.)					

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

1977				1977			
May	27	Up	iPKP	23 17 04.3	May	28	(cont.)
			i	23 17 09.6			Sulawesi.
		Ki	iPKP	23 16 52.8			h = 35 km (Ki,Sk,Um,Ud).
		Sk	iPKP	23 17 01.0			m = 6.5, M = 6.0 (Up,Ki).
		Um	iPKP	23 16 57.7	"	28	Ki iP 13 12 42.2
		Ud	iPKP	23 17 06.8			Ud iP 13 13 12.0
		De	iPKP	23 17 12.7	"	28	Up iP 15 21 10.5
			i	23 17 17.3			Ki iP 15 20 53.5
			Solomon Islands (h = N).				Ud iP 15 21 22.4
"	28	Up	iP	02 52 32.5	"	28	Ki iPKP2 15 30 28.9
		Um	iP	02 52 19.3			Balleny Islands (h = N).
"	28	Ud	eP	02 54 48	"	28	Ki iPKP2 15 31 30.9
			Mindanao (h = 50 km).				PKP2 Z' 0.1 1.0
"	28	Ud	iP	03 04 14.4			Um iPKP2 15 31 31.7
			Sulawesi (h = 140 km).				Ud iPKP2 15 31 33.5
"	28	Up	iP	03 21 17.5			De iPKP2 15 31 22.8
		Ki	eP	03 20 53.3			Balleny Islands (h = N).
		Um	iP	03 20 58.8	"	29	Up iP 02 30 47.7 D
		Ud	iP	03 21 23.9			ipP 02 30 54.2
"	28	Up	i(P)	06 09 11.0 D			Ki iP 02 31 11.3 D
			iPP	06 09 30.4			ipP 02 31 17.6
				micr sec			P Z' 0.1 0.9
			(PP)	Z' 0.1 1.3			Sk iP 02 31 17.0 D
			PP	Z' 0.6 2.3			Um iP 02 30 54.7 D
			Mx	E 2.2 19			Ud iP 02 31 02.2 D
			Mx	N 2.5 20			ipP 02 31 08.8
			Mx	Z 2.7 20			De iP 02 30 51.4 D
		Ki	iP	06 05 06.2 D			Pakistan.
			ipP	06 05 15.9			h = 20 km (Up,Ki,Ud).
			i(P)	06 08 56.5	"	29	Up iP 03 03 55.0 C
			iPP	06 09 07.5			ipN 03 04 59.8
				micr sec			P Z' 0.9 0.9
			P	Z' 0.2 1.9			Ki iP 03 03 38.5 C
			pP	Z' 0.5 2.4			ipN 03 04 37.5
			PP	Z' 0.4 2.1			P Z' 1.0 0.7
			Mx	E 3.7 19			Sk iP 03 04 10.1 C
			Mx	N 4.8 19			ipN 03 05 27.6
			Mx	Z 2.7 18			Um iP 03 03 39.9 C
		Sk	iP	06 05 25.5 D			Ud iP 03 04 11.3 C
			ipP	06 05 37.5			ipN 03 04 31.1
			iPP	06 09 41.9			De iP 03 04 18.6 C
		Um	iP	06 05 09.7 D			ipN 03 04 39.1
			ipP	06 05 19.6			Kazakh SSR.
			iPP	06 09 14.9			m = 6.7 (Up,Ki).
			iSKS	06 15 54			Underground explosion.
		Ud	iP	06 05 27.0 D	"	29	Ki iP 03 29 42.7
			ipP	06 05 36.6			i 03 29 48.7
			iPP	06 09 44.2			(cont.)
		De	ipP	06 05 42.6			
			iPP	06 09 52.1			
			(cont.)				

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

1977				1977			
May	31	Um	iP	04 50	49.6	May	31 (cont.)
		Ud	iP	04 51	16.3		Ud iRg 20 56 33.0
				Japan (h = 470 km).			Central Sweden.
							Near-surface event.
"	31	Up	iP	07 45	49.6 C		
		Ki	iP	07 46	00.1		
		Sk	iP	07 46	15.9 C		
		Um	iP	07 45	48.9 C		
		Ud	iP	07 46	06.3 C		
			ipP	07 46	37.5		
		De	iP	07 46	01.7 C		
				Hindu Kush.			
				h = 140 km (Ud).			
"	31	Up	iP	08 19	19.1		
		Ud	iP	08 19	21.8 C		
		De	iP	08 19	31.8 C		
"	31	Ki	iP	10 58	50.8		
		Um	iP	10 58	53.1		
		Ud	iP	10 58	37.1		
				Dominican Republic (h = 55 km).			
"	31	Um	iP	12 13	52.4		
		Ud	iP	12 14	16.9		
		De	iP	12 14	40.0		
				Aleutian Islands.			
"	31	Ud	iP	12 39	52.1		
"	31	Up	iPKP	15 06	46.9		
		Ki	iPKP	15 06	32.9		
		Sk	iPKP	15 06	43.7		
		Um	iPKP	15 06	39.0		
			ipPKP	15 07	15.6		
		Ud	iPKP	15 06	48.6		
		De	iPKP	15 06	54.2		
			ipPKP	15 07	31.5		
			iSKP1	15 10	08.6		
				Santa Cruz Islands.			
				h = 140 km (Um,De).			
"	31	Up	iPKP2	19 11	12.9		
		Ki	ePKP1	19 10	39		
		Sk	ePKP2	19 10	54		
		Um	iPKP1	19 10	43.5		
			i	19 10	47.4		
		Ud	iPKP2	19 11	15.1		
			i	19 11	34.3		
		De	iPKP2	19 11	28.1		
				North Island, New Zealand			
				(h = 130 km).			
"	31	Up	iRg	20 56	46.0		
				(cont.)			

29 December, 1978

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BOX 517
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 SWEDEN

SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, SKALSTUGAN, UMEÅ,

UDDEHOLM and DELARY

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

JUNE 1 - 30, 1977

1977					1977				
June	1	Up	iP	05 56 42.8	June	1	(cont.)		
		Sk	eP	05 56 20			Same location as the event		
		Ud	iP	05 56 45.0			at 10 38.		
"	1	De	iPKP1	09 17 01.3			Origin time = 12 16 43.		
		Tonga Islands (h = N).					M _L = 2.4 (Um).		
"	1	Um	iPKP	09 21 06.2			Felt.		
		Ud	iPKP	09 21 19.6			Checked with Finnish station		
							readings.		
"	1	Ud	iP	10 08 42.4	"	1	Up	iP	13 00 09.9 D
"	1	Um	iP	10 10 08.4			ipP	13 00 25.3	
"	1	Up	iSgl	10 43 04.2			i	13 00 35.0	
		Ki	iPgl	10 40 03.6			eS	13 04 31	
			iSgl	10 40 58.0			iScS	13 11 01.3	
			i	10 41 05.7				micr sec	
		Sk	eSn	10 42 13			P	Z' 0.2 1.0	
			iSgl	10 42 53.2			pP	Z' 1.7 1.4	
		Um	iSn	10 40 50.1			Mx	E 7.7 22	
			iSgl	10 41 12.4			Mx	N 6.0 17	
		Ud	iSgl	10 43 41.6			Mx	Z 9.7 19	
		De	eSgl	10 45 07			Ki	iP	13 01 12.1 D
		Finland-USSR, 66.0°N, 29.8°E.					ipP	13 01 27.5	
		Origin time = 10 38 50.						micr sec	
		M _L = 3.2 (Ki,Sk,Um,Ud).					P	Z' 0.3 1.0	
		Felt.					pP	Z' 0.4 0.9	
		Checked with Finnish station					Mx	E 4.9 17	
		readings.					Mx	N 5.2 19	
"	1	Ki	iSgl	12 18 47.5			Mx	Z 3.8 17	
			i	12 18 55.5			Sk	iP	13 00 49.5 D
		Sk	iSgl	12 20 46.7			ipP	13 01 05.2	
		Um	iSgl	12 19 04.1			Um	iP	13 00 38.1
		(cont.)					ipP	13 00 53.7	
							iS	13 05 19	
							Ud	iP	13 00 20.7 D
							i	13 00 38.2	
							De	iP	12 59 51.4
							i	13 00 02.7	
							(cont.)		

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

1977				1977			
June	1	(cont.)		June	2	(cont.)	
		Turkey.				Um iLg2	13 38 54.9
		h = 70 km (Up,Ki,Sk,Um).				Ud iS	13 35 23.7
		m = 5.9, M = 5.4 (Up,Ki).				iSg2	13 36 22.9
"	1	Up iP	22 36 10.6			De iP	13 33 22.8
			micr sec			i	13 33 30.3
		P Z' 0.1 1.0				i	13 33 47.6
		Ki iP	22 35 52.9			iS	13 34 08.6
			micr sec			iSg2	13 34 43.9
		P Z' 0.1 1.0				Germany (h = 0 km).	
		Sk eP	22 36 16	"	2	Ud iP	14 24 15.3
		Um iP	22 35 58.7				
		Ud iP	22 36 19.6	"	2	De iP	14 55 01.9
		De iP	22 36 25.5				
		Luzon (h = 45 km).		"	2	Up iP	14 59 37.3
		m = 5.6 (Up,Ki).				i	14 59 40.8
"	1	Up iP	22 39 29.0			iS	15 03 04
		Ki iP	22 39 11.1				micr sec
			micr sec			Mx E	2.6 17
		P Z' 0.1 1.0				Mx N	7.1 15
		Sk eP	22 39 32			Mx Z	4.1 14
		Um iP	22 39 16.9			Ki iP	14 59 28.6
		Ud iP	22 39 37.8			iS	15 02 41
		De iP	22 39 43.9				micr sec
		Luzon (h = 55 km).				P Z' 0.3 1.8	
"	2	Ud i(P)	02 19 16.4			Mx E	4.0 14
						Mx N	10.0 17
"	2	Up iP	04 04 24.4			Mx Z	4.2 14
		Ki iP	04 05 00.4			Sk iP	14 58 50.6
		Sk iP	04 04 59.4			Um iP	14 59 33.2
		Um iP	04 04 37.7			iS	15 02 46
		Ud iP	04 04 39.6			Ud iP	14 59 19.7
		i	04 04 43.8			De iP	14 59 39.6
		De iP	04 04 24.1			Iceland (h = 10 km).	
		Iran (h = 35 km).		"	2	Up i(P)	15 12 16.8
"	2	Up iRg	13 04 35.8	"	2	Ud i(P)	15 15 45.0
		Ud iRg	13 04 26.2	"	2	Up iP	17 25 44.4
		Central Sweden.				i	17 26 17.3
		Near-surface event.				Ki iP	17 26 50.5
"	2	Up iS	13 35 42.7			Sk iP	17 26 24.2
		i	13 36 12.7			Ud iP	17 25 53.3
		iSg2	13 36 38.2			De iP	17 25 22.5
		Ki eS	13 38 59			Dodecanese Islands (h = N).	
		iLg2	13 40 57.0	"	2	Ud iP	19 14 04.6
		Sk iP	13 34 50.5			De iP	19 13 33.9
		iS	13 36 56.1			i	19 13 36.0
		iLg2	13 38 15.7			Dodecanese Islands (h = N).	
		Um iS	13 37 20.8	"	2	Up iP	19 42 54.5
		i	13 38 23.9			Ud iP	19 42 35.3
		(cont.)				North Atlantic Ocean (h = N).	

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

1977				1977					
June	3	Up	iPKP1	14 51 19.4	June	3	Ki	iPKP	17 25 17.3
			iPKP	14 51 27.9			Sk	ePKP	17 25 29
		Ki	i(PKP)	14 51 09.2			Um	iPKP	17 25 24.0
			iPKP	14 51 11.6				i	17 25 28.3
		Sk	iPKP	14 51 22.1			Ud	iSKP1	17 28 53.5
		Um	i(PKP)	14 51 10.4			De	iPKP	17 25 39.5
			iPKP	14 51 18.1			New Hebrides Islands.		
			iSKP1	14 53 55.4					
		Ud	iPKP1	14 51 19.7	"	3	Up	iP	23 01 17.3
			iSKP1	14 54 09.5				ipP	23 01 27.5
		De	iPKP1	14 51 29.0			Ki	iP	23 00 35.0
		Fiji Islands (h = 570 km).						ipP	23 00 45.3
							Sk	ipP	23 01 19.7
"	3	Ki	iSgl	15 00 20.9			Um	iP	23 00 53.5
		Um	iPgl	14 59 13.6				ipP	23 01 03.5
			iSgl	14 59 43.6			Ud	iP	23 01 24.0
		Origin time = 14 58 33.						ipP	23 01 34.1
		$M_L = 2.1$ (Um).					De	ipP	23 01 50.3
"	3	Up	iPKP	15 36 29.9			Japan.		
			iSKP1	15 39 52.7			h = 35 km (Up,Ki,Um,Ud).		
			i	15 40 01.5	"	3	Up	iP	23 38 58.7
				micr sec			Ki	iP	23 38 20.9 C
		Mx	N	0.7 19			Sk	iP	23 38 54.4
		Mx	Z	1.4 20			Um	iP	23 38 37.3 C
		Ki	iPKP	15 36 15.8			Ud	iP	23 39 06.0
			i	15 36 19.5			De	iP	23 39 20.3
				micr sec			Japan (h = 70 km).		
			PKP	Z' 0.1 1.1	"	4	Um	iP	09 48 43.3
		Sk	iPKP	15 36 26.4	"	4	Ud	iPgl	13 21 38.1
		Um	iPKP	15 36 21.4				iSgl	13 22 01.0
			i	15 36 26.1			Origin time = 13 21 07.		
		Ud	iPKP	15 36 31.3			$M = 2.1$ (Ud).		
			i	15 36 35.4			L		
			iSKP1	15 39 54.0	"	4	Up	iP	15 08 53.6 C
			i	15 40 04.1				ipP	15 08 59.9
		De	iPKP	15 36 37.8					micr sec
			iSKP1	15 40 05.2				pP	Z' 0.1 0.9
		New Hebrides Islands					Ki	iP	15 08 07.7
		(h = 40 km).						i	15 09 31.7
"	3	Ud	iRg	16 45 13.7				ipP	15 09 47.3
		Regional, near-surface event.					Sk	iP	15 08 50.3 C
"	3	Up	iRg	16 51 53.7			Um	iP	15 08 26.9 C
		Ud	iRg	16 51 37.9			Ud	iP	15 09 04.3 C
		Central Sweden.						ipP	15 09 10.5
		Near-surface event.					De	iP	15 09 22.0 C
"	3	Ki	ePKP	17 24 30			Lake Baikal.		
		Sk	ePKP	17 24 42			h = 20 km (Up,Ud).		
		Um	iPKP	17 24 37.4	"	4	Ud	iP	15 17 30.9
		Ud	iSKP1	17 28 07.1	"	4	Um	iPKP1	17 44 49.5
		New Hebrides Islands (h = N).					North Island, New Zealand		
							(h = 35 km).		

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

1977				1977			
June	4	Ki i(pP)	19 05 55.1	June	5	(cont.)	
		Virgin Islands (h = 50 km).				Um iP	04 52 02.7 C
"	4	Ki iP	20 31 14.3			i	04 52 05.1
		Um iP	20 31 04.3			iS	04 57 40
		Ud iP	20 31 22.9			Ud iP	04 52 01.6 C
		ipP	20 32 04.0			i	04 52 04.5
		Afghanistan-USSR.				iS	04 57 43.5
		h = 190 km (Ud).				De iP	04 51 44.1 C
						i	04 51 46.3
"	5	Up iP	00 12 50.9			Iran (h = 40 km).	
		Um iP	00 12 39.1			m = 6.2, M = 6.1 (Up,Ki).	
		Ud iP	00 12 52.5	"	5	Up iP	05 05 52.4
"	5	Up iRg	01 01 10.7			i	05 05 55.2
		Ud iRg	01 01 09.0			Ki iP	05 06 34.4 C
		Central Sweden.				i	05 06 37.8
		Near-surface event.					micr sec
"	5	Up iRg	01 27 52.3			P	Z' 0.1 0.9
		Ud i	01 27 46.1			i	Z' 0.1 1.0
		iRg	01 27 49.6			Sk i	05 06 34.2
		Central Sweden.				Um iP	05 06 08.4
		Near-surface event.				i	05 06 11.5
"	5	Up iRg	01 30 27.9			Ud iP	05 06 07.7
		Ud iRg	01 30 27.5			i	05 06 10.7
		Central Sweden.				De iP	05 05 49.8
		Near-surface event.				Iran-Iraq (h = 60 km).	
"	5	Up iPKP1	02 17 24.1	"	5	Up iP	05 09 15.4
		i	02 17 31.5			Ki iP	05 09 55.9
		Sk iPKP1	02 17 18.0			Ud iP	05 09 29.1
		Um iPKP1	02 17 10.0			De iP	05 09 10.2
		Ud iPKP1	02 17 25.7			i	05 09 14.4
		i	02 17 33.1			Iran (h = N).	
"	5	Up iP	04 51 47.0 C	"	5	Up eP	05 24 17
		i	04 51 49.3			Ud iP	05 24 30.5
		iS	04 57 15.5			Iran.	
			micr sec				
		i	Z' 0.2 1.0	"	5	Up i	05 28 50.0
		Mx	E 16 23			Ki i	05 29 28.6
		Mx	N 42 30			Sk i	05 29 27.9
		Mx	Z 19 20			Ud iP	05 28 59.1
		Ki iP	04 52 28.2 C			De eP	05 28 42
		i	04 52 32.9			Iran (h = N).	
		iS	04 58 32	"	5	Ud iP	06 02 03.1
			micr sec	"	5	Up iP	06 05 33.3
		P	Z' 1.0 2.0			Ki iP	06 06 17.3
		i	Z' 0.6 1.2			Ud iP	06 05 48.4
		Mx	E 15 17			De iP	06 05 31.9
		Mx	N 16 17			Iran (h = N).	
		Sk iP	04 52 24.3 C	"	5	Up iP	06 06 21.9
		iS	04 58 23.5			(cont.)	
		(cont.)					

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

1977						1977						
June	5	(cont.)				June	5	(cont.)				
		Ki	iP	06 07 02.8				Ki	iP	08 32 53.5 C		
		De	iP	06 06 19.1				i		08 32 57.6		
		Iran.						iPP		08 34 18.4		
										micr	sec	
"	5	Up	iP2	06 34 17.4				P	Z'	0.1	1.0	
		Ki	iP2	06 34 59.5				i	Z'	0.1	0.8	
		Um	iP2	06 34 33.6				Mx	E	0.6	13	
		Ud	iP1	06 34 29.3				Mx	N	0.4	15	
			iP2	06 34 32.7			Sk	iP		08 32 48.4 C		
		De	iP2	06 34 14.9			Um	iP		08 32 27.6 C		
		Iran (h = N).						i		08 32 31.6		
								iPP		08 33 46.5		
"	5	Up	iP	06 52 21.3			Ud	iP		08 32 27.0 C		
		Ki	iP	06 51 38.8				i		08 32 30.7		
		Um	iP	06 51 57.0 C				iPP		08 33 47.3		
			i	06 52 04.5			De	iP		08 32 08.9 C		
		Ud	iP	06 52 27.9				i		08 32 12.7		
		De	iP	06 52 45.4			Iran (h = N).					
		Japan (h = 70 km).					m = 5.5, M = 4.7 (Up,Ki).					
"	5	Up	iP	07 55 18.7		"	5	Up	iP	11 17 07.3		
			i	07 55 22.9				Um	iP	11 16 45.2		
			iPP	07 56 33.7					ipP	11 16 56.4		
		Ki	iP	07 56 00.2				Ud	iP	11 17 15.3		
			i	07 56 08.9				Japan.				
		Um	iP	07 55 35.6				h = 40 km (Um).				
			i	07 55 45.7			"	5	Up	iP	12 08 48.4	
		Ud	iP	07 55 34.0					iS	12 11 31.0		
			i	07 55 38.4					iLg2	12 13 20.7		
			iPP	07 57 01.0				Ki	iP	12 10 03.7		
		De	i	07 55 18.7					i	12 10 06.6		
		Iran (h = N).							eS	12 14 09		
"	5	Ud	iP	08 12 09.6					iLg2	12 17 15.9		
"	5	Up	iP	08 51 49.3				Sk	iP	12 09 58.4		
		Ki	iP	08 52 32.2				Um	iP	12 09 31.4		
			i	08 52 35.3					iLg2	12 14 55.9		
			i	08 52 42.7				Ud	iP	12 09 09.7		
				micr	sec				i	12 09 12.9		
			i	Z'	0.1	0.9			i	12 09 36.9		
		Um	iP	08 52 06.3					iS	12 12 02.1		
		Ud	iP	08 52 04.7					iLg2	12 14 05.6		
		De	iP	08 51 46.5				De	iP	12 08 28.6		
			i	08 51 50.1					i	12 09 18.5		
		Iran-Iraq (h = 55 km).							iLg2	12 12 37.2		
								Romania.				
"	5	Up	iP	08 32 11.6 C		"	5	Up	iP	14 04 17.4		
			iPP	08 33 18.2					ipP	14 04 19.4		
				micr	sec				i	14 04 22.8		
			PP	Z'	0.1	1.4			i	14 04 31.4		
			Mx	E	0.8	20			iS	14 08 21		
			Mx	N	1.0	19				micr	sec	
			Mx	Z	1.5	22			pP	Z'	0.1	0.9
		(cont.)							i	Z'	0.1	0.9
								(cont.)				

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

1977				1977			
June	5	(cont.)		June	5		
		Ki	iP 14 05 33.6			Up	iP 19 31 32.3 C
			i 14 05 43.0				ipP 19 31 39.3
		Sk	iP 14 04 53.6			Ki	iP 19 31 29.7 C
		Um	iP 14 04 58.0				ipP 19 31 36.1
		Ud	iP 14 04 18.5			Sk	iP 19 31 50.0 C
			ipP 14 04 20.8				ipP 19 31 57.2
			i 14 04 33.5			Um	iP 19 31 25.9 C
		De	i 14 03 43.5				ipP 19 31 33.1
		Sicily.				Ud	iP 19 31 46.1 C
		h = 10 km (Up,Ud).					ipP 19 31 53.1
						De	iP 19 31 47.0 C
						India-Bangladesh.	
						h = 25 km (Up,Ki,Sk,Um,Ud).	
"	5	Ki	iP 14 10 08.2			Ki	iP 21 48 08.2
		Ud	iP 14 09 39.6			Ud	eP 21 49 08
		De	iP 14 09 25.9			"	5
		Iran.				Ud	iP 22 34 09.5
						North Atlantic Ocean	
"	5	Ki	iP 14 56 41.5			(h = N).	
		Ud	iP 14 56 14.8			"	5
		De	iP 14 55 56.7			Sk	i ₁ 23 25 17.8
		Iran (h = 55 km).				Um	i ₁ 23 25 18.0
"	5	Ud	iP 15 24 22.3			Ud	iP 23 24 33.4
						i ₁	23 24 43.5
"	5	Ud	iPKP 15 37 41.0			Italy (h = N).	
		De	iPKP 15 37 45.1			"	5
		New Britain (h = 150 km).				Up	iPKP 23 45 15.9
"	5	Ud	iP 16 54 58.7			i	23 45 23.5
		De	iP 16 54 39.9			iSKP1	23 48 35.4
"	5	Ud	iP 17 52 11.3			micr sec	
		De	iP 17 52 21.8			SKP1 Z'	0.2 1.5
"	5	Up	iP 18 27 36.5			Ki	iPKP 23 45 28.4
			ipP 18 27 43.6			Um	iPKP 23 45 24.0
			isP 18 27 47.3			i	23 45 33.1
		Ki	iP 18 27 23.4			Ud	iPKP 23 45 12.8
			ipP 18 27 30.5			i	23 45 22.3
			isP 18 27 33.8			i	23 48 57.6
		Sk	iP 18 27 52.1			Scotia Sea (h = N).	
			isP 18 28 02.6			"	6
		Um	iP 18 27 23.9 C			Ki	iPKP 01 33 27.4
			isP 18 27 34.4			Um	iPKP 01 33 21.7
		Ud	iP 18 27 52.1			South Sandwich Islands	
			isP 18 28 02.1			(h = N).	
		De	iP 18 27 57.3			"	6
		Sinkiang, China.				Ki	iPKP 01 49 02.2
		h = 25 km (Up,Ki,Sk,Um,Ud).				i	01 49 04.9
"	5	Ud	iP 19 13 27.4			Um	iPKP 01 48 55.4
		Volcano Islands (h = 120 km).				South Sandwich Islands	
"	5	Ki	e 19 28 54			(h = N).	
		Um	i 19 28 28.4			"	6
		Ud	iP 19 28 20.8			Up	iP 04 37 58.7
		Iran (h = N).				i	04 38 04.9
						Sk	iP 04 38 36.5
						(cont.)	

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

1977				1977				
June	6	(cont.)		June	7	Ud	iP	07 59 16.9
		Ud	iP					04 38 04.1
		De	iP	"	7	Up	iPKP1	04 37 30.2
		Greece (h = N).					iPKP2	08 25 55.3
"	6	Sk	i				i	08 26 03.1
		Um	iP					08 26 16.5
		Dominican Republic (h = 50 km).						micr sec
"	6	Ud	iP				PKP1	Z' 0.1 1.0
		Spain (h = N).					PKP2	Z' 0.1 0.9
"	6	Up	iSgl				i	Z' 0.1 1.0
			i			Ki	ePKP1	08 25 34
		Ki	iSgl			Sk	iPKP1	08 25 49.4
		Sk	iSgl				iPKP2	08 25 53.7
		Um	iSgl				i	08 26 02.9
		Ud	iPgl			Um	iPKP1	08 25 45.2
			iSgl				i	08 25 59.0
		De	iSgl			Ud	iPKP1	08 25 56.5
		South Norway, 60.4°N, 7.4°E.					iPKP2	08 26 06.1
		Origin time = 12 49 43.				De	iPKP2	08 26 20.2
		M _L = 2.7 (Up,Um,Ud).		"	7			South of Kermadec Islands
		By combination with Bergen						(h = N).
		and Kongsberg readings.				Up	iP	09 00 09.6
"	6	Up	ePKP1			Ki	iP	08 59 56.2
		Ki	iPKP			Sk	iP	09 00 07.4
		Um	iPKP			Um	iP	09 00 02.5 D
		Ud	iPKP1			Ud	iP	09 00 12.3
		De	iPKP1			De	iP	09 00 18.9 D
		Tonga Islands (h = 250 km).						Santa Cruz Islands
"	6	Ud	i(P)					(h = 80 km).
"	6	Up	iP	"	7	Ki	i(P)	10 32 02.0
			i				i	10 32 05.4
"	6	Ud	iRg	"	7	Up	iPKP1	11 03 22.2
		Regional, near-surface event.					iPKP2	11 03 25.4
"	6	Up	iP				i	11 03 28.8
		Ki	eP			Sk	ePKP1	11 03 14
		Um	iP			Um	iPKP1	11 03 09.7
		Ud	iP				i	11 03 13.4
		De	iP			Ud	iPKP1	11 03 23.2
		Iran (h = 30 km).					iPKP2	11 03 28.1
"	6	Up	iP				i	11 03 32.2
		Ki	eP					Kermadec Islands (h = 40 km).
		Um	iP					
		Ud	iP	"	7	Up	iSgl	12 36 31.7
		De	iP			Ud	iPgl	12 35 09.6
		Origin time = 12 34 44.					iSgl	12 35 28.4
		Explosion?					iRg	12 35 42.6
"	6	Ki	iP					
		Ud	iP	"	7	Up	iP	12 43 57.3
		Aleutian Islands (h = 55 km).				Ki	iP	12 43 29.1
"	7	Up	iP					Mariana Islands (h = 200 km).
		Ki	iP					
		Ud	iP	"	7	Up	iSgl	14 24 35.6
						Ud	iSgl	14 23 37.4

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

1977				1977					
June	7	Um	i(P)	15 07 08.7	June	8	(cont.)		
"	7	Up	iSgl	19 08 06.0		Ki	micr sec		
		Sk	eSgl	19 06 28		P	Z' 0.1 0.7		
		Ud	iSgl	19 07 09.4		sP	Z' 0.2 0.8		
		Coast of central Norway,				Mx	E 0.9 18		
		62.5°N, 6.2°E.				Mx	N 1.1 15		
		Origin time = 19 04 57.				Mx	Z 0.6 15		
		M _L = 2.3 (Ud).				Sk	iP 14 36 53.3 C		
		By combination with Bergen				ipP	14 37 13.4		
		readings.				isP	14 37 20.0		
		Um	iP			ipP	14 36 37.5 C		
						isP	14 36 57.1		
"	7	Ud	iRg	23 04 48.7		isP	14 37 04.0		
		Regional, near-surface event.				iS	14 45 29		
"	8	Ki	eP	00 24 46		Ud	iP 14 37 07.3 C		
"	8	Ki	iP	00 45 28.1		ipP	14 37 27.3		
		Um	iP	00 45 18.2		isP	14 37 34.0		
		Ud	iP	00 45 37.9		De	iP 14 37 22.0 C		
						ipP	14 37 42.2		
						isP	14 37 49.1		
						Japan.			
						h = 80 km (Up,Ki,Sk,Um,Ud,De).			
						m = 5.8, M = 5.2 (Up,Ki).			
"	8	Ud	iP	04 57 13.3		Up	iPKP1 15 47 21.3		
		De	iP	04 56 40.8		Ud	iPKP1 15 47 23.3		
"	8	Ki	iP	06 43 12.3	"	8	Up	iPKP1 18 48 20.9	
		Ud	iP	06 42 44.9			Um	iPKP1 18 48 10.3	
			i	06 42 49.8			Ud	iPKP1 18 48 23.5	
		Iran (h = 35 km).			"	8	Up	iP 19 52 08.9	
"	8	Up	iPKP1	14 24 36.4		Ud	iP 19 52 20.9		
		Ki	iPKP	14 24 28.3					
			iSKP1	14 27 36.9		"	8	Up	iP 21 30 32.6
								micr sec	
		Sk	SKP1	Z' 0.1 1.3			P	Z' 0.1 1.5	
		Sk	iSKP1	14 27 52.7		Ki	iP 21 30 25.9		
		Um	iPKP	14 24 36.1 D		Sk	iP 21 30 43.1		
			iSKP1	14 27 48.6		Um	iP 21 30 26.6		
		Ud	iPKP1	14 24 36.8 D		Ud	iP 21 30 41.6		
			iSKP1	14 28 00.7		ipP	21 34 49.3		
		De	iPKP1	14 24 48.1 D		De	iP 21 30 43.4		
		Tonga-Kermadec Islands				Java Sea (h = 640 km).			
		(h = 230 km).			"	8	Ud	iP 22 11 16.0	
"	8	Up	iP	14 36 59.9 C			ipP	22 15 40.1	
			ipP	14 37 20.0			Java Sea (h = 640 km).		
			isP	14 37 25.9		"	9	Up	iP 00 36 38.9
			iS	14 46 11			Ud	iP 00 36 45.0	
							Ryukyu Islands (h = 35 km).		
						"	9	Ki	iP 01 03 38.6
			P	Z' 0.2 1.2			Mariana Islands (h = 45 km).		
			sP	Z' 0.2 1.1					
			Mx	E 0.8 20					
			Mx	N 0.7 20					
		Ki	iP	14 36 19.8 C					
			ipP	14 36 38.9					
			isP	14 36 46.2					
		(cont.)							

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

1977

June 10 (cont.)
 Um iS 02 58 49
 Ud iP 02 48 19.1 C
 iP 02 48 30.9
 iPP 02 52 01.6
 De iP 02 48 17.5 C
 Sumatra.
 h = 40 km (Up,Um,Ud).

" 10 Up i(PKP) 03 42 21.2
 Ki iPKP 03 42 13.2
 Um iPKP 03 42 20.3
 Ud iPKP 03 42 31.2
 De iPKP1 03 42 30.3
 Fiji Islands (h = 530 km).

" 10 Ud eP 05 35 46

" 10 Up iP 05 49 46.4 D
 Ki iP 05 50 19.1 D
 micr sec
 P Z' 0.1 1.0
 Sk iP 05 50 16.9 D
 Um iP 05 49 59.2 D
 Ud iP 05 49 58.8 D
 De iP 05 49 43.1
 Arabian Sea (h = N).

" 10 Ki eP 15 02 14
 Banda Sea (h = N).

" 10 Up iP 16 51 05.4
 Ki iP 16 50 48.0
 Mindoro (h = 120 km).

" 10 Ud iP 17 36 45.5

" 10 Up iP 23 07 54.0
 Ki iP 23 09 03.0
 Sk iP 23 08 32.1
 Um iP 23 08 27.8
 Ud iP 23 08 00.1
 De iP 23 07 26.0
 Mediterranean Sea (h = N).

" 10 Um eP 23 57 22
 Ceram (h = 40 km).

" 11 Ud iP 03 38 16.7
 De iP 03 38 28.3

" 11 Up iP 03 52 02.0
 Ki iP 03 52 08.5
 Um iP 03 51 59.0
 Ud iP 03 52 18.8
 Afghanistan-USSR (h = 120 km).

1977

June 11 Up iP 07 54 27.5
 Um iP 07 54 09.4
 Ud iP 07 54 35.7

" 11 Ud iPKP1 10 23 39.4
 De iPKP1 10 23 50.9
 Tonga-Kermadec Islands
 (h = 210 km).

" 11 Ud iP 12 44 00.2

" 11 Up iP 20 41 44.3
 micr sec
 P Z' 0.1 1.4
 Ud iP 20 41 33.4
 North Atlantic Ocean (h = N).

" 11 Up iP 22 30 37.7
 Ki iP 22 30 00.0
 Um iP 22 30 15.9 C
 Ud iP 22 30 44.1 C
 Japan (h = 25 km).

" 12 Ud iP 05 48 32.2
 De eP 05 47 56

" 12 Um iP 07 39 19.8
 Ud iP 07 39 36.5
 Molucca Sea (h = 80 km).

" 12 Up iP 08 58 36.5 C
 micr sec
 P Z' 0.1 1.0
 Ki iP 08 57 53.5 C

 micr sec
 P Z' 0.1 0.8
 Sk iP 08 58 28.4 C
 Um iP 08 58 12.5 C
 Ud iP 08 58 43.6 C
 De iP 08 59 00.3 C
 Japan (h = 110 km).
 m = 5.6 (Up,Ki).

" 12 Up iP 11 35 50.6
 Ud iP 11 35 59.6

" 12 Up iPKP 12 35 56.8
 Ki iPKP 12 35 42.7
 Sk iPKP 12 35 54.3
 Um iPKP 12 35 49.4
 Ud iPKP 12 35 58.9
 De iPKP 12 36 06.1
 New Hebrides Islands
 (h = 110 km).

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

1977

June 12 Up iPgl 16 02 54.2
 iSgl 16 03 25.7
 iRg 16 03 42.0
 Um iSgl 16 05 04.3
 Ud iSgl 16 04 24.4
 De iSgl 16 04 26.7
 Baltic Sea, 58.2°N, 21.1°E.
 Origin time = 16 02 12.
 $M_L = 2.4$ (Ud,De).

Explosion?

" 12 Up ipP 17 01 30.1
 Ki epP 17 01 11
 Um epP 17 01 17
 Ud iP 17 01 29.5
 ipP 17 01 38.6

Luzon.
 $h = 30$ km (Ud).

" 12 Up iP 18 19 25.6
 Sk iP 18 19 38.0

" 12 Ud iPKP1 19 33 04.4
 De iPKP1 19 33 14.9
 i 19 33 32.7
 Tonga-Kermadec Islands
 ($h = 120$ km).

" 12 Ki iP 21 18 11.0
 Alaska ($h = 35$ km).

" 12 Ki iP 23 47 30.7
 De iP 23 48 56.8

" 13 Up iP 00 24 57.8
 Ki eP 00 25 16
 Um iP 00 25 01.1
 Ud iP 00 25 13.6
 i 00 25 19.0
 De iP 00 25 05.3
 Pakistan ($h = N$).

" 13 Up iPKP 10 28 07.2
 Ki iPKP 10 27 54.8
 Um iPKP 10 28 01.1
 Ud iPKP1 10 28 00.1
 De iPKP1 10 28 09.8
 i 10 28 19.4
 Tonga Islands ($h = 40$ km).

" 13 Ud iP 11 27 13.7

" 13 De i(P) 11 41 48.4

1977

June 13 Up iPKP1 11 58 55.3
 Ud iPKP1 11 58 56.4
 De iPKP1 11 59 06.9

" 13^v Up iP 12 00 23.1 C
 ipP 12 00 34.3
 iSKS 12 10 43
 iS 12 10 55

micr sec

P Z' 0.2 1.2

pP Z' 0.2 1.2

Mx E 1.0 18

Mx N 2.2 18

Mx Z 2.2 20

Ki iP 12 00 04.2 C

ipP 12 00 15.5

iS 12 10 19

micr sec

P Z' 0.2 1.0

pP Z' 0.2 1.1

Mx E 1.1 17

Mx N 2.8 20

Sk iP 12 00 28.4

ipP 12 00 40.3

Um iP 12 00 11.3

ipP 12 00 21.9

iSKS 12 10 27

Ud iP 12 00 33.2 C

ipP 12 00 43.5

De ipP 12 00 48.9

iPP 12 04 08.8

Luzon.

$h = 35$ km (Up,Ki,Sk,Um,Ud).

$m = 6.2$, $M = 5.7$ (Up,Ki).

" 13 Up iPKP1 12 09 52.7
 Ud iPKP1 12 09 55.0

" 13 Up iP 13 48 24.7 C
 micr sec

P Z' 0.2 1.1

Ki iP 13 48 33.1 C

Sk iP 13 48 50.1 C

Um iP 13 48 22.8 C

Ud iP 13 48 41.4 C

Afghanistan-USSR

($h = 120$ km).

" 13 Sk iP 14 32 58.1

De iP 14 33 15.6

" 13 De i(P) 15 09 42.7

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

1977

June 13 Sk iP 15 22 45.4
 Ud iP 15 23 09.4
 De eP 15 23 34
 Alaska (h = 55 km).

" 13 Um iP 19 08 22.2

" 13 Ud i 21 42 32.4
 iSgl 21 42 38.4
 South Norway.
 Origin time = 21 40 59.
 $M_L = 2.2$ (Ud).
 By combination with Bergen
 readings.

" 14 Up iP 08 04 14.3 D
 micr sec
 Mx Z 0.7 18
 Ki iP 08 03 56.0
 iP 08 04 07.7
 micr sec
 Mx E 0.5 17
 Mx N 0.4 15
 Um iP 08 04 01.8 D
 iS 08 14 36
 Ud iP 08 04 22.3 D
 iP 08 04 34.1
 Philippine Islands.
 h = 40 km (Ki,Ud).

" 14 Up iRg 08 43 59.4
 Ud iRg 08 43 57.5
 Central Sweden.
 Near-surface event.

" 14 Um iP 08 55 59.3
 Tonga Islands (h = 220 km).

" 14 Up iP 10 42 46.4
 Ki eP 10 42 24
 Um iP 10 42 33.1
 Ud iP 10 42 56.4
 Formosa (h = 5 km).

" 14 Up iSgl 18 11 56.8
 Ud iSgl 18 10 58.6
 De iSgl 18 11 50.5

" 14 Up iP 21 01 37.2
 Um eP 21 02 10
 Ud iP 21 01 45.7
 De iP 21 01 13.8
 Eastern Mediterranean Sea
 (h = N).

1977

June 14 ✓ Up iP 21 51 31.6
 i 21 51 33.0
 i 21 51 38.3
 iPP 21 54 29.4
 iS 22 01 24
 micr sec
 i Z' 0.8 1.8
 Mx E 0.7 19
 Mx N 0.7 20
 Mx Z 2.0 21
 Ki iP 21 52 10.7
 i 21 52 12.0
 i 21 52 17.8
 iPP 21 55 28.8
 micr sec
 i Z' 0.5 1.9
 Mx E 0.7 15
 Mx N 1.2 16
 Sk iP 21 51 43.4
 i 21 51 44.6
 i 21 51 50.5
 ePP 21 54 45
 Um iP 21 51 53.4
 i 21 51 54.6
 i 21 52 00.4
 iPP 21 55 01.3
 iS 22 02 10
 Ud iP 21 51 26.6
 i 21 51 28.0
 i 21 51 33.8
 iPP 21 54 21.3
 De iP 21 51 09.2
 i 21 51 10.4
 i 21 51 15.8
 iPP 21 53 56.0
 South Atlantic Ocean (h = N).
 m = 6.4, M = 5.3 (Up,Ki).
 Multiple P phases, in average
 1.3 s and 7.0 s after the
 first P.

" 14 Ki iP 22 42 59.8
 Ud iP 22 42 26.0
 De iP 22 42 19.7
 North Atlantic Ocean (h = N).

" 15 Up eP 00 03 26
 micr sec
 Mx Z 0.6 16
 Ki eP 00 03 45
 i 00 03 51.5
 Um iP 00 03 38.4
 i 00 03 44.9
 Ud iP 00 03 11.1
 North Atlantic Ocean (h = N).

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

1977					1977						
June	18	Up	iPKP	02 07 54.9	June	18	Ud	iP	11 23 30.5		
		Ki	iPKP	02 07 40.5			Kurile Islands (h = 45 km).				
		Sk	iPKP	02 07 52.4		"	18	Up	iP	11 25 09.2	
		Um	iPKP	02 07 46.9			Ud	iP	11 25 24.4	C	
		Ud	iPKP	02 07 56.9			De	iP	11 25 07.2		
			iSKP1	02 11 30.3		"	18	Up	iP	12 41 51.1	
		De	iPKP	02 08 03.5			Ki	iP	12 41 19.0		
		New Hebrides Islands (h = 35 km).					Sk	iP	12 41 33.4		
	"	18	Um	iP	03 05 10.7			i	12 41 42.5		
			Ud	iP	03 05 23.4			Um	iP	12 41 28.5	
	"	18	Up	iP	04 52 07.8			Ud	iP	12 41 54.5	
			Ki	eP	04 52 43		"	18	Up	iP	14 37 45.3
			Um	iP	04 52 31.1			i	14 37 51.5		
			Ud	iP	04 52 02.5				micro sec		
		South Atlantic Ocean (h = N).						Mx	Z	0.9 13	
	"	18	Up	iP	06 28 44.3			Ki	iP	14 38 28.2	
			Um	iP	06 28 13.7			i	14 38 34.2		
	"	18	Up	iP	06 33 41.7				micro sec		
			i	06 33 50.9			Mx	E	0.4 13		
			Ki	iP	06 33 10.6			Mx	N	0.4 13	
			Sk	iP	06 33 24.0			Um	iP	14 38 01.2	
			i	06 33 32.9			Ud	iP	14 38 02.0		
			Um	iP	06 33 19.3			i	14 38 04.1		
			i	06 33 27.9			i	14 38 09.8			
			Ud	eP	06 33 30			De	iP	14 37 45.7	
	"	18	Ud	iP	09 02 47.4			i	14 37 51.7		
			De	eP	09 02 55			Caucasus (h = N).			
	"	18	Ud	iP	09 12 11.8		"	18	Ud	eP	15 58 20
								Japan (h = 80 km).			
	"	18	Up	i(PKP)	10 22 21.5		"	18	Um	iP	16 19 27.6
			Ki	iPKP	10 22 16.2			Ud	iP	16 19 00.5	
			Sk	e(PKP)	10 22 18		"	18	Ud	iP	17 06 46.9
			Um	i(PKP)	10 22 16.3			18	Up	iP	17 08 00.7
			iPKP	10 22 22.3				Ud	iP	17 07 47.8	
			Ud	iPKP1	10 22 23.9		"	18	Up	iSKS	17 14 06
			iSKP1	10 25 16.8				Um	iSKS	17 14 15	
			De	iPKP1	10 22 35.0			Chile-Bolivia (h = 130 km).			
		Fiji Islands (h = 570 km).				"	18	Ud	iP	17 19 36.7	
	"	18	Up	iP	10 35 03.3			De	iP	17 19 41.8	
			i	10 35 23.0		"	18	Ud	iP	17 35 34.9	
			Ki	iP	10 34 17.2		"	18	Ud	iP	17 45 27.5
			Sk	iP	10 34 53.5		"	18	Ud	iP	18 45 35.6
			Um	iP	10 34 36.5						
			Ud	iP	10 35 07.2						
			De	iP	10 35 23.7						
		Japan (h = 70 km).									

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

1977						1977					
June	18	Up	iP	18 52 13.8		June	18	Up	iPKP	22 29 46.0	
		Um	iP	18 52 36.5						micr sec	
			ipP	18 52 41.7				Mx	E	1.2	20
		Ud	iP	18 52 09.1				Mx	N	1.6	21
			ipP	18 52 14.8				Mx	Z	1.3	19
		De	iP	18 51 51.0				Ki	iPKP	22 29 31.5	
			ipP	18 51 57.1						micr sec	
		South Atlantic Ocean.						Mx	E	2.0	21
		h = 20 km (Um,Ud,De).						Mx	N	2.0	21
"	18	Up	iP	19 49 32.8				Mx	Z	0.9	16
		Um	iP	19 49 55.3				Sk	iPKP	22 29 43.2	
		Ud	iP	19 49 28.5				Um	iPKP	22 29 37.6	
		De	iP	19 49 11.0				Ud	iPKP	22 29 46.5	
			i	19 49 17.0				De	iPKP	22 29 52.6	
								Solomon Islands (h = 10 km).			
								M = 5.8 (Up,Ki).			
"	18	Up	iP	19 59 56.4		"	18	Up	iSn	22 49 06.3	
		Um	iP	20 00 18.2					i	22 49 24.0	
		Ud	iP	19 59 51.0					i	22 49 50.0	
"	18	Ki	iP	20 18 29.7					iSgl	22 49 52.0	
		Um	iP	20 18 34.6				Ki	iPgl	22 46 38.7	
		Ud	iP	20 18 52.5					iSn	22 47 03.3	
		Banda Sea (h = 15 km).							iSgl	22 47 15.6	
"	18	Up	iP	20 50 42.4				Sk	i	22 47 25.3	
				micr sec					i	22 47 46.2	
			P	Z' 0.1 1.4					iSgl	22 47 52.0	
		Ki	iP	20 51 21.4				Um	iPn	22 46 59.6 C	
		Sk	iP	20 50 52.0					iSn	22 47 49.1	
		Um	iP	20 51 04.2					i	22 48 05.0	
			ipP	20 51 11.6					iSgl	22 48 10.6	
		Ud	iP	20 50 37.0				Ud	iSgl	22 49 36.1	
			ipP	20 50 44.9				De	eLgl	22 51 32	
		De	iP	20 50 19.8				Off coast of Nordland, Norway,			
			ipP	20 50 27.3				67.4°N, 13.1°E.			
		South Atlantic Ocean.						Origin time = 22 45 49.			
		h = 25 km (Um,Ud,De).						M _L = 3.1 (Up,Ki,Sk,Um,Ud,De).			
"	18	Up	iP	20 53 38.9		"	18	Up	iPKP1	22 52 21.6	
		Um	iP	20 53 58.7					iSKP1	22 55 11.8	
		Ud	iP	20 53 33.4				Ki	ePKP	22 52 10	
"	18	Up	iP	20 59 32.0				Sk	iPKP1	22 52 15.9	
		Um	iP	20 59 48.0					iSKP1	22 55 06.1	
		Ud	iP	20 59 20.4				Um	iPKP1	22 52 09.7	
"	18	Ud	iP	21 00 50.6					iSKP1	22 55 01.1	
"	18	Ud	iP	21 04 43.3				Ud	iPKP1	22 52 23.5 D	
"	18	Sk	iP	21 08 47.2					iSKP1	22 55 13.2	
		Um	iP	21 09 02.6				De	iPKP1	22 52 34.3 D	
		Ud	iP	21 08 56.0					iSKP1	22 55 22.0	
		Mexico (h = N).						Tonga-Kermadec Islands			
								(h = 540 km).			
"	19	Up	iPKP	04 00 09.1 D		"	19	Up	iPKP	04 00 09.1 D	
				micr sec							
			PKP	Z' 0.1 0.7							
		(cont.)									

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

1977				1977			
June	19	(cont.)		June	19	(cont.)	
		Um	iPKPl 03 59 59.5			Um	iP 11 58 32.8 D
		Ud	iPKPl 04 00 11.2 D			i	11 58 49.5
		De	iPKPl 04 00 21.0 D			ipP	11 59 10.6
"	19	Ud	iP 04 14 16.3			iS	12 05 49
"	19	Up	iP 07 45 03.6			Ud	iP 11 58 04.0 D
			iSKS 07 55 08			i	11 58 20.0
			micr sec			iPcP	11 58 30.4
		Mx	Z 1.0 19			ipP	11 58 44.7
		Ki	iP 07 44 48.2			De	iP 11 58 22.6 D
			micr sec			iPcP	11 58 43.8
		P	Z' 0.1 1.1			ipP	11 59 02.3
		Mx	E 0.5 15			Kuril Islands.	
		Mx	N 0.4 15			h = 160 km (Up,Ki,Um,Ud,De).	
		Sk	iP 07 45 09.0 C			m = 6.1, M = 5.1 (Up,Ki).	
			i 07 49 49.7	"	19	Up	iP 18 28 09.8
		Um	iP 07 44 53.1 C			Ki	iP 18 28 31.4
			iSKS 07 54 55			Ud	iP 18 27 57.8
			iS 07 55 25			De	iP 18 27 51.6
		Ud	iP 07 45 12.0 C			i	18 27 58.7
		De	iP 07 45 17.5 C			North Atlantic Ocean (h = N).	
			iPP 07 49 22.0	"	19	Ud	iP 22 23 41.4
		Celebes Sea (h = 270 km).				Tadzhik SSR (h = N).	
"	19	Up	iP 08 37 51.9	"	20	Ud	iP 00 51 59.9
		Ki	iP 08 38 02.0			Unimak Island (h = N).	
		Sk	iP 08 37 40.9	"	20	Up	iP 01 56 23.1
		Ud	iP 08 37 40.9 C			i	01 56 51.5
		De	iP 08 37 39.4 C			Ki	iP 01 56 29.6
		Windward Islands (h = 110 km).				Sk	eP 01 56 46
"	19	Up	iP 11 57 58.4 D			Um	iP 01 56 21.6
			i 11 58 15.2			Ud	iP 01 56 38.7
			iPcP 11 58 27.0			De	eP 01 56 35
			ipP 11 58 38.2			Hindu Kush (h = 110 km).	
			iS 12 06 38.3	"	20	Up	iP 02 08 31.2
			micr sec			Ki	iP 02 09 45.3
		P	Z' 0.2 1.0			Um	iP 02 09 08.7 C
		Mx	E 0.8 21			Ud	iP 02 08 32.4
		Mx	N 0.7 20			De	iP 02 07 58.9
		Mx	Z 0.9 21			Italy (h = 270 km).	
		Ki	iP 11 57 11.1 D	"	20	Ud	iP 03 15 25.8 C
			i 11 57 26.9			De	iP 03 15 23.4
			ipP 11 57 51.4			Afghanistan-USSR (h = 40 km).	
			iS 12 05 06	"	20	Ud	iP 03 23 13.3
			micr sec			Mexico (h = N).	
		P	Z' 0.6 1.5	"	20	Sk	eP 06 24 20
		Mx	E 0.9 15			Ud	iP 06 24 29.2
		Mx	N 1.0 14			Japan (h = N).	
		Mx	Z 0.8 15				
		Sk	iP 11 57 46.9 D				
		(cont.)					

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

1977					1977				
June	20	Ud	iP	10 27 57.4	June	21	(cont.)		
		De	iP	10 28 17.4			Sk	iP	19 19 31.6
"	20	Sk	iSgl	14 34 22.3			Um	iP	19 19 21.5
"	20	Ki	iP	20 05 41.5			Ud	iP	19 19 01.7 C
		Ud	iP	20 06 09.2				ipP	19 19 10.2
		Philippine Islands (h = 35 km).						i	19 19 20.9
"	20	Up	iP	20 11 14.0			De	iP	19 18 32.2 C
"	20	Ud	iP	20 33 15.2			Mediterranean Sea. h = 30 km (Up,Ud). m = 5.6 (Up,Ki).		
"	21	Ud	iP	02 49 58.6	"	21	Up	iP	21 41 20.0
		Japan (h = 90 km).					Ud	iP	21 41 35.9
"	21	Up	iPKP	07 37 43.2				i	21 41 41.5
		Ki	iPKP	07 37 29.6			Afghanistan-USSR (h = 140 km).		
		Sk	iPKP	07 37 41.5	"	21	Ud	iP	23 42 07.8
		Um	iPKP	07 37 36.3			Chile-Argentina (h = 100 km).		
		Ud	iPKP	07 37 45.5	"	22	Ud	i(PKP)	00 19 50.0
		De	iPKP	07 37 52.4				iPKP1	00 19 55.0
		New Hebrides Islands (h = 120 km).					De	iPKP1	00 20 06.2
"	21	Ud	iPKP	09 17 04.1			Tonga Islands (h = N). Late arrivals when compared with NEIS solutions.		
		De	iPKP	09 17 10.2	"	22	Up	i(P)	00 56 29.3
		Tonga Islands (h = 310 km).			"	22	Up	iSgl	01 41 03.5
"	21	Ki	iP	12 45 10.8			Um	iSgl	01 41 30.1
			i	12 45 22.5			Ud	iSgl	01 42 06.7
		Ud	iP	12 45 27.9			De	i	01 42 31.6
		De	i	12 45 38.6				iSgl	01 42 38.5
		Sinkiang, China (h = N).					Esthonia. Explosion?		
"	21	Up	iP	13 38 00.6	"	22	Up	iP	07 23 00.3
		Ud	iP	13 38 41.3			Ki	iP	07 22 22.2 C
"	21	Ud	iP	17 11 17.7			Sk	iP	07 22 55.8
"	21	Um	iP	18 19 05.1			Um	iP	07 22 38.8 C
"	21	Ud	eP	18 28 01			Ud	iP	07 23 07.2 C
			i	18 28 06.6			De	iP	07 23 21.6
		Tadzhik SSR (h = 10 km).					Japan (h = 35 km).		
"	21	Up	iP	19 18 51.6	"	22	Up	iP	07 29 15.0
			ipP	19 19 00.0	"	22	Up	iP	09 00 53.3
			i	19 19 22.8			Ud	iP	09 00 54.5
			micr sec					i	09 00 59.2
			pP	Z' 0.1 1.0			De	iP	09 01 20.3
		Ki	iP	19 19 55.8			Kamchatka (h = N).		
			micr sec		"	22	Up	iPdiff	12 25 22
			P	Z' 0.1 0.7				iPKP1	12 27 51.7
		(cont.)					(cont.)		

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

1977

June	22	(cont.)				
		Up	iPP	12 31 11		
			iSS	12 49 34		
				micr sec		
			PKP1	Z' 1.3 1.1		
			PP	Z' 6.4 2.0		
			Mx	E 164 30		
			Mx	N 298 29		
			Mx	Z 509 29		
		Ki	iPKP	12 27 33.7		
			i	12 27 43.8		
				micr sec		
			PKP	Z' 0.3 1.4		
			i	Z' 5.6 2.3		
			Mx	E 217 29		
			Mx	N 230 28		
			Mx	Z 187 27		
		Sk	iPKP	12 27 44.0		
			i	12 27 54.4		
		Um	i(PKP)	12 27 37.3		
		Ud	iPKP1	12 27 53.6		
		De	iPKP1	12 28 04.6		
				Tonga Islands (h = 70 km).		
				M = 7.9 (Up,Ki).		
"	22	Up	iP	13 04 16.1		
			i	13 04 23.4		
				micr sec		
			i	Z' 0.1 1.1		
		Ki	iP	13 03 49.2		
		Sk	iP	13 04 11.1		
		Um	iP	13 04 05.6		
		Ud	iP	13 04 26.1		
		De	iP	13 04 40.8		
"	22	Sk	iPgl	13 22 28.0		
			iSgl	13 22 33.0		
			iRg	13 22 33.8		
				Regional, near-surface event.		
"	22	Up	iP	16 01 50.5 C		
		Ki	iP	16 01 55.7 C		
		Sk	iP	16 02 14.5 C		
		Um	iP	16 01 47.9 C		
		Ud	iP	16 02 06.4 C		
		De	iP	16 02 03.6		
				Kashmir-India (h = 35 km).		
"	22	Up	iP	18 39 46.7		
		Sk	iP	18 39 43.8		
		Um	iP	18 39 26.7		
				Japan (h = 25 km).		
"	22	Up	iP	21 49 09.0		
		Ud	iP	21 49 15.5		

1977

June	22					
		Up	iSKP1	02 16 06.1		
		Ud	iSKP1	02 16 07.6		
		De	iPKP1	02 13 35.5		
		De	iSKP1	02 16 17.0		
				Fiji Islands (h = 680 km).		
"	23	Ud	iPKP1	09 53 16.2		
		De	iPKP1	09 53 29.3 C		
				Tonga Islands (h = 130 km).		
"	23	Ud	iP	11 35 46.6		
"	23	De	iPKP1	14 00 09.3		
				Tonga-Kermadec Islands (h = 680 km).		
"	23	Ud	iP	14 19 40.9		
"	23	Sk	eP	16 51 31		
		Um	iP	16 51 14.8		
		Ud	iP	16 51 41.6		
				Japan (h = 30 km).		
"	23	Ud	iPKP1	18 20 43.5		
		De	iPKP1	18 20 55.0 C		
			i	18 21 03.6		
				Tonga-Kermadec Islands (h = 100 km).		
"	23	Ki	iP	20 06 23.0		
		Sk	iP	20 06 29.5		
"	23	Up	iP	20 29 51.4		
		Ud	iP	20 29 53.0		
		De	iP	20 30 16.1		
				Komandorsky Islands (h = 30 km).		
"	23	Up	iPKP1	00 49 43.9		
				micr sec		
			Mx	Z 1.4 21		
		Ki	i(PKP)	00 49 17.5		
		Sk	iPKP1	00 49 37.9		
		Um	iPKP1	00 49 37.0		
		Ud	iPKP1	00 49 45.2		
		De	iPKP1	00 49 55.5 C		
				Tonga Islands (h = N).		
"	24	Ki	iP	00 43 17.1		
		Ud	i	00 43 35.4		
				Sumatra (h = 55 km).		
"	24	Ud	iP	02 50 16.0		
				Crete (h = N).		

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

1977				1977			
June	24	Ud	i	07 50 38.1	June	25	(cont.)
			iSgl	07 50 45.0			Ud iP 00 05 40.1 C
"	24	Ud	i(P)	11 40 46.0			i 00 06 02.6
"	24	Up	iP	13 08 24.5			i 00 06 22.7
		Ki	iP	13 08 29.2			De iP 00 05 35.7
		Sk	iP	13 08 49.9			Hindu Kush (h = 210 km).
		Um	i	13 08 24.9	"	25	Up iP 00 44 13.9
		Ud	iP	13 08 42.2			Ki iP 00 44 55.2
			i	13 08 48.6			Ud iP 00 44 27.7
		De	eP	13 08 41			De iP 00 44 10.5
		Tadzhik-Sinkiang					Iran (h = 60 km).
		(h = 45 km).					Late arrivals when compared with NEIS solutions.
"	24	Up	iP	16 33 19.2	"	25	Up iP 06 52 19.9
			P	micr sec			ipP 06 52 33.8
			Z'	0.1 1.3			Ki iP 06 52 20.0
		Ki	iP	16 33 18.8 C			ipP 06 52 33.4
			P	micr sec			i 06 52 50.2
			Z'	0.1 1.0			micr sec
		Sk	iP	16 33 31.8			P Z' 0.1 1.0
		Um	iP	16 33 16.2 C			Sk iP 06 52 33.9
		Ud	iP	16 33 28.5 C			ipP 06 52 47.0
		De	iP	16 33 27.4			Um iP 06 52 17.2 C
			i	16 33 51.6			ipP 06 52 30.9
		Sumatra (h = 55 km).					Ud iP 06 52 29.5
		m = 6.0 (Up,Ki).					ipP 06 52 43.5
"	24	Up	iP	16 52 56.8 C			De ipP 06 52 39.3
		Ud	eP	16 53 04			Sumatra.
		De	iP	16 53 14.7			h = 45 km (Up,Ki,Sk,Um,Ud).
		Mariana Islands					"
		(h = 150 km).					25
"	24	De	iPKP1	17 38 26.1			Ki iP 14 13 13.2
		Tonga Islands (h = N).					Ud iP 14 14 03.6
"	25	Up	iP	00 04 00.4			Japan (h = 90 km).
			i	00 04 03.9			"
		Ki	iP	00 04 39.1			25
		Um	iP	00 04 13.4			Up iP 15 42 52.0
		Ud	iP	00 04 15.8 C			iSKP1 15 45 36.7
			i	00 04 19.3			Ki iSKP1 15 45 14.5
		De	iP	00 03 59.3			Sk eSKP1 15 45 30
		Iran (h = 55 km).					Um i(PKP) 15 42 39.6
		Double P, small and large,					iSKP1 15 45 26.4
		average separation 3.5 s.					Ud iP 15 42 54.5 D
"	25	Up	iP	00 05 23.4 C			iSKP1 15 45 38.7
		Ki	iP	00 05 32.9 C			De iP 15 43 05.8 D
			P	micr sec			iSKP1 15 45 48.4
			Z'	0.1 0.5			Fiji Islands (h = 630 km).
		Sk	iP	00 05 49.8 C	"	25	Um iP 16 50 17.4
		Um	iP	00 05 21.8 C	"	25	Ud iP 16 51 31.9
		(cont.)					"
							25
							Um iP 17 11 41.8
							Ud iP 17 12 08.0

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

1977				1977				
June	27	Ud	iSKP1 New Hebrides Islands (h = 35 km).	01 44 04.7	June	28	Ki iP Ud iP Japan (h = 20 km).	02 58 35.0 02 58 16.3
"	27	Ki	ePKP Drake Passage (h = N).	07 09 32	"	28	Up iP i Ki iP i	03 52 39.2 03 52 41.4 03 53 11.9 C 03 53 14.3
"	27	Up	iP Sk iP Ud iP Italy (h = N).	12 37 26.1 12 37 55.6 12 37 20.4			i i Z' 0.1 0.9	micr sec
"	27	Up	iPKP Um iPKP i Ud iPKP1 i De i Tonga-Kermadec Islands (h = N).	14 31 15.3 14 31 09.4 14 31 14.9 14 31 14.6 14 31 18.9 14 31 28.9			Sk iP i Um iP i Ud iP i De iP Iran (h = 45 km).	03 53 12.6 03 53 15.0 03 52 50.5 03 52 52.9 03 52 54.4 03 52 56.7 03 52 41.7
"	27	Um	iP Ud iP	16 13 41.9 16 14 12.9	"	28	Ki iP Um iP Ud iP De iP Celebes (h = 270 km).	04 05 59.5 04 06 03.8 04 06 21.7 04 06 27.5
"	27	Up	i Ki iPKP i Um iPKP Ud iPKP1 De i Tonga-Kermadec Islands (h = 30 km).	16 26 24.9 16 25 51.9 16 26 08.6 16 26 03.4 16 26 04.7 16 26 21.0	"	28	Ki iP Sk iP Um iP iS Ud iP Jan Mayen Island (h = N).	05 55 03.9 05 55 18.2 05 55 38.0 05 57 43.0 05 56 03.6
"	28	Ud	iP Tonga-Kermadec Islands (h = N).	22 40 42.0	"	28	De iPKP1 Tonga Islands (h = 45 km).	06 02 49.4
"	28	Up	iP Sk iP Um iP Ud iP De iP Dodecanese Islands (h = N).	22 59 04.0 22 59 45.0 22 59 36.0 22 59 13.3 22 58 42.5	"	28	Up iP i iS P Z' 0.3 0.9 Ki iP P Z' 0.2 1.0 Sk iP i Um iP i Ud iP De iP Sicily (h = 260 km). m = 5.7 (Up,Ki).	07 17 14.8 07 18 26 07 20 55 micr sec 07 18 28.7 D micr sec 07 17 49.6 D 07 18 46.0 07 17 53.3 07 18 03.1 07 17 15.8 D 07 16 39.8 D
"	27	Ki	iP Sk iP Ud iP North Atlantic Ocean (h = N).	23 40 07.2 23 39 36.8 23 39 28.3	"	28	Ki iSg1 Sk iSg1 (cont.)	07 56 03.6 07 56 06.0
"	28	Um	iP Ud iP Japan (h = N).	00 25 03.0 00 25 26.3				
"	28	Ud	iPKP1 De iPKP1 Tonga Islands (h = 70 km).	01 42 54.9 01 43 05.1				

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

1977

June 28

(cont.)

Um iSgl 07 56 30.1
Ud iSgl 07 58 03.1
Nordland, Norway,
66.5°N, 13.9°E.
Origin time = 07 54 35.
M_L = 2.5 (Ki,Sk,Um,Ud).
Explosion?

" 28 De iPKP1 08 50 09.7
Tonga Island (h = N).

" 28 Ud iP 14 30 28.9

" 28 Up iP 15 48 20.5
i 15 48 23.9
iS 15 56 20

micr sec
P Z' 0.18 1.4
Mx E 1.6 17
Mx N 0.9 17
Mx Z 2.7 17

Ki iP 15 48 41.9
i 15 48 45.2
iS 15 57 04

micr sec
i Z' 0.1 1.4
Mx E 1.2 18
Mx N 0.9 18
Mx Z 1.3 19

Sk iP 15 48 10.6
i 15 48 14.1

Um iP 15 48 35.9
i 15 48 38.3
iS 15 56 46

Ud iP 15 48 07.2
i 15 48 10.8

De iP 15 48 01.5
i 15 48 05.5

North Atlantic Ocean (h = N).

m = 5.9, M = 5.2 (Up,Ki).

Double P, small and large,
average separation 3.3 s.

The second onset, when
interpreted as pP, gives a
focal depth of 10 km.

" 28 Up iPgl 16 13 50.4
i 16 14 13.2
iSgl 16 14 14.8

Ud ePgl 16 13 46
iSgl 16 14 07.0

De iSgl 16 14 24.2

(cont.)

1977

June 28

(cont.)

Lake Vetter, Sweden,
58.5°N, 14.9°E.
Origin time = 16 13 17.
M_L = 2.2 (Up,Ud,De).
Explosion?

" 28 Up iP 16 27 57.9
iS 16 36 00

micr sec
P Z' 0.23 1.5

Mx E 2.6 17
Mx N 1.5 17

Mx Z 4.4 18

Ki iP 16 28 16.4
i 16 28 21.3

iS 16 36 40

micr sec
i Z' 0.2 1.0

Mx E 2.0 19
Mx N 0.7 16

Mx Z 1.9 18

Sk iP 16 27 48.8
Um iP 16 28 10.9

iS 16 36 23
Ud iP 16 27 44.5
De iP 16 27 39.5

North Atlantic Ocean (h = N).
m = 6.1, M = 5.4 (Up,Ki).

" 28 Ud iP 16 39 14.4

" 28 Ud iP 18 12 03.6

" 28 Ki iP 19 06 53.2

Sk eP 19 06 22

Ud iP 19 06 18.9

De iP 19 06 13.4

North Atlantic Ocean (h = N).

" 28 Up iP 19 28 19.1
iS 19 36 20

micr sec
P Z' 1.84 2.3

Mx E 3.2 17
Mx N 2.1 17

Mx Z 5.9 17

Ki iP 19 28 39.7
iS 19 37 01

micr sec
P Z' 1.4 2.1

Mx E 3.9 18
Mx N 1.5 18
Mx Z 3.4 19

(cont.)

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

1977				1977			
June	28	(cont.)		June	29	(cont.)	
		Sk	iP 19 28 09.7			Ud	iP 03 14 11.7 C
		Um	iP 19 28 33.4			De	iP 03 14 18.7 C
			iS 19 36 45			Kazakh SSR.	
		Ud	iP 19 28 05.2			Origin time = 03 07 00.	
		De	iP 19 27 59.9			m = 6.1 (Up,Ki).	
		North Atlantic Ocean (h = N).				Underground explosion.	
		m = 6.8, M = 5.6 (Up,Ki).					
"	28	Ki	iP 19 45 06.2	"	29	Ud	iPKP1 03 31 05.1
		Sk	iP 19 44 36.2			De	ePKP1 03 31 16
		Um	iP 19 44 58.4			Tonga Islands (h = 40 km).	
		Ud	iP 19 44 32.8	"	29	Up	iP 07 38 33.2
		De	iP 19 44 27.4				iPP 07 43 00
		North Atlantic Ocean (h = N).					micr sec
"	28	Up	iP 21 08 35.8			Mx	E 0.6 17
		Sk	iP 21 09 18.7			Mx	N 0.9 17
		Um	iP 21 09 12.2			Mx	Z 1.1 17
		Ud	iP 21 08 41.7			Ki	iP 07 38 20.4
		Greece (h = N).					micr sec
"	28	Up	iP 21 21 37.8			P	Z' 0.1 1.0
		Ki	iP 21 21 00.0			Mx	E 0.5 17
		Sk	eP 21 21 33			Mx	N 1.2 16
		Um	iP 21 21 14.8			Mx	Z 0.9 16
		Ud	iP 21 21 44.9			Sk	iP 07 38 38.5
		Japan (h = N).					iPP 07 43 13.1
"	28	Ud	iP 21 35 57.5			Um	iP 07 38 23.8
"	28	Up	iP 22 16 18.4			Ud	iP 07 38 41.4
		Ki	iP 22 16 04.1 C			De	iP 07 38 46.6
		Sk	iP 22 16 24.4			Banda Sea (h = 60 km).	
		Um	iP 22 16 06.9			M = 5.5 (Up,Ki).	
		Ud	iP 22 16 26.7 C	"	29	Sk	iP 07 42 47.4
		De	iP 22 16 31.8 C	"	29	Ud	iRg 08 20 48.0
		Molucca Sea (h = N).				Regional, near-surface event.	
"	29	Um	iP 02 15 09.6	"	29	Up	iP 08 58 10.0
		Ud	iP 02 15 40.6				i 08 58 23.0
"	29	De	iP 03 02 58.3			Ki	eP 08 57 17
"	29	Up	iP 03 13 55.3 C			Um	iP 08 58 45.1
			iPn 03 13 57.8			Ud	iP 08 58 09.8
			iPP 03 14 13.3				i 08 58 11.7
			micr sec			De	iP 08 58 33.5
		P	Z' 0.3 0.8			Aleutian Islands	
		Ki	iP 03 13 38.5 C			(h = 60 km).	
			micr sec	"	29	Um	iP 12 40 06.9
		P	Z' 0.2 1.0	"	29	Up	iP 13 09 56.3
		Sk	iP 03 14 10.2 C				micr sec
			iPP 03 15 33.3			P	Z' 0.1 1.5
		Um	iP 03 13 40.0 C			Ki	iP 13 10 18.3
		(cont.)				Um	iP 13 10 05.7
						Ud	iP 13 10 04.1
						Mid-Indian Ocean (h = N).	

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

1977				1977			
June	29	Ud	i(P)	14 05 11.6	June	30	(cont.)
"	29	De	eP	15 03 30			Ki iSgl 17 33 06.5
"	29	Up	iP	16 14 06.9			Sk ePgl 17 29 19
		Sk	iP	16 14 32.2			iSgl 17 30 07.5
		Um	iP	16 14 05.0			Um iSgl 17 31 42.4
		Ud	iP	16 14 23.4			Ud iPgl 17 29 04.7
		De	iP	16 14 19.8			i 17 29 23.8
"	29	Ud	iPKP	19 50 06.1			iSgl 17 29 45.5
		i		19 50 13.7			De i 17 30 38.2
		Tonga Islands (h = N).					iSgl 17 30 51.3
"	29	De	iPKP1	21 44 47.9 C			South Norway, 60.5°N, 7.4°E.
		Tonga Islands (h = N).					Origin time = 17 28 08.
							M _L = 2.7 (Up,Um,Ud).
							By combination with Bergen and Kongsberg readings.
"	30	Up	iP	00 25 18.8 C	"	30	Ud i(P) 18 09 01.2
		Ki	iP	00 24 56.2	"	30	Up iP 19 33 26.4
		Sk	iP	00 25 22.6 C			i 19 33 28.6
		Um	iP	00 25 06.5			micr sec
		Ud	iP	00 25 27.3 C			i Z' 0.1 1.0
		Mindanao (h = N).					Ki iP 19 34 42.8
"	30	Up	iP	03 02 18.9			i 19 34 46.0
		iS		03 11 42			Sk iP 19 34 01.3
		Ki	iP	03 01 47.5			i 19 34 05.4
		Sk	iP	03 02 16.5			Um iP 19 34 08.4
		Um	iS	03 11 07			Ud iP 19 33 28.4
		Ud	iP	03 02 25.9			Sicily (h = N).
		De	iP	03 02 38.1	"	30	Sk iP 19 39 43.5
		Bonin Islands (h = 470 km).					Ud iP 19 39 10.0
"	30	Up	iSKS	03 10 28	"	30	Ud iP 21 16 46.4
		Um	iSKS	03 10 37			De iP 21 16 59.5
		Chile (h = 110 km).			"	30	Ud iP 22 37 08.1
"	30	De	iPKP1	03 03 59.9			Japan (h = 20 km).
		Tonga Islands (h = N).					
"	30	Up	iP	07 42 27.1			
		Ud	iP	07 42 32.9			
"	30	Ki	iP	10 23 59.8			
		Ud	iP	10 24 28.8			
"	30	Up	iP	14 59 15.1 C			
		Ki	iP	14 59 04.3			
		Sk	iP	14 59 28.8			
		Ud	iP	14 59 28.7			
		De	iP	14 59 32.0			
		Burma (h = N).					
"	30	Up	iSgl	17 30 47.1			
		(cont.)					

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January 12, 1979



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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

JULY 1 - 31, 1977

1977					1977				
July	1	Up	iP	03 56 24.6	July	1	(cont.)		
		Sk	iP	03 56 52.2			Um	iP	14 51 29.1 C
		Um	iP	03 56 23.9				ipP	14 52 22.9
		Ud	iP	03 56 41.1			Ud	iP	14 51 47.2 C
		De	iP	03 56 37.4				ipP	14 52 40.6
		Afghanistan (h = 45 km).					De	iP	14 51 43.6
								ipP	14 52 37.0
"	1	Up	iP	09 59 50.9			Afghanistan-USSR border region.		
		Ki	iP	09 59 51.3			h = 260 km (Sk,Um,Ud,De).		
				micr sec			m = 5.2 (Up,Ki).		
		P	Z'	0.1 0.9					
		Sk	iP	10 00 05.8	"	1	Up	iP	15 43 38.8
		Um	iP	09 59 48.2					micr sec
		Ud	iP	10 00 01.9			P	Z'	0.1 0.9
		De	iP	09 59 59.3			Ki	iP	15 42 51.9
		Northern Sumatra							micr sec
		(h = 70 km).					Mx	E	1.0 16
							Mx	N	0.8 17
"	1	Ki	iP	11 01 30.8			Sk	iP	15 43 27.2
		Ud	iP	11 01 29.8			Um	iP	15 43 13.8
"	1	Ud	iP	11 28 12.7			Ud	iP	15 43 44.6
							De	iP	15 44 03.2
"	1	Ud	iP	12 45 10.0			Kuril Islands (h = 35 km).		
		Greece-Albania border region			"	1	Ki	eP	18 34 45
		(h = N).					Iceland (h = 5 km).		
"	1	Ud	iSgl	12 57 46.7	"	1	Up	eP	21 54 31
		Southwest Norway.					Ki	iP	21 55 09.7
		By combination with Bergen					Um	iP	21 54 42.2
		readings.					Ud	iP	21 54 46.4
"	1	Up	iP	14 51 30.7 C			Eastern Caucasus (h = 55 km).		
				micr sec	"	2	Up	iP	01 13 17.9
		P	Z'	0.1 1.0					
		Ki	iP	14 51 39.2	"	2	Up		micr sec
				micr sec			Mx	E	1.2 20
		P	Z'	0.1 1.0			Mx	N	1.4 20
		Sk	iP	14 51 56.3			Mx	Z	2.1 22
				ipP			Ki	ePKP	01 13 54
		(cont.)					(cont.)		

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

1977					1977					
July	2	(cont.)			July	3	Up	iP	14 52 44.3	
		Ki		micr sec				i(PP)	14 55 46.6	
		Mx	E	1.8 20				iSKS	15 03 18	
		Mx	N	1.6 19				iS	15 04 03	
		Mx	Z	1.2 18					micr sec	
		Sk	ePKP	01 14 02				P	Z' 0.1 1.0	
			i	01 14 14.5				Mx	E 4.3 24	
		Um	iPKP	01 13 58.1				Mx	N 4.3 26	
			i	01 14 09.1				Mx	Z 6.0 23	
		Ud	ePKP	01 14 09		Ki	iP		14 52 29.6 C	
			iP	01 14 12.6			iSKS		15 03 02	
		De	iPKP	01 14 14.6					micr sec	
			i	01 14 23.7				P	Z' 0.2 0.9	
		Solomon Islands (h = 15 km).						Mx	E 3.0 18	
		M = 5.8 (Up,Ki).						Mx	N 2.9 18	
								Mx	Z 5.8 22	
"	2	Up	iP	15 11 02.3		Sk	iP		14 52 51.0	
		Ki	iP	15 11 40.7		Um	iP		14 52 35.3	
		Um	iP	15 11 16.1			i(PP)		14 55 03.9	
		Ud	iP	15 11 23.3			iSKS		15 03 07	
		De	iP	15 11 14.6			iS		15 03 44	
						Ud	iP		14 52 53.7	
"	2	Up	iP	16 01 08.6			i(PP)		14 55 51.7	
		Ud	iP	16 01 12.7			iPKKP		15 09 15.3	
		Near east coast of Kamchatka (h = 55 km).				De	iP		14 53 01.2	
						Molucca Passage (h = 50 km). m = 6.4, M = 6.0 (Up,Ki).				
"	3	Ki	iP	06 47 28.5 C		"	3	Ki	iPKP	15 18 05.9
		Sk	iP	06 47 32.3				Um	iPKP	15 18 15.6
		Um	iP	06 47 10.1				Ud	iPKP	15 18 26.6
		Ud	iP	06 47 15.9						
		Southern Iran (h = N).				"	3	Up	iP	17 40 44.3
"	3	Ud	iP	09 03 01.6				Ki	iP	17 39 51.0
								Um	iP	17 40 18.0
"	3	Up	iP	09 30 30.1				Ud	iP	17 40 43.3
		Ud	iP	09 30 47.9				De	iP	17 41 06.4
								Fox Islands, Aleutian Islands (h = N).		
"	3	Um	iP	12 18 06.6		"	3	Ki	iP	18 32 38.7
		France (h = N).						Ud	iP	18 33 04.5
"	3	Up	iP	13 06 36.6				Philippine Islands region (h = 70 km).		
				micr sec						
			P	Z' 0.1 1.0		"	3	Up	iP	21 17 20.8
		Ki	iP	13 05 43.2 C				Ki	iP	21 16 35.2
				micr sec				Um	iP	21 16 55.9
			P	Z' 0.1 1.0				Ud	iP	21 17 27.2
		Sk	iP	13 06 13.0				Sea of Okhotsk (h = 370 km).		
		Um	iP	13 06 10.1 C		"	3	Um	iP	23 09 05.3
		Ud	iP	13 06 35.5 C				Ud	iP	23 09 30.0
		De	iP	13 06 58.1 C				Bonin Islands region (h = 460 km).		
		Fox Islands, Aleutian Islands (h = N).								
		m = 5.9 (Up,Ki).								

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

1977				1977				
July				July				
	3	Ud	iP	23 27 56.5	4	(cont.)		
"	4	Up	iP	02 13 11.4		Up	ipP 19 59 19.0	
		Ki	iP	02 13 10.7		Ki	iP 19 59 51.0	
		Sk	iP	02 12 43.0			ipP 19 59 57.6	
		Ud	iP	02 12 53.6		Um	iP 19 59 25.7	
		North Atlantic Ocean (h = N).					ipP 19 59 35.1	
"	4	Ud	iP	03 43 18.8		Ud	iP 19 59 23.7	
							ipP 19 59 30.9	
"	4	Sk	iPKP	05 11 04.1		Eastern Arabian Peninsula. h = 25 km (Up,Ki,Um,Ud).		
		Ud	iPKP	05 11 12.9	"	4	Up	iP 21 09 26.5
"	4	Ud	iPKP1	05 59 35.7			Ki	iP 21 09 33.4
		Fiji Islands region (h = 630 km).					Sk	eP 21 09 51
"	4	Sk	iSKP1	07 36 17.4			Um	iP 21 09 23.1
		Um	iSKP1	07 36 11.7				ipP 21 09 57.5
		Fiji Islands region (h = 460 km).					Ud	iP 21 09 43.1
"	4	Ud	iP	08 43 25.8			Tadzhik SSR. h = 150 km (Um).	
		De	iP	08 43 47.0	"	4	Ud	iP 21 26 38.7
"	4	Ud	iP	11 36 21.8	"	4	Ud	iP 22 03 46.0
		De	iP	11 36 18.9				i 22 03 53.6
		Hindu Kush region (h = 230 km).					Off coast of northern California (h = 15 km).	
"	4	Sk	iPKP1	12 49 01.2	"	4	Ud	i 22 17 34.1
		Um	iPKP1	12 48 56.4 C			Off coast of northern California (h = 15 km).	
		Ud	iPKP1	12 49 09.4	"	5	Up	iPKP 01 06 24.5
		Kermadec Islands region (h = 110 km).					Ud	iPKP 01 06 22.1
"	4	Ud	iPKP1	13 44 10.4	"	5	Up	iPKP 01 06 24.5
		De	iPKP1	13 44 20.4			Ud	iPKP 01 06 22.1
		South of Fiji Islands (h = 520 km).			"	5	Ud	iP 06 03 05.9
"	4	Ud	iP	14 24 05.0	"	5	Ud	iP 06 04 13.5
			i	14 21 26.0			Burma-India border region (h = N).	
"	4	Ud	iP	14 55 02.1	"	5	Ud	iSgl 09 11 48.2
"	4	Up	iP	16 43 31.1			Southwest Norway. By combination with Bergen readings.	
		Ki	iP	16 42 44.3	"	5	Up	iP 13 20 12.1
		Um	iP	16 43 05.6			Ki	iP 13 19 28.6
		Ud	iP	16 43 37.1			Ud	iP 13 20 19.1
		De	iP	16 43 55.1			Off coast of Hokkaido, Japan (h = 35 km).	
		Sea of Okhotsk (h = 460 km).						
"	4	Up	iP	19 59 12.1				
		(cont.)						

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

1977				1977						
Month	Day	Station	Type	Time	Time	Type	Time			
July	5	Up	iP	14 55 33.1	July	6	(cont.)			
		Ki	iP	14 55 23.9			Ki	micr sec		
		Sk	iP	14 55 46.5			PKP	Z' 0.2 1.0		
		Ud	iP	14 55 46.6			Sk	i(PKP) 11 46 35.4		
"	5	Up	iP	16 12 00.4				iPKP 11 46 46.4		
		Ki	iP	16 11 29.9				iSKP1 11 49 26.0		
		Sk	iP	16 11 59.9			Um	i(PKP) 11 46 31.5		
		Um	iP	16 11 42.3				iPKP 11 46 38.8		
		Ud	iP	16 12 09.2				iSKP1 11 49 21.7		
			i	16 12 19.6			Ud	iPKP1 11 46 44.8		
		De	iP	16 12 19.1				iSKP1 11 49 34.8		
		Ryukyu Islands (h = 30 km).					De	iPKP1 11 46 56.6		
								iSKP1 11 49 43.5		
"	6	Up	iS	05 06 17			Fiji Islands region			
				micr sec			(h = 590 km).			
		Mx	E	1.3 23	"	6	Ud	iP 13 24 24.7		
		Mx	N	1.1 20	"	6	Ud	iP 21 10 10.6		
		Mx	Z	3.5 25			Philippine Islands region			
		Ki	iP	04 55 20.8			(h = 15 km).			
				micr sec			"	6	Ud	iP 23 07 06.0
		Mx	E	1.4 22			"	7	Sk	i(P) 05 55 53.6
		Mx	N	2.2 22				Um	i(P) 05 56 42.1	
		Sk	iP	04 55 08.5			"	7	Ud	iP 06 28 21.4
		Um	iP	04 55 24.8				Hindu Kush region		
			iSKS	05 05 57			(h = 240 km).			
			iS	05 06 21			"	7	Um	iP 09 07 48.1
		Ud	iP	04 55 14.5				Ud	iP 09 07 35.2	
		De	iP	04 55 19.8			Iceland (h = 10 km).			
		South of Panama (h = N).					"	7	Ud	iPKP 15 22 49.0
		M = 5.5 (Up,Ki).						Easter Island Cordillera		
"	6	Up	iP	08 59 25.5			(h = N).			
				micr sec			"	7	Up	iSg1 15 30 09.2
		P	Z'	0.2 1.5				Ud	iPg1 15 28 47.5	
		Ki	iP	09 00 12.4					iSg1 15 29 07.7	
				micr sec					iRg 15 29 17.6	
		P	Z'	0.1 1.0			Origin time = 15 28 20.			
		Sk	iP	08 59 52.4			Regional, near-surface event.			
		Um	iP	08 59 48.8			"	7	Um	iP 16 08 53.7
		Ud	iP	08 59 30.0				Ud	iP 16 09 18.2	
			i	08 59 40.4			Fox Islands, Aleutian Islands			
		De	iP	08 59 08.3			(h = 50 km).			
		Lake Tanganyika region					"	7	Up	iPKP1 19 01 28.2
		(h = N).							iPKP2 19 01 31.7	
		m = 5.9 (Up,Ki).						Sk	iPKP1 19 01 21.1	
"	6	Up	iPKP1	11 46 43.6				Um	iPKP1 19 01 15.3	
			iSKP1	11 49 33.0			(cont.)			
				micr sec						
			PKP1	Z' 0.1 0.6						
		Ki	i(PKP)	11 46 23.3						
			iPKP	11 46 37.2						
			iSKP1	11 49 07.6						

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

1977				1977			
July	9	(cont.)		July	10	(cont.)	
		Ud iP	15 05 57.3			Ki	micr sec
		East China Sea (h = 30 km).				Mx E	1.0 19
		M = 5.4 (Up,Ki).				Mx N	1.3 19
"	9	Up iPKP1	17 03 30.7			Sk iPKP	02 01 18.0
		Ki iPKP	17 03 22.2			ipPKP	02 01 47.8
		Um iPKP	17 03 30.1			Um iPKP	02 01 21.3 C
		Ud iPKP1	17 03 32.1			ipPKP	02 01 51.2
		Tonga Islands region				Ud iPKP	02 01 11.8
		(h = N).				ipPKP	02 01 40.8
						iPKKP	02 11 21.7
						South Sandwich Islands region.	
"	9	Ki iPKP	17 37 16.4			h = 110 km (Up,Ki,Sk,Um,Ud).	
		Um iPKP	17 37 24.9			M = 5.7 (Up,Ki).	
"	9	Up iP	17 43 04.4	"	10	Up iSKP1	03 00 03.0
		Ki iP	17 42 43.8				micr sec
		Sk iP	17 43 08.0			Mx E	1.2 21
		Ud iP	17 43 12.0			Mx N	1.5 21
		Mindanao, Philippine Islands				Mx Z	1.7 21
		(h = 60 km).				Ki iPKP	02 56 17.1
"	9	Up Mx	21 02				micr sec
			micr sec			Mx E	1.0 19
		Mx E	0.8 15			Mx N	1.3 19
		Mx N	0.6 12			Sk iPKP	02 56 29.4
		Mx Z	0.6 12			Um iPKP	02 56 26.1
		Ki iP	20 37 32.2			iSKP1	02 59 49.5
			micr sec			Ud iPKP	02 56 35.2
		Mx E	0.6 13			iSKP1	03 00 06.4
		Mx N	0.6 14			New Hebrides Islands	
		Um iP	20 37 46.3			(h = 10 km).	
		Northeastern China (h = N).				M = 5.8 (Up,Ki).	
"	9	Ud iP	21 43 05.4	"	10	Ud iP	04 12 32.2
		Honshu, Japan (h = 60 km).		"	10	Up iPKP1	04 38 41.6
"	10	Up iP	02 00 16.1			iSKP1	04 41 29.3
		Sk eP	02 00 20			Ki iSKP1	04 41 05.1
		Um iP	02 00 03.8			Sk iPKP1	04 38 35.7
		i	02 00 15.6			iSKP1	04 41 22.7
		Ud iP	02 00 25.0			Um iPKP1	04 38 29.9
		Luzon, Philippine Islands				iSKP1	04 41 18.3
		(h = N).				Ud iPKP1	04 38 42.7
"	10	Up iPKP	02 01 13.3 C			iSKP1	04 41 30.5
		ipPKP	02 01 42.9			iSKKP	04 50 00.9
			micr sec			Fiji Islands region	
		Mx E	0.9 16			(h = 580 km).	
		Mx N	0.9 17	"	10	Up iPKP1	05 29 55.0
		Mx Z	1.0 19			iSKP1	05 32 43.3
		Ki iPKP	02 01 26.8 C			Ki iPKP	05 29 45.8
		ipPKP	02 01 56.4			iSKP1	05 32 18.8
			micr sec			Sk iPKP1	05 29 48.4
		PKP Z'	0.5 1.5			iSKP1	05 32 37.1
		(cont.)				Um iPKP1	05 29 43.4
						(cont.)	

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

1977					1977				
July	10	(cont.)			July	11	(cont.)		
		Um	iSKPl	05 32 31.8			Ki	iP	09 48 40.6 C
		Ud	iPKPl	05 29 56.9					micr sec
			iSKPl	05 32 44.2				P	Z' 0.1 1.0
			iSKKP	05 41 14.5				Mx	E 1.1 17
		De	iPKPl	05 30 08.0 D			Sk	iP	09 49 10.2
		Fiji Islands region					Um	iP	09 49 02.9 C
		(h = 610 km).					Ud	iP	09 49 31.3 C
							De	iP	09 49 53.2
"	10	Up	iSgl	06 12 05.8			Rat Islands, Aleutian Islands		
		Sk	eSgl	06 13 04			(h = 15 km).		
		Um	iSn	06 11 22.3			m = 5.9, M = 5.2 (Up,Ki).		
			iSgl	06 11 26.2					
		Ud	iSgl	06 12 57.3	"	11	Up	iP	12 46 35.0 C
		South-central Finland,							micr sec
		62.0°N, 24.6°E.						P	Z' 0.1 1.2
		Origin time = 06 10 04.						Mx	N 1.4 18
		M _L = 2.2 (Um).						Mx	Z 1.2 18
		By combination with Finnish					Ki	iP	12 45 46.2
		station readings.							micr sec
								Mx	E 0.9 18
"	10	Ud	iPKPl	09 17 34.8			Sk	iP	12 46 21.8
		De	iPKPl	09 17 45.3			Um	iP	12 46 08.4
		Fiji Islands region					Ud	iP	12 46 39.2
		(h = 580 km).					De	iP	12 46 59.5
"	10	Ud	iP	09 58 39.3			Kuril Islands (h = N).		
							M = 5.1 (Up,Ki).		
"	10	Ud	iP	11 16 37.1	"	11	Up	iP	16 58 40.6
"	10	Ud	iP	12 27 19.5			Ki	iP	16 58 54.7
"	10	Up	i(P)	14 45 16.4 C			Um	iP	16 58 38.9
							Ud	iP	16 58 57.3
"	10	Ud	eP	17 53 39			Afghanistan-USSR border		
		Oaxaca, Mexico (h = 180 km).			"	11	Ud	iP	22 17 39.5
"	10	Ki	iP	20 03 44.5	"	11	Up	Mx	23 41
		Um	iP	20 03 47.1					micr sec
		Ud	iP	20 04 05.9				Mx	E 1.5 20
		Tanimbar Islands region						Mx	N 1.4 20
		(h = N).						Mx	Z 2.0 21
"	11	Um	i	05 04 14.8			Ki	Mx	23 41
		De	iPKPl	05 04 26.7					micr sec
		Tonga Islands region						Mx	E 1.3 19
		(h = 40 km).						Mx	N 1.1 20
"	11	Up	iP	09 49 30.0 C			West Irian region (h = N).		
				micr sec			M = 5.6 (Up,Ki).		
			P	Z' 0.1 1.0	"	12	Ud	iP	01 53 57.8
			Mx	E 1.0 18	"	12	Ud	iP	11 15 38.6
			Mx	N 0.9 17			De	iP	11 15 35.3
			Mx	Z 1.1 17			Afghanistan-USSR border		
		(cont.)					region (h = 210 km).		

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

1977				1977								
July	12	Ud	iP	13 38 06.4	July	13	Ud	iPKP1	19 04 15.0			
		De	iP	13 37 34.7			Kermadec Islands region (h = N).					
		Dodecanese Islands (h = 160 km).					"	13	Ki	iP	19 51 47.5	
	"	12	Up	iSn	14 58 42.5			Um	iP	19 51 38.7		
				iSgl	14 58 58.6			Ud	iP	19 52 12.2		
			Ud	iSgl	14 59 42.4			"	13	Ud	iP	23 21 12.7
			De	iPgl	14 58 00.8			Mindanao, Philippine Islands (h = 45 km).				
				iSgl	14 58 52.6			"	14	Ud	iP	00 44 27.7
			Coast of Latvia-Lithuania, near 56°N, 21°E. Origin time = 14 56 51. M _L = 2.6 (Ud). Explosion?					Dodecanese Islands (h = N).				
	"	12	Ud	iP	15 37 19.1			"	14	Up	iP	05 55 54.3 C
	"	12	Um	iP	19 42 02.9					iPP	05 57 02.9	
	"	12	Ud	iP	23 14 32.2						micr sec	
	"	13	Ud	iP	01 18 29.5					P	Z'	0.4 1.4
	"	13	Up	iP	08 17 29.1					Mx	E	1.9 10
				iS	08 24 08					Mx	N	8.9 18
					micr sec					Mx	Z	5.2 11
				P	Z'	0.2 1.4			Ki	iP	05 56 11.2 C	
				Mx	E	2.7 20					micr sec	
				Mx	N	7.2 17				P	Z'	0.2 1.1
				Mx	Z	4.3 16				Mx	E	4.0 12
			Ki	iP	08 17 47.9					Mx	N	3.1 12
					micr sec					Sk	iP	05 56 22.8
				P	Z'	0.1 1.3				Um	iP	05 55 54.6 C
				Mx	E	2.7 12					iS	06 01 20
				Mx	N	3.4 13				Ud	iP	05 56 12.0 C
			Sk	iP	08 17 57.3					De	iP	05 56 06.7
			Um	iP	08 17 32.7					Uzbek SSR (h = N). m = 6.1, M = 5.6 (Up,Ki).		
				iS	08 24 11			"	14	Ki	iP	07 19 14.7
			Ud	iP	08 17 44.7					Um	iP	07 19 25.5
			De	iP	08 17 38.2					Ud	iP	07 19 10.9
			Pakistan (h = 10 km). m = 5.7, M = 5.6 (Up,Ki).							Iceland (h = N).		
	"	13	Up	iP	09 05 29.5			"	14	Up	iSgl	13 44 13.3
			Sk	iP	09 05 24.7					Ud	iSgl	13 43 13.7
			Um	iP	09 05 09.3					Near southwest coast of Norway, near 58 1/2°N, 6 1/2°E. Origin time = 13 41 08. M _L = 2.6 (Ud).		
			Ud	iP	09 05 36.1					By combination with Bergen and Kongsberg readings.		
			South of Honshu, Japan (h = N).					"	14	Ki	iP	14 01 38.4
	"	13	Ud	iPKP1	14 25 21.7					Molucca Passage (h = 45 km).		
			De	iPKP1	14 25 32.7			"	14	Ki	iP	15 32 13.5
			Tonga Islands region (h = 60 km).							Ud	iP	15 31 53.8 C
										De	iP	15 31 37.4
										Southern Iran (h = N).		

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

1977				1977			
July	18	Ki iP	05 10 47.4	July	20	Up iP	10 47 02.8
		Um iP	05 11 03.8			Ki iP	10 46 07.5
		Near s. coast of Honshu, Japan (h = 45 km).				Ud iP	10 47 03.7
"	18	Up iP	10 13 27.7			Andreanof Islands, Aleutian Is. (h = N).	
		Sk iP	10 14 12.3	"	20	Up iP	13 35 06.8
		Um iP	10 14 08.2			Ki iP	13 34 12.2
		Ud iP	10 13 34.2				micr sec
		De i	10 12 57.3			P	Z' 0.1 1.0
		Albania (h = 40 km).				Sk iP	13 34 41.1
"	18	Up iP	14 30 30.9			Um iP	13 34 39.5
		il	14 30 34.7			Ud iP	13 35 05.0
			micr sec			De iP	13 35 28.3
		l	Z' 0.1 0.6			Alaska Peninsula (h = 55 km).	
		Ki il	14 30 45.0	"	21	Ki iP	02 29 34.2
		Sk eP	14 30 58			Ud iP	02 30 27.6
		il	14 31 01.1			Alaska Peninsula (h = 90 km).	
		Um iP	14 30 30.1	"	21	Up iP	02 48 12.8
		il	14 30 34.1			Ki iP	02 48 11.3
		Ud iP	14 30 47.7			Sk iP	02 48 28.8
		il	14 30 51.3			Um iP	02 48 10.2
		De iP	14 30 44.1			Ud iP	02 48 23.8
		il	14 30 47.7			De iP	02 48 21.6
		Hindu Kush region (h = 70 km).				Northern Sumatra (h = 70 km).	
"	18	Up iP	18 25 13.3	"	21	Up iSgl	04 02 29.3
		Ki iP	18 25 10.0			Ud i	04 01 26.1
		Ud iP	18 25 22.1			iSgl	04 01 33.2
		Java (h = 70 km).				Southwest Norway.	
"	18	Ud iSgl	20 33 31.8			By combination with Bergen readings.	
		Southwest Norway. By combination with Bergen readings.		"	21	Up iPn	09 00 43.7
"	18	Up iPKP1	21 44 26.0			i	09 01 31.8
		Ud iPKP1	21 44 28.1			iSgl	09 01 43.1
		iSKP1	21 47 18.0			Sk eSgl	09 04 05
		De iPKP1	21 44 39.6			Um iSgl	09 03 33.1
		South of Fiji Islands (h = 570 km).				Ud eSgl	09 02 27
"	18	Ki eP	21 54 42			De iPn	09 00 41.4
		Ud iP	21 55 21.0			iPgl	09 00 50.3
		Kyushu, Japan (h = 50 km).				iSgl	09 01 45.0
"	19	Ki iP	10 27 43.6			i	09 01 55.9
		Ud i(pP)	10 28 14.0			Coast of Latvia-Lithuania, near 56 1/4°N, 21°E.	
		Molucca Passage (h = N).				Origin time = 08 59 42.	
"	20	Ud iP	00 28 29.7			M _L = 2.3 (Up,Ud).	
		Southern Sinkiang prov., China (h = 160 km).				Explosion?	
"	21	Up iP	09 43 35.0	"	21	Up iP	09 43 35.0
		il	09 43 43.8			il	09 43 43.8
		Ki iP	09 43 34.6			Ki iP	09 43 34.6
		(cont.)				(cont.)	

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

1977

July 21

(cont.)

Ki il 09 43 42.2
 Sk il 09 42 56.5
 Um iP 09 43 33.2
 Ud il 09 43 53.0
 De iP 09 43 44.7
 Nicobar Islands region
 (h = N).

" 21

Up iPKP 12 13 16.5
 iPKP2 12 13 51.5
 iPP 12 17 30.3

micr sec

PKP Z' 1.7 2.5

PKP2 Z' 3.0 2.0

Mx E 8.5 20

Mx N 11 20

Mx Z 19 20

Ki iPKP 12 13 11.2

iPKP2 12 13 42.9

iPP 12 17 14.4

micr sec

PKP Z' 1.2 2.5

PKP2 Z' 2.4 1.8

Mx E 8.4 17

Mx N 8.2 18

Mx Z 7.2 17

Sk iPKP 12 13 18.3

iPKP2 12 14 00.5

iPP 12 17 39.2

Um iPKP 12 13 12.3

iPKP2 12 13 46.7

iPP 12 17 22.2

Ud iPKP 12 13 18.1

iPKP2 12 13 57.8

iPP 12 17 39.8

De iPKP 12 13 18.7

iPKP2 12 14 00.4

iPP 12 17 37.9

Macquarie Islands region

(h = N).

M = 6.8 (Up,Ki).

" 21

Um iPKP2 12 54 50.7

i 12 54 57.2

Ud iPKP2 12 55 06.1

i 12 55 12.4

Macquarie Islands region

(h = N).

" 21

Up iP 13 58 15.4 C

iS 14 08 32.8

micr sec

P Z' 1.7 1.0

(cont.)

1977

July 21

(cont.)

Up micr sec

Mx E 57 24

Mx N 188 24

Mx Z 80 22

Ki iP 13 57 56.3 C

iS 14 07 52

micr sec

P Z' 1.2 1.4

Mx E 46 19

Mx N 136 23

Mx Z 31 20

Sk iP 13 58 19.8 C

Um iP 13 58 01.7 C

Ud iP 13 58 24.6 C

iS 14 08 51.5

De iP 13 58 31.0 C

Luzon, Philippine Islands

(h = N).

m = 6.9, M = 7.3 (Up,Ki).

" 21

Up iP 14 05 48.4

micr sec

P Z' 0.1 1.0

Ud iP 14 05 57.9

Luzon, Philippine Islands.

" 21

Up iP 15 35 54.7

Ki iP 15 35 33.7

Um iP 15 35 41.7

Ud iP 15 36 03.9

Luzon, Philippine Islands

(h = N).

" 21

Up eP 17 05 55

Ki iP 17 05 29.4

Ud eP 17 06 01

Luzon, Philippine Islands

(h = N).

" 21

Up iP 19 07 53.4

i 19 08 06.6

micr sec

i Z' 0.1 0.9

Ki iP 19 07 31.0

i 19 07 40.6

Sk iP 19 07 57.5

i 19 08 07.7

Um iP 19 07 39.7

i 19 07 48.9

Ud iP 19 08 02.4

ipP 19 08 14.3

Luzon, Philippine Islands

(h = 45 km).

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

1977				1977			
July	21	Ki iP	19 35 28.6	July	22	Up iP	06 12 53.4
		Ud iP	19 35 56.1			Ki eP	06 12 58
		Mindanao, Philippine Islands (h = 80 km).				Um eP	06 12 54
"	21	Ud iP	22 12 48.7			Ud eP	06 13 04
						De iP	06 13 07.4
"	21	Up iP	22 21 04.2			Nicobar Islands region (h = N).	
		Ki eP	22 20 43	"	22	Ki eP	06 52 10
		Um iP	22 20 50.5			Ud iP	06 52 19.6
		Ud iP	22 21 16.1			Nicobar Islands region (h = 45 km).	
		Luzon, Philippine Islands (h = N).		"	22	Up iP	11 38 04.8
"	21	Up iP	23 42 03.3			Ud iP	11 38 14.6
			micr sec	"	22	Up iPKP	17 36 23.7 C
		P Z'	0.1 1.3			iPKP1	17 36 30.1
		Ki iP	23 41 52.3			iPKP2	17 36 40.8
		Sk iP	23 42 18.3				micr sec
		Um iP	23 41 52.3			PKP Z'	0.3 1.6
		Ud iP	23 42 15.0			PKP1 Z'	0.4 1.1
		Tibet (h = N).				PKP2 Z'	0.6 1.2
"	22	Up iPKP1	00 39 09.8			Mx E	1.4 24
		iPKP2	00 39 15.6			Mx N	4.3 26
			micr sec			Mx Z	5.5 26
		PKP1 Z'	0.1 0.8			Ki iPKP1	17 36 11.9
		Ki iPKP1	00 38 45.8				micr sec
		Sk iPKP1	00 39 04.7			PKP1 Z'	1.3 2.3
		Um iPKP1	00 38 58.8			Mx E	1.5 23
		Ud iPKP1	00 39 12.0			Mx N	1.7 22
		iPKP2	00 39 17.5			Mx Z	2.6 23
		De iPKP1	00 39 20.0			Sk iPKP	17 36 20.9 C
		Kermadec Islands region (h = 560 km).				iPKP1	17 36 25.1
"	22	Up iP	00 57 17.5			Um iPKP	17 36 17.8 C
		Ki eP	00 56 56			iPKP1	17 36 20.6
		Um iP	00 57 04.1			Ud iPKP	17 36 25.1 C
		Ud iP	00 57 26.6			iPKP1	17 36 31.9
		Luzon, Philippine Islands (h = 90 km).				iPKP2	17 36 43.3
"	22	Up iP	01 48 22.2			De iPKP	17 36 30.1 C
		Ki iP	01 49 28.7			iPKP1	17 36 39.2
		Sk iP	01 49 01.0			iPKP2	17 36 56.0
		Ud iP	01 48 30.9			South of Kermadec Islands (h = 30 km).	
		De iP	01 47 57.7			M = 6.0 (Up,Ki).	
		Southern Greece (h = 110 km).		"	22	Ki iP	18 34 10.4
"	22	Up iP	05 25 57.4			Sk iP	18 34 33.2
		Ki eP	05 25 38			Um iP	18 34 08.3
		Um iP	05 25 45.1			Ud eP	18 34 31
		Ud iP	05 26 07.2			Tibet (h = N).	
		Luzon, Philippine Islands (h = 45 km).		"	22	Ki eP	18 54 37
						Ud iP	18 54 50.0
						Tadzhik SSR (h = N).	

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

1977				1977			
July	25	(cont.)		July	25	(cont.)	
		Sk eSg1	04 17 32			Sk iP	22 34 53.9
		Um iSg1	04 16 34.4			Um iP	22 34 47.9
		Ud eSg1	04 16 49			Ud iP	22 34 22.1
		Gulf of Bothnia, 60.8°N, 20.6°E. Origin time = 04 15 01. M _L = 2.1 (Up,Um). Explosion?				De iP	22 33 49.1
						Crete (h = 45 km).	
"	25	Ud iSg1	04 49 36.2	"	26	Up iP	01 25 46.6
						Ki iP	01 26 18.5
						Sk i	01 26 25.4
						Um iP	01 25 56.8
						Ud iP	01 26 01.3
						De iP	01 25 46.4
						Southern Iran (h = 40 km).	
"	25	Ki iP	05 03 37.7				
		Sk iP	05 03 25.5				
		Caribbean Sea (h = N).		"	26	Up iP	02 19 25.3
						Ud iP	02 19 41.8
"	25	Sk iP	10 40 10.2			De eP	02 19 39
						Afghanistan-USSR border region (h = 110 km).	
"	25	Ki i(P)	10 44 25.2				
"	25	Ud iP	10 59 07.8	"	26	Up eSn	03 51 44
		Kuril Islands (h = 35 km).				i	03 52 01.0
"	25	Um iP	12 36 55.4			i	03 52 44.3
		Ud iP	12 37 14.0			Ki iPn	03 50 49.4
"	25	Up iPKP1	13 18 00.1			eSn	03 52 26
		Um iPKP1	13 17 48.9			i	03 52 45.8
		Ud iPKP1	13 18 02.3			Sk iPn	03 49 38.6
		De iPKP1	13 18 11.8			iSn	03 50 29.9
		South of Fiji Islands (h = 510 km).				i	03 50 38.1
"	25	Sk iPKP1	15 16 12.8			Um iPn	03 50 26.7
		Um iPKP1	15 16 07.4			iSn	03 51 55.0
		i	15 16 14.6			Ud iPn	03 49 52.7
		Ud iPKP1	15 16 20.4			iSn	03 50 57.4
		i	15 16 28.0			i	03 51 15.0
"	25	Um iPg1	17 15 45.8			i	03 51 34.3
		iSg1	17 15 59.3			De eSn	03 51 51
		iRg	17 16 06.4			i	03 52 32.7
		Origin time = 17 16 27. Regional, near-surface event.				i	03 52 55.6
"	25	Ki iP	19 43 50.1	"	26	Off west coast of Norway, near 62°N, 2 1/2°E. Origin time = 03 48 27. By combination with Bergen and Kongsberg readings.	
		Ud iP	19 44 20.3			Ki eP	04 10 40
		Philippine Islands region (h = N).				Ud iP	04 10 57.8
"	25	Ud iP	22 01 51.2	"	26	Ki i	04 35 47.0
						Um iP	04 35 57.0
"	25	Up eP	22 34 17			Ud iP	04 36 27.6
		Ki iP	22 35 23.8			Honshu, Japan (h = 100 km).	
		(cont.)		"	26	Up iSg1	14 30 58.1
						Sk eSg1	14 31 03
						(cont.)	

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

1977				1977			
July	28			July	28	(cont.)	
		Ud	iP	00 46 03.3			
"	28	Ki	iP	01 26 29.1		Ki	micr sec
			i	01 26 49.7		Mx	E 0.9 15
		Um	iP	01 26 14.0		Mx	N 1.0 16
			i	01 26 20.0		Mx	Z 1.0 14
			i	01 26 35.5		Um	iP 15 33 27.0
		Ud	iP	01 25 45.3		iS	15 42 38
			i	01 25 51.6		Ud	iP 15 33 39.7
			i	01 26 06.4		Off coast of Oregon (h = 15 km). M = 5.3 (Up,Ki).	
"	28	Up	iP	01 58 15.9	"	28	Ud eP 16 30 00
			i	01 58 27.0			De iP 16 30 07.2
			iS	02 07 04			i 16 30 12.3
			P	Z' 0.1 1.3			i 16 30 19.3
			Mx	E 1.7 15		"	28
			Mx	N 1.7 16		Up	iP 23 23 58.6
			Mx	Z 3.6 22		Ki	iP 23 23 12.3
		Ki	iP	01 58 55.3		Um	iP 23 23 33.5
			i	01 59 07.8		Ud	iP 23 24 04.8
			iS	02 08 30		De	iP 23 24 22.6
				micr sec		Kuril Islands (h = 160 km).	
			P	Z' 0.1 1.3		"	29
			Mx	E 2.7 15		Up	iP 00 12 08.0
			Mx	N 1.5 15			i 00 12 17.5
			Mx	Z 1.5 16		Ki	iP 00 11 37.7
		Um	iP	01 58 40.0		Um	iP 00 11 50.6
			i	01 58 52.0			i 00 11 59.5
			iS	02 07 48		Ud	iP 00 12 16.4 C
		Ud	iP	01 58 07.9			i 00 12 25.4
			i	01 58 21.3		Ryukyu Islands (h = 30 km).	
		De	iP	01 57 49.9		"	29
		North of Ascension Island (h = N).				Um	i(P) 08 47 18.1
		m = 5.7, M = 5.6 (Up,Ki).			"	29	Up
							iP
							micr sec
"	28	Ud	i	04 04 42.3		P	Z' 0.4 1.4
			iSgl	04 04 57.7		Ki	iP 09 21 49.9 C
							ipP 09 22 20.0
"	28	Up	eP	06 28 16			micr sec
		Ud	iP	06 28 32.8		P	Z' 0.2 0.7
		De	iP	06 27 51.5		Um	iP 09 21 44.1 C
		Rumania (h = 140 km).					ipP 09 22 14.0
						Ud	iP 09 22 05.6 C
							ipP 09 22 35.1
"	28	Up	iP	15 33 48.4 C		De	iP 09 22 04.1 C
			iS	15 43 15			ipP 09 22 34.1
				micr sec		Southern Sinkiang prov., China. h = 140 km (Ki,Um,Ud,De). m = 6.0 (Up,Ki).	
			P	Z' 0.1 1.4			
			Mx	E 0.9 16		"	29
			Mx	N 1.2 17		Up	iPKP 11 34 32.9
			Mx	Z 1.6 15			ipP 11 35 49.7
		Ki	iP	15 33 05.2		(cont.)	
			iS	15 42 01		(cont.)	
		(cont.)				(cont.)	

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1977

July 30 (cont.)

	Ki			micr	sec
	P	Z'	0.2	1.0	
	Um	iP	16 12	25.1	
	Ud	iP	16 12	49.2	
	De	iP	16 13	35.7	
	Jan Mayen Island region (h = N).				
"	30	Up	iP	19 56	39.7 C
				micr	sec
		P	Z'	0.1	0.9
		Ki	iP	19 57	49.8
		Um	iP	19 57	16.0
		Ud	iP	19 56	46.1 C
		De	iP	19 56	10.2
		Southern Greece (h = 50 km).			
"	31	Ki	iP	01 18	55.0
		Ud	iP	01 18	26.5
		North Atlantic Ocean (h = N).			
"	31	Ud	ePKP1	03 26	04
		De	iPKP1	03 26	11.0
		Tonga Islands region (h = 120 km).			
"	31	Up	iP	23 13	52.9
		Ki	eP	23 14	06
		Ud	iP	23 14	10.8
		De	iP	23 14	05.6
		Uzbek SSR (h = N).			

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April 25, 1979



SEISMOLOGICAL INSTITUTE
BOX 517
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SWEDEN



SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, SKALSTUGAN, UMEÅ,

UDDEHOLM and DELARY

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

AUGUST 1 - 31, 1977

1977					1977						
Aug.	1	Up	iP	00 10 02.8	Aug.	1	(cont.)				
			ipP	00 10 13.8			Ud	iPKP1	13 51 48.4		
		Um	iP	00 09 56.5				iSKP1	13 55 19.9		
			ipP	00 10 07.3			De	iPKP1	13 51 55.4		
		Ud	iP	00 10 16.0				iSKP1	13 55 29.1		
			ipP	00 10 26.3			New Hebrides Islands				
		De	iP	00 10 16.6			(h = 110 km).				
		Burma.					"	1	De	iP	15 06 44.1
		h = 35 km (Up,Ki,Um,Ud).					"	1	Up	iRg	16 44 15.3
"	1	Um	iP	01 14 36.5			"	1	Ud	iRg	16 44 15.0
			i	01 14 41.6			Central Sweden.				
		Ud	iP	01 14 52.0			Near-surface event.				
			i	01 14 57.8			"	1	Up	iRg	17 05 24.6
		Talaud Islands (h = 60 km).					"	1	Ud	iRg	17 05 25.0
"	1	Up	iP	01 31 33.3			Central Sweden.				
		Um	iP	01 31 22.7			Near-surface event.				
			i	01 31 35.9			"	1	Up	i	17 37 26.1
		Ud	iP	01 31 41.6					iRg	17 37 29.3	
			i	01 31 46.6				Ud	iSgl	17 38 20.6	
		Samar, Philippine Islands					East-central Sweden.				
		(h = 55 km).					Near-surface event.				
"	1	Ud	iP	06 09 27.0			"	1	Up	iPKP1	19 30 06.0
		Mindanao, Philippine Islands							Um	i(PKP)	19 29 58.9
		(h = 35 km).							i	19 30 00.2	
"	1	Ud	i	10 40 29.3					iPKP	19 30 07.2	
		De	iPKP1	10 40 26.8					iSKP1	19 32 43.2	
		Loyalty Islands region						Ud	iPKP1	19 30 07.4	
		(h = 25 km).							iSKP1	19 32 56.5	
"	1	Up	iPKP	13 51 57.2				De	iPKP1	19 30 19.5	
			iSKP1	13 55 17.1					iSKP1	19 33 06.3	
				micr sec			Fiji Islands region				
			SKP1	Z' 0.1 1.0			(h = 600 km).				
		Um	iPKP	13 51 49.6			"	1	Up	iSgl	20 47 49.4
			iSKP1	13 55 04.0					Ud	iSn	20 46 38.9
		(cont.)					(cont.)				

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

1977				1977					
Aug.	3	Up	iRg	09 27 06.8	Aug.	3	(cont.)		
		Ud	iSgl	09 27 13.6			Southern Norway.		
			iRg	09 27 22.0			By combination with Bergen readings.		
		Central Sweden.							
		Near-surface event.							
"	3	Up	iP	10 19 12.0	"	3	Ud	iP	21 19 36.3
		Ki	eP	10 18 56	"	4	Up	iPKP	01 29 49.1
			i	10 19 00.5				ipPKP	01 30 16.0
		Um	iP	10 19 02.2				iSKP	01 33 13.2
		Ud	iP	10 19 21.9				iPKKP	01 39 52.4
			i	10 19 26.0					micr sec
		Panay, Philippine Islands						PKP	Z' 0.1 0.8
		(h = 110 km).				Ki		iPKP	01 30 04.1
								ipPKP	01 30 31.7
								iSKP1	01 33 11.8
"	3	Ud	iPKP1	11 19 40.4 D					micr sec
		De	iPKP1	11 19 51.9 D				PKP	Z' 0.3 1.0
			i	11 19 55.6				SKP1	Z' 0.3 1.7
		South of Fiji Islands				Sk		iPKP	01 29 53.7
		(h = 120 km).						iSKP	01 33 16.6
"	3	Up	iP	12 16 04.3				iPKKP	01 39 44.1
		Ki	iP	12 15 13.6		Um		iPKP	01 29 57.4
		Um	iP	12 15 37.4				i	01 30 02.6
		Ud	iP	12 16 09.1				ipPKP	01 30 25.3
		Kuril Islands (h = 160 km).						iSKP	01 33 19.1
"	3	Ud	iP	15 22 05.8		Ud		iPKP	01 29 47.2
								ipPKP	01 30 15.3
"	3	Up	iP	15 28 08.3				i	01 31 46.1
				micr sec				iSKP	01 33 08.4
		P	Z'	0.1 1.4				iPKKP	01 39 54.7
		Ki	iP	15 27 58.2		De		iPKP	01 29 42.3
		Sk	iP	15 28 23.3				iPKKP	01 40 07.5
		Um	iP	15 27 58.3				South Sandwich Islands region.	
		Ud	iP	15 28 22.1				h = 100 km (Up,Ki,Um,Ud).	
		Tibet (h = N).			"	4	Up	iP	13 33 32.9
"	3	Up	i	17 59 42.2				ipP	13 33 50.6
		Ki	iP	17 59 37.6		Ki		iP	13 33 26.9
		Sk	eP	17 59 23				ipP	13 33 43.9
			i	17 59 30.8					micr sec
		Um	i	17 59 48.1				pP	Z' 0.1 1.4
		Ud	eP	17 59 30		Sk		iP	13 33 17.1
		De	iP	17 59 30.5				ipP	13 33 34.3
		Near west coast of Colombia				Um		iP	13 33 33.4
		(h = 20 km).						ipP	13 33 49.9
"	3	De	i(P)	18 17 32.4		Ud		iP	13 33 22.5
								ipP	13 33 41.3
"	3	Ki	iP	20 07 22.0		De		iP	13 33 28.4
		Java (h = 100 km).						ipP	13 33 47.1
"	3	Ud	iSn	21 16 10.2				Near coast of Nicaragua.	
			iSgl	21 16 17.0				h = 70 km (Up,Ki,Sk,Um,Ud,De).	
		(cont.)			"	4	Up	iSgl	14 51 33.8
							Ud	iPg1	14 50 37.2
							(cont.)		

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

1977								1977							
Aug.	4	(cont.)						Aug.	5	(cont.)					
		Ud	iSgl	14 50 46.5						Ud	iSgl	12 50 12.0			
			iRg	14 50 51.4						Southern Norway,					
		Origin time = 14 50 25.									60.6°N, 7.2°E.				
		Regional, near-surface event.									Origin time = 12 48 32.				
										M_L	= 2.4 (Ud).				
"	4	Ud	i(P)	15 04 59.2						By combination with Bergen and Kongsberg readings.					
"	4	Up	iP	16 51 48.8 C				"	5	Up	iP	13 25 27.0			
				micr sec								micr sec			
			P	Z' 0.1 1.2							P	Z' 0.1 1.1			
		Ki	iP	16 51 14.7						Ki	iP	13 26 34.1			
		Sk	iP	16 51 22.7								micr sec			
		Um	iP	16 51 34.2 C							P	Z' 0.1 1.1			
		Ud	iP	16 51 40.9 C						Sk	iP	13 26 05.9			
		De	iP	16 51 58.1						Um	iP	13 25 59.2			
		Southern Nevada.									Ud	iP	13 25 35.4		
		Underground explosion.									De	iP	13 25 02.7		
"	4	Up	iP	17 13 25.7						Crete (h = 25 km).					
				micr sec						m = 5.3 (Up,Ki).					
			P	Z' 0.1 1.2						"	5	Up	iSgl	14 27 43.0	
		Ki	iP	17 13 15.4								Sk	iSgl	14 27 42.9	
		Sk	iP	17 13 40.3								Ud	iSgl	14 26 43.5	
		Um	iP	17 13 15.7								i	14 26 51.8		
		Ud	iP	17 13 40.3								Near coast of south Norway,			
		Tibet (h = 40 km).										near 58 1/2°N, 6 1/2°E.			
"	4	Um	iP	18 33 01.0								Origin time = 14 24 39.			
		Turkey (h = N).										M_L = 2.7 (Sk,Ud).			
"	4	Up	iP	22 35 29.1							By combination with Bergen and Kongsberg readings.				
			i	22 35 30.9						"	5	Ud	iP	19 13 02.5	
			i	22 35 43.8						"	5	Ud	iPKP	21 40 03.2	
		Ki	iP	22 36 51.3								De	iPKP	21 40 09.0	
			i	22 36 57.2							Solomon Islands (h = 45 km).				
		Sk	iP	22 36 24.2						"	6	Ud	iPKP1	05 46 09.4	
		Um	iP	22 36 09.1								De	iPKP1	05 46 18.1	
			i	22 36 25.4							South of Fiji Islands				
		Ud	eP	22 35 46							(h = 120 km).				
		De	iP	22 35 04.8						"	6	Ki	iP	07 47 12.4	
			i	22 35 20.2								Ud	i	07 46 24.2	
		Rumania (h = 150 km).										De	iP	07 45 36.9	
"	5	Um	iP	07 56 55.3 D							Dodecanese Islands				
		Ud	iP	07 57 25.9							(h = 25 km).				
		Near east coast of Honshu,									"	6	Ud	iP	07 51 18.9
		Japan (h = 70 km).										Bonin Islands region			
"	5	Sk	iPKP1	12 35 48.1							(h = 440 km).				
		Um	iPKP1	12 35 45.8											
		Ud	iPKP1	12 35 58.0											
"	5	Up	iSgl	12 51 15.4											
		Ud	iSn	12 50 05.4											
		(cont.)													

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1977				1977			
Aug.	6	Ud iP	08 41 19.5	Aug.	7	(cont.)	
		Near east coast of Honshu, Japan (h = 55 km).				De i	02 04 22.5
"	6	Ud iP	10 20 30.6			Santa Cruz Islands (h = 35 km). M = 5.7 (Up,Ki).	
		Afghanistan-USSR border region (h = 60 km).		"	7	Up iP	02 46 10.8
"	6	Up iPKP	11 44 50.3			Ki iP	02 45 26.6
		Ki iPKP	11 44 39.3			Ud iP	02 46 18.1
		Sk iPKP	11 44 49.7			De iP	02 46 34.8
		Um iPKP	11 44 43.9			Hokkaido, Japan region (h = 160 km),	
		Ud iPKP	11 44 53.6	"	7	Up iP	07 20 53.6
		De iPKP	11 44 59.0			iS	07 31 32
		Solomon Islands (h = 80 km).					micr sec
"	6	Up iPKP1	16 07 42.4			Mx E	2.2 19
		Sk ePKP1	16 07 36			Mx N	1.7 19
		Um iPKP1	16 07 30.6			Mx Z	4.9 21
		Ud iPKP1	16 07 42.1			Ki iP	07 20 48.9
"	6	Up iSgl	20 02 28.5				micr sec
		Ud iSgl	20 01 30.9			P Z'	0.5 2.4
		Coast of Norway, near Bergen. Origin time = 19 59 15. M _L = 2.5 (Ud). By combination with Bergen readings.				Mx E	5.4 17
"	6	Up iP	21 01 45.5			Mx N	14 25
		Tibet (h = N).				Mx Z	1.9 20
"	6	Um iP	21 51 37.5			Sk iP	07 20 37.9
		Ud eP	21 51 45			Ud iP	07 20 42.5
		De iP	21 51 30.8			i	07 20 58.2
		Southern Iran (h = N).				i	07 21 07.8
"	6	Up iP	23 55 11.1			De iP	07 20 48.0
		Ki iP	23 55 33.3			i	07 20 54.5
		Sk iP	23 55 05.8			Panama-Costa Rica border region (h = N). M = 6.0 (Up,Ki).	
		Ud iP	23 55 18.9	"	7	Up iPKP1	08 00 32.4
		De iP	23 55 33.2			iPKP2	08 00 37.8
		Near east coast of Honshu, Japan (h = 50 km).				i	08 00 46.8
"	7	Up	micr sec			Sk iPKP1	08 00 23.9
		Mx E	1.2 21			Ud iPKP1	08 00 34.0
		Mx N	1.6 22			iPKP2	08 00 40.1
		Mx Z	2.6 21			i	08 00 47.6
		Ki ePKP	02 04 01			De iPKP1	08 00 43.1
			micr sec			i	08 00 57.4
		Mx N	1.2 18			Kermadec Islands (h = 220 km).	
		Sk i	02 04 18.8	"	7	Ki iP	08 29 31.9
		Ud iPKP	02 04 11.6			Ud iP	08 29 03.8
		i	02 04 22.1			De iP	08 28 45.6
		(cont.)		"	7	Up iP	09 28 47.4
						Ud iP	09 28 58.8
				"	7	Up iPgl	09 55 00.9
						iSgl	09 56 31.3
						iRg	09 56 49.3
						(cont.)	

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

1977				1977			
Aug.		(cont.)		Aug.		(cont.)	
	7	Ud iSgl	09 57 31.1		7	Ud il	23 38 14.9
		Baltic Sea, near				De ipP	23 38 30.9
		58 1/4°N, 21°E.				il	23 38 37.0
		Origin time = 09 55 20.				Andreanof Islands, Aleutian Is.	
		Near-surface event,				h = 120 km (Up,Um,Ud).	
		probably explosion.					
"	7	Up iP	11 13 44.1	"	8	Up iP	01 56 18.6
		Ki iP	11 14 16.0			Ki iP	01 56 14.6
		Ud iP	11 13 55.6			Ud iP	01 56 27.0
						Java (h = 110 km).	
"	7	Ud eP	11 23 36	"	8	Up iP	07 12 48.1 C
"	7	Up iP	11 45 27.7 C			ipP	07 12 54.1
			micr sec				micr sec
		P Z'	0.1 1.2			P Z'	0.1 1.0
		Ki iP	11 45 55.5 C			ipP Z'	0.1 1.0
			micr sec			Ki iP	07 12 48.4 C
		P Z'	0.2 1.8			ipP	07 12 54.3
		Sk iP	11 45 54.8				micr sec
		Ud iP	11 45 39.2 C			P Z'	0.1 1.0
		De iP	11 45 25.1			Sk iP	07 12 34.4 C
		Carlsberg Ridge (h = N).				ipP	07 12 40.4
		m = 5.8 (Up,Ki).				Um iP	07 12 51.4 C
"	7	Ud iP	13 46 12.9			ipP	07 12 57.4
"	7	Up i	15 02 21.6			Ud iP	07 12 38.0 C
		Ki iP	15 01 54.3			ipP	07 12 44.1
		Ud iP	15 02 19.1			De iP	07 12 40.8 C
		Talau Islands (h = 70 km).				ipP	07 12 46.9
"	7	De ePKP1	17 06 02	"	8	Up iP	08 31 28.9
		Tonga Islands region				Ud iP	08 31 38.3
		(h = N).		"	8	Ud iRg	10 59 25.3
"	7	Ud eP	18 37 29			Regional, near-surface event.	
		Near south coast of Honshu,		"	8	Up iPKP	13 17 38.6
		Japan (h = 340 km).				Um iPKP	13 17 33.4
"	7	Up iP	23 15 19.5			Ud iPKP	13 17 42.6
		Um iP	23 14 58.4			i	13 18 08.5
		Ud iP	23 15 26.3			Solomon Islands (h = 30 km).	
"	7	Um iP	23 35 33.5	"	8	Ud i(P)	14 14 20.4
"	7	Up iP	23 37 38.3	"	8	Ki iPKP2	14 29 00.8
		ipP	23 38 08.1			Um iPKP2	14 29 00.3
		il	23 38 14.2			i	14 29 08.4
		Ki il	23 37 19.8			Ud iPKP2	14 29 10.3
		Um iP	23 37 11.5			West of Macquarie Island	
		ipP	23 37 40.1			(h = N).	
		il	23 37 46.7	"	8	Up iPKP1	15 23 53.1
		Ud iP	23 37 38.7			Um iPKP	15 23 56.9
		ipP	23 38 07.2			(cont.)	
		(cont.)				(cont.)	

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

1977				1977			
Aug.				Aug.			
8	(cont.)			9	Ki	iP	01 47 22.0
	Ud	ePKP1	15 23 55		Um	iP	01 47 13.9
	De	iPKP1	15 24 05.4		Ud	iP	01 46 42.6
	Fiji Islands region (h = 560 km).				North Atlantic Ridge (h = N).		
"	8	Ud	iP 17 49 29.8	"	9	Um	iP 03 27 05.7
						Ud	iP 03 27 27.9
"	8	Ki	eP 18 18 09		Mariana Islands region (h = 25 km).		
		Um	iP 18 18 37.5				
		Ud	eP 18 19 02	"	9	Up	iPKP1 05 25 21.2
		De	iP 18 19 26.1		Ud	iPKP1	05 25 21.1
	Kodiak Island region (h = 35 km).					i	05 26 07.3
"	8	Ud	iP 19 52 58.7		De	iPKP1	05 25 30.5
"	8	Ud	iP 20 59 24.5		Kermadec Islands region (h = 90 km).		
"	8	Um	iPKP1 22 14 29.3	"	9	Um	eP 07 58 19
		Ud	iPKP1 22 14 42.8			Ud	eP 07 58 41
"	8	Ki	i(P) 22 24 45.7	"	9	Up	iP 21 49 56.6
"	8	Up	iPKP1 22 39 27.3			iPP	21 51 28.3
		Ki	iPKP 22 39 17.4		Ki	iP	21 50 18.7
		Um	iPKP1 22 39 15.9			iPn	21 51 37.0
			ePKP 22 39 25		Sk	eP	21 50 28
			iSKP1 22 42 16.8			i	21 50 38.4
		Ud	iPKP1 22 39 29.9			iPP	21 52 15.6
			i 22 39 30.4		Um	i	21 50 37.9
		De	iPKP1 22 39 40.6		Ud	iP	21 50 13.5
			i 22 39 42.2		De	iP	21 50 04.9
			ipPKP1 22 41 28.5			iPn	21 51 19.3
	South of Fiji Islands. h = 440 km (De).				Iran-USSR border region (h = 20 km).		
"	8	Up	iP 23 37 26.8	"	10	Ki	eP 01 17 20
		Ki	iP 23 37 26.9			Ud	iP 01 17 31.6
			micr sec				i 01 17 44.3
		P	Z' 0.1 1.0	"	10	Up	eP 03 12 24
		Sk	iP 23 37 42.0			Ud	iP 03 12 12.9
		Um	iP 23 37 23.7	"	10	Up	iP 04 26 35.0
		Ud	iP 23 37 37.7			Ki	iP 04 26 34.7
		De	iP 23 37 36.3			Sk	eP 04 26 50
	Northern Sumatra (h = 110 km).					Um	iP 04 26 31.8
"	8	Up	iP 23 55 20.3			Ud	iP 04 26 45.2
			micr sec			De	iP 04 26 43.7
		P	Z' 0.1 1.5	"	10	Up	iP 07 20 54.7
		Sk	iP 23 55 34.9			i	07 20 57.6
		Um	iP 23 55 10.5			iPP	07 24 51.9
		Ud	iP 23 55 34.4				micr sec
	Tibet (h = N).					i	Z' 0.1 1.1
"	9	Um	iP 00 11 44.4			PP	Z' 0.1 1.1
					Ki	iP	07 21 51.8
						i	07 21 54.3
					(cont.)		

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

1977

Aug. 10 (cont.)
 Ki i(PP) 07 24 41.5
 i 07 25 00.3
 micr sec
 P Z' 0.1 1.2
 Sk iP 07 21 06.3
 i 07 21 09.4
 iPP 07 25 12.4
 Um iP 07 20 50.6
 i 07 20 53.4
 iPP 07 24 48.9
 Ud iP 07 21 03.4
 i 07 21 06.4
 i(PP) 07 23 58.4
 iPP 07 25 05.4
 De eP 07 21 02
 iPP 07 25 03.1
 Java (h = 50 km).
 m = 6.1 (Up,Ki).
 Double P-phases, about 3 s
 apart, at Up,Ki,Sk,Um and Ud.

" 10 Up iP 09 46 28.1 D
 i 09 46 34.6
 i 09 46 41.8
 micr sec
 P Z' 0.1 0.9
 Ki iP 09 45 33.6 D
 i 09 45 40.0
 i 09 45 46.9
 micr sec
 P Z' 0.2 1.3
 Sk iP 09 46 00.4 D
 i 09 46 07.9
 Um iP 09 46 01.9 D
 i 09 46 07.0
 Ud iP 09 46 24.9 D
 i 09 46 31.4
 De iP 09 46 48.4 D
 i 09 46 55.1
 Kodiak Island region (h = N).
 m = 5.9 (Up,Ki).

" 10 Ud i(P) 15 17 30.1
 De e(P) 15 17 27

" 10 Up iPKP1 18 45 24.4
 iSKP1 18 48 13.7
 micr sec
 PKP1 Z' 0.1 0.9
 Ki iPKP 18 45 15.7
 iSKP1 18 47 49.6
 micr sec
 PKP Z' 0.1 1.0
 Sk i(PKP) 18 45 16.5
 (cont.)

1977

Aug. 10 (cont.)
 Sk iPKP 18 45 25.8
 i 18 48 06.0
 Um i(PKP) 18 45 16.9
 iPKP 18 45 24.5
 iSKP1 18 48 01.7
 Ud iPKP1 18 45 23.9
 iSKP1 18 48 14.9
 iSKKP 18 56 46.3
 De iPKP1 18 45 35.5 D
 i 18 47 58.1
 iSKP1 18 48 24.3
 Fiji Islands region
 (h = 590 km).
 " 10 Ki iP 20 18 46.7
 Sk iP 20 19 13.2
 Ud iP 20 19 37.4
 De eP 20 20 01
 Kodiak Island region
 (h = 70 km).

" 10 Up iSgl 21 32 35.5
 Sk eSn 21 31 42
 Ud iSn 21 31 27.5
 iSgl 21 31 34.0
 De iSgl 21 32 39.7
 Southern Norway,
 60.6°N, 7.2°E.
 Origin time = 21 29 57.
 M_L = 2.4 (Ud).

By combination with Bergen
 and Kongsberg readings.

" 10 Up iP 22 08 51.3
 Ki iP 22 08 12.1
 Sk iP 22 08 51.1
 Um iP 22 08 28.0
 Ud iP 22 09 02.2
 De iP 22 09 17.7
 Lake Baikal region (h = 0 km).

" 10 Up iPKP 22 10 12.3
 Ki i 22 10 50.1
 Ud iPKP 22 10 18.4
 De iPKP 22 10 26.3

" 11 Ud i(P) 01 54 13.9

" 11 Up i(PKP) 02 01 52.2
 iPKP 02 02 03.3
 iPP 02 04 46.4
 i 02 05 16.5
 iSKP1 02 05 30.4
 iSKKP 02 14 18.2
 cont.)

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

1977				1977			
Aug.	11	(cont.)		Aug.	11		
		Up	micr sec			Up	iRg 10 02 52.0
		PKP	Z' 0.1 1.3			Ud	iSgl 10 03 35.2
		PP	Z' 0.2 1.7				East-central Sweden.
		SKP1	Z' 0.4 1.8				Near-surface event.
		Mx	E 2.7 20	"	11	Sk	iP 13 05 44.1
		Mx	N 3.6 22			Ud	iP 13 05 34.6
		Mx	Z 4.5 22				
		Ki	i(PKP) 02 01 41.0	"	11	Ki	iSgl 18 29 02.4
			iPKP 02 01 48.7				
			i 02 02 21.7	"	12	Ki	iP 00 20 30.7
			i 02 04 20.2			Ud	i 00 20 23.5
			iSKP1 02 05 02.4				Southern Iran (h = 55 km).
			iSKKP 02 14 48.0				
			micr sec	"	12	Up	iPKP 00 26 31.9
		PKP	Z' 0.3 1.7				i 00 26 34.4
		SKP1	Z' 0.5 2.5				iPKKP 00 36 54.4
		Mx	E 2.6 20			Ki	iPKP 00 26 20.5
		Mx	N 3.6 20				i 00 26 23.5
		Mx	Z 3.8 20				iPKKP 00 37 14.9
		Sk	e(PKP) 02 01 47			Sk	iPKP 00 26 31.1
			iPKP 02 01 59.7				i 00 26 34.2
			i 02 02 31.3				ePKKP 00 36 57
			iSKP1 02 05 21.0			Um	iPKP 00 26 25.8
		Um	i(PKP) 02 01 44.5				i 00 26 28.8
			iPKP 02 01 55.6				iPKKP 00 37 05.1
			i 02 02 30.1			Ud	iPKP 00 26 34.6
			iSKP1 02 05 17.2				i 00 26 37.7
			i 02 06 15.6				iPKKP 00 36 48.7
			iSKKP 02 14 29.2			De	iPKP 00 26 40.3 C
		Ud	iPKP1 02 01 54.1				i 00 26 43.1
			iPKP 02 02 03.2				iPKKP 00 36 38.0
			iPP 02 04 54.3				Solomon Islands (h = 60 km).
			i 02 05 23.2				Double PKP-phases, about
			iSKP1 02 05 30.6				3 s apart.
			i 02 14 00.6	"	12	Sk	eSgl 03 29 24
		De	iPKP1 02 02 03.7			Ud	iSgl 03 29 08.3
			iPKP 02 02 09.5				Southern Norway, near
			i 02 02 39.7				60°N, 7°E.
			iSKP1 02 05 37.6				Origin time = 03 27 22.
			iSKKP 02 13 54.9				M _L = 2.2 (Ud).
			Tonga Islands (h = 55 km).				By combination with Bergen
			M = 6.1 (Up,Ki).				and Kongsberg readings.
"	11	Up	iP 02 38 04.8	"	12	Ud	iPKP1 03 40 07.1
		Ud	iP 02 38 03.3			De	iPKP1 03 40 16.2
"	11	Up	iP 09 02 16.0				South of Fiji Islands
		Ud	iP 09 02 16.9				(h = 170 km).
		De	iP 09 02 32.5	"	12	Ud	iP 11 11 36.7
"	11	Up	iRg 09 44 04.4	"	12	Up	iSgl 16 44 10.3
		Ud	iSgl 09 44 22.6			Sk	eSn 16 43 15
			East-central Sweden.				(cont.)
			Near-surface event.				

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

1977					1977				
Aug.	12	(cont.)			Aug.	13	(cont.)		
		Ud	iSgl	16 43 06.8			Sk	i	13 04 49.5
		Southern Norway,					Um	iP	13 04 23.2
		60.6°N, 7.2°E.						i	13 04 24.9
		Origin time = 16 41 30.					Ud	iP	13 04 47.4
		M _L = 2.4 (Ud).						i	13 04 48.9
		By combination with Bergen					Tibet (h = N).		
		readings.					Double P, in average 1.6 s		
							apart.		
"	12	Ud	iSKP1	20 25 06.7	"	13	Ud	iP	14 37 44.4
		De	iPKP1	20 25 17.9			De	iP	14 37 14.1
		Tonga Islands region					Aegean Sea (h = N).		
		(h = N).							
"	12	Up	iSgl	20 32 33.6	"	13	Up	iPn	17 44 28.2
		Sk	eSgl	20 31 06			Ki	iP	17 44 07.0
		Um	eSgl	20 32 58				iPn	17 45 08.8
		Ud	iSgl	20 31 37.2			Sk	iP	17 44 12.5
		West coast of Norway,						iPn	17 45 18.9
		near 62°N, 5°E.					Um	i	17 44 26.1
		Origin time = 20 29 12.						iPn	17 44 41.4
		M _L = 2.4 (Ud).					Ud	iP	17 43 56.1
		By combination with Bergen					De	iPP	17 44 52.9
		and Kongsberg readings.					Turkmen SSR (h = N).		
"	12	Ki	iPKP	22 04 10.5	"	13	Up	iP	19 44 07.7 C
		Sk	iPKP	22 04 20.5					micr sec
		Ud	iPKP	22 04 26.9				P	Z' 0.1 0.9
		De	iPKP	22 04 28.5			Ki	iP	19 43 23.4
		East Papua New Guinea					Sk	iP	19 43 58.2
		region (h = N).					Um	iP	19 43 43.1 C
"	12	Ud	iP	23 55 32.5			Ud	iP	19 44 14.0 C
		De	iP	23 55 42.9			De	iP	19 44 30.9
							Hokkaido, Japan region		
							(h = 60 km).		
"	13	Up	iP	03 24 28.4	"	13	Ud	iP	20 43 25.5
		Ki	iP	03 23 42.2					
		Ud	iP	03 24 34.7	"	13	Um	iP	22 43 10.3
			i	03 24 46.3			Ud	iP	22 43 35.0
		Kuril Islands (h = 70 km).							
"	13	Ud	i(P)	09 41 39.7	"	14	Up	iP	00 13 33.9
							Ki	iP	00 13 22.0
"	13	Ud	iPKP	10 18 45.8			Sk	iP	00 13 46.8
		New Hebrides Islands					Um	iP	00 13 23.3
		(h = 150 km).					Ud	iP	00 13 46.9
"	13	Up	iP	13 04 33.6			Burma-China border region		
			i	13 04 35.3			(h = N).		
				micr sec	"	14	Ki	iP	00 20 52.5
				Z' 0.1 1.2	"	14	Ud	iP	02 22 22.2
		Ki	iP	13 04 22.8	"	14	Ud	iP	02 22 22.2
			i	13 04 24.3	"	14	Up	iP2	04 34 24.1
		Sk	iP	13 04 48.1				ipP	04 34 50.5
		(cont.)					(cont.)		

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

1977				1977				
Aug.	14	(cont.)		Aug.	14	Up ✓	iP	21 52 19.0 C
		Up	micr sec			i		21 52 34.0
		P2	Z' 0.1 0.9			i(PP)		21 55 15.3
		Ki	iP1 04 34 32.7			iPP		21 56 17.6
			iP2 04 34 33.7			iSKS		22 02 49
			ipP 04 34 59.7				micr sec	
			micr sec			P	Z' 0.2 1.4	
		P2	Z' 0.1 1.0			Mx	E 2.2 23	
		Sk	iP2 04 34 12.4			Mx	N 2.8 22	
			ipP 04 34 39.9			Mx	Z 3.3 24	
		Um	iP2 04 34 32.1		Ki	iP		21 52 16.6 C
			ipP 04 34 58.0			i		21 52 18.9
		Ud	iP1 04 34 12.3			i		21 52 33.6
			iP2 04 34 13.3				micr sec	
			ipP 04 34 39.5			i	Z' 0.4 1.3	
		De	iP2 04 34 11.6			Mx	E 2.2 16	
			ipP 04 34 38.0			Mx	N 2.9 17	
						Mx	Z 2.5 15	
		Windward Islands.			Sk	iP		21 52 31.7 C
		h = 110 km (Up,Ki,Sk,Um,				i		21 52 49.9
		Ud,De).			Um	iP		21 52 15.3
		m = 5.4 (Up,Ki).				i		21 52 17.1
		Double P at Ki and Ud, the				iS		22 03 33
		second, larger (P2) 1.0 s			Ud	iP		21 52 28.6 C
		delayed. pP are delated to				i		21 52 45.6
		P2 for focal depth				i(PP)		21 55 29.4
		determination.				i		21 55 48.5
"	14	Up	iPKP1 12 15 20.1 C		De	iP		21 52 27.4 C
			micr sec			Java (h = N).		
		PKP1	Z' 0.1 0.7			m = 6.6, M = 5.9 (Up,Ki).		
		Ud	iPKP1 12 15 22.0 C	"	14	Up	iPKP1	23 50 28.3
		De	iPKP1 12 15 31.3			Sk	ePKP1	23 50 20
		South of Fiji Islands				Um	iPKP1	23 50 16.1
		(h = 390 km).				Ud	iPKP1	23 50 28.3
"	14	Ki	eP 16 03 19			i		23 50 37.1
		Ud	iP 16 03 53.1	"	14	Ki	eP	23 58 40
		Taiwan (h = N).				Ud	iP	23 59 15.6
"	14	Um	iP 19 16 42.7			Taiwan region (h = N).		
		Ud	iP 19 16 17.4	"	14	Up	iP	24 00 09.5
		South Atlantic Ridge				ipP		24 00 17.1
		(h = N).					micr sec	
"	14	Ki	eP 19 17 33			pP	Z' 0.1 1.5	
			micr sec			Mx	E 0.6 11	
		P	Z' 0.1 2.0			Mx	N 0.8 12	
		Sk	iP 19 17 10.4			Mx	Z 1.4 13	
		Um	iP 19 17 18.7		Ki	iP		23 59 26.9
		Ud	iP 19 16 54.3			ipP		23 59 35.1
		De	iP 19 16 37.6				micr sec	
		South Atlantic Ridge				P	Z' 0.1 1.4	
		(h = N).				pP	Z' 0.1 1.3	
"	14	Ud	iP 21 02 39.7			Mx	E 0.7 13	
"	14	Ud	iP 21 10 45.3			Mx	N 1.3 13	
						Mx	Z 0.6 12	

(cont.)

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

1977				1977						
Aug.	14	(cont.)		Aug.	15	Up	iP	21 15 13.5	C	
		Sk	eP				iS	21 19 03.7		
			ipP					micr sec		
		Um	iP				P	Z' 0.4	1.4	
			ipP				Mx	E 0.6	11	
		Ud	iP				Mx	N 0.6	9	
			ipP				Mx	Z 0.7	8	
		Eastern Sea of Japan.				Ki	iP	21 16 29.6	C	
		h = 30 km (Up,Ki,Sk,Um,Ud).						micr sec		
		m = 5.9, M = 5.4 (Up,Ki).					P	Z' 0.2	1.2	
"	15	Ud	iP				Mx	E 0.4	10	
		Andreanof Islands,					Mx	N 0.4	8	
		Aleutian Is. (h = 60 km).				Sk	iP	21 15 51.6	C	
"	15	Ud	iP			Um	iP	21 15 53.5	C	
		De	iP			Ud	iP	21 15 16.8		
		Southern Italy (h = 55 km).				De	iP	21 14 36.8		
		m = 5.6 (Up,Ki).								
"	15	Up	iPKP1			"	15	Up	iPKP1	23 24 37.5
		Sk	e					Ud	iPKP1	23 24 39.3
		Um	iPKP					De	iPKP1	23 24 50.9
			i					South of Fiji Islands		
		Ud	iPKP1					(h = 540 km).		
			i			"	16	Up	eP	05 03 49
		De	iPKP1							micr sec
		Tonga Islands region						Mx	E 0.7	12
		(h = N).						Mx	N 1.9	12
"	15	Um	iP					Mx	Z 1.0	12
			i					Ki		micr sec
		Ud	iP					Mx	E 2.0	14
		Volcano Islands region						Mx	N 2.6	11
		(h = N).						Mx	Z 1.4	12
"	15	Ki	iP			Sk	eP	05 04 16		
			i			Ud	iP	05 04 06.1		
		Sk	iP				iPn	05 05 20.4		
		Um	iP			Iran (h = N).				
		Ud	iP			M = 5.2 (Up,Ki).				
		Southern Sumatra				"	16	Up	iP	05 05 27.2
		(h = 90 km).						Sk	eP	05 05 57
"	15	Ud	i					Um	iP	05 05 31.6
		Philippine Islands region						Ud	iP	05 05 41.8
		(h = N).				"	16	Up	iPKP	06 34 35.6
"	15	Up	iP					Sk	iPKP	06 34 33.2
			ipP					Um	iPKP	06 34 28.0
								Ud	iPKP	06 34 36.3
								De	iPKP	06 34 42.3
			pP					New Hebrides Islands region		
		Ki	ipP					(h = 10 km).		
		Sk	iP			"	16	Ud	iPKP	07 22 15.6
		Um	iP					New Hebrides Islands region		
			ipP					(h = N).		
		Off coast of central America.								
		h = 25 km (Up,Um).								

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

1977				1977							
Aug.	19	(cont.)		Aug.	19	Ki	iP	16 05 22.1			
		Up	micr sec				ipP	16 05 33.3			
		Mx	E 2.2 23					Sumba Island region.			
		Mx	N 2.7 19					h = 35 km (Ki).			
		Mx	Z 4.3 24			"	19	Ki	iP	16 18 42.3	
		Ki	iP	13 37 33.6				ipP	16 18 52.4		
			i	13 37 34.7					Sumba Island region.		
			ipP	13 37 45.4					h = 35 km (Ki).		
			i(PP)	13 41 37.8			"	19	Ki	iP	16 36 28.9
			iPP	13 41 51.7					ipP	16 36 40.2	
				micr sec						Sumba Island region.	
			i	Z' 0.2 1.3						h = 40 km (Ki).	
			Mx	E 2.0 16			"	19	Ki	iP	17 54 42.8
			Mx	N 2.3 18					Ud	iPP	17 59 36.0
			Mx	Z 3.1 18							South of Sumbawa Island
		Sk	iP	13 37 52.2							(h = N).
			ipP	13 38 03.1			"	19	Up	iP	18 06 48.8 C
			i(PP)	13 41 58.6					i		18 07 06.9
		Um	iP	13 37 36.1							micr sec
			ipP	13 37 48.5						P	Z' 0.2 1.1
			iPP	13 41 50.8					Ki	iP	18 06 14.5 C
		Ud	iP	13 37 52.3					i		18 06 32.8
			ipP	13 38 03.2							micr sec
			i(PP)	13 41 08.9						P	Z' 0.1 1.0
			i	13 42 12.4					Sk	iP	18 06 22.5 C
			iPP	13 42 28.6					Um	iP	18 06 33.8 C
				Sumba Island region.					Ud	iP	18 06 40.6 C
				h = 40 km (Ki,Sk,Um,Ud).					De	iP	18 06 56.5 C
				m = 6.6, M = 5.9 (Up,Ki).							Southern Nevada.
"	19	Ki	iP	13 46 10.9							m = 6.1 (Up,Ki).
			ipP	13 46 21.6							Underground explosion.
		Ud	ipP	13 46 39.1			"	19	Up	iP	19 53 05
				Sumba Island region.					iPP		19 57 29
				h = 35 km (Ki).							micr sec
										Mx	E 1.2 20
"	19	Ki	iP	14 36 37.2						Mx	N 2.0 22
			ipP	14 36 47.5						Mx	Z 1.8 22
				micr sec					Ki	iP	19 52 56.7
			pP	Z' 0.1 1.0							micr sec
		Ud	ipP	14 37 04.4						P	Z' 0.1 1.0
				Sumba Island region.						Mx	E 1.2 16
				h = 35 km (Ki).						Mx	N 1.2 16
"	19	Ud	iP	14 53 53.6						Mx	Z 1.2 16
"	19	Ki	iP	15 07 58.7					Sk	iPP	19 57 40.1
				Sumba Island region					Um	iPP	19 57 09.4
				(h = N).					Ud	iP	19 53 16.1
"	19	Ki	eP	15 26 11						i(PP)	19 57 35.1
				South of Sumba Island						iPP	19 57 50.4
				(h = N).							Sumba Island region (h = N).
"	19	Ki	iP	15 42 02.1							M = 5.7 (Up,Ki).
				South of Sumbawa Island							
				(h = N).							

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

1977						1977					
Aug.	20	(cont.)				Aug.	20	(cont.)			
		Ki		micr	sec			Ki	iP	07 38 10.7	
		i	Z'	0.1	1.1			Sk	eP	07 38 45	
		pP	Z'	0.5	1.4			Um	iP	07 38 27.3	
		PP	Z'	0.4	2.2			Ud	iP	07 38 58.1	
		Mx	E	3.7	20			Sea of Japan (h = 430 km).			
		Mx	N	2.4	17						
		Sk	iP	04 03	57.2	"	20	Up	eI	09 36 04	
		i		04 04	01.1			iPP		09 40 29.5	
		ipP		04 04	07.4					micr sec	
		Um	iP	04 04	14.6			eI	Z'	0.1 1.2	
		ipP		04 04	25.5			PP	Z'	0.1 1.3	
		iPP		04 07	32.8			Mx	E	3.1 23	
		iS		04 14	30			Mx	N	3.8 23	
		Ud	iP	04 04	05.2			Mx	Z	5.7 24	
		ipP		04 04	15.7			Ki	iP	09 35 48.5	
		De	iP	04 04	11.8			iI		09 35 53.9	
		i		04 04	14.0			i		09 35 55.8	
		ipP		04 04	21.9			iPP		09 40 14.5	
		Caribbean Sea.								micr sec	
		h = 35 km (Up,Ki,Sk,Um,Ud,De).						iI	Z'	0.1 1.0	
		m = 6.5, M = 5.8 (Up,Ki).						i	Z'	0.2 1.2	
"	20	Ki	iP	04 12	39.3			PP	Z'	0.1 1.5	
		ipP		04 12	49.7			Mx	E	1.7 19	
				micr	sec			Mx	N	2.0 18	
		P	Z'	0.1	1.3			Sk	iI	09 36 11.1	
		Sk	iP	04 12	56.8			i(PP)		09 39 16.5	
		Ud	iP	04 12	56.1			i		09 40 34.1	
		ipP		04 13	07.9			iPP		09 40 51.6	
		i(PP)		04 16	36.7			Um	iI	09 35 56.9	
		i		04 17	10.6			i(PP)		09 38 37.9	
		iPP		04 17	28.6			i		09 40 05.8	
		Sumba Island region.						iPP		09 40 18.2	
		h = 35 km (Ki,Ud).						Ud	iI	09 36 10.3	
"	20	Ki	iP	04 34	27.4			i		09 36 13.8	
		ePP		04 38	38			i(PP)		09 39 24.9	
		Sk	iP	04 34	45.2			i		09 40 30.2	
		iPP		04 39	20.9			South of Sumba Island			
		Um	iPP	04 38	48.1			(h = N).			
		Ud	eP	04 34	45			m = 6.5, M = 5.9 (Up,Ki).			
		iPP		04 39	14.8			PP-arrivals are some s late,			
		South of Sumbawa Island						and are better related to			
		(h = N).						iI (eI) phases than to P.			
"	20	Ki	eP	05 17	52	"	20	Ud	iP	11 19 12.8	
		South of Sumba Island									
		(h = N).					"	20	Ki	iP	11 31 23.3
"	20	Ki	iP	07 26	01.5			South of Sumba Island (h = N).			
		South of Sumba Island					"	20	Up	iPP	12 33 33.1
		(h = N).						Sk	eP	12 33 05	
"	20	Up	iP	07 38	49.8			Um	iP	12 33 22.9	
		(cont.)						ipP		12 33 32.1	
								Ud	iP	12 33 12.9	
								Caribbean Sea.			
								h = 30 km (Um).			

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

1977				1977				
Aug.	22	Ud	eP	04 42 13	Aug.	23	Ki iP	00 17 43.3
"	22	Up	iP	05 35 51.7			Ud iP	00 18 08.7
		Ud	iP	05 35 56.0			Philippine Islands region (h = 80 km).	
				Kuril Islands (h = 45 km).	"	23	Ki eP	03 28 41
"	22	Ki	iP	07 24 51.7	"	23	Up iP	06 17 08.0
				South of Sumba Island (h = N).			Ki eP	06 16 48
"	22	Up	iP	09 15 10.6			Sk iP	06 17 10.5
		Ki	eP	09 14 40			Um iP	06 16 56.4
		Sk	iP	09 15 10.7			Mindanao, Philippine Islands (h = 80 km).	
		Um	iP	09 14 52.4	"	23	Up iP	08 26 41.8
		Ud	iP	09 15 19.3				micr sec
		De	eP	09 15 30			PKP1 Z'	0.1 1.0
				Ryukyu Islands (h = 90 km).			Ki ePKP	08 26 29
"	22	Up	iP	14 22 16.0			Um iP	08 26 31.0
		Ud	iP	14 22 34.4			Ud iP	08 26 43.4
"	22	Ud	iP	17 58 00.7			De iP	08 26 54.2
							South of Fiji Islands (h = 50 km).	
"	22	Up	iP	18 06 22.4	"	23	Ud iP	08 45 59.1
			il	18 06 25.9			Mariana Islands (h = 150 km).	
			ipP	18 06 42.8	"	23	Up iP	10 42 36.9
			isP	18 06 53.7			Ki eP	10 38 08
			iPP	18 08 01.7			Sk iP	10 42 58.3
		Ki	iP	18 06 29.3			Um ePP	10 42 27
			iPP	18 08 08.5			Ud iP	10 42 55.6
		Sk	iP	18 06 47.3			De iP	10 43 00.2
			ipP	18 07 08.8			South of Sumbawa Island (h = N).	
			iPP	18 08 32.1	"	23	Ud iP	10 58 36.5
		Um	iP	18 06 20.2	"	23	Up iP	12 37 21.9
			ipP	18 06 40.8			iSgl	12 37 27.3
			iPP	18 07 57.9			iRg	12 37 29.3
		Ud	iP	18 06 38.2			Ud iSgl	12 38 23.4
			il	18 06 42.1			De e(Sgl)	12 39 14
			ipP	18 06 59.6			East-central Sweden. Near-surface event.	
			isP	18 07 10.2	"	23	Up iP	12 48 11.3
			iPP	18 08 19.8			iPcP	12 48 31.1
		De	il	18 06 38.4			Ki iP	12 47 28.4
			ipP	18 06 56.2			iPP	12 49 47.8
				Afghanistan-USSR border region. h = 90 km (Up,Sk,Um,Ud).			Ud iP	12 48 17.5
"	22	Um	iP	18 34 43.9			De iP	12 48 33.9
		Ud	iP	18 35 16.2			Off east coast of Honshu, Japan (h = 15 km).	
"	22	Up	iPKP	22 09 37.8				
		Ki	iPKP	22 09 52.8				
		Um	iPKP	22 09 45.7				
		Ud	iPKP	22 09 35.7				
				South Sandwich Islands region (h = 120 km).				

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

1977					1977				
Aug.	27	(cont.)			Aug.	28	(cont.)		
		Dalsland, Sweden,					Um	iS	09 55 27
		59.0°N, 12.3°E.					Ud	iP	09 50 10.7
		Origin time = 16 14 54.					De	iP	09 49 34.7
		$M_L = 2.3$ (Ud,De).						i	09 49 44.3
		Felt.							Western Mediterranean Sea
		By combination with							(h = 10 km).
		Kongsberg reading.							m = 5.7, M = 5.3 (Up,Ki).
"	27	Ki	iP	17 41 06.3	"	28	Ud	iP	11 14 30.4
		South of Sumbawa Island			"	28	Ud	iP	12 12 28.6
		(h = N).			"	28	Ki	iP	13 39 03.8
"	27	Up	iP	19 09 11.2			Um	iP	13 39 18.5
		Ki	iP	19 08 36.7			Ud	iP	13 39 45.9
		Sk	eP	19 09 07	"	28	Up	iPKP1	14 31 09.0
		Um	iP	19 08 49.5					micr sec
		Ud	iP	19 09 16.9					PKP1 Z' 0.1 0.8
		South of Honshu, Japan					Ki	ePKP	14 30 50
		(h = N).					Sk	iPKP1	14 31 01.1
"	28	Sk	iP	01 51 03.4				i	14 31 09.2
		Tibet (h = N).					Um	iPKP1	14 30 55.9
"	28	Up	iP	03 47 40.8			Ud	iPKP1	14 31 10.3
		Ud	iP	03 47 50.3			De	iPKP1	14 31 19.6
"	28	Ki	iP	04 11 16.7				i	14 31 27.8
		South of Sumba Island							Kermadec Islands (h = 45 km).
		(h = N).			"	28	Ud	eP	14 46 01
"	28	Ud	iPKP	05 37 38.4	"	28	Up	iPKP1	15 23 10.7
		De	iPKP	05 37 51.0				i	15 23 49.8
"	28	Up	iP	09 50 14.2			Sk	iPKP1	15 23 02.2
		i		09 50 24.0				i	15 23 42.0
		i		09 51 20.4			Um	iPKP1	15 22 57.9
		iS		09 54 18.5			Ud	iPKP1	15 23 12.2
				micr sec				i	15 23 51.3
		P	Z'	0.4 1.4			De	iPKP1	15 23 22.0
		Mx	E	5.1 15				i	15 24 13.0
		Mx	N	4.2 14					Kermadec Islands (h = 45 km).
		Mx	Z	6.0 13	"	28	Up	iPKP1	16 59 06.2
		Ki	iP	09 51 27.7			Sk	iPKP1	16 58 58.5
		i		09 52 39.5			Um	iPKP1	16 58 53.5
				micr sec			Ud	iPKP1	16 59 08.0
		P	Z'	0.1 1.5			De	iPKP1	16 59 16.9
		Mx	E	4.0 14					Kermadec Islands (h = 45 km).
		Mx	N	4.1 16	"	28	Up	iP	23 58 09.1
		Mx	Z	4.2 13				i	23 58 12.6
		Sk	eP	09 50 42				i	23 58 24.8
		i		09 50 44.0					micr sec
		i		09 50 55.5					i Z' 0.1 1.5
		iPP		09 51 20.1			Ki	iP	23 58 43.5
		Um	iP	09 50 52.9					(cont.)
		(cont.)							

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

1977

Aug. 31 (cont.)
 Nicobar Islands region
 (h = 25 km).
 Phases at Ki and Um are
 19 s delayed, at Ud 14 s
 delayed, when related to
 expected P arrivals
 according to the NEIS
 solution.

" 31 Ud i(P) 15 03 40.0

" 31 Up iP 18 27 37.4
 Sk iP 18 28 04.0
 Um iP 18 27 37.2
 Ud iP 18 27 54.0
 Hindu Kush region
 (h = 45 km).

" 31 Up iPKP1 23 23 15.8 D
 i 23 23 19.3
 i 23 23 29.5
 Sk iPKP1 23 23 08.3 D
 Um i 23 23 16.1
 Ud iPKP1 23 23 17.5 D
 i 23 23 23.3
 i 23 23 31.1
 De ePKP1 23 23 27
 i 23 23 32.0
 Kermadec Islands region
 (h = 70 km).

-Norris John
 Ota Kulhánek
 Klaus Meyer
 Rutger Wahlström

June 6, 1979

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

1977				1977			
Sep.		(cont.)		Sep.		(cont.)	
		Ud	iP 16 43 16.6			Ki	micr sec
		De	iP 16 43 23.1			P	Z' 0.1 1.0
"	1	Up	ePKP1 17 11 20			Sk	iP 05 53 25.6
		Ud	iPKP1 17 11 22.2			Um	iP 05 53 07.0
		De	iPKP1 17 11 33.3			Ud	iP 05 53 32.6 D
							ipP 05 53 52.2
"	1	Up	iP 17 49 45.4			De	iP 05 53 43.5 D
		Ki	eP 17 49 45				ipP 05 54 01.4
			il 17 49 48.2			Ryukyu Islands.	
		Sk	iP 17 49 30.3			h = 80 km (Up,Ud,De).	
			il 17 49 33.4			m = 5.8 (Up,Ki).	
		Ud	il 17 49 37.0	"	2	De	i(P) 08 23 45.3
		De	iP 17 49 36.2	"	2	Up	iP 09 25 35.8
			il 17 49 39.3			Ki	iP 09 25 05.5
		Northern Colombia (h = 30 km).				Sk	iP 09 25 35.8
"	1	Up	iPKP1 18 57 06.6			Um	iP 09 25 17.9
		Sk	iPKP1 18 57 02.5			Ud	iP 09 25 44.4
		Ud	iPKP1 18 57 09.2			De	iP 09 25 54.8
"	1	Up	iPKP1 21 05 52.9	"	2	Up	iP 10 50 35.1
			iPKP2 21 06 00.4				micr sec
		Sk	iPKP1 21 06 47.9			P	Z' 0.3 1.9
		Um	iPKP1 21 06 42.5			Mx	E 3.0 22
		Ud	iPKP1 21 05 54.9			Mx	N 3.4 19
		De	iPKP1 21 06 02.9			Mx	Z 6.0 20
		South of Kermadec Islands				Ki	iP 10 50 25.8 C
		(h = 40 km).					i 10 50 27.3
"	1	Um	iPKP1 23 27 58.6				i 10 50 37.7
		Ud	iPKP1 23 28 10.6				micr sec
		South of Kermadec Islands				i	Z' 0.2 1.0
		(h = 55 km).				Mx	E 3.4 14
"	2	Up	iPKP1 00 20 28.8			Mx	N 3.3 15
		Ki	iPKP 00 20 19.7			Mx	Z 3.8 15
		Um	e(PKP) 00 20 16			Sk	iP 10 50 44.8
			iPKP 00 20 26.2			Um	iP 10 50 26.7
		Ud	iPKP1 00 20 31.3				iSKS 11 01 07
		De	iPKP1 00 20 41.9			Ud	iP 10 50 43.0
		South of Fiji Islands				De	iP 10 50 44.8
		(h = 590 km).				South of Sumba Island (h = N).	
"	2	Up	iP 05 53 23.2 D	"	2	Ud	iP 10 53 49.5
			ipP 05 53 43.3				
			i 05 54 16.5			Up	iSgl 11 01 25.9
			micr sec			Ud	iSgl 11 00 52.5
		P	Z' 0.2 1.0			De	e 11 00 20
		Ki	iP 05 52 56.5				iRg 11 00 29.5
		(cont.)				Regional, near-surface event.	

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

1977				1977							
Sep.	2	Up	iP	17 27 03.8	Sep.	3	Up	iP	22 38 51.6		
		Ki	iP	17 26 11.0			Ki	iP	22 38 09.9		
		Sk	iP	17 26 47.2			Um	iP	22 38 28.8		
		Um	iP	17 26 35.9			Ud	iP	22 38 58.3		
		Ud	iP	17 27 07.5			Off coast of Honshu, Japan				
		De	iP	17 27 29.0			(h = 30 km).				
		Near east coast of Kamchatka					"	3	Up	iP	22 45 43.3
		(h = N).							Ki	iP	22 45 34.4
"	2	Um	iP	19 22 48.1					Sk	iP	22 45 25.1
		Ud	iP	19 23 05.6					Um	iP	22 45 41.9
"	3	Ud	eP	02 24 58					i		22 45 58.3
		Tadzhik SSR (h = 30 km).							Ud	iP	22 45 32.4
"	3	Ud	iP	10 33 30.0					De	iP	22 45 38.2
									Near coast of Nicaragua		
"	3	Up	iSgl	12 22 41.6			"	3	Ud	iPKP1	22 52 33.9
		Sk	iSgl	12 22 14.0					De	iPKP1	22 52 44.7
		Um	iSgl	12 23 45.0			"	3	Up	iP	23 26 40.4
		Ud	iSgl	12 21 40.7					Sk	iP	23 27 22.5
		De	iSgl	12 22 18.4					Um	iP	23 27 20.4
		Southwest Norway, 59.6°N,							Ud	iP	23 26 47.1
		5.9°E.					"	4	Ud	iP	00 48 25.3
		Origin time = 12 19 37.					"	4	Up	iPKP1	03 37 10.9
		M _L = 2.8 (Up,Um,Ud).							Ud	iPKP1	03 37 13.2
		Felt.							De	iPKP1	03 37 23.6
		By combination with Bergen							South of Fiji Islands		
		and Kongsberg readings.							(h = 510 km).		
"	3	Ud	iP	12 26 22.9			"	4	Up	iP	04 56 52.2 C
			i	12 26 26.8					Um	iP	04 56 35.3
		De	iP	12 26 12.9					Ud	iP	04 57 00.8 C
"	3	Up	iP	15 37 02.4					Ryukyu Island (h = 45 km).		
		Ki	eP	15 37 13			"	4	Ki	iP	08 25 11.6
			i	15 37 15.5					Sk	iP	08 24 27.9
		Sk	iP	15 36 51.4					Um	iP	08 24 37.7
		Um	iP	15 37 08.8					Ud	iP	08 23 58.6
		Ud	iP	15 36 51.2					De	iP	08 23 26.6
		De	iP	15 36 49.0					Tunisia (h = N).		
"	3	Um	iP	15 45 17.9			"	4	Up	iPKP	09 07 41.9
		Ud	iP	15 45 02.6					iSKP1		09 11 03.4
		Dominican Republic Region							micr sec		
		(h = 50 km).							PKP	Z'	0.3 1.5
"	3	Ud	iP	18 00 15.3					Mx	E	6.9 21
"	3	Ud	iP	22 11 59.1					Mx	N	15 21
		Iran (h = N).							Mx	Z	27 22
									Ki	iPKP	09 07 28.7 C

(cont.)

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

1977				1977			
Sep.	4	(cont.)		Sep.	4	(cont.)	
		Ki	micr sec			Sk eP	16 04 20
		PKP	Z' 0.2 1.1			Um iP	16 04 12.1
		Mx	E 5.9 20			Ud iP	16 04 41.0
		Mx	N 9.4 21			De iP	16 05 02.0
		Mx	Z 13 21			Rat Islands, Aleutian Islands (h = N).	
		Sk	iPKP 09 07 39.2				
			iSKP1 09 10 57.9		"	4	Up iP 16 10 01.4
		Um	iPKP 09 07 34.8				Ki iP 16 09 09.2
		Ud	iPKP 09 07 44.9				Ud iP 16 10 03.3
			iSKP1 09 11 05.0				De iP 16 10 24.9
		De	iPKP 09 07 50.7			Rat Islands, Aleutian Islands (h = N).	
			iSKP1 09 11 15.8		"	4	Ud iP 16 20 46.7
		New Hebrides Islands (h = N).					Rat Islands, Aleutian Islands (h = N).
		M = 6.6 (Up,Ki).			"	4	Up iP 16 35 32.2
"	4	Up	iP 15 51 55.3		"	4	Ud iP 16 35 32.1
			iS 16 00 55				
			iP'P' 16 20 06.5				
			micr sec		"	4	Up iP 16 43 38.6
		P	Z' 0.5 1.0				i 16 43 42.6
		Mx	E 13 20			Ki	iP 16 42 45.1
		Mx	N 20 19				i 16 42 48.7
		Mx	Z 24 20			Um	iP 16 43 15.3
		Ki	iP 15 51 02.2 C			Ud	iP 16 43 39.1
			iS 15 59 13			Rat Islands, Aleutian Islands (h = N).	
			micr sec		"	4	Up iP 16 51 34.8
		P	Z' 0.2 0.9				i 16 51 35.8
		Mx	E 27 18				micr sec
		Mx	N 36 17			P	Z' 0.1 1.0
		Mx	Z 22 17			Ki	iP 16 50 58.8
		Sk	iP 15 51 35.0 C				micr sec
		Um	iP 15 51 28.3				P Z' 0.1 1.0
			iS 16 00 03			Sk	iP 16 51 30.9
			iP'P' 16 20 19.0			Um	iP 16 51 13.8
		Ud	iP 15 51 55.9			Ud	iP 16 51 41.8
		De	iP 15 52 17.8				i 16 51 42.9
		Rat Islands, Aleutian Islands (h = 35 km).				De	iP 16 51 56.3
		m = 6.4, M = 6.6 (Up,Ki).					i 16 51 58.1
"	4	Up	iP 15 57 51.1		"	4	Up iP 16 55 24.9
		Ki	iP 15 56 59.5				micr sec
		Um	iP 15 57 23.8				P Z' 0.1 1.0
		Ud	iP 15 57 51.7			Ki	iP 16 54 33.2
		Aleutian Islands.				Um	iP 16 54 58.6
"	4	Up	iP 16 03 37.8			Ud	iP 16 55 26.3
		Ud	iP 16 03 37.9			Rat Islands, Aleutian Islands (h = N).	
"	4	Up	iP 16 04 39.2				
			micr sec				
		P	Z' 0.1 1.0				
		Ki	iP 16 03 46.2				
		(cont.)					

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

1977				1977			
Sep.	4	Up	iP	16 59	42.2	Sep.	4 (cont.)
				micr	sec	Up	
			P	Z'	0.1 1.0	i	Z' 1.2 0.9
		Ki	iP	16 58	50.4	Mx	E 33 19
		Sk	iP	16 59	23.3	Mx	N 37 16
		Um	iP	16 59	15.8	Mx	Z 50 18
		Ud	iP	16 59	43.9	Ki	iP 17 34 51.5 C
		De	iP	17 00	06.9	i	17 34 54.1
		Rat Islands, Aleutian				iP'P'	18 04 21.4
		Islands (h = 35 km).					micr sec
			P	Z'	0.2 1.1		P Z' 0.2 1.1
			i	Z'	0.6 1.1		i Z' 0.6 1.1
"	4	Up	iP	17 21	28.6	Mx	E 49 17
			i	17 21	29.6	Mx	N 61 18
			iS	17 30	25	Mx	Z 62 15
				micr	sec	Sk	iP 17 35 23.7
			P	Z'	0.5 0.9	i	17 35 26.7
		Ki	iP	17 20	35.9	eP'P'	18 04 10
			iS	17 28	42	Um	iP 17 35 17.2 C
				micr	sec	i	17 35 21.6
			P	Z'	0.3 0.9	iP'P'	18 04 13.3
		Sk	iP	17 21	08.9	Ud	iP 17 35 44.1
			i	17 21	10.0	i	17 35 49.9
		Um	iP	17 21	03.6	iP'P'	18 04 05.2
		Ud	iP	17 21	29.8	De	iP 17 36 06.8 C
			i	17 21	30.8	i	17 36 11.7
		De	iP	17 21	51.7	Rat Islands, Aleutian	
			i	17 21	52.6	Islands (h = 10 km).	
		Rat Islands, Aleutian				m = 6.8, M = 6.9 (Up,Ki).	
		Islands (h = 30 km).				"	4
		m = 6.5 (Up,Ki).				Up	iP 17 49 19.7
							micr sec
"	4	Up	iP	17 27	12.5	P	Z' 0.1 1.0
				micr	sec	Ki	iP 17 48 26.6
			P	Z'	0.1 1.0		micr sec
		Ki	iP	17 26	20.2	P	Z' 0.1 1.0
		Sk	iP	17 26	51.8	Sk	iP 17 49 00.3
		Um	iP	17 26	44.4	Um	iP 17 48 52.9
		Ud	iP	17 27	14.6	Ud	iP 17 49 21.1
		De	iP	17 27	36.7	De	iP 17 49 42.4
		Rat Islands, Aleutian				Rat Islands, Aleutian	
		Islands (h = N).				Islands (h = 45 km).	
		m = 5.9 (Up,Ki).				"	4
"	4	Up	iP	17 34	30.7	Up	iP 17 52 12.1
		Ud	iP	17 34	31.3	Ki	iP 17 51 18.7
		Aleutian Islands.				Ud	iP 17 52 12.8
"	4	Up	iP	17 35	43.0	Aleutian Islands.	
			i	17 35	45.4	"	4
			iS	17 44	41	Up	iP 18 11 08.6
			iP'P'	18 04	06.0	i	18 11 21.4
				micr	sec		micr sec
			P	Z'	0.1 1.0	P	Z' 0.1 0.9
		(cont.)				(cont.)	

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

1977									1977											
Sep.	4	(cont.)							Sep.	4	(cont.)									
		Ki	iP	18	10	15.9					Rat Islands, Aleutian									
		Um	iP	18	10	42.3					Islands (h = 35 km).									
		Ud	iP	18	11	08.9					m = 6.0 (Up,Ki).									
		De	iP	18	11	30.6														
		Rat Islands, Aleutian								"	4	Up	iP	19	39	08.4				
		Islands (h = 50 km).																		
	"	4	Up	iP	18	36	45.5			"	4	Up	iP	19	40	56.3				
				i	18	36	46.7					Ud	iP	19	40	56.5				
					micr sec							Aleutian Islands.								
				i	Z'	0.3	0.9			"	4	Ud	iP	21	04	41.5				
		Ki	iP	18	35	52.7														
					micr sec						"	4	Up	eP	21	14	31			
				P	Z'	0.2	0.9													
		Sk	iP	18	36	26.7				"	4	Ud	iP	21	14	31.9				
		Um	iP	18	36	18.7						Aleutian Islands.								
		Ud	iP	18	36	46.9														
		De	iP	18	37	09.4				"	4	Ki	iP	21	36	50.5				
		Rat Islands, Aleutian										Um	iP	21	37	18.2				
		Islands (h = 40 km).										Ud	eP	21	37	42				
		m = 6.3 (Up,Ki).										South of Alaska (h = 20 km).								
	"	4	Up	iP	18	49	20.5			"	4	Up	iP	21	41	53.5				
					micr sec							Ud	iP	21	41	54.1				
				P	Z'	0.1	1.0				Aleutian Islands.									
		Ki	iP	18	48	28.6				"	4	Ud	iP	23	18	56.1				
					micr sec															
				P	Z'	0.1	1.0			"	4	Up	iP	23	31	41.3				
		Sk	iP	18	49	01.5						i	23	31	42.6					
		Um	iP	18	48	54.4						iS	23	40	41					
		Ud	iP	18	49	22.4						micr sec								
		De	iP	18	49	44.2						i	Z'	0.2	0.8					
		Rat Islands, Aleutian										Mx	N	3.6	20					
		Islands (h = 35 km).										Mx	Z	5.1	19					
		m = 5.9 (Up,Ki).										Ki	iP	23	30	48.5				
	"	4	Up	iP	19	33	57.0					i	23	30	49.6					
				i	19	33	58.3					micr sec								
					micr sec							i	Z'	0.2	0.9					
				i	Z'	0.2	1.0					Mx	E	2.5	15					
		Ki	iP	19	33	04.5						Mx	N	2.2	16					
				i	19	33	05.4					Mx	Z	2.2	15					
					micr sec							Sk	iP	23	31	22.3				
				i	Z'	0.1	1.0					Um	iP	23	31	14.4				
		Sk	iP	19	33	37.0						i	23	31	15.4					
				i	19	33	38.5					Ud	iP	23	31	42.5				
		Um	iP	19	33	29.9						i	23	31	43.5					
				i	19	33	31.7					De	iP	23	32	05.2				
		Ud	iP	19	33	58.1						Rat Islands, Aleutian								
				i	19	34	00.6					Islands (h = 40 km).								
		De	iP	19	34	20.1						m = 6.2, M = 5.6 (Up,Ki).								
				i	19	34	21.6													
		(cont.)								"	4	Up	iP	23	51	59.4				
		(cont.)										(cont.)								

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

1977				1977					
Sep.	6	Ki	ePKP	23 19 32	Sep.	9	Up	iPKP1	17 56 32.7
		Ud	iPKP1	23 19 40.5			Ud	iPKP1	17 56 32.8
		De	iPKP1	23 19 52.1			De	iPKP1	17 56 43.5
		Fiji Islands (h = 590 km).				Fiji Islands region (h = 560 km).			
"	8	Ki	i(P)	01 01 21.3	"	9	Up	iP	21 12 48.8
			i	01 01 23.5			Ki	iP	21 12 56.8
"	8	Ud	iPKP1	03 18 38.1			Ud	iP	21 13 05.4
		De	iPKP1	03 18 49.3		Afghanistan-USSR border region (h = 100 km).			
		Fiji Islands region (h = 510 km).			"	9	Up	iP	21 28 57.1
"	8	Ud	iP	08 51 23.8			Ud	iP	21 28 57.2
"	8	Ud	i(P)	09 42 06.2	"	10	Up	iP	01 01 36.0
		De	i(P)	09 42 29.9			Ki	iP	01 02 43.8
"	8	Ud	iP	14 12 59.8			Sk	iP	01 02 15.7
			i	14 13 15.6			Um	iP	01 02 08.4
"	9	Up	iP	02 44 43.6			Ud	iP	01 01 44.4
		Ki	iP	02 44 05.0 D			De	iP	01 01 12.7
		Sk	iP	02 44 39.7		Crete (h = 60 km).			
		Um	iP	02 44 21.6 D	"	10	Up	iPKP1	01 38 24.1
		Ud	iP	02 44 52.2 D			Ki	iPKP	01 38 16.8
		De	iP	02 45 07.4			Um	iPKP	01 38 18.6
		E. USSR - N.E. China border region (h = 500 km).					Ud	iPKP1	01 38 26.0
"	9	Up	iRg	04 11 19.4			De	iPKP1	01 38 37.9
		Ud	iSgl	04 12 17.0		South of Fiji Islands (h = 590 km).			
		East-central Sweden. Near-surface event.		"	10	Up	iP	06 37 05.6	
"	9	Ud	iP	08 42 19.5			i	06 37 31.1	
"	9	Ud	iP	09 11 35.0				micr sec	
		De	iP	09 11 55.3			i	Z' 0.3 1.3	
"	9	Ki	i(P)	13 34 02.3			Mx	E 0.9 12	
"	9	Ud	i(P)	15 03 20.0			Mx	N 2.0 13	
		De	i(P)	15 02 48.2			Mx	Z 4.1 14	
"	9	Up	iP	15 05 05.1			Ki	iP	06 38 14.8
		Ki	iP	15 06 12.6				micr sec	
		Um	iP	15 05 37.9			Mx	E 1.3 12	
		Ud	iP	15 05 12.9			Mx	N 1.6 14	
		De	iP	15 04 41.7			Mx	Z 1.7 14	
		Crete (h = 70 km).					Sk	iP	06 37 44.0
"	9	Up	i(P)	15 47 31.7			Um	iP	06 37 39.4
							Ud	iP	06 37 12.0
							i	06 37 37.9	
							De	iP	06 36 38.6
							i	06 37 05.3	
						Crete (h = N). M = 5.0 (Up,Ki).			
"	9	Up	i(P)	15 47 31.7	"	10	Up	iP	10 33 51.4
							(cont.)		

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

1977				1977			
Sep.	10	(cont.)		Sep.	11	(cont.)	
		Ki	iP	10 33	41.2	C	
					micr	sec	
			P	Z'	0.1	1.4	
		Sk	iP	10 33	34.2		
		Um	iP	10 33	49.1	C	
		Ud	iP	10 33	43.1	C	
		De	iP	10 33	49.2		
		Near coast of Guatemala (h = 80 km).					
"	10	Ki	iP	13 52	11.5		
		Um	iP	13 52	10.7		
		Ud	iP	13 52	23.0		
		Java (h = 110 km).					
"	10	Up	iP	16 08	00.4		
		Ki	iP	16 07	15.9		
		Sk	iP	16 07	58.3		
		Um	iP	16 07	34.1		
		Ud	iP	16 08	11.2		
		De	iP	16 08	30.1		
		Lake Baikal region (h = N).					
"	11	Up	iPKP1	01 45	13.3		
		Ud	iPKP1	01 45	15.7		
"	11	Um	iPKP	14 27	13.0		
		Ud	iPKP	14 27	21.3		
		Tonga Islands (h = N).					
"	11	Up	i(P)	19 53	01.9		
"	11	Up	iP	23 24	45.1		
			i	23 24	48.2		
			iS	23 29	05		
					micr	sec	
			P	Z'	1.0	1.2	
			i	Z'	2.5	1.5	
		Mx	E	13	13		
		Mx	N	37	14		
		Mx	Z	49	14		
		Ki	iP	23 25	55.4		
			iS	23 31	11		
					micr	sec	
			P	Z'	0.7	0.8	
		Mx	E	25	13		
		Mx	N	33	14		
		Mx	Z	32	14		
		Sk	iP	23 25	24.0		
			i	23 25	25.9		
		Um	iP	23 25	19.5		
			i	23 25	21.2		
		(cont.)					
		Um	iS	23 30	03		
		Ud	iP	23 24	51.6		
			i	23 24	54.1		
		De	iP	23 24	18.6		
			i	23 24	20.6		
			iS	23 28	25.7		
		Crete (h = N). m = 6.5, M = 6.2 (Up,Ki).					
"	11	Up	iP	23 36	02.0		
		Ud	iP	23 36	09.3		
		Crete. From the same hypocentral area as the preceding event.					
"	11	Up	iP	23 37	09.9		
		Sk	iP	23 37	46.7		
		Ud	iP	23 37	15.3		
		De	iP	23 36	42.1		
		Crete (h = N).					
"	11	Ud	iP	23 39	23.3		
"	11	Ud	iP	23 44	05.6		
"	12	Up	iP	00 09	04.5		
		Ki	iP	00 10	12.0		
		Sk	eP	00 09	42		
		Ud	iP	00 09	10.4		
		De	eP	00 08	39		
		Mediterranean Sea (h = 35 km).					
"	12	Ud	iP	00 11	51.6		
"	12	Ud	iP	00 28	31.6		
"	12	Ud	iP	00 37	33.5		
"	12	Ud	iP	01 00	00.2		
"	12	Up	iP	02 36	05.6		
		Ki	iP	02 37	15.1		
		Sk	eP	02 36	43		
		Ud	iP	02 36	11.3		
			i	02 36	12.9		
		De	iP	02 35	38.4		
		Crete (h = 55 km).					
"	12	Up	iP	03 03	17.3		
			i	03 03	23.7		
					micr	sec	
			P	Z'	0.1	1.0	
			i	Z'	0.1	1.1	
		(cont.)					

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

1977				1977			
Sep.	12	(cont.)		Sep.	12	Ki eP	17 20 09
		Ki iP	03 04 26.7 C				Greenland Sea, near
			micr sec				75 1/4° N, 9° E.
		P	Z' 0.1 0.6				Origin time = 17 18 12.
		Sk iP	03 03 55.7				Solution from Helsinki
		Um iP	03 03 51.0				regional bulletin.
		Ud iP	03 03 23.8 C				
		De iP	03 02 50.3 C	"	12	Ud iSn	19 01 36.7
		Crete (h = 35 km).				iSgl	19 01 41.6
"	12	Ud iP	03 21 48.7				Southern Norway.
"	12	Ud iP	04 01 52.4				By combination with Bergen
"	12	Ud iP	05 21 06.2	"	12	Up iPKP	22 58 51.7
		i	05 21 22.9			Ki iPKP	22 59 06.2
		Mediterranean Sea (h = N).				Ud iPKP	22 58 50.0
"	12	Up iP	07 09 54.2				South Sandwich Islands
		Ki iP	07 11 01.8	"	12	Ki iP	23 16 49.3
		Sk iP	07 10 31.7			Ud iP	23 15 46.4
		Um iP	07 10 28.0			De iP	23 15 16.9
		Ud iP	07 10 01.1				Crete (h = 170 km).
		De iP	07 09 28.5	"	12	Up iP	23 27 45.1
		Crete (h = N).					micr sec
"	12	Ud iP	07 43 35.7			P	Z' 0.3 1.4
"	12	Up iP	09 40 51.2			Ki iP	23 27 03.2
		Sk iP	09 41 19.3				micr sec
		Um iP	09 40 51.6			P	Z' 0.1 1.0
		Ud iP	09 41 08.1			Sk iP	23 27 38.3
		ipP	09 41 17.3			Um iP	23 27 21.5 C
		Afghanistan-USSR border				Ud iP	23 27 52.6 C
		region.				De iP	23 28 09.7
		h = 30 km (Ud).					Eastern Sea of Japan
"	12	Up iP	10 57 51.7				(h = 30 km).
		Ki iP	10 59 01.3				m = 6.1 (Up,Ki).
		Sk iP	10 58 30.2	"	12	Ki iP	23 57 13.9
		Um iP	10 58 26.1			Sk iP	23 57 35.2
		Ud iP	10 57 58.5			Um iP	23 57 19.1
		i	10 58 00.2			Ud iP	23 57 37.9
		Crete (h = 60 km).					Mindanao, Philippine Islands
"	12	Ki ipP	14 30 44.9				(h = 590 km).
			micr sec	"	13	Ki iP	00 24 23.5
		pP	Z' 0.1 1.5			Sk iP	00 24 25.3
		Sk ipP	14 30 17.1			Um iP	00 24 02.3
		Um iP	14 30 21.9			Ud iP	00 24 06.6
		ipP	14 30 27.6			De iP	00 23 52.6
		Ud ipP	14 30 01.1				Southern Iran (h = 55 km).
		South Atlantic Ridge.		"	13	Up ePKP	00 41 09
		h = 20 km (Um).				(cont.)	

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1977					1977					
Sep.	13	(cont.)			Sep.	13	(cont.)			
		Up		micr sec			Ud	i	18 01 26.2	
		Mx	E	1.2 20			Southern Norway, near			
		Mx	N	1.5 21			60 1/2°N, 7°E.			
		Ki	iPKP	00 40 53.7			Origin time = 17 59 45.			
				micr sec			M _L = 2.4 (Ud).			
		Mx	E	1.5 18			By combination with Bergen			
		Mx	N	1.1 20			readings.			
		Mx	Z	1.3 19						
		Um	iPKP	00 41 04.5		"	13	Ki	iP	
		Ud	ePKP	00 41 09				Sk	iP	
		Tonga Islands (h = N).						Ud	iP	
		M = 5.8 (Up,Ki).						Leeward Islands (h = N).		
"	13	Ki	iP	05 05 46.7	"	13	Ud	iP	21 07 34.3	
		Ud	iP	05 06 37.0			Eastern Kashmir (h = 210 km).			
		Hokkaido, Japan region					"	14	Up	i
		(h = 50 km).							iSgl	02 31 08.7
"	13	Up	iSgl	11 43 46.1				Sk	iSgl	02 31 13.3
		Ud	i	11 42 58.5				Um	iSgl	02 33 10.5
			iRg	11 43 01.9				Ud	eSgl	02 32 07.8
		Regional, near-surface event.						De	eSgl	02 32 15
"	13	Ki	iP	11 57 13.8				West coast of Esthonia,		
		Ud	iP	11 57 00.6				near 59 1/4°N, 23 1/2°E.		
		De	iP	11 56 48.8				Origin time = 02 29 41.		
		Southern Iran (h = N).						M _L = 2.5 (Up,Um,Ud).		
"	13	Up	iP	13 09 34.3	"	14	Ud	iP	05 40 06.0	
		Ki	iP	13 10 42.2			De	iP	05 39 33.7	
		Sk	iP	13 10 11.0			Crete (h = 50 km).			
		Um	iP	13 10 06.0	"	14	Up	ipP	06 03 41.5	
		Ud	iP	13 09 39.4					micr sec	
		De	iP	13 09 06.0			Ki	pP	Z' 0.1 1.0	
		Crete (h = N).						iP	06 03 34.7	
"	13	Up	iP	14 49 34.7				ipP	06 03 39.3	
				micr sec					micr sec	
		P	Z'	0.1 1.2				pP	Z' 0.1 1.0	
		Ki	iP	14 48 41.5			Sk	ipP	06 04 05.0	
				micr sec			Um	ipP	06 03 34.6	
		P	Z'	0.1 1.0			Ud	ipP	06 03 57.3 C	
		Sk	iP	14 49 14.0			De	ipP	06 03 59.3	
		Ud	iP	14 49 36.2			Southern Sinkiang province,			
		Rat Islands, Aleutian					China.			
		Islands (h = 35 km).					h = 15 km (Ki).			
		m = 5.8 (Up,Ki).					m = 5.5 (Up,Ki).			
"	13	Ud	iP	15 23 03.0	"	14	Ki	iPKP	15 10 06.4	
		Off east coast of Honshu,							micr sec	
		Japan (h = N).						PKP	Z' 0.2 1.6	
"	13	Sk	eSgl	18 01 48			Um	iPKP	15 10 00.3	
		Um	iSgl	18 03 23.0			South Sandwich Islands			
		(cont.)					region (h = 40 km).			

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

1977				1977									
Sep.	19	Up	iP	05 26	55.8	Sep.	20	Up	iP	02 10	58.1		
			iPP	05 31	13.1				ipP	02 11	11.3		
			iSKS	05 37	31			Ki	iP	02 10	12.7		
		Ki	iP	05 26	40.9			Um	iP	02 10	33.2		
			iSKS	05 37	24			Ud	iP	02 11	03.5		
			iPKKP	05 43	19.7				ipP	02 11	16.2		
								De	iP	02 11	21.3		
									ipP	02 11	34.0		
			P	Z'	0.1 1.0			Kuril Islands.					
			Mx	E	2.2 15			h = 50 km (Up,Ud,De).					
			Mx	N	2.9 19			"	20	Ud	iP	03 06 26.7	
			Mx	Z	2.4 17			"	20	Ud	iP	04 04 20.8	
		Sk	iP	05 27	03.6			"	20	Up	iPKP1	04 32 24.9 C	
		Um	iP	05 26	45.7							micr sec	
			iPP	05 30	52.1							PKP1 Z' 0.1 1.0	
			iSKS	05 37	24			Sk	iPKP1	04 32	19.7		
		Ud	iP	05 27	03.0			Um	iPKP1	04 32	14.9 C		
		De	iP	05 27	10.7			Ud	iPKP1	04 32	27.2 C		
			iPP	05 31	27.4			De	iPKP1	04 32	33.5		
									iPKP2	04 32	51.8		
								South of Kermadec Islands (h = 40 km).					
								"	19	Up	iP	05 44 38.1	
										Ud	iP	05 44 45.3	
										Kuril Islands (h = 55 km).			
		"	19	Up	iP	05 44 38.1		"	19	De	i(P)	13 06 48.4	
				Ud	iP	05 44 45.3				"	19	Up	iPKP1 14 37 09.0 D
				Kuril Islands (h = 55 km).								ipPKP1 14 38 03.8	
												micr sec	
												PKP1 Z' 0.1 0.8	
												Ki iPKP 14 36 51.8	
												Sk iPKP1 14 37 01.5	
												Um iPKP1 14 36 58.2	
												i 14 37 03.4	
												Ud iPKP1 14 37 11.1 D	
												ipPKP1 14 37 03.6	
												De iPKP1 14 37 20.3 D	
												iPKP2 14 37 26.5	
												ipPKP1 14 38 13.1	
												Kermadec Islands region.	
												h = 210 km (Up,Ud,De).	
		"	19	Up	iP	14 48 53.5		"	20	Up	iP	13 45 59.9	
				Ud	iP	14 48 59.4				Ki	iP	13 45 24.4	
										Um	iP	13 45 40.4	
										Ud	iP	13 46 07.0	
										South of Honshu, Japan (h = N).			
		"	19	Up	i(P)	20 22 16.7		"	20	Up	iPKP1	13 56 51.9	
										Um	iPKP1	13 56 41.1	
		"	19	Ud	iP	22 28 17.2				Ud	iPKP1	13 56 51.6	
				De	iP	22 28 41.1				South of Kermadec Islands (h = N).			
				Southern Alaska (h = 100 km).						"	19	Ud	iP 22 53 12.1
		"	19	Ud	iP	22 53 12.1		"	20	Ud	iP	14 20 51.9	

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

1977				1977					
Sep.	20	Up	iSgl	18 50 36.6	Sep.	21	(cont.)		
		Ud	iSn	18 49 29.3			Sk iP	16 16 47.4 C	
			iSgl	18 49 37.1			Ud iP	16 16 48.3 C	
		De	iSgl	18 50 44.7			De iP	16 16 46.1	
		Southern Norway, 60.6°N, 7.2°E.					Near coast of Venezuela (h = N).		
		Origin time = 18 47 59.							
		M _L = 2.2 (Ud).							
		By combination with Bergen readings.							
"	21	Up	iP	03 23 15.6	"	21	Up	iP	17 49 50.8
		Sk	iP	03 23 06.6			i	17 50 01.2	
		Um	iP	03 22 52.1				micr sec	
		Ud	iP	03 23 23.0			i	Z' 0.2 1.0	
		Sakhalin Island (h = 60 km).					Ki	iP	17 48 55.6
							Sk	eP	17 49 35
"	21	Up	iPKP	09 47 32.9			Um	iP	17 49 22.0
		Ki	i	09 47 27.3			i	17 49 30.7	
		Um	iPKP	09 47 26.2			Ud	iP	17 49 53.8
		Ud	iPKP1	09 47 31.9			De	iP	17 50 15.7
		De	iPKP1	09 47 40.2			Near east coast of Kamchatka (h = 50 km).		
		Tonga Islands region (h = 15 km).			"	21	Ud	iP	18 59 36.4
"	21	Up	iP	10 46 23.8	"	21	Up	i(P)	20 34 41.8
		Ki	iP	10 45 32.0			Up	iP	21 11 50.4 D
		Sk	eP	10 46 04			iPcP	21 12 24.0	
		Ud	iP	10 46 25.3			ipP	21 12 46.8	
		i	10 46 27.3			iS	21 20 03		
		De	iP	10 46 48.0				micr sec	
		Andreanof Islands, Aleutian Islands (h = 30 km).					P	Z' 1.2 1.5	
"	21	Ud	i(P)	12 18 12.1			Mx	E 1.0 13	
"	21	Ki	iP	13 28 29.1			Mx	N 1.7 14	
				micr sec			Mx	Z 1.7 14	
		P	Z'	0.3 1.5			Ki	iP	21 10 59.0 D
		Sk	iP	13 28 30.1			ipP	21 11 53.9	
		Um	iP	13 28 43.4				micr sec	
		Ud	eP	13 28 42			P	Z' 1.1 1.0	
		Revilla Gebedo Islands region (h = N).					Mx	E 2.5 10	
"	21	Up	iP	15 00 24.8			Mx	N 2.0 12	
		Ki	iP	14 59 30.0			Mx	Z 1.2 11	
		Sk	iP	14 59 57.4			Sk	iP	21 11 35.6 D
		Um	iP	14 59 58.5			iPcP	21 12 15.4	
		Ud	iP	15 00 21.6			ipP	21 12 32.0	
		De	iP	15 00 45.1			Um	iP	21 11 23.1 D
		Kodiak Island region (h = 20 km).					iPcP	21 12 07.5	
"	21	Up	iP	16 16 59.2 C			iS	21 19 16	
		Ki	iP	16 17 08.1			Ud	iP	21 11 54.9 D
		(cont.)					iPcP	21 12 27.1	
							ipP	21 12 51.7	
							De	iP	21 12 15.2 D
							iPcP	21 12 40.5	
							ipP	21 13 13.1	
							Northwest of Kuril Islands. h = 250 km (Up,Ki,Sk,Um, Ud,De).		
							m = 6.5, M = 5.6 (Up,Ki). M not corrected for focal depth.		

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

1977				1977					
Sep.	21	Up	iP	21 40 27.9	Sep.	22	Up	iSgl	11 52 16.4
		Ud	iP	21 40 41.6			Sk	iSn	11 51 28.9
		De	iP	21 41 07.9			Ud	iSn	11 51 13.7
"	21	De	iPKP1	22 39 38.5				iSgl	11 51 21.3
		Tonga Islands region (h = N).					De	eSgl	11 52 29
"	21	Up	iSgl	22 43 30.2			Southern Norway, 60.6°N, 7.2°E.		
			i	22 43 46.8			Origin time = 11 49 43.		
			iRg	22 44 05.9			M _L = 2.8 (Ud).		
		Sk	eSgl	22 45 21			By combination with Bergen readings.		
		Um	iSgl	22 43 58.9	"	22	De	iP	12 51 36.4
		Ud	iSgl	22 44 35.8	"	22	De	iP	16 19 54.7
			i	22 44 43.4					
		De	iSgl	22 45 05.6	"	22	Ki	iPKP1	18 45 15.6
		Esthonia, near 59 1/4°N, 27 1/2°E.					Sk	iPKP1	18 45 29.2
		Origin time = 22 40 58.						iPKP2	18 45 39.5
		Near-surface event.					Um	iPKP1	18 45 24.4
		Solution from Helsinki regional bulletin.					Off east coast of North Island, New Zealand (h = 45 km).		
"	22	Up	iP	00 17 19.7	"	23	Ki	iPKP	00 00 39.3
		Ki	iP	00 17 01.7			Sk	iPKP	00 00 50.8
		Ud	iP	00 17 28.7			Um	iPKP	00 00 45.2
"	22	Up	iPKP1	04 00 41.4			New Hebrides Islands (h = 25 km).		
		Sk	iPKP1	04 00 35.4	"	23	Up	iP	03 02 15.2
		Um	iPKP1	04 00 29.6				i	03 02 18.6
		Ud	iPKP1	04 00 41.4					micr sec
		South of Kermadec Islands (h = N).						i	Z' 0.1 1.1
"	22	Up	iP	08 01 25.0				Mx	E 0.3 6
		Sk	eP	08 01 36				Mx	N 0.4 8
		Ud	iP	08 01 44.7				Mx	Z 0.8 9
"	22	Up	iPKP2	08 09 49.0			Ki	iP	03 03 35.9
			ipPKP2	08 09 58.7				ipP	03 03 42.0
			i	08 10 05.0					micr sec
				micr sec				pP	Z' 0.1 1.4
			PKP2	Z' 0.1 1.3				Mx	E 0.5 8
		Ki	iPKP1	08 09 17.0				Mx	N 0.9 9
			ipPKP1	08 09 27.0				Mx	Z 1.0 9
				micr sec			Sk	iP	03 03 00.5
			PKP1	Z' 0.1 1.3				ipP	03 03 06.0
		Sk	iPKP1	08 09 30.9 D			Um	iP	03 02 59.5
			ipPKP1	08 09 40.6				i	03 03 02.9
		Um	iPKP1	08 09 26.5 D			Ud	iP	03 02 22.6
			ipPKP1	08 09 36.1				i	03 02 24.9
		Ud	iPKP1	08 09 37.2			De	ipP	03 01 44.6
			ipPKP1	08 09 46.8			Albania.		
			i	08 10 02.1			h = 25 km (Ki,Sk).		
		East of North Island, New Zealand.					m = 5.1 (Up,Ki).		
		h = 35 km (Up,Ki,Sk,Um,Ud).			"	23	Up	iPP	06 16 19.0
							(cont.)		

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

1977				1977								
Sep.	23	(cont.)		Sep.	23	(cont.)						
		Ki	iP	06 11 52.8		Ud	iPKP	22 11 54.5				
			i(PP)	06 15 03.1		"	24	Um	iP	02 07 19.9		
			iPP	06 16 08.7					i	02 07 29.0		
				micr sec								
			P	Z'	0.3	1.5						
		Sk	iP	06 12 10.2		"	24	Ud	iP	02 43 15.5		
			i(PP)	06 16 23.9				De	eP	02 42 51		
			iPP	06 16 31.5								
		Um	iP	06 11 53.9		"	24	Up	iP	05 14 37.6		
			i	06 12 06.9				Ki	iP	05 16 23.1		
			i(PP)	06 15 11.5				Sk	iP	05 15 20.4		
			iPP	06 16 07.0				Ud	iP	05 14 40.8		
		Ud	iP	06 12 10.2		"	24	Up	iP	05 43 15.3		
			i	06 12 26.9				Sk	iP	05 42 57.5		
		De	i(PP)	06 16 17.2				Um	iP	05 42 52.7		
			iPP	06 16 35.6								
		South of Sumbawa Island				"	24	Up	iP	20 48 27.8		
		(h = N).						Ki	iP	20 49 37.2		
"	23	Ud	iP	11 57 46.7				Sk	iP	20 49 06.5		
"	23	Um	iP	13 38 16.5				Um	iP	20 49 01.6		
		Ud	iP	13 38 38.5				Ud	iP	20 48 34.3		
								De	iP	20 48 00.7		
								Crete (h = 60 km).				
"	23	Up	iSgl	14 24 44.3		"	24	Ki	i(P)	23 58 43.8		
		Sk	iSgl	14 24 44.6				"	25	Up	iP	02 23 34.9
		Ud	iSgl	14 23 42.3						Ud	iP	02 23 49.4
		De	eSn	14 23 36				"	25	Up	iP	03 17 45.0
		Southwest coast of Norway,								i	03 17 59.6	
		near 58 1/2°N, 6 1/2°E.								Ki	iP	03 18 54.4
		Origin time = 14 21 38.								Sk	iP	03 18 23.4
		M _L = 2.7 (Ud).								Um	iP	03 18 18.7
		By combination with Bergen								Ud	iP	03 17 51.4
		and Kongsberg readings.								De	iP	03 17 17.9
"	23	Ud	e(P)	15 21 49				Crete (h = 60 km).				
"	23	Ud	iPKP1	15 44 01.2		"	25	Ki	iPKP	06 31 58.3		
		De	iPKP1	15 44 12.0				South Sandwich Islands				
								region (h = N).				
"	23	Up	iP	20 59 29.9		"	25	Up	iP	08 27 54.4		
			i(PP)	21 03 45.3				Ud	iP	08 28 09.1		
		Ki	iP	20 59 15.5 C				De	eP	08 27 26		
				micr sec								
			P	Z'	0.1	1.0		"	25	Ud	iP	10 24 18.1
		Sk	iP	20 59 36.0 C				Afghanistan-USSR border				
		Um	iP	20 59 20.5 C				region (h = 200 km).				
			iPP	21 03 33.0								
		Ud	iP	20 59 38.4 C								
			iPP	21 04 11.3								
		Banda Sea (h = 310 km).				"	25	Up	iP	14 44 29.2		
"	23	Um	iPKP	22 11 43.1				Ud	iP	14 44 44.4		
		(cont.)						De	iP	14 44 25.4		

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

1977				1977			
Sep.	25			Sep.	26	(cont.)	
		Ud	iP 15 15 39.5			Up	i 08 31 50.1
		Hindu Kush region (h = 210 km).				Ki	iP 08 30 52.8
"	25	Up	iPKP1 16 33 20.0			Sk	iP 08 31 28.9
			iSKP1 16 36 29.3			Um	iP 08 31 17.5
		Ki	iPKP 16 33 12.6			Ud	iP 08 31 49.9
		Um	i(PKP) 16 33 14.0			De	iP 08 32 11.9
			iPKP 16 33 20.0			Near east coast of Kamchatka	
			iSKP1 16 36 04.6			(h = 45 km).	
		Ud	iPKP1 16 33 22.2 C	"	26	Up	iP 16 39 10.9
		De	iPKP1 16 33 32.9 C			Ud	iP 16 39 19.9
		Fiji Islands region (h = 610 km).				Northeast of Taiwan	
"	25	Up	iPP 18 50 04.7			(h = 70 km).	
		Um	iPP 18 49 51.0	"	26	Up	iP 19 57 32.3
		Ud	iPP 18 50 18.1			Ki	iP 19 57 51.2
		South of Sumbawa Island				Sk	iP 19 58 00.2
		(h = N).				Um	iP 19 57 36.6
"	25	Up	iP 20 01 58.6			Ud	iP 19 57 47.1
		i	20 02 21.6			De	iP 19 57 38.5
		Ki	iP 20 03 03.0			Pakistan (h = N).	
		Sk	i 20 03 01.0	"	27	Ud	i(P) 03 10 31.8
		Um	iP 20 02 28.7	"	27	Up	iP 06 10 01.6
		Ud	iP 20 02 12.1			Ud	eP 06 10 10
		De	iP 20 01 43.5			Up	iP 09 06 29.3
		Turkey (h = 20 km).				Ud	iP 09 06 49.6
"	25	Ki	iP 20 33 10.2	"	27	Up	iPKP1 11 38 14.9
		Ud	iP 20 34 07.6			Ud	iPKP1 11 38 17.5
"	25	Um	iP 22 52 08.0			De	iPKP1 11 38 27.4
		Ud	iP 22 52 32.1	"	27	Up	iP 14 11 48.7
		Philippine Islands region				Ki	iP 14 11 13.9
		(h = N).				Sk	iP 14 11 22.5
"	26	Ki	i(P) 00 59 13.3			Um	iP 14 11 34.0
"	26	Up	iP 01 47 23.6			Ud	iP 14 11 40.4
		Ki	eP 01 46 31			Southern Nevada.	
		Um	iP 01 46 55.9			Underground explosion.	
		Ud	iP 01 47 27.2	"	27	De	i(P) 15 32 24.0
		De	iP 01 47 48.7	"	27	Ud	iPKP1 17 41 28.2
		Off east coast of Kamchatka				De	iPKP1 17 41 37.8
		(h = N).				Tonga Islands (h = N).	
"	26	Ki	iPKP1 05 16 55.9	"	27	Up	iP 20 47 29.8
			micr sec			Ki	iP 20 46 58.2
		Mx	E 1.2 18			Sk	iP 20 47 11.9
		Mx	N 1.4 20			Um	iP 20 47 07.0
		Mx	Z 1.5 18	"	28	Up	iP 03 42 26.8
		West coast of Macquarie				(cont.)	
		Islands (h = N).					
"	26	Up	iP 08 31 46.5				
		(cont.)					

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

1977

Sep. 30 Up iP 16 46 35.1
Sk iP 16 47 06.4
Um iP 16 47 18.2
Ud i 16 46 39.8
Western Mediterranean Sea
(h = 10 km).

" 30 Up iP 19 24 43.3
Ki iP 19 24 46.2 D
Sk iP 19 25 06.7
Um iP 19 24 38.2
Ud iP 19 24 59.9 D
De eP 19 25 00
Tadzhik-Sinkiang border
region (h = 20 km).

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June 19, 1979

SEISMOLOGICAL INSTITUTE
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SWEDEN



SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, SKALSTUGAN, UMEÅ,

UDDEHOLM and DELARY

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

OCTOBER 1 - 31, 1977

1977				1977			
Oct.	1	Ud iP	06 42 53.7	Oct.	2	Up iP	07 29 52.4 C
		Afghanistan-USSR border region (h = 160 km).				Ki iP	07 29 16.9
						Um iP	07 29 32.2
						Ud iP	07 29 59.9 C
"	1	Ud iP	12 02 22.7			South of Honshu, Japan (h = 300 km).	
"	1	Ki iP	13 06 21.0	"	2	Up eP	13 15 42
			micr sec			iS	13 26 14
		P	Z' 0.1 1.1				micr sec
		Ud iP	13 06 41.4			Mx E	1.9 20
		South of Sumbawa Island (h = N).				Mx N	6.8 19
						Mx Z	3.8 19
"	1	Up iP	13 17 36.7			Ki iP	13 15 22.3
			micr sec			i	13 15 27.7
		P	Z' 0.1 0.8				micr sec
		Ki iP	13 17 37.9 C			P	Z' 0.1 0.9
			micr sec			i	Z' 0.2 1.0
		P	Z' 0.1 0.9			Mx E	2.8 14
		Sk iP	13 17 53.6			Mx N	6.1 19
		Um iP	13 17 33.6			Sk i	13 15 51.7
		Ud iP	13 17 48.4 C			Um iP	13 15 25.8
		Nicobar Islands region (h = 110 km).				Ud iP	13 15 47.9 D
		m = 5.7 (Up,Ki).				Panay, Philippine Islands (h = N).	
						M = 6.1 (Up,Ki).	
"	1	Up iPKP2	15 15 07.1	"	2	Ud iP	19 00 11.0
		Sk iPKP1	15 14 55.8			i	19 00 12.9
		Um iPKP1	15 14 51.0 D			Off coast of northern Peru (h = 45 km).	
		Ud iPKP1	15 15 04.5 D				
		Kermadec Islands (h = N).					
"	2	Ki ePKP1	03 58 46	"	3	Ki iP	00 26 29.9
		iPKP2	03 58 52.0			Ud iP	00 26 54.3
		Sk iPKP2	03 59 15.9			Mindanao, Philippine Islands (h = 110 km).	
		Cook Strait, New Zealand (h = 180 km).					
				"	3	Up iSgl	00 37 06.0
						Sk e	00 35 19
						(cont.)	

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

1977		1977	
Oct.	3	Oct.	3
	(cont.)		(cont.)
Sk	iSgl 00 35 27.2	Up	micr sec
Ud	iSgl 00 36 09.2	P	Z' 0.1 1.0
Off coast of west Norway, near 62 3/4°N, 5°E.		Ki	iP 22 57 29.7 D
Origin time = 00 33 38.			micr sec
M _L = 2.7 (Ud).		P	Z' 0.1 1.0
By combination with Bergen and Kongsberg readings.		Sk	iP 22 57 43.4
		Um	iP 22 57 26.2 D
		Ud	iP 22 57 38.8
		Northern Sumatra (h = 15 km). m = 6.0 (Up,Ki).	
"	3	Sk	iP 01 52 33.1
		Ud	iP 01 52 34.6
"	3	Ki	iP 04 49 38.3
			micr sec
		P	Z' 0.1 1.5
		Sk	eP 04 49 02
		Ud	iP 04 49 03.8
		i	04 49 07.1
		North Atlantic Ocean (h = N).	
"	3	Sk	iPKP 05 07 47.9
		Loyalty Islands (h = N).	
"	3	Ud	iP 11 02 15.0
"	3	Ki	iP 11 29 44.4 C
		Sk	iP 11 29 23.3
		Ud	iP 11 29 23.0
		Windward Islands (h = 100 km).	
"	3	Ki	iP 13 54 12.7
		Volcano Islands region (h = 200 km).	
"	3	Ud	iPKP1 19 22 18.6
		Fiji Islands region (h = 550 km).	
"	3	Up	iPKP2 19 55 17.1
		i	19 55 28.2
			micr sec
		PKP2	Z' 0.1 1.4
		Sk	iPKP1 19 55 06.4
		i	19 55 17.8
		Um	iPKP1 19 55 02.3
		Ud	i(PKP) 19 55 02.0
		iPKP1	19 55 15.4
		Kermadec Islands region (h = 35 km).	
"	3	Up	iP 22 57 28.4 D
		i	22 57 39.6
		(cont.)	
"	4	Up	iP 06 28 11.9
		Arabian Sea (h = N).	
"	4	Up	iP 08 06 00.9
		Ud	iP 08 06 03.3
"	4	Up	iP 11 13 42.8
		Ki	iP 11 13 21.0
		Ud	iP 11 13 52.0 C
		Philippine Islands region (h = 70 km).	
"	4	Ki	iP 11 21 08.0 C
"	4	Ud	i 12 41 39.1
		iSgl	12 41 44.0
		Southwest Norway, near 60°N, 6 1/2°E.	
		Origin time = 12 39 49.	
		M _L = 2.6 (Ud).	
		By combination with Kongsberg readings.	
"	4	Up	iP 13 56 39.7
		ipP	13 56 47.3
			micr sec
		P	Z' 0.1 1.2
		Ki	iP 13 56 49.0
		ipP	13 56 54.6
			micr sec
		P	Z' 0.1 1.0
		Sk	iP 13 56 28.3
		ipP	13 56 35.5
		Um	iP 13 56 47.7
		Ud	iP 13 56 29.6
		ipP	13 56 36.0
		Near coast of Venezuela. h = 20 km (Up,Ki,Sk,Ud). m = 5.8 (Up,Ki).	
"	4	Up	iP 14 00 56.7
		Ki	iP 14 01 29.3
		(cont.)	

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

1977				1977			
Oct.		(cont.)		Oct.	5	(cont.)	
	4	Sk iP	14 01 38.0			Up	micr sec
		Ud iP	14 01 04.3			Mx E	16 14
"	4	Um iP	15 12 07.4			Mx N	26 19
		Near east coast of Honshu, Japan (h = 80 km).				Mx Z	19 18
"	4	Up iP	15 50 21.3 C			Ki iP	05 40 33.7
		i	15 50 35.7			iS	05 45 20
			micr sec				micr sec
		P Z'	0.1 0.9			P Z'	0.4 1.0
		Ki iP	15 49 42.7 C			Mx E	3.7 13
		Sk iP	15 50 15.7			Mx N	3.9 12
		Um iP	15 49 59.4 C			Mx Z	4.7 12
		Ud iP	15 50 28.2 C			Sk iP	05 40 15.2
		Honshu, Japan (h = 70 km).				Um iP	05 40 00.1 D
"	4	Ud eSgl	16 34 31			i	05 40 08.0
		Southwest Norway, near 60°N, 6°E.				iS	05 44 20
		Origin time = 16 32 30.				Ud iP	05 39 43.1
		$M_L = 2.5$ (Ud).				i	05 39 47.4
		By combination with Bergen and Kongsberg readings.				i	05 44 01.6
"	4	Ud iSgl	16 38 19.0			Turkey (h = N).	
		Same location as the preceding event.				m = 6.0, M = 5.9 (Up,Ki).	
		Origin time = 16 36 18.		"	5	Up iRg	08 14 01.9
		By combination with Bergen and Kongsberg readings.				Ud i(Sgl)	08 13 31.7
"	4	Up iP	17 49 06.8			iRg	08 13 37.3
		Ki iP	17 48 17.9			Central Sweden.	
		Um iP	17 48 40.5			Near-surface event.	
		Ud iP	17 49 11.3	"	5	Up iPKP1	10 47 24.1
		Kuril Islands (h = 45 km).					micr sec
"	4	Up iP	21 47 30.1			PKP1 Z'	0.3 1.2
		Ud iP	21 47 37.8			Sk iPKP1	10 47 16.5
		Greece (h = N).				Um iPKP	10 47 14.0
"	5	Up iP	03 26 40.2			Ud iPKP1	10 47 25.5
		Ki iP	03 26 05.7			i	10 47 38.7
		Um iP	03 26 20.5 D			Kermadec Islands region	
		Ud iP	03 26 46.2			(h = 55 km).	
		Bonin Islands region (h = N).		"	5	Up iPKP1	11 15 05.3
"	5	Up iP	05 39 30.1				micr sec
		iS	05 43 15.7			PKP1 Z'	0.1 1.0
			micr sec			Sk iPKP1	11 14 55.6
		P Z'	1.1 1.9			Ud iPKP1	11 15 03.9
		(cont.)				i	11 15 15.6
						Kermadec Islands region	
						(h = 160 km).	
"	5	Ud i(P)	12 44 44.6	"	5	Ud i(Sgl)	13 39 04.7
						iRg	13 39 09.7
"	5	Up iP	05 39 30.1			Regional, near-surface event.	
		iS	05 43 15.7	"	5	Ud iPKP1	13 48 15.9
			micr sec			Tonga Islands region (h = N).	
		P Z'	1.1 1.9				
		(cont.)					

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

1977					1977						
Oct.	7	(cont.)			Oct.	7	(cont.)				
		Up		micr sec			Up		micr sec		
		Mx	E	72 26			Mx	E	1.6 26		
		Mx	N	13 23			Mx	N	3.8 23		
		Mx	Z	16 25			Mx	Z	3.3 26		
		Ki	iP	12 24 33.9			Ki	iP	17 50 36.0		
			ipP	12 24 44.1				i	17 50 40.0		
			iSKS	12 35 19					micr sec		
				micr sec			Mx	E	3.3 21		
			pP	Z' 0.1 1.0			Mx	N	4.4 26		
			Mx	E 11 20			Mx	Z	4.7 21		
			Mx	N 33 28			Sk	eP	17 50 54		
			Mx	Z 15 20				iPP	17 55 17.0		
		Sk	iP	12 24 51.2			Um	iP	17 50 37.0		
		Um	i	12 24 41.6			Ud	iP	17 50 52.7		
			iSKS	12 35 19				i	17 51 02.8		
		Ud	iP	12 24 50.9			Sumbawa Island region				
			iPP	12 29 11.9			(h = N).				
		South of Sumbawa Island.					M = 5.9 (Up,Ki).				
		h = 35 km (Up,Ki).					"	7	Up	iP	18 37 41.5
		M = 6.6 (Up,Ki).					"	7	Up	iP	19 06 10.9
"	7	Ud	iP	12 37 13.0			"	7	Ki	iP	19 05 20.2
		Sumbawa Island region							Ud	iP	19 06 17.0
		(h = N).								i	19 06 31.1
"	7	Up	iP	12 47 34.1			Kuril Islands region				
			i	12 47 47.7			(h = 70 km).				
		Sk	iP	12 48 18.3			"	7	Ki	iP	19 18 09.4
			i	12 48 24.5						i	19 18 17.9
		Um	i	12 48 25.4			South of Sumbawa Island				
		Ud	iP	12 47 40.8			(h = N).				
			i	12 48 13.8			"	7	Ki	iP	19 23 53.2
		Greece (h = N).					Sumbawa Island region (h = N).				
"	7	Ki	iP	14 52 35.9			"	7	Um	iP	21 43 47.1
		Ud	iP	14 52 53.2					Ud	iP	21 44 16.8
		South of Sumba Island					"	7	Up		micr sec
		(h = N).							Mx	E	1.8 30
"	7	Up	eP	17 15 10					Mx	N	3.4 26
				micr sec					Mx	Z	2.0 28
		Mx	E	1.5 25			Ki	iP	21 50 00.7		
		Mx	N	4.7 28						micr sec	
		Mx	Z	2.1 29					Mx	E	1.5 20
		Ki	iP	17 15 03.3					Mx	N	1.3 17
				micr sec					Mx	Z	3.1 21
		Mx	N	6.8 27			Ud	iP	21 50 18.9		
		Sk	iP	17 15 21.4			South of Sumbawa Island (h = N)				
		Ud	iP	17 15 20.9			M = 5.7 (Up,Ki).				
		Sumbawa Island region					"	7	Ki	iP	22 21 43.2
		(h = N).							Sk	iP	22 22 20.7
		M = 6.0 (Up,Ki).							Um	iP	22 22 02.1
"	7	Up	iP	17 50 44.1					Ud	iP	22 22 22.0
		(cont.)									

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

1977				1977					
Oct.	7	Um	iP	23 17 26.9	Oct.	9	Ki	iP	04 16 24.2 C
		Ud	iP	23 17 52.4					micr sec
				Ryukyu Islands (h = N).			P	Z'	0.1 1.0
"	8	Ki	iP	00 26 42.3			Sk	eP	04 17 01
				Sumba Island region (h = N).			Ud	iP	04 17 21.6
"	8	Ud	iP	00 28 37.1	"	9	Up	iP	11 04 26.4
"	8	Ud	iP	01 48 58.3				i	11 04 33.9
"	8	Um	iP	02 55 19.3				i	11 07 49.9
"	8	Up	ipP	03 17 53.3					micr sec
		Sk	ipP	03 17 45.9			Ki	iP	Z' 0.1 0.8
		Um	ipP	03 18 00.6				i	11 02 55.4
		Ud	iP	03 17 11.5 C			Sk	iP	11 03 08.1
			ipP	03 17 45.1				i	11 04 06.5
				Peru (h = 130 km).			Um	iP	11 04 10.8
"	8	Um	iP	10 25 15.4				i	11 03 34.4
"	8	Up	iP	10 30 52.7			Ud	iP	11 03 44.0
			i	10 31 25.9				i	11 04 37.2 C
		Ud	iP	10 30 58.7			De	iP	11 05 12.5
		De	iP	10 30 25.6					11 05 08.6
				Crete (h = 60 km).			Novaya Zemlya.		
"	8	Ud	iPKP1	17 37 42.7	"	9	Ud	iP	11 51 33.7
		De	iPKP1	17 37 54.3	"	9	Sk	iPKP1	12 17 40.8
				Fiji Islands region			Um	iPKP1	12 17 35.7
				(h = 610 km).			Ud	iPKP1	12 17 49.2 C
"	8	Up	iP	21 19 35.7 C			Kermadec Islands (h = N).		
			i	21 19 44.0	"	9	Ud	iP	14 03 36.4
		iSKS		21 29 57				i	14 03 47.7
		iS		21 30 10	"	9	Ki	iP	15 36 56.7
				micr sec			Sk	iP	15 37 20.8
		P	Z'	0.1 1.1			Ud	iP	15 37 25.9
		i	Z'	0.2 1.2				i	15 37 35.1
		Mx	E	2.4 18			Luzon, Philippine Islands		
		Mx	N	5.0 20	"	9	Ki	iP	(h = 60 km).
		Mx	Z	3.9 17					
		Ki	iP	21 19 15.6			Sk	eP	16 52 09.4
			i	21 19 30.8			Ud	iP	16 52 23
				micr sec					16 52 47.6
		P	Z'	0.5 1.8			Alberta Province, Canada		
		Mx	E	2.2 16	"	9	Ki	iP	(h = N).
		Mx	N	3.3 15					
		Mx	Z	2.5 16			Ud	iP	17 10 54.1
		Sk	i	21 19 48.5	"	9	Ud	iP	17 11 12.8
		Um	iP	21 19 22.2 C			South of Sumbawa Island		
			iSKS	21 29 41	"	9	Ud	iP	(h = N).
		Ud	iP	21 19 42.8	"	9	Up	iP	23 22 28.9
				Luzon, Philippine Islands			Ki	iP	23 21 57.2
				(h = 30 km).			Sk	iP	23 22 11.1
				m = 6.4, M = 5.9 (Up,Ki).					

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

1977						1977					
Oct.	10	Ki	iP	08 56 06.4		Oct.	10	Up	iPKP1	12 22 03.9 C	
		Sk	eP	08 55 35				Ud	iPKP1	12 22 05.4 C	
		Ud	iP	08 55 03.9				South of Tonga Islands.			
		De	iP	08 54 32.9				Origin time = 12 02 32.			
		Crete (h = 80 km).									
"	10	Up	iPdiff	12 11 07		"	10	Up	iPKP1	12 28 26.9	
			iPKP1	12 13 25.7 D				Ud	iPKP1	12 28 28.1	
			iPP	12 16 52.9				Probably south of Tonga Islands.			
			i	12 24 12.0		"	10	Up	iPKP1	12 31 10.1	
				micr sec						micr sec	
		PKP1	Z'	1.5 0.6					PKP1	Z'	0.1 1.0
		PP	Z'	1.4 1.7				Ud	iPKP1	12 31 11.5 C	
		Mx	E	22 22				De	iPKP1	12 31 20.5	
		Mx	N	46 23				South of Tonga Islands.			
		Mx	Z	49 23				Origin time = 12 11 38.			
		Ki	i(PKP)	12 13 07.8		"	10	Ud	iP	12 39 25.2	
			iPKP	12 13 12.7		"	10	Up	iPKP1	12 40 24.2	
			i	12 13 16.9				Ud	iPKP1	12 40 26.4	
			iPP	12 15 59.5				Probably south of Tonga Islands.			
			i	12 25 05.6		"	10	Up	iPKP1	12 43 13.0 C	
				micr sec				Ud	iPKP1	12 43 14.0	
			i	Z' 4.7 3.0				Probably south of Tonga Islands.			
			PP	Z' 0.4 1.6		"	10	Up	iPKP1	12 46 14.1 C	
			Mx	E 27 18				Ud	iPKP1	12 46 15.4 C	
			Mx	N 22 19				De	iPKP1	12 46 24.9	
			Mx	Z 43 19				South of Tonga Islands.			
		Sk	iPKP1	12 13 19.2		"	10	Origin time = 12 26 42.			
			iPP	12 16 33.9							
		Um	iPKP1	12 13 14.7							
			iPP	12 16 26.9							
		Ud	iPKP1	12 13 27.1 D		"	10	Up	iPKP1	12 54 59.8	
			iPP	12 16 50.7				Ud	iPKP1	12 55 01.8	
		De	iPKP1	12 13 34.6					i	12 55 17.6	
			i	12 13 38.8				De	iPKP1	12 55 10.1	
		South of Tonga Islands									
		(h = N).									
		m = 6.7, M = 7.2 (Up,Ki).									
"	10	Up	iPKP1	12 20 31.0		"	10	Up	iPKP1	12 57 25.9	
		Ki	iPKP	12 20 18.0				Ud	iPKP1	12 57 27.6	
		Ud	iPKP1	12 20 32.8				Probably south of Tonga Islands.			
		De	iPKP1	12 20 41.5		"	10	Ud	iP	13 05 54.6	
		South of Tonga Islands.									
		Origin time = 12 01 00.									
		Approximate origin times,									
		based upon the same									
		coordinates as for the									
		earthquake at 11 53 54,									
		October 10, are given for									
		those aftershocks, which									
		have not been reported by									
		NEIS. Up and Ud are									
		obviously our most									
		sensitive stations for									
		this sequence.									
						"	10	Up	iPKP1	13 16 59.1	
								Um	iPKP	13 16 51.9	
								Ud	iPKP1	13 17 00.9 C	
								South of Tonga Islands.			
								Origin time = 12 57 28.			
						"	10	Up	iPKP1	13 19 26.9	
								Ud	iPKP1	13 19 29.0	
								De	iPKP1	13 19 38.5	
								(cont.)			

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

1977				1977					
Oct.	10	(cont.) South of Tonga Islands. Origin time = 12 59 56.		Oct.	10	Ud	iP	14 21 02.2	
"	10	Up	iPKP1	13 21 32.9	"	10	Ud	iP	14 34 41.9
			i	13 21 40.4	"	10	Ud	iP	14 44 25.5 C
			i	13 21 51.9	"	10	Up	iPKP1	14 52 02.4
				micr sec			Um	i	14 52 02.8
			i	Z' 0.1 1.0			Ud	iPKP1	14 52 03.8 C
			i	Z' 0.3 1.3			Probably south of Tonga Islands.		
		Ud	iPKP1	13 21 34.6	"	10	Up	iPKP1	14 57 36.7
			i	13 21 44.2			Ud	iPKP1	14 57 38.1 C
			i	13 21 53.2			i	14 57 49.3	Probably south of Tonga Islands.
		De	iPKP1	13 21 45.5	"	10	Ud	iP	14 59 22.3
			i	13 21 54.7			i	14 59 33.1	
			i	13 22 05.1	"	10	Ud	iP	15 05 37.0
		South of Tonga Islands. Origin time = 13 02 02.					i	15 05 47.8	
"	10	Up	iPKP1	13 22 43.3	"	10	Ud	iP	15 05 37.0
			i	13 22 56.5			i	15 05 47.8	
				micr sec	"	10	Up	iPKP1	15 32 19.4 C
			PKP1	Z' 0.1 0.9			Ki	iPKP	15 32 10.0
		Um	iPKP1	13 22 32.9			Ud	iPKP1	15 32 20.8 C
		Ud	iPKP1	13 22 44.9			De	iPKP1	15 32 31.0
			i	13 22 58.1			South of Tonga Islands. Origin time = 15 12 48.		
		De	iPKP1	13 22 56.0	"	10	Ud	iPgl	15 38 38.2
		South of Tonga Islands. Origin time = 13 03 12.					iSgl	15 38 58.3	
"	10	Up	iPKP1	13 28 13.6			iRg	15 39 06.5	
				micr sec			De	iSgl	15 39 30.1
			PKP1	Z' 0.1 0.8			Origin time = 15 38 11. Regional, near-surface event.		
		Um	ePKP1	13 28 04	"	10	Up	iPKP1	15 51 19.9
		Ud	iPKP1	13 28 14.5			Um	iP	15 51 29.3
		De	iPKP1	13 28 25.5			Ud	iPKP1	15 51 21.0
		South of Tonga Islands (h = N).					De	iPKP	15 51 27.0
"	10	Up	iPKP1	13 35 31.5			South of Tonga Islands. Origin time = 15 31 48.		
		Ud	iPKP1	13 35 33.0	"	10	Up	iPKP1	16 00 26.8
		Probably south of Tonga Islands.					Ki	iPKP1	16 00 06.3
"	10	Up	iPKP1	13 50 09.9			Um	iPKP1	16 00 15.8
			i	13 50 23.3			Ud	iPKP1	16 00 28.3 C
		Ud	iPKP1	13 50 13.3			South of Tonga Islands. Origin time = 15 40 55.		
			i	13 50 24.0	"	10	Up	iPKP1	16 03 38.7
		De	iPKP2	13 50 23.4			Ud	iPKP1	16 03 40.1 C
		South of Tonga Islands (h = N).					Probably south of Tonga Islands.		
"	10	Ud	iP	13 58 52.4	"	10	Ud	iP	16 18 26.1
"	10	Up	iP	14 00 52.5					
		Ud	iP	14 00 54.2					

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

1977				1977					
Oct.	10	Ud	iP	16 21 58.8	Oct.	10	Up	iPKP1	18 10 08.4 C
"	10	Up	iPKP1	16 40 40.3			Ud	iPKP1	18 10 09.8 C
		Ud	iPKP1	16 40 44.2			De	iPKP2	18 10 22.1
		De	iPKP2	16 40 55.8			South of Tonga Islands.		
		South of Tonga Islands.					Origin time = 17 50 37.		
		Origin time = 16 21 11.			"	10	Ud	iP	18 11 28.9
"	10	Ud	iP	16 44 22.9	"	10	Up	iPKP1	18 12 40.2
"	10	Up	iPKP1	16 49 27.5 C			Ud	iPKP1	18 12 41.8
		Ud	iPKP1	16 49 27.6			Probably south of Tonga Islands.		
		i	16 49 39.5						
		De	iPKP1	16 49 39.1	"	10	Up	iPKP1	18 48 11.5
		South of Tonga Islands.					Ud	iPKP1	18 48 12.8
		Origin time = 16 29 55.					i	18 48 22.9	
"	10	Up	iPKP1	16 51 16.1			Probably south of Tonga Islands.		
		Ud	iPKP1	16 51 17.5	"	10	Ud	iP	18 57 10.9
		De	iPKP1	16 51 28.2			De	iP	18 56 39.4
		South of Tonga Islands.					Dodecanese Islands (h = N).		
		Origin time = 16 31 44.			"	10	Up	iPKP1	19 13 52.2
"	10	Ud	iPKP1	16 54 59.8 C			Ud	iPKP1	19 13 53.7 C
		De	iPKP1	16 55 08.6			De	iPKP1	19 14 04.0
		Probably south of Tonga Islands.					South of Tonga Islands.		
		Islands.					Origin time = 18 54 21.		
"	10	Up	iPKP1	17 05 49.1	"	10	Up	iPKP1	19 25 53.2
		Ud	iPKP1	17 05 49.3			Ud	iPKP1	19 25 55.2
		Probably south of Tonga Islands.					i	19 26 18.0	
"	10	Ud	iP	17 12 40.1			De	iPKP1	19 26 01.6
		i	17 12 48.1			South of Tonga Islands.			
"	10	Up	iPKP1	17 31 26.3			Origin time = 19 06 22.		
		i	17 31 37.5	"	10	Ud	iP	19 28 02.7	
		Um	iPKP1	17 31 03.4	"	10	Up	iPKP1	19 33 31.0
		Ud	iPKP1	17 31 27.4			Ud	iPKP1	19 33 29.0
		i	17 31 38.6			Probably south of Tonga Islands.			
		De	iPKP1	17 31 38.0	"	10	Ud	iP	19 43 54.1
		i	17 31 49.2						
		South of Tonga Islands.			"	10	Up	iPKP1	19 51 00.9 C
		Origin time = 17 11 54.					Um	i	19 50 46.0
"	10	Up	iP	17 51 28.9			Ud	iPKP1	19 51 02.3 C
"	10	Up	iPKP1	18 04 55.1			South of Tonga Islands.		
		i	18 05 07.1			Origin time = 19 31 29.			
		Ud	iPKP1	18 04 57.6	"	10	Up	iPKP1	20 07 18.0
		i	18 05 08.2			Ud	iPKP1	20 07 15.9	
		De	iPKP1	18 05 07.2			Probably south of Tonga Islands.		
		South of Tonga Islands.					Islands.		
		Origin time = 17 45 25.							

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

1977				1977			
Oct.	11	(cont.)		Oct.	11	(cont.)	
		Um	i(PKP) 06 02 43.9			Um	i 12 05 44.9
		Ud	iPKP1 06 03 00.7 C			Ud	iP 12 05 53.7 C
			i 06 03 10.8				i 12 06 12.0
		De	iPKP1 06 03 10.9			South of Honshu, Japan (h = 60 km).	
		South of Tonga Islands.					
		Origin time = 05 43 28.					
"	11	Up	iPKP2 06 17 17.7	"	11	Up	iPKP1 12 13 38.6
		Um	iPKP1 06 17 02.3			Um	iPKP1 12 13 27.7
		Ud	iPKP1 06 17 16.2			Ud	iPKP1 12 13 40.2
		De	iPKP2 06 17 33.0			South of Tonga Islands. Origin time = 11 54 07.	
		Kermadec Islands (h = N).					
"	11	Up	iPKP1 06 48 32.9	"	11	Ud	iPKP1 12 32 29.0
			i 06 48 41.5			De	iPKP1 12 32 39.9
		Ki	i(PKP) 06 48 08.2			South of Fiji Islands (h = 550 km).	
		Sk	e 06 48 35				
		Um	iPKP1 06 48 21.3	"	11	Um	iP 12 35 06.7
		Ud	iPKP1 06 48 34.8	"	11	Up	eP 12 56 55
			i 06 48 43.4			Ud	iP 12 56 49.2
		De	iPKP2 06 48 51.2				
		Kermadec Islands (h = N).		"	11	Up	iPKP1 13 51 42.3
"	11	Up	iPKP1 07 24 09.9			Ud	iPKP1 13 51 43.8
		Ud	iPKP1 07 24 10.8				i 13 51 54.4
		De	iPKP1 07 24 22.1			De	iPKP1 13 51 54.3
		South of Tonga Islands.				South of Tonga Islands. Origin time = 13 32 11.	
		Origin time = 07 04 38.					
"	11	Up	eP 08 07 26	"	11	Um	iP 14 08 06.0
		Ki	iP 08 06 52.1	"	11	Ud	i(P) 14 23 28.6
		Sk	iP 08 06 56.2	"	11	Up	epP 14 32 55
		Um	iP 08 07 12.0 C			Ki	ipP 14 32 23.7
		Ud	iP 08 07 17.2 C			Um	ipP 14 32 36.1
		De	iP 08 07 34.0			Ud	iP 14 32 55.3
		Utah (h = 5 km).				Ud	ipP 14 33 03.8
"	11	Up	ePKP1 08 19 19			East China Sea (h = 25 km).	
			i 08 19 22.5	"	11	Up	eP 20 22 36
		Um	i(PKP) 08 18 58.9	"	11	Up	iP 21 10 03.4
			iPKP1 08 19 06.1	"	11	De	iP 21 28 00.9
		Ud	i(PKP) 08 19 11.4	"	11	Ud	iP 22 52 26.0
			iPKP1 08 19 20.6	"	12	Ki	iP 00 55 46.6
		De	iPKP1 08 19 28.9			Sk	iP 00 56 20.1
			iPKP2 08 19 39.1			Um	iP 00 56 02.3
"	11	Ud	i(P) 12 01 41.7				i 00 56 09.0
"	11	Up	iP 12 05 46.6			Ud	iP 00 56 33.6
			i 12 06 04.8			Sea of Japan (h = 440 km).	
		Ki	eP 12 05 12				
			i 12 05 28.9				
		Sk	iP 12 05 41.6				
		Um	iP 12 05 26.8				
		(cont.)					

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

1977				1977					
Oct.	12	Ud	iP	01 04 00.7	Oct.	12	Ud	iP	19 52 02.2 D
				North Atlantic Ocean (h = N).					Off coast of Hokkaido, Japan (h = 60 km).
"	12	Um	iP	01 40 26.7	"	12	Up	i(P)	20 22 35.3
"	12	Up	iP	03 00 53.1	"	12	Ud	iP	20 43 05.4
		Ki	iP	03 00 52.2					Crete (h = N).
		Sk	iP	03 01 06.4 D	"	12	Up	iP	22 51 13.0
		Um	iP	03 00 50.0	"	13	Up	iP	00 19 14.6 C
		Ud	iP	03 01 02.6			Ki	iP	00 18 20.5
		De	i	03 01 07.4			Ud	iP	00 19 14.5
				Southern Sumatra (h = N).					Andreanof Islands, Aleutian Is. (h = 30 km).
"	12	Ud	iPKP1	05 37 18.4	"	13	Up	i	00 59 44.6 C
		De	iPKP1	05 37 28.0			Ki	ePKP	00 59 21
				Fiji Islands region (h = 620 km).			Um	iPKP	00 59 15.3
"	12	De	iP	05 40 11.8				iPKP1	00 59 24.0
"	12	Ud	iP	09 21 00.7			Ud	i	00 59 36.6
				Hindu Kush region (h = 80 km).			De	iPKP1	00 59 26.7
"	12	Ud	iP	10 19 04.2					West of Macquarie Island (h = N).
				Greece (h = 50 km).	"	13	Up	iPKP	01 04 07.9
"	12	Up	iPKP2	12 18 57.7			Ki	iPKP	01 03 54.0
		Ki	i	12 18 41.1			Sk	i(PKP)	01 03 54.7
		Sk	ePKP2	12 18 56			Ud	i	01 04 13.2
		Um	iPKP2	12 18 50.7			De	iPKP1	01 04 12.4
		Ud	iPKP2	12 19 01.8					Fiji Islands region (h = 600 km).
				East of North Island, N.Z. (h = 350 km).	"	13	Up	iPKP1	01 36 00.3 C
"	12	Ki	iP	13 34 53.7			Ud	iPKP1	01 36 01.7 C
			i	13 35 46.1			De	iPKP1	01 36 11.0
			i	13 35 57.7					South of Tonga Islands. Origin time = 01 16 29.
			i	13 36 10.4	"	13	Up	iPKP1	05 56 02.4
		Sk	i	13 36 51.1			Ud	iPKP1	05 56 03.7
		Ud	iP	13 36 11.5					Probably south of Tonga Islands.
"	12	Up	i(P)	13 57 09.7	"	13	Up	iP	07 09 02.3
"	12	Up	iPKP1	15 18 22.3				i	07 09 05.9
		Ud	iPKP1	15 18 22.8				i	07 09 13.4
				Probably south of Tonga Islands.					micr sec
"	12	Up	ePKP1	15 42 11				i	Z' 0.1 1.0
		Ud	iPKP1	15 42 12.9 C			Ki	iP	07 09 06.8
				Probably south of Tonga Islands.				i	07 09 09.3
"	12	Ud	iP	16 27 48.2					micr sec
								i	Z' 0.1 1.0
							Sk	iP	07 09 22.8

(cont.)

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

1977				1977			
Oct.	13	(cont.)		Oct.	13	(cont.)	
		Um	iP 07 09 03.0 D			De	ipP 11 42 00.2
			i 07 09 05.8			Burma-India border region.	
		Ud	iP 07 09 17.5			h = 60 km (Up,Ki,Sk,Um,Ud,De).	
			i 07 09 20.4			m = 6.2 (Up,Ki).	
		De	iP 07 09 12.0				
		Nicobar Islands region		"	13	Ud	iP 14 12 20.1
		(h = N).		"	13	De	iP 14 59 29.7
		M = 5.8 (Up,Ki).		"	13	Up	iP 18 24 19.8 C
		Double P, average separation					
		3 s.		"	13	Up	iP 20 46 22.3 C
"	13	Up	iP 08 02 19.8	"	13	Ki	eP 20 46 28
		Ki	iP 08 02 20.6			Sk	iP 20 46 47.1
			ipP 08 02 28.2			Um	iP 20 46 19.3
		Sk	ipP 08 02 44.2			Ud	iP 20 46 38.7
		Um	iP 08 02 15.1			Tadzhik SSR (h = 140 km).	
		Ud	iP 08 02 31.8	"	13	Up	iP 21 30 34.5
		De	iP 08 02 31.1				micr sec
		Nicobar Islands region					Z' 0.2 1.5
		(h = N).				Ki	iP 21 30 35.8
"	13	Up	iP 08 48 10.7				micr sec
		Ki	iP 08 47 51.9				Z' 0.1 1.0
			i 08 48 06.8			Sk	iP 21 30 53.5
		Um	i 08 48 11.3			Um	iP 21 30 32.4
		Ud	iP 08 48 19.7			Ud	iP 21 30 43.6
		Luzon, Philippine Islands				De	iP 21 29 46.7
		(h = 45 km).				Nicobar Islands region	
"	13	Sk	eSgl 11 03 53			(h = N).	
		Ud	i 11 03 04.3			m = 5.8 (Up,Ki).	
			iSgl 11 03 31.8	"	14	Ki	iPgl 03 42 14.8
"	13	Ki	i(P) 11 28 30.8				iSgl 03 42 33.8
			i 11 28 37.3			Sk	iSgl 03 44 48.0
						Um	iSgl 03 43 36.0
"	13	Up	iP 11 42 29.8			Norrbotten, Sweden,	
			ipP 11 42 46.0			67.0°N, 23.4°E.	
			micr sec			Origin time = 03 41 49.	
			P Z' 0.1 0.9			M _L = 2.7 (Ki,Um).	
			pP Z' 0.2 0.9			Checked with Finnish station	
		Ki	iP 11 42 24.2			readings.	
			i 11 42 34.4	"	14	Up	iPKP 05 14 53.0
			ipP 11 42 41.3				micr sec
			micr sec				Mx E 4.0 23
			pP Z' 0.2 1.0				Mx N 2.0 22
		Sk	iP 11 42 46.2			Ki	iPKP 05 14 36.0
			ipP 11 43 02.4				micr sec
		Um	iP 11 42 22.4				PKP Z' 0.1 1.0
			ipP 11 42 40.0				Mx N 2.0 21
		Ud	iP 11 42 43.1			Sk	iPKP 05 14 45.7
			ipP 11 42 58.2			Um	iPKP 05 14 44.6 C
			i 11 43 12.3			Ud	i(PKP) 05 14 38.7
		De	iP 11 42 44.1			(cont.)	
		(cont.)				(cont.)	

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

1977				1977			
Oct.	14	(cont.)		Oct.	14	Up iRg	12 51 32.8
		Ud iPKP	05 14 51.8			Ud i(Sgl)	12 51 26.4
		De i(PKP)	05 14 48.8			Regional, near-surface event.	
		Tonga Islands (h = N).					
		M = 6.0 (Up,Ki).		"	14	Up iRg	14 07 49.7
"	14	Up iP	07 04 39.3			Ud iSgl	14 08 48.0
		Ud iP	07 05 06.8			Regional, near-surface event.	
		De iP	07 04 55.5	"	14	Ud iP	14 16 24.0
"	14	Up iSgl	11 09 41.8			Turkey (h = N).	
		Ud iSgl	11 10 29.6	"	14	Up iSgl	14 26 27.7
		De i	11 09 31.5			Sk iSgl	14 26 30.5
		iSgl	11 10 03.0			Ud iPgl	14 24 35.4
		Coast of Latvia, near				iSgl	14 25 31.3
		57 1/4° N, 21° E.				De iPgl	14 24 45.8
		Origin time = 11 08 06.				iSgl	14 25 47.9
		M _L = 2.4 (Ud).				Coast of southwest Norway,	
		Explosion?				near 58 1/2° N, 6° E.	
"	14	De iPKP	11 11 22.3			M _L = 2.9 (Up,Ud).	
		Tonga Islands (h = 250 km).				Origin time = 14 23 21.	
"	14	Ki i(P)	11 35 50.6			Checked with Kongsberg readings.	
"	14	Up iP	11 59 58.8	"	14	Ki i(P)	16 51 28.4
		i	12 00 05.4	"	14	Ud iP	17 03 09.1
			micr sec	"	14	Ud iP	17 48 30.9
		i	Z' 0.1 1.2	"	14	Ud iP	17 57 36.5
		Ki iP	11 59 40.8	"	14	Um iP	19 01 06.8
		i	11 59 46.7			Ud iP	19 01 12.7
		Um iP	11 59 45.6			i	19 01 33.3
		Ud i	12 00 09.7	"	14	Ud iP	19 46 34.5
		Luzon, Philippine Islands		"	14	Ud iP	20 40 41.3
		(h = 60 km).				South of Timor (h = N).	
"	14	Ki iP	12 31 09.9	"	14	Up iP	20 56 27.9 C
"	14	Up iPKP	12 48 09.7			Ki iP	20 56 06.8
			micr sec			Ud iP	20 56 37.0
		PKP	Z' 0.1 1.2	"	14	Philippine Islands region	
		Ki iPKP	12 47 55.7 C			(h = 15 km).	
			micr sec	"	14	Ud iP	21 16 28.5
		PKP	Z' 0.1 1.0	"	14	Ud iP	21 31 40.5
		Sk iPKP	12 48 06.8 C	"	15	Ud iP	00 38 51.3
		Um iPKP	12 48 01.8 C			De iP	00 38 18.5
		Ud iPKP	12 48 11.8	"	15	Ki iP	02 25 54.1
		De i(PKP)	12 48 04.5			Ud iP	02 26 17.8
		iPKP	12 48 17.0			Molucca Passage (h = 70 km).	
		New Hebrides Islands					
		(h = 130 km).					
"	14	Up iRg	12 50 51.3				
		Regional, near-surface event.					

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1977				1977			
Oct.	16	Ud	iP	07 20	13.7	Oct.	16 (cont.)
"	16	Up	iP	10 56	08.2 C	Up	micr sec
			i	10 56	15.6	P	Z' 0.1 0.9
			P			Ki	iP 19 16 25.8
			Z'	0.1	1.0	Sk	eP 19 17 02
		Ki	iP	10 55	19.1	Um	iP 19 16 48.1
		Sk	iP	10 55	55.1	Ud	iP 19 17 20.2
			i	10 56	01.8	De	iP 19 17 39.4
		Um	iP	10 55	41.1	Kuril Islands region	
			i	10 55	47.3	(h = 45 km).	
		Ud	iP	10 56	13.4	"	16 Up iP 19 22 02.5 C
			i	10 56	22.2		i 19 22 14.1
		De	iP	10 56	32.1		micr sec
		Kuril Islands (h = 40 km).					P Z' 0.1 0.8
"	16	Ud	iP	13 09	53.6	Ki	iP 19 21 13.2
			i	13 10	02.7	Sk	iP 19 21 49.6
"	16	Up	iPKP1	13 33	49.7	Um	iP 19 21 36.5
			i	13 34	14.1	Ud	iP 19 22 07.6 C
			PKP1			De	iP 19 22 27.2
			Z'	0.2	1.4	Kuril Islands (h = N).	
		Sk	iPKP1	13 33	43.2	"	16 Ud iP 19 50 33.2 C
		Um	iPKP1	13 33	37.6 C	"	16 Up iP 20 14 36.7
		Ud	iPKP1	13 33	50.2		Ud iP 20 14 41.5
		De	iPKP1	13 33	58.1	"	16 Up iP 21 16 18.2
		Kermadec Islands region				Ki	iP 21 15 26.9
		(h = 20 km).				Ud	iP 21 16 21.9
"	16	Um	iP	14 07	47.1	Kuril Islands (h = 40 km).	
		Ud	iP	14 08	01.2	"	16 Up iP 21 23 14.5
"	16	Um	iP	15 10	06.5		micr sec
		Ud	iP	15 10	24.9	Mx	E 2.5 25
		Afghanistan-USSR border				Mx	N 6.9 25
		region (h = 260 km).				Mx	Z 5.9 25
"	16	Up	iSgl	16 02	59.8	Ki	iP 21 23 05.2
		Sk	iSgl	16 02	15.4		micr sec
		Ud	iPgl	16 01	11.4	P	Z' 0.1 0.1
			iSgl	16 01	53.3	Mx	E 2.6 20
		De	eSgl	16 02	59	Mx	N 8.5 25
		Southern Norway, near				Sk	iP 21 23 24.6
		60 1/2°N, 7 1/2°E.				Um	iP 21 23 10.9
		Origin time = 16 00 15.				Ud	iP 21 23 22.2
		By combination with				De	eP 21 23 24
		Kongsberg readings.				Sumbawa Island region (h = N).	
"	16	Ud	iP	17 39	40.7	M = 6.2 (Up,Ki).	
"	16	Ud	iP	17 52	10.8	"	16 Ud iP 23 38 07.6
"	16	Up	iP	19 17	14.9	"	17 Um iP 02 24 59.1
		(cont.)					Ud iP 02 25 09.8

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1977				1977			
Oct.	18	(cont.)		Oct.	18	Ud	i(PKP) 23 42 45.0
		Um	iP 07 14 08.6			De	iPKP1 23 42 54.5
		Ud	iP 07 14 31.5			Fiji Islands region	
			ipP 07 14 46.2			(h = 600 km).	
		South of Alaska.		"	18	Ud	iP 23 57 42.0
		h = 55 km (Up,Ki,Ud).					
"	18	Ud	iP 08 45 16.4	"	19	Ki	iP 02 24 41.9 D
		Banda Sea (h = 110 km).					i 02 25 07.7
"	18	Ud	iP 09 27 58.4			Sk	iP 02 25 09.7
"	18	Up	iP 09 43 33.0			Ud	iP 02 25 36.2
		Ud	iP 09 42 58.2			De	eP 02 26 00
							i 02 26 23.5
						Central Alaska (h = 100 km).	
"	18	Um	iP 10 20 00.6	"	19	Ud	iPKP 02 41 04.6
		Ud	iP 10 20 08.2				i 02 41 13.7
		Central California (h = 5 km).				De	iPKP1 02 41 10.7
"	18	Up	iP 12 40 51.6			Tonga Islands (h = N).	
"	18	Ud	iP 12 51 25.0	"	19	Up	iP 02 55 58.3 C
			i 12 51 33.6			Ki	eP 02 55 42
"	18	Ud	iP 14 49 32.0			Sk	eP 02 56 08
		De	iP 14 48 59.2			Ud	iP 02 56 09.0
"	18	Up	iSgl 15 00 44.1			De	iP 02 56 15.5
		Ud	i 14 59 19.2			Eastern China (h = N).	
			iSgl 14 59 41.3	"	19	Up	iP 05 09 20.0
"	18	Up	iP 20 33 15.7 C			Ki	iP 05 09 27.3 C
			i 20 33 25.2			Sk	iP 05 09 45.5
			micr sec			Um	iP 05 09 18.1
		P	Z' 0.2 1.0			Ud	iP 05 09 36.5
		Ki	iP 20 32 25.9			Afghanistan-USSR border	
		Sk	eP 20 32 59			region (h = 230 km).	
		Um	iP 20 32 48.9 C	"	19	Up	iP 06 42 50.0
		Ud	iP 20 33 20.3				i 06 43 05.1
		De	iP 20 33 40.7				micr sec
		Kuril Islands region					Z' 0.2 0.9
		(h = N).				Mx	E 0.7 13
"	18	Up	iP 21 22 49.5			Mx	N 1.0 14
			i 21 23 34.1			Mx	Z 2.3 17
			micr sec			Ki	iP 06 43 25.1 C
		P	Z' 0.1 1.0				micr sec
		Ki	iP 21 22 00.6				Z' 0.2 0.8
			i 21 22 35.8			Mx	E 2.0 14
		Sk	iP 21 22 37.8			Mx	N 3.3 12
		Ud	iP 21 22 55.1 D			Sk	iP 06 43 24.8 C
			i 21 23 39.1			Um	iP 06 43 02.8 C
		De	iP 21 23 14.4			Ud	iP 06 43 05.7 C
		Kuril Islands (h = N).					i 06 43 20.9
							iPP 06 44 54.0
						De	iP 06 42 49.9 C
						Southern Iran (h = N).	
						m = 5.9, M = 5.2 (Up,Ki).	

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1977				1977			
Oct.	22	(cont.)		Oct.	23	(cont.)	
		Ud	i 18 17 03.1			Ki	iPKP 10 50 52.0
			i 18 23 37.0				ipPKP 10 51 15.3
			i 18 25 44.6				i 10 54 05.2
			iPKKP 18 26 07.2				micr sec
		De	iPdiff 18 10 27.2				PKP Z' 0.1 1.5
			iPP 18 14 53.5				Mx N 1.6 24
			i 18 16 11.3			Sk	iPKP 10 51 02.2
			i 18 25 56.1				iSKP1 10 54 25.2
			iPKKP 18 26 15.3			Um	iPKP 10 50 59.9
			i 18 28 14.7				ipPKP 10 51 22.5
		Santiago del Estero Prov., Arg. (h = 610 km).					iSKP1 10 54 17.9
		m = 6.5, M = 5.9 (Up,Ki).				Ud	i(PKP) 10 50 57.9
		M not corrected for focal depth.					iPKP 10 51 07.4
							i 10 54 43.8
						De	iPKP1 10 51 05.8
							ipPKP1 10 51 30.4
"	22	Ud	iP 20 05 28.5			Loyalty Islands region.	
			i 20 05 37.9			h = 60 km (Up,Ki,Um,De).	
		De	iP 20 05 00.0			M = 5.5 (Up,Ki).	
"	22	Ud	iPKP1 23 52 40.8	"	23	Up	iP 11 16 57.2
		De	iPKP1 23 52 52.0			Um	iP 11 16 32.1
		South of Fiji Islands (h = 510 km).				Ud	iP 11 17 02.9
"	23	Up	ePKP1 03 04 18	"	23	Up	iP 11 29 32.4
			eSKP1 03 07 04			Ki	iP 11 28 50.2
		Ki	eSKP1 03 06 40			Um	iP 11 29 08.5
		Um	i(PKP) 03 04 10.0			Ud	iP 11 29 40.6
			iSKP1 03 06 52.2			Near e. coast of eastern USSR (h = 340 km).	
		Ud	iPKP1 03 04 17.7	"	23	Up	iPKP1 11 44 23.6
			iSKP1 03 07 05.0			Ud	iPKP1 11 44 25.8
		De	iPKP1 03 04 29.3			De	iPKP1 11 44 35.6
			iSKP1 03 07 14.4	"	23	Up	iPKP1 12 56 55.1
		Fiji Islands region (h = 590 km).				Sk	iPKP1 12 56 47.9
"	23	Up	iP 05 49 48.9				i 12 57 03.0
		Sk	iP 05 50 32.5			Um	iPKP1 12 56 44.4
		Um	iP 05 50 29.7			Ud	iPKP1 12 56 56.4
		Ud	iP 05 49 55.4			De	iPKP1 12 57 05.6
			i 05 50 00.0			Kermadec Islands (h = 20 km).	
		De	iP 05 49 19.3	"	23	Up	iSg1 19 08 11.4
		Greece (h = 60 km).				Sk	eSg1 19 09 16
"	23	Up	iP 09 56 42.5			Ud	iPg1 19 07 18.3
		De	iP 09 56 38.6				iSg1 19 07 28.8
		Mid-Indian Rise (h = N).				De	iSg1 19 08 35.7
"	23	Up	iPKP 10 51 06.9			Lake Vänern, Sweden, 59.3°N, 13.4°E.	
			ipPKP 10 51 29.5			Origin time = 19 07 04.	
			iSKP1 10 54 29.9			M _L = 2.2 (De).	
			micr sec	"	23	Ud	i(P) 20 50 13.1
		Mx	N 0.9 24				
		Mx	Z 1.7 29				
		(cont.)					

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1977		1977	
Oct.	25	(cont.)	Oct. 26
		Ud iPKP2 17 10 16.4	Up iP 13 25 00.4
		Off w. coast of S. Island,	Ud iP 13 25 05.0
		N.Z. (h = N).	" 26
"	25	Up iP 18 08 22.6	Sk iPgl 14 00 07.0
		Ki iP 18 08 17.4 D	iSgl 14 00 11.7
		Ud iP 18 08 39.5 D	iRg 14 00 14.4
		De iP 18 08 40.3	Origin time = 13 59 59.
		Southern Sinkiang Prov.,	Regional, near-surface event.
		China (h = 30 km).	" 26
"	25	Up iP 18 23 24.1	Up i 14 10 04.0
		i 18 23 35.5	Ki iP 14 09 11.4
		Ki iP 18 23 03.0	Um iP 14 09 29.8
		i 18 23 14.9	Ud iP 14 10 00.0
		Um i 18 23 22.6	i 14 10 07.3
		Ud iP 18 23 33.9	De i 14 10 27.2
		De iP 18 23 40.3	Off east coast of Honshu,
		Philippine Islands region	Japan (h = 20 km).
		(h = N).	" 26
"	25	Up iP 22 06 38.2 C	Up iP 15 21 56.4
		i 22 06 50.0	i 15 22 01.3
		Ki iP 22 05 59.0	i 15 22 42.5
		i 22 06 12.2	micr sec
		Sk iP 22 06 32.4	P Z' 0.4 0.9
		Um iP 22 06 16.2 C	Ki iP 15 21 03.3
		Ud iP 22 06 45.3 C	i 15 21 48.3
		Near east coast of Honshu,	micr sec
		Japan (h = 40 km).	P Z' 0.2 0.7
"	25	Up iP 22 16 19.1 C	Sk iP 15 21 36.0
		Ki iP 22 15 30.1	Um iP 15 21 29.1 C
		Um iP 22 15 53.5	Ud iP 15 21 57.3 C
		Ud iP 22 16 24.3	De iP 15 22 19.1
"	26	Ki ePKP 01 23 23	Rat Islands, Aleutian Islands
		iPKP2 01 23 37.9	(h = N).
		South Island, New Zealand	m = 6.5 (Up,Ki).
		(h = N).	" 26
"	26	Up iSgl 04 12 44.9	Up iP 17 09 48.6
		Ki eSgl 04 13 29	Ki iP 17 10 27.5
		Sk iPgl 04 10 18.6	Sk iP 17 10 27.3
		iSgl 04 10 55.8	Um iP 17 10 03.1
		Um iSgl 04 12 46.0	Ud iP 17 10 03.9
		Ud iSgl 04 11 52.9	De iP 17 09 48.4
		De iSgl 04 13 25.3	Iran (h = 50 km).
		Off west coast of Norway,	" 26
		near 63 1/2°N, 6°E.	Ud iP 19 41 20.0
		Origin time = 04 09 28.	" 26
		M _L = 2.9 (Up,Sk,Um,Ud,De).	Ud iP 21 33 19.5
"	26	Up iP 07 22 31.5	" 27
		Ud iP 07 22 35.8	Up iP 00 25 52.0
			Um iP 00 25 34.1
			Ud iP 00 25 54.0
			" 27
			Up iP 00 29 32.9
			i 00 29 41.9
			micr sec
			P Z' 0.1 0.9
			Ki iP 00 30 12.2
			(cont.)

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

1977				1977						
Oct.	29	(cont.)		Oct.	29	Ud	iPKP1	17 35	11.1	
		Um	iP			De	iPKP1	17 35	22.1 C	
		Ud	iP			Fiji Islands region				
		De	iP			(h = 540 km).				
		Eastern Kazakh SSR.								
		m = 6.0 (Up,Ki).				"	29	Up	iP	21 26 09.3
		Underground explosion.						Sk	iP	21 25 54.7
"	29	Up	iP	03 14 00.0 C				Um	iP	21 26 11.7 C
				micr sec				Ud	iP	21 25 59.1
			P	Z' 1.1 1.0				De	iP	21 26 03.8
		Ki	iP	03 13 43.4 C				Panama (h = 40 km).		
				micr sec		"	30	Ki	iPKP1	01 17 22.9
			P	Z' 0.8 0.7				Um	iPKP1	01 17 30.8
		Sk	iP	03 14 14.9 C					iPKP2	01 17 42.3
		Um	iP	03 13 44.6 C				North Island, New Zealand		
		Ud	iP	03 14 16.5 C				(h = N).		
		De	iP	03 14 24.0 C						
		Eastern Kazakh SSR.				"	30	Up	iPKP1	01 23 20.4
		m = 6.7 (Up,Ki).							iSKP1	01 26 12.9
		Underground explosion.						Ud	iPKP1	01 23 21.5
"	29	Up	iSgl	07 12 36.4					iSKP1	01 26 11.2
		Sk	iSgl	07 11 59.1				De	iPKP1	01 23 33.7
		Um	eSgl	07 13 35				Fiji Islands region		
		Ud	iPgl	07 10 57.3				(h = 570 km).		
			iSgl	07 11 35.1		"	30	Up	iPP	02 09 23.6
		De	iSgl	07 12 41.0				Ud	iP	02 05 07.6
		Southern Norway, near							iPP	02 09 36.5
		60 1/2°N, 8°E.						South of Sumbawa Island		
		Origin time = 07 10 07.						(h = N).		
		M _L = 2.6 (Sk,Ud,De).				"	30	Up	iP	02 30 42.3
"	29	Up	iPKP	10 33 59.5				Sk	iP	02 30 29.4
		Ki	iPKP	10 33 45.3				Um	iP	02 30 46.0
				micr sec				Ud	iP	02 30 30.9
			PKP	Z' 0.1 1.0					i	02 30 40.9
		Sk	iPKP	10 33 56.0				Panama (h = N).		
		Um	iPKP	10 33 52.0		"	30	Up	i(PKP)	06 43 40.3
		Ud	iPKP	10 34 01.5					iPKP1	06 43 42.7
			iSKP1	10 37 09.0					iSKP1	06 46 30.1
		De	iPKP	10 34 07.9				Sk	i(PKP)	06 43 33.5
		New Hebrides Islands							iSKP1	06 46 22.6
		(h = 180 km).						Um	i(PKP)	06 43 33.7
"	29	Ud	iP	10 44 51.2					iPKP	06 43 41.3
		Kuril Islands (h = 60 km).							iSKP1	06 46 17.7
"	29	Ud	iP	10 50 15.7				Ud	i(PKP)	06 43 41.7
									iPKP1	06 43 44.8
"	29	Ud	iP	12 24 46.8					iSKP1	06 46 31.8
								De	iPKP1	06 43 53.6 C
									iSKP1	06 46 40.1
"	29	Up	iP	16 38 53.9				Fiji Islands region		
		Northern Sulawesi						(h = 600 km).		
		(h = 70 km).								

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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

N O V E M B E R 1 - 30, 1977

1977					1977				
Nov.	1	Ud	iPKP1	08 44 47.3	Nov.	2	Ki	iSgl	05 38 16.7
		De	iPKP1	08 44 59.1					
		Tonga Islands region (h = N).			"	2	Up	iP	06 41 14.8
"	1	Ud	i(P)	14 29 06.0				i	06 41 27.4
									micr sec
"	1	Ud	iP	15 53 42.8			Ki	iP	Z' 0.1 1.2
								i	06 40 22.3 D
"	1	Ud	i(Pgl)	16 44 40.5					06 40 32.6
			i	16 44 41.5				P	Z' 0.1 1.1
			i(Sgl)	16 45 07.4			Sk	eP	06 40 59
		De	i(Sgl)	16 45 52.1			Um	iP	06 40 47.9
"	1	Um	iP	19 01 31.6			Ud	eP	06 41 18
								i	06 41 31.9
"	1	Up	iP	20 41 38.4			De	iP	06 41 39.7
		Ki	iP	20 41 36.2			Off east coast of Kamchatka		
		Ud	iP	20 41 47.3			(h = N).		
		De	iP	20 41 46.5			m = 5.7 (Up,Ki).		
		Sunda Strait (h = 100 km).			"	2	Ud	i(P)	13 37 42.4
"	1	De	iPKP1	21 35 33.3	"	2	Up	ipP	15 01 55.0
		Fiji Islands region					Ud	iP	15 01 29.9
		(h = 250 km).						ipP	15 01 44.5
"	2	Ki	eP	01 13 59			Peru.		
		Ud	eP	01 14 34			h = 50 km (Ud).		
		Taiwan (h = 90 km).			"	2	Up	iPKP1	16 28 45.7
"	2	Ud	iP	01 30 37.9			Sk	iPKP1	16 28 39.2
							Ud	iPKP1	16 28 47.6
"	2	Up	i	02 55 10.5				i	16 28 51.4
		Ki	iPKP1	02 54 40.8			De	iPKP1	16 28 56.5
				micr sec	"	3	Up	iP	02 27 07.9
		PKP1	Z'	0.1 1.0				iS	02 30 26
		Sk	ePKP1	02 54 56				i	02 33 32.0
			i	02 55 06.2					micr sec
		Um	iPKP1	02 54 50.4				P	Z' 0.9 1.8
		Ud	iPKP1	02 55 01.4			(cont.)		

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

1977				1977			
Nov.		(cont.)		Nov.		(cont.)	
	3	Up	micr sec		4	Up	i 10 04 00.1
		Mx	E 9.6 10			iS	10 12 56
		Mx	N 7.0 7			i	10 32 24.2
		Mx	Z 9.8 11				micr sec
		Ki	iP 02 28 29.0			P	Z' 0.1 0.9
			i 02 28 31.2			i	Z' 0.2 1.0
			iLg2 02 37 00.9			Mx	E 13 21
			micr sec			Mx	N 47 23
			i Z' 0.4 1.9			Mx	Z 63 23
		Mx	E 10 8		Ki	iP	10 03 00.7
		Mx	N 14 8			i	10 03 08.5
		Mx	Z 13 9			i	10 03 31.4
		Sk	iP 02 27 55.0			iS	10 11 18
			i 02 36 02.4			iP'P'	10 32 25.6
		Um	iP 02 27 47.4				micr sec
			i 02 27 52.9			P	Z' 0.1 1.2
			iS 02 31 52.7			i	Z' 0.1 0.9
			iLg2 02 34 58.8			Mx	E 18 21
		Ud	iP 02 27 19.5			Mx	N 18 21
			i 02 27 20.5			Mx	Z 17 22
			iLg2 02 33 26.0		Sk	iP	10 03 33.9
			i 02 34 29.5			i	10 03 44.0
		De	iP 02 26 38.3			iP'P'	10 32 15.8
			i 02 26 44.9		Um	iP	10 03 27.4
			i 02 31 58.1			i	10 03 33.6
		Bulgaria (h = 5 km).				iS	10 12 07
		m = 5.7 (Up,Ki).				i	10 32 30.8
"	3	Ud	iP 12 39 06.6		Ud	iP	10 03 54.2
		Kuril Islands (h = 45 km).				i	10 03 56.3
"	3	Ud	eP 16 39 32		De	iP	10 04 16.8
						i	10 05 00.6
"	3	✓Ki	iP 17 38 08.0		Andreanof Islands, Aleutian Islands (h = N).		
			micr sec		m = 6.0, M = 6.5 (Up,Ki).		
			P Z' 0.1 1.2	"	4	Up	iP 10 13 03.7
		Um	iP 17 38 18.5			iPcP	10 13 27.8
		Ud	iP 17 38 39.7				micr sec
		South of Mariana Islands (h = N).				P	Z' 0.1 0.9
"	3	Ki	iP 17 48 37.3		Ki	iP	10 12 09.3
		Ud	iP 17 49 09.1		Ud	iP	10 13 03.4
		South of Mariana Islands (h = 35 km).				i	10 13 24.2
"	3				De	iP	10 13 25.8
					Andreanof Islands, Aleutian Islands (h = N).		
"	3	Ki	iP 19 52 33.7	"	4	Ud	iP 11 02 46.4
		Ud	iP 19 52 03.9	"	4	Ud	iP 11 34 02.0
		Turkey (h = N).		"	4	✓Up	iP 18 18 32.1
"	4	Ud	iP 09 39 24.8			i	18 18 47.3
"	4	Up	iP 10 03 54.9			i	18 19 09.9
		(cont.)					micr sec
						P	Z' 0.1 1.0
					(cont.)		

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

1977				1977					
Nov.	4	(cont.)		Nov.	6	Up	iP	02 49 55.0	
		Ki	eP				i	02 50 16.6	
			i			Ki	iP	02 49 01.5	
		Sk	e			Sk	eP	02 49 38	
			e			Um	iP	02 49 26.9	
		Um	iP			Ud	iP	02 49 58.5	
		Ud	iP				i	02 50 05.1	
			i				i	02 50 21.7	
		De	iP				i	02 50 34.3	
		Andreanof Islands, Aleutian Islands (h = N).				De	iP	02 50 20.2	
						Near east coast of Kamchatka (h = 70 km).			
"	5	Up	iP	00 03 53.4	"	6	Sk	iP	02 53 45.1
		Ki	iP	00 03 55.3			Um	iP	02 53 36.1
		Sk	iP	00 04 14.6			Ud	iP	02 53 08.1
		Ud	iP	00 04 08.4			Bulgaria (h = 25 km).		
		Nepal (h = 15 km).							
"	5	Up	iP	01 37 15.3	"	6	Ud	iP	03 28 20.6
		Ki	iP	01 36 43.7			Mid-Indian Rise (h = N).		
		Mariana Islands region (h = 40 km).			"	6	Ud	iP	05 51 39.5
"	5	Up	iP	02 15 08.8	"	6	Up	iP	07 18 49.5 c
		Ki	iP	02 15 36.5	"	6	Ud	iP	07 40 59.6
		Ud	eP	02 15 17	"	6	Up	iP	07 45 23.4
"	5	Up	iP	14 55 01.2	"	6		i	07 45 37.1
			i	14 55 03.7					micr sec
			iPcP	14 55 27.4				P	Z' 0.2 0.9
				micr sec			Ki	iP	07 44 30.1
			i	Z' 0.1 1.0					micr sec
		Mx	E	2.1 22				P	Z' 0.1 1.2
		Mx	N	6.0 22			Um	iP	07 44 56.2
		Mx	Z	9.3 22			Ud	iP	07 45 24.6
		Ki	iP	14 54 09.0			De	iP	07 45 46.2
				micr sec			Andreanof Islands, Aleutian Islands (h = N).		
		Mx	E	2.0 19			m = 5.9 (Up,Ki).		
		Mx	N	2.0 18	"	6	Ud	iP	13 39 27.5
		Mx	Z	2.7 18			Afghanistan-USSR border region (h = 160 km).		
		Sk	iP	14 54 41.6	"	6	Sk	iP	15 01 51.5
		Um	iP	14 54 35.6			South of Panama (h = N).		
			iPcP	14 55 08.7	"	6	Ud	iP	15 36 41.0
			iS	15 03 12			Andreanof Islands, Aleutian Islands (h = N).		
		Ud	iP	14 55 03.1	"	6	Sk	iP	17 16 11.6
			iPcP	14 55 27.1			Ud	iP	17 15 32.6
		De	iP	14 55 26.0			Rumania (h = 130 km).		
		Andreanof Islands, Aleutian Islands (h = N).							
		M = 5.6 (Up,Ki).							
"	6	Ud	iS	01 26 56.3	"	6	Sk	iP	17 16 11.6
		De	iP	01 24 38.6			Ud	iP	17 15 32.6
			iS	01 25 44.7			Rumania (h = 130 km).		
		Germany (h = 25 km).							

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

1977				1977					
Nov.	6	Ki	iP	17 31 00.9	Nov.	7	Up	iRg	09 30 58.6
				micr sec					Probably rockburst at the
			P	Z' 0.1 1.0					Dannemora iron ore mines,
		Um	iP	17 31 05.2					Sweden, 60.1°N, 17.5°E.
		Ud	iP	17 31 23.1 C					
				Northern Sulawesi (h = N).	"	7	Up	iRg	09 31 10.5
"	7	Up	iSgl	00 39 44.8					Probably rockburst at the
		Ki	iPn	00 35 19.8					Dannemora iron ore mines.
			iPgl	00 35 26.4	"	7	Up	e(P)	10 25 04
			iSn	00 35 55.9					
			iSgl	00 36 06.4	"	7	Ud	i(P)	10 34 02.5
		Sk	iSn	00 38 04.5					
			iSgl	00 38 54.1	"	7	Sk	iSgl	11 49 05.4
		Um	iSgl	00 37 35.1			Ud	iSgl	11 48 41.5
		Ud	iSn	00 39 11.7			De	iSgl	11 49 44.6
			i	00 40 04.4					Southern Norway, 60.4°N,
			iLgl	00 40 12.6					7.5°E.
		De	iLgl	00 41 50.3					Origin time = 11 47 06.
				North Finland-USSR, near					M _L = 2.4 (Ud).
				69°N, 28 1/2°E.					By combination with Bergen
				M _L = 3.6 (Up,Ki,Sk,Um,Ud,De).					and Kongsberg readings.
				Origin time = 00 34 32.					
				Felt.	"	7	Up	iRg	15 01 19.4
"	7	Up	iP	04 55 04.0					Probably rockburst at the
				Greece (h = N).					Dannemora iron ore mines.
"	7	Up	iP	08 30 28.0	"	7	Up	iPgl	16 01 17.2
				micr sec				iSgl	16 01 21.1
			P	Z' 0.3 1.5				iRg	16 01 23.5
		Ki	iP	08 29 39.6			Um	iSgl	16 03 08.1
				micr sec			Ud	iPgl	16 01 47.8
			P	Z' 0.1 0.9				iSgl	16 02 15.6
		Sk	eP	08 30 16				iRg	16 02 28.6
		Um	iP	08 30 01.9					Rockburst at the Dannemora
		Ud	iP	08 30 33.2					iron ore mines.
		De	iP	08 30 52.3					Origin time = 16 01 06.
				Kuril Islands (h = N).					Felt.
				m = 5.9 (Up,Ki).	"	7	Up	iRg	16 01 38.5
"	7	Up	iP	08 37 20.4					Probably rockburst at the
			iPP	08 41 03.2					Dannemora iron ore mines.
				micr sec	"	7	Up	iRg	17 36 11.5
			P	Z' 0.1 0.9					Probably rockburst at the
		Ki	iP	08 36 53.6					Dannemora iron ore mines.
				micr sec	"	7	Up	iRg	20 06 37.9
			P	Z' 0.1 1.0					Probably rockburst at the
		Sk	iP	08 37 17.1					Dannemora iron ore mines.
		Um	iP	08 37 05.0					
		Ud	iP	08 37 26.5	"	7	Up	iP	21 44 39.7
			iPP	08 41 16.0				i	21 44 51.4
		De	eP	08 37 40			Ki	iP	21 44 09.1
				Mariana Islands (h = 260 km).					(cont.)
				m = 6.0 (Up,Ki).					

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

1977				1977			
Nov.	7	(cont.)		Nov.	8	(cont.)	
		Ki i	21 44 20.4			Up	micr sec
		Um iP	21 44 18.8			P	Z' 0.2 1.3
		i	21 44 33.0			Mx	N 2.0 19
"	7	Up iPKKP	23 26 12.4			Ki iP	15 09 14.1
		Ki iPKP	23 15 44.1				micr sec
		Sk ePKKP	23 26 16			P	Z' 0.1 1.4
		Ud iPKP	23 15 57.2			Mx	E 3.8 15
		iPKKP	23 26 06.9			Mx	N 4.3 16
		De iPKP	23 16 03.4			Mx	Z 2.7 18
		Solomon Islands (h = 80 km).				Sk eP	15 09 50
"	8	Up iPKP1	03 21 17.5			Um iP	15 09 36.3
		Sk iPKP1	03 21 09.9			Ud iP	15 10 07.5 C
		Um iPKP1	03 21 04.8			i	15 10 38.0
		Ud iPKP1	03 21 18.1			De iP	15 10 27.0
		De iPKP1	03 21 26.5			Kuril Islands (h = N).	
		Kermadec Islands region (h = 350 km).		"	8	Ud iP	15 43 41.0
"	8	Up iP1	04 00 05.0			Banda Sea (h = 360 km).	
		iP2	04 00 08.6	"	8	Sk eP	21 50 46
			micr sec			Um iP	21 50 47.8
		P2	Z' 0.1 0.9			i	21 51 10.2
		Mx	E 1.5 20			Ud iP	21 50 13.4 C
		Mx	N 6.8 20			i	21 50 23.2
		Mx	Z 3.8 19			Mediterranean Sea (h = N).	
		Ki iP1	03 59 47.8	"	9	Um iP	00 49 39.5
			micr sec			Ud iP	00 50 11.2
		P1	Z' 0.1 1.7			Kuril Islands (h = 50 km).	
		Mx	E 1.9 17	"	9	Ud iP	05 37 34.0
		Mx	N 4.0 17	"	9	Ud iP	05 39 24.0
		Mx	Z 1.4 20	"	9	Ud iP	08 24 42.2
		Sk eP2	04 00 14			Kuril Islands (h = 25 km).	
		Um iP2	03 59 56.6	"	9	Ki iPKP	09 03 36.2
		Ud iP1	04 00 14.0			Um iPKP	09 03 42.7
		iP2	04 00 17.5			iSKP	09 07 08.8
		De eP2	04 00 22			Ud iPKP	09 03 52.7
		Luzon, Philippine Islands (h = N).		"	9	New Hebrides Islands (h = 25 km).	
		m = 5.9, M = 6.0 (Up,Ki).		"	9	Ud iP	11 27 25.5
"	8	Ki iP	09 35 13.9			Iran (h = N).	
		iP	09 35 22.8	"	9	Up iPn	14 16 42.2
			micr sec			iSn	14 18 11.0
		pP	Z' 0.1 1.2			i	14 18 13.5
		Ud iP	09 35 49.5			i	14 18 25.8
		Luzon, Philippine Islands. h = 30 km (Ki).		"	9	Ki iPn	14 16 54.8
"	8	Up i(P)	14 09 21.4			i	14 17 05.0
"	8	Up iP	15 10 02.7			(cont.)	
		(cont.)					

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

1977				1977			
Nov.	9	(cont.)		Nov.	9	(cont.)	
		Ki	iSn 14 18 29.6			De	iP 22 11 57.3 C
			i 14 18 50.1			Southern Nevada.	
		Sk	iPn 14 15 56.9			m = 6.5 (Up,Ki).	
			i 14 16 38.4			Underground explosion.	
			i 14 16 49.5		"	10	Ki iPKP1 04 34 51.3
		Um	iSn 14 16 52.5				Um ePKP1 04 34 59
			iPn 14 16 43.0				Ud i 04 35 37.8
			i 14 16 51.8			Off east coast of North	
			iSn 14 18 11.0			Island, New Zealand	
		Ud	i 14 18 28.1			(h = 55 km).	
			iPn 14 16 17.1		"	10	Um iP 05 37 37.1
			i 14 16 18.5				Ud iP 05 38 02.8 C
			i 14 16 26.0		"	10	Up iPKP1 09 19 01.2 D
			iSn 14 17 26.9				PKP1 Z' 0.3 0.8
			i 14 17 55.0				Ki iPKP 09 18 48.0
		De	iPn 14 16 51.3				Um iPKP1 09 18 48.9 D
			iSn 14 18 27.0				Ud iPKP1 09 19 02.9 D
			i 14 19 12.7				De iPKP1 09 19 12.8 D
		Norwegian Sea, near 63°N, 1 1/2°E.				South of Fiji Islands	
		Origin time = 14 14 42.				(h = 480 km).	
		Checked with Finnish and Norwegian station readings.			"	10	Up iP 13 59 48.3
"	9	Um	i(P) 14 26 20.3				iPP 14 01 06.2
		Ud	i(P) 14 26 52.0				PP Z' 0.1 1.0
"	9	Ki	i 20 34 41.1				Ki iP 14 00 13.0
		Um	iPKP2 20 34 46.9				Sk iP 14 00 19.5
		Ud	ePKP1 20 34 57				Um iP 13 59 55.6
		Off east coast of North Island, New Zealand (h = 40 km).					Ud iP 14 00 04.8
							iPP 14 01 35.6
"	9	Up	iP1 21 25 23.9				De iP 13 59 55.2
		Ki	iP1 21 24 36.1			Iran (h = 25 km).	
		Sk	iP2 21 25 18.8		"	10	Up iSgl 15 43 46.1
		Um	iP1 21 24 58.6				Ki i 15 41 14.7
		Ud	iP1 21 25 30.4				iPg1 15 41 16.1
		De	iP2 21 25 55.6				i 15 41 44.6
		Kuril Islands (h = N).					iSgl 15 41 47.7
"	9	Up	iP 22 11 48.9 C				Sk i 15 43 08.1
			micr sec				iSgl 15 43 10.4
			P Z' 0.6 1.3				Um iPgl 15 41 10.2 C
		Ki	iP 22 11 14.6 C				i 15 41 12.5
			micr sec				iSgl 15 41 38.1
			P Z' 0.4 1.4				Ud i 15 44 07.8
		Sk	iP 22 11 22.9 C				iSgl 15 44 09.8
		Um	iP 22 11 34.3 C			North Gulf of Bothnia, 65.6°N, 22.9°E.	
			i 22 11 51.6			M _L = 3.2 (Up,Ki,Sk,Um,Ud).	
		Ud	iP 22 11 41.1 C			Origin time = 15 40 33.	
		(cont.)				Felt.	

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

1977				1977								
Nov.	10	Up	i(P)	20 35	16.2	Nov.	12	Ki	eP	02 33	43	
"	10	Ud	i(P)	21 31	12.4			Um	iP	02 34	09.4	
"	10	Up	iPKP1	22 26	27.2			Ud	iP	02 34	35.8	
		Ud	iPKP1	22 26	29.1			Fox Islands, Aleutian Islands (h = N).				
"	10	Up	iP	23 19	16.3 C	"	12	Up	iP	03 27	42.1	
		Ki	iP	23 20	21.8 C			Um	iP	03 27	16.6	
		Ud	iP	23 19	24.5			Ud	iP	03 27	48.2	
		De	eP	23 18	53			De	iP	03 28	06.9	
		Dodecanese Islands (h = N).						Kuril Islands (h = 20 km).				
"	11	Up	iPKP1	00 43	35.0	"	12	Sk	iP	05 18	23.7	
		i		00 44	41.2			Ud	iP	05 18	23.1	
		Ud	iPKP1	00 43	37.6	"	12	Up	iPKP1	19 23	08.9	
		South of Fiji Islands (h = 200 km).						Ki	iPKP	19 22	58.3	
"	11	Ud	iP	04 42	12.9			Sk	ePKP	19 23	06	
								Um	ePKP	19 23	06	
"	11	Ud	eP	05 20	36			Ud	iPKP1	19 23	10.0 C	
		Ryukyu Islands (h = 100 km).						De	iPKP1	19 23	21.0 C	
"	11	Ki	i(P)	15 14	53.8	"	12	Ki	iP	23 06	32.8	
		Sk	i(P)	15 15	25.4			Sk	iP	23 06	46.1	
								Northern Sumatra (h = 80 km).				
"	11	Up	iPKP1	15 31	19.1	"	13	Sk	eSg1	00 30	57	
		Sk	iPKP1	15 31	11.7			Ud	iSg1	00 30	23.0	
		Ud	iPKP1	15 31	20.9	"	13	Ud	iP	06 53	18.9	
		De	iPKP1	15 31	29.6			Hokkaido, Japan region (h = 70 km).				
		Kermadec Islands (h = 110 km).					"	13	Up	iP	13 33	01.4
"	11	Up	iPg1	18 50	56.9 D			Ki	eP	13 32	08	
		iSg1		18 51	06.8			Ud	iP	13 33	01.9	
		iRg		18 51	12.6			Rat Islands, Aleutian Islands (h = 30 km).				
		Ki	iSg1	18 54	32.8	"	13	Up	eP	21 12	35	
		Sk	iPg1	18 51	46.7			Um	iP	21 12	27.2	
		iSn		18 52	24.6			Ud	iP	21 12	48.7	
		iSg1		18 52	37.9			Eastern India (h = N).				
		Um	iPg1	18 51	48.8	"	13	Up	iP	21 24	53.6	
		iSn		18 52	25.3			i		21 25	04.0	
		i		18 52	34.3			micr sec				
		iSg1		18 52	38.0			i	Z'	0.2	1.3	
		Ud	iPg1	18 51	06.9 C			Mx	E	2.8	15	
		iSg1		18 51	26.1			Mx	N	2.1	15	
		i		18 51	29.6			Ki	iP	21 24	32.3	
		De	iSg1	18 52	52.7			i		21 24	40.1	
		Rockburst at the Vingesbacke iron ore mine, Sweden, 60.5°N, 16.4°E. Origin time = 18 50 43. Felt.							(cont.)			

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

1977				1977			
Nov.	13	(cont.)		Nov.	14	(cont.)	
		Ki	micr sec			De i	16 58 20.4
		P	Z' 0.1 1.5			Northern Sumatra.	
		i	Z' 0.1 1.2			h = 30 km (Ki,Um).	
		Mx	N 3.2 20				
		Sk i	21 25 07.3	"	14	Up iP	19 39 53.0
		Um iP	21 24 42.5			Ki iP	19 38 59.7
		i	21 24 50.2				micr sec
		iS	21 34 29			P	Z' 0.1 0.7
		Ud iP	21 25 05.1			Sk iP	19 39 30.8
		i	21 25 14.0			iPcP	19 40 04.9
		Philippine Islands region				Um iP	19 39 26.5
		(h = N).				i	19 39 38.2
		m = 5.8, M = 5.7 (Up,Ki).				iPcP	19 40 02.5
						Ud iP	19 39 52.4
"	13	Up iP	21 49 39.9			De iP	19 40 15.1
		Sk ePKP1	21 49 38			Fox Islands, Aleutian	
		Ud iP	21 49 41.9 C			Islands (h = 70 km).	
"	14	Up iP	00 48 36.5	"	14	Up i	22 59 55.4
		Ki iP	00 48 04.7 C			Ud ePKP1	22 58 48
		Sk iP	00 48 33.9			i	22 58 56.8
		Um iP	00 48 18.8			South of Tonga Islands	
		Ud iP	00 48 44.2 C			(h = N).	
		De iP	00 48 56.0	"	15	Up iP	05 07 54.9
		Bonin Islands region				Ki iP	05 07 00.9
		(h = 410 km).				Ud iP	05 07 52.9
"	14	Ki iP	10 24 55.1			Alaska Peninsula (h = 40 km).	
		Um iP	10 24 48.5	"	15	Up iSg1	14 25 35.7
		South Sandwich Islands				Sk iSg1	14 25 34.1
		region (h = 180 km).				i	14 25 45.8
"	14	Ud iP	13 42 39.1			Ud iSg1	14 24 36.7
		South of Tonga Islands				Southern Norway.	
		(h = N).		"	15	Up iP	18 17 52.9
"	14	Up iP	13 48 29.9 C	"	15	Up iP	20 28 17.8
		Ud iP	13 48 31.1			Ki iP	20 28 21.2
		South of Tonga Islands					micr sec
		(h = N).				P	Z' 0.1 0.6
"	14	Up i(P)	14 00 26.3			Sk iP	20 28 41.4
		i	14 00 35.2			Um iP	20 28 13.7
		Ud i(P)	14 00 26.0			Ud iP	20 28 35.0 D
"	14	Ki iP	16 57 46.5			ipP	20 29 11.9
		ipP	16 57 56.3			Tadzhik-Sinkiang border	
			micr sec			region.	
		pP	Z' 0.1 1.4			h = 170 km (Ud).	
		Um iP	16 57 43.1	"	15	Up iP	21 12 10.7
		ipP	16 57 52.8				micr sec
		Ud iP	16 57 56.1			PKP1	Z' 0.1 0.9
		i	16 58 19.0			Ud iP	21 12 12.4
		(cont.)				(cont.)	

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

1977				1977	
Nov.	15	(cont.)		Nov.	16
		South of Fiji Islands		Up	iP
		(h = 310 km).			19 47 12.0 D
		Arrivals are about 15 s			micr sec
		late when related to		P	Z' 0.2 1.4
		the NEIS solution.		Ki	iP
				Sk	iP
				Um	iP
				Ud	iP
"	16	Ki eP	03 42 48	Hokkaido, Japan region	
		i	03 42 53.3	(h = 70 km).	
		iS	03 44 17.7	"	16
		South of Svalbard.		Ki	iP
		By combination with Finnish		Hokkaido, Japan region	
		station readings.		(h = 140 km).	
"	16	Ki iP	07 24 58.9	"	16
		Sk iP	07 25 20.9	Ki	iPKP
		Ud iP	07 25 25.6	i	21 59 47.4
		Mindanao, Philippine		Fiji Islands region	
		Islands (h = 90 km).		(h = 580 km).	
"	16	Ki iP	15 09 21.0	"	16
		e	15 09 51	Up	iSgl
		Sk eP	15 09 56	Sk	iSn
		Um iP	15 09 39.1 D		iSgl
		Ud iP	15 10 07.7	Um	iSgl
		Near east coast of Honshu,		Ud	iSgl
		Japan (h = 110 km).		Coast of southwest Norway,	
				near 60 1/2°N, 4 1/2°E.	
				Origin time = 23 44 13.	
				M _L = 2.7 (Ud).	
"	16	Up iP	15 40 25.4	Felt.	
		Ud iP	15 40 26.4	By combination with Bergen	
		Rat Islands, Aleutian		and Kongberg readings.	
		Islands (h = 70 km).		"	17
"	16	Um iP	16 04 10.9	Up	iRg
		i	16 04 49.9	Ud	iRg
		Northern Sulawesi (h = 150 km).		Central Sweden.	
				Near-surface event.	
"	16	Up iPKP1	16 46 30.4	"	17
		Ud iPKP1	16 46 32.1 C	Ud	iP
		South of Fiji Islands		05 41 51.5	
		(h = 110 km).		"	17
				Sk	iP
				De	iP
				Bulgaria (h = 10 km).	
"	16	Up iP	18 55 41.1	"	17
		micr sec		Up	iPKP
		P	Z' 0.1 1.1		15 39 19.8 C
		Ki iP	18 54 46.7		micr sec
		Ud iP	18 55 40.1		PKP
		Rat Islands, Aleutian		Ki	iPKP
		Islands (h = 60 km).			15 39 35.1 C
					micr sec
					PKP
					Z' 0.2 0.9
"	16	Up iP	19 08 54.0	Sk	iPKP
		Ki iP	19 08 29.1 D	Um	iPKP
		Ud eP	19 09 03	Ud	iPKP
		Southwestern Ryukyu Islands		15 39 18.3	
		(h = 130 km).		South Sandwich Islands	
				region (h = 130 km).	

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

1977

Nov. 18 (cont.)
 Ud ipP 10 31 04.2
 iPP 10 34 37.5
 De iP 10 30 50.4
 ipP 10 31 02.7
 Southern Sumatra.
 h = 40 km (Sk,Um,Ud,De).
 m = 6.3, M = 6.2 (Up,Ki).

" 18 Up iP 11 36 42.2
 Ki eP 11 36 36
 Ud iP 11 36 57.0
 Tibet (h = N).

" 18 Um iP 12 01 33.4
 Ud eP 12 01 46

" 18 Ud iP 13 25 47.1

" 18 Ud iP 15 20 10.8 C
 Tibet (h = N).

" 18 Um i(P) 17 24 35.8

" 18 Up iP 17 32 38.4
 micr sec
 P Z' 0.1 1.0
 Ki iP 17 32 33.4
 i 17 33 44.7
 Sk iP 17 32 56.8
 Um iP 17 32 31.0
 i 17 32 34.8
 Ud iP 17 32 53.2 C
 i 17 33 01.7
 De iP 17 32 57.0
 i 17 33 02.3
 Tibet (h = N).

" 18 Up i 21 00 29.3
 iRg 21 00 34.0
 Um iSgl 21 02 08.5
 Ud iRg 21 00 20.9
 De iSgl 21 01 38.0
 Bergslagen area, Sweden,
 near 60°N, 15°E.
 Origin time = 20 59 48.
 Near-surface event.

" 18 Up iP 23 22 03.3 C
 Ki iP 23 21 56.5
 Sk iP 23 22 21.6
 Ud iP 23 22 17.9 C
 Tibet (h = N).

1977

Nov. 19 Up iPKP 01 01 21.7 C
 Ki iPKP 01 01 36.1 C
 micr sec
 PKP Z' 0.1 1.0
 Um iPKP 01 01 29.9
 Ud iPKP 01 01 19.8
 South Sandwich Islands
 region (h = 140 km).

" 19 Up iP 07 24 05.6 C
 Ud eP 07 24 11
 Kuril Islands (h = 35 km).

" 19 Up iP 11 58 50.9
 Ki iP 11 58 59.6
 Um iP 11 58 48.9
 Ud iP 11 59 08.0
 Afghanistan-USSR border
 region (h = 100 km).

" 19 Up iP 22 14 46.5
 ipP 22 14 58.7
 micr sec
 P Z' 0.1 1.0
 Ki iP 22 13 53.3
 Um iP 22 14 19.8
 Ud iP 22 14 46.1
 Andreanof Islands, Aleutian
 Islands (h = 45 km).

" 20 Ki iP 19 02 44.0 C
 Central Alaska (h = 80 km).

" 20 Ki iP 22 41 33.2

" 21 Ki eP 02 19 10 D
 Um iP 02 19 29.1
 Ud iP 02 20 00.6
 Eastern Sea of Japan
 (h = 230 km).

" 21 ✓ Up iP 03 02 25.2
 micr sec
 P Z' 0.1 1.1
 Mx E 5.4 19
 Mx N 7.1 16
 Mx Z 9.5 20
 Ki iP 03 01 53.2
 micr sec
 Mx E 4.2 16
 Mx N 4.3 15
 Mx Z 4.9 15
 Sk e 03 02 08
 (cont.)

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

1977

Nov. 21 (cont.)
Um iP 03 02 15.5
iS 03 12 19
Ud iP 03 02 13.7
Gulf of California (h = N).
M = 6.1 (Up,Ki).

" 21 Up iPKP1 10 11 46.8
iPKP2 10 11 53.2
micr sec
PKP1 Z' 0.1 0.9
PKP2 Z' 0.1 0.8
Ki e(PKP) 10 11 25
i 10 11 29.6
Sk iPKP1 10 11 41.4
Um iPKP1 10 11 36.4
Ud iPKP1 10 11 49.0
De iPKP1 10 10 56.7
Kermadec Islands region
(h = 320 km).

" 21 Up iP 11 51 45.2 C
iPP 11 55 35.0
micr sec
PP Z' 0.3 1.6
Ki iP 11 51 29.5
iPP 11 55 13.2
micr sec
P Z' 0.1 1.0
PP Z' 0.2 1.4
Sk iP 11 51 52.8
Um iP 11 51 35.0
iPP 11 55 18.4
Ud iP 11 51 54.5 C
i 11 52 24.3
i(PP) 11 55 25.3
Mindanao, Philippine
Islands (h = 600 km).
m = 6.0 (Up,Ki).

" 21 Up iP 14 45 28.9
Ud iP 14 45 32.8
De iP 14 45 53.4
Near east coast of Kamchatka
(h = N).

" 21 Ki iP 16 52 22.6
iS 16 54 08.6
iLg2 16 55 17.3
Um iP 16 53 10.9
i 16 55 44.1
iS 16 56 07.3
iLg1 16 57 14.0
Ud iP 16 54 07.1
Svalbard region (h = 10 km).

1977

Nov. 21 Ki iP 18 15 13.3
Ud eP 18 15 36
Mindanao, Philippine
Islands (h = 610 km).

" 21 Ud iP 21 39 44.6

" 21 Up iPKP1 23 24 16.0
iPKP2 23 24 19.5
micr sec
PKP1 Z' 0.1 0.7
PKP2 Z' 0.1 0.7
Ki iPKP 23 23 59.9
Sk iPKP1 23 24 10.1 C
Um iPKP1 23 24 04.2
Ud iPKP1 23 24 18.1
iPKP2 23 24 23.0
De iPKP1 23 24 26.6
iPKP2 23 24 36.3
Kermadec Islands region
(h = 330 km).

" 22 Up iP 07 03 48.2
micr sec
P Z' 0.1 1.0
Ki iP 07 03 56.2
Um iP 07 03 46.6
Ud iP 07 04 05.1
Afghanistan-USSR border
region (h = 120 km).

" 22 Ud iPKP 08 58 43.7
Fiji Islands region
(h = 90 km).

" 22 Up iP 11 41 58.2
Ki iP 11 41 44.0 C
Sk iP 11 42 13.5
Um iP 11 41 44.5 C
Ud iP 11 42 13.7 C
Northern Sinkiang province,
China (h = N).

" 22 Up iPP 16 17 11.4
micr sec
PP Z' 0.2 1.4
Mx E 3.1 26
Mx N 3.6 22
Mx Z 6.7 24
Ki ePKP 16 15 18
i(PP) 16 16 10.8
micr sec
Mx E 2.6 20
Mx N 3.9 22
Mx Z 2.9 22

(cont.)

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

1977				1977			
Nov.	22	(cont.)		Nov.	23	(cont.)	
		Sk	iPKP 16 15 28.8			De	iP 05 44 07.7
			iPP 16 17 05.9			Kodiak Island region (h = N).	
		Um	iPKP 16 15 23.6		"	23	Up i(P) 07 56 26.7
			ipPKP 16 15 42.7				
			iSKS 16 22 13		"	23	✓ Up iPdiff 09 41 14
		Ud	iPKP 16 15 33.0				i 09 41 37
			iPP 16 17 23.4				iPKP 09 45 04.2
		De	iPKP 16 15 40.5				iPP 09 45 54.4
			ipPKP 16 15 58.4				iPKKP 09 55 52.7
		Solomon Islands.					micr sec
		h = 70 km (Um,De).				PP	Z' 19 4.0
		M = 6.1 (Up,Ki).				Mx	E 94 19
"	22	Ki	iP 17 00 36.5			Mx	N 84 20
		Um	iP 17 00 41.9			Mx	Z 166 19
		Banda Sea (h = N).				Ki	ePdiff 09 41 31
"	22	Ud	iSgl 18 00 38.5				iPKP 09 45 10.1
		Southwest coast of Norway,					iPP 09 46 26.9
		near 58 1/2°N, 6 1/2°E.					iPKKP 09 55 45.1
		Origin time = 17 58 30.					micr sec
		M _L = 2.6 (Ud).				PP	Z' 21 3.5
		By combination with Bergen				Mx	E 75 17
		and Kongsberg readings.				Mx	N 89 18
"	22	Sk	e(P) 18 17 21			Mx	Z 84 18
			i 18 17 24.0			Sk	i 09 41 57.2
"	22	Ud	iP 19 24 43.4				iPKP 09 45 00.2
"	22	Up	iP 21 27 39.7				iPP 09 45 44.0
			micr sec				iPKKP 09 55 48.7
			P Z' 0.1 1.0			Um	iPKP 09 45 08.3
		Ki	eP 21 27 02				i 09 45 33.1
			ipP 21 27 06.2				iPP 09 46 19.3
			micr sec				iPKKP 09 55 48.1
			pP Z' 0.1 1.0			Ud	iPKP 09 44 59.6
		Sk	eP 21 27 15				iPP 09 45 54.1
			ipP 21 27 18.1				iPKKP 09 55 58.4
		Um	iP 21 27 22.2			De	iPKP 09 44 58.0
			ipP 21 27 27.1				i 09 45 22.6
		Ud	iP 21 27 34.2				iPP 09 45 39.0
			ipP 21 27 37.6				iPKKP 09 55 55.4
		Near coast of northern					San Juan province, Argentina
		California.					(h = 15 km).
		h = 15 km (Ki,Sk,Um,Ud).					m = 8.2, M = 7.5 (Up,Ki).
		m = 5.8 (Up,Ki).		"	23	Ud	iPKP 09 53 32.9
"	23	Up	iPKP1 02 30 31.2 C				San Juan province, Argentina
		Ud	iPKP1 02 30 33.9 C				(h = N).
		De	iPKP1 02 30 44.3 C	"	23	Ud	iP 09 54 13.7
		South of Fiji Islands		"	23	Ud	iP 10 47 44.7
		(h = 520 km).		"	23	Ud	iPKP 12 02 50.2
"	23	Ki	iP 05 42 52.5				San Juan province, Argentina
		Sk	iP 05 43 20.4				(h = N).
		Ud	eP 05 43 44	"	23	Up	Mx 13 00
		(cont.)					(cont.)

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

1977				1977			
Nov.	23	(cont.)		Nov.	24	Um	iPKP 02 16 13.6
		Up	micr sec				San Juan province, Argentina (h = N).
		Mx	E 1.9 17				
		Mx	N 1.0 18				
		Mx	Z 2.7 20	"	24	Um	iPKP 02 17 14.6
		Ki	Mx 13 09			Ud	iPKP 02 17 06.9
			micr sec				San Juan province, Argentina (h = N).
		Mx	E 0.8 17				
		Mx	N 1.3 17				
		San Juan province, Argentina (h = 20 km).		"	24	Up	micr sec
		M = 5.8 (Up,Ki).				Mx	E 1.8 19
"	23	Um	iPKP 16 54 45.6			Mx	N 1.8 20
		San Juan province, Argentina (h = 15 km).				Mx	Z 5.2 20
"	23	Ud	iPKP 16 59 22.3			Ki	ePKP 02 21 17
		San Juan province, Argentina (h = N).					micr sec
"	23	Up	iP 17 06 14.5			Mx	E 1.2 18
			micr sec			Mx	N 2.3 19
		P	Z' 0.1 1.0			Mx	Z 1.3 19
		Mx	E 1.7 18			Um	iPKP 02 21 14.7
		Mx	N 2.4 19			Ud	ePKP 02 21 06
		Mx	Z 6.2 20			i	02 21 12.7
		Ki	iP 17 05 20.7			San Juan province, Argentina (h = 25 km).	
			micr sec			M = 5.9 (Up,Ki).	
		P	Z' 0.2 1.0	"	24	Up	iP 02 26 55.5
		Mx	E 2.0 19			Um	iP 02 26 42.2
		Mx	N 2.9 19			i	02 26 45.1
		Mx	Z 2.8 20			Ud	iP 02 27 00.6
		Sk	iP 17 05 53.1	"	24	Up	iP 02 31 56.6
		Um	iP 17 05 47.1 C			Um	iP 02 31 42.3
		iPcP	17 06 23.0			i	02 31 45.7
		Ud	iP 17 06 14.2 C			Ud	iP 02 32 01.5
		i	17 07 01.8			i	02 32 04.9
		De	iP 17 06 37.4	"	24	Up	iPKP 17 19 16.0
		Fox Islands, Aleutian Islands (h = 55 km).					micr sec
		m = 6.0, M = 5.5 (Up,Ki).				PKP	Z' 0.1 1.1
"	23	Um	iPKP 22 10 44.7			Ki	iPKP 17 19 14.8
		Ud	iPKP 22 10 34.8				micr sec
		San Juan province, Argentina (h = N).				PKP	Z' 0.1 1.0
"	23	Um	iPKP 22 16 06.5			Ud	iPKP 17 19 22.7
		San Juan province, Argentina (h = N).				Tuamotu archipelago region (h = 0).	
"	23	Um	iPKP 23 46 18.6	"	24	Um	iPKP 18 38 57.6
		San Juan province, Argentina (h = N).				Ud	iPKP 18 38 48.6
"	23	Um	iPKP 20 30 07.7			San Juan province, Argentina (h = N).	
		Fiji Islands region (h = 550 km).		"	24	De	iPKP1 20 30 07.7

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

1977				1977					
Nov.	24	Ud	iP	22 41 36.4	Nov.	26	Up	iP	22 57 05.9
				Off east coast of Honshu, Japan (h = 25 km).			Ki	iP	22 56 33.7
							Sk	iP	22 57 08.3
							Um	iP	22 56 46.6
"	24	Up	iP	22 49 19.7 C				i	22 56 52.6
				micr sec			Ud	i	22 57 17.1
			P	Z' 0.1 1.0			De	iP	22 57 29.6
		Ud	iP	22 49 21.7 C			Northeastern China (h = N).		
"	24	Ud	eP	23 30 10	"	27	Up	eP	02 32 42
								i	02 32 42.6
"	25	Ki	iP	01 30 31.2				iS	02 43 24
									micr sec
"	25	Ki	iP	06 42 38.0				P	Z' 0.1 1.0
		Sk	iP	06 43 24.5			Mx	E	1.8 19
							Mx	N	5.4 20
"	25	Ud	iSgl	07 48 40.1			Mx	Z	6.4 17
			i	07 48 50.9			Ki	iP	02 32 24.7
				Off coast of southwest Norway, not far from Bergen. Origin time = 07 46 23. M _L = 2.5 (Ud). By combination with Bergen readings.				i	02 32 26.7
								iS	02 42 48
									micr sec
								P	Z' 0.2 1.3
							Mx	E	2.9 21
							Mx	N	7.8 21
							Mx	Z	2.4 20
"	25	Ud	iP	11 23 29.0			Sk	iP	02 32 46.1
				Molucca Passage (h = 80 km).			Um	iP	02 32 30.8 D
								iS	02 43 00
"	26	Ud	iPKP1	05 39 53.9			Ud	iP	02 32 50.5
		De	iPKP1	05 40 00.3			De	iP	02 32 56.9
				Fiji Islands region (h = 560 km).			Samar, Philippine Islands (h = N). m = 6.1, M = 6.1 (Up,Ki).		
"	26	Ud	iP	06 02 57.9	"	27	Up	iP	08 47 02.3 C
"	26	Up	iP	13 24 32.5 D				iS	08 56 00
				micr sec					micr sec
			P	Z' 0.1 1.0				P	Z' 0.6 1.1
		Ki	e	13 25 56			Mx	E	11 28
		Sk	iP	13 25 12.6			Mx	N	7.5 27
			i	13 25 14.9			Mx	Z	2.9 31
		Um	iP	13 25 10.9			Ki	iP	08 46 13.5 C
			i	13 25 12.3				i	08 46 16.4
		Ud	iP	13 24 43.1				i	08 46 53.5
			i	13 24 43.1				iS	08 54 37
		De	iP	13 24 02.4					micr sec
				Greece (h = 70 km).				P	Z' 0.2 1.1
								i	Z' 0.6 1.5
"	26	Ki	iP	14 18 57.1			Mx	E	9.5 17
				Mariana Islands (h = 55 km).			Mx	N	9.8 17
"	26	Ud	iP	15 52 35.8			Mx	Z	13 17
"	26	Ud	iP	22 29 42.3			Sk	iP	08 46 50.2 C
				Luzon, Philippine Islands (h = 60 km).				i	08 47 01.3
							Um	iP	08 46 36.6 C
								iS	08 55 15

(cont.)

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

1977

Nov. 30 (cont.)
 Up iPn 04 14 58.1
 iPP 04 15 13.7
 micr sec
 P Z' 1.3 0.8
 Ki iP 04 13 38.5 C
 iPn 04 14 38.0
 micr sec
 P Z' 1.3 0.8
 Sk iP 04 14 10.2 C
 i 04 15 17.7
 iPn 04 15 27.6
 iPP 04 15 33.2
 Um iP 04 13 39.8 C
 Ud iP 04 14 11.6 C
 iPn 04 15 24.2
 iPP 04 15 33.7
 De iP 04 14 18.6 C
 iPn 04 15 41.0

Eastern Kazakh SSR.

m = 6,9 (Up,Ki).

Underground explosion.

" 30 Up iP 05 52 57.5
 Ki iP 05 52 11.5
 Um iP 05 52 32.8 C
 Ud iP 05 53 03.5 C
 Kuril Islands (h = 80 km).

" 30 Um iP 08 01 50.0
 Southern Honshu, Japan
 (h = 350 km).

" 30 Up ePKP1 10 34 01
 iSKP1 10 36 53.0
 micr sec
 PKP1 Z' 0.1 1.0
 Ki iPKP 10 33 52.7
 iSKP1 10 36 28.5
 Sk iPKP 10 34 03.0
 iSKP1 10 36 45.2
 Um i(PKP) 10 33 53.5
 iPKP 10 34 00.0
 iSKP1 10 36 40.7
 Ud iPKP1 10 34 01.5
 iSKP1 10 36 54.1
 De iPKP1 10 34 12.0
 i 10 36 52.9
 iSKP1 10 37 02.8
 Fiji Islands region (h = 550 km).

" 30 Ud iP 10 45 31.2

" 30 Ki iP 12 20 58.9
 micr sec
 P Z' 0.8 2.4
 Sk iP 12 21 23.7
 (cont.)

1977

Nov. 30 (cont.)
 Um iP 12 21 09.9
 Ud iP 12 21 31.6
 South of Mariana Islands
 (h = 30 km).
 " 30 Up iP 13 17 38.9
 Ki iP 13 17 23.0
 Um iP 13 17 28.5
 Ud iP 13 17 48.5
 Mindoro, Philippine Islands
 (h = 120 km).

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