

SEISMOLOGICAL DEPARTMENT
 BOX 12019
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 SWEDEN

SEISMOLOGICAL DEPARTMENT
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SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, UMEÅ, UDDEHOLM

DELARY and MYRVIKEN

Uppsala	(UPP)	59°51.5'N,	17°37.6'E;	h = 14 m
Kiruna	(KIR)	67°50.4'N,	20°25.0'E;	h = 390 m
Umeå	(UME)	63°48.9'N,	20°14.2'E;	h = 16 m
Uddeholm	(UDD)	60°05.4'N,	13°36.4'E;	h = 240 m
Delary	(DEL)	56°28.2'N,	12°52.2'E;	h = 150 m
Myrviken	(MYV)	62°56.5'N,	14°20.8'E;	h = 345 m

JANUARY 1 - 31, 1989

1989					1989				
Jan.	2	UPP	iPKP1	00 18 42.6	Jan.	3	(cont.)		
		UME	iPKP1	00 18 42.8			UME	iP	04 52 35.9
		Fiji Islands region (h = 640 km).						ipP	04 52 48.0
"	2	UPP	iPKP	02 11 09.9			Ryukyu Islands region.		
			iSKP1	02 14 05.2			h = 45 km (UPP,UME).		
		KIR	iPKP	02 11 04.8			m = 6.2 (UPP,KIR).		
			iSKP1	02 14 19.8	"	3	UPP	iP	10 14 06.7
		UME	iPKP	02 11 09.1			UME	iP	10 13 44.8
			i	02 11 11.3			Near east coast of Honshu, Japan		
			iSKP1	02 14 31.8			(h = 55 km).		
		Tonga Islands (h = 110 km).			"	3	UPP	iP	16 57 42.6
"	2	UME	eP	02 57 03			UME	iP	16 58 19.7
		Kuril Islands region (h = N).					Tunisia (h = 10 km).		
"	2	UME	iP	10 57 20.1	"	4	UPP	iP	07 35 08.2
		South of Honshu, Japan						i	07 35 17.5
		(h = 10 km).							micr sec
"	2	UPP	iP	23 01 07.2				P	Z' 0.3 1.5
		Burma (h = 110 km).					KIR	iP	07 35 50.2
"	3	UPP	iP	04 52 54.6			UME	iP	07 35 22.4
			ipP	04 53 06.4			Turkey-USSR border region		
				micr sec			(h = 10 km).		
			P	Z' 0.4 1.3	"	5	UPP	iP	12 23 31.3
			Mx	Z 7.0 15			UME	iP	12 23 58.6
		KIR	iP	04 52 22.5	"	5	UME	iP	14 01 15.4
				micr sec	"	6	UPP	iP	04 14 51.6
			P	Z' 0.3 1.2			UME	iP	04 14 37.3
(cont.)							Philippine Islands region (h = 50 km).		

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989					
Jan.	6	UPP	iP	05 32 19.8	Jan.	8	UPP	iP	20 08 05.3
				micr sec				i	20 08 07.0
			P	Z' 0.1 1.3					micr sec
		UME	iP	05 32 54.9				i	Z' 0.3 1.1
		Tunisia (h = 10 km).					KIR	iP	20 07 12.2
"	6	UPP	iP	12 55 54.3				i	20 07 14.0
		UME	iP	12 55 28.0					micr sec
		Kuril Islands (h = N).						i	Z' 0.2 1.1
"	6	UPP	iP	15 49 50.4			UME	iP	20 07 39.7
		UME	iP	15 49 23.9			Andreanof Islands, Aleutian Is. (h = N).		
		Kuril Islands (h = N).					m = 6.2 (UPP,KIR).		
"	6	UPP	iP	15 58 05.0	"	8	UPP	iP	20 37 25.0
				micr sec					micr sec
			P	Z' 0.1 1.0				P	Z' 0.1 0.8
		UME	iP	15 57 38.9			KIR	eP	20 36 32
		Kuril Islands (h = N).					UME	iP	20 36 58.2
"	6	UPP	iP	19 03 56.8			Andreanof Islands, Aleutian Is. (h = N).		
		Near east coast of Honshu, Japan (h = 40 km).		"	8	UPP	iP	22 48 30.8 C	
"	6	UPP	iP	19 15 00.0					micr sec
			iS	19 24 04				P	Z' 0.2 0.9
				micr sec			KIR	iP	22 47 37.3
			P	Z' 0.4 1.1					micr sec
		KIR	iP	19 14 11.9				P	Z' 0.1 0.9
				micr sec			UME	iP	22 48 04.2
			P	Z' 0.3 1.5			Andreanof Islands, Aleutian Is. (h = N).		
		Kuril Islands (h = 50 km).					m = 6.1 (UPP,KIR).		
		m = 6.2 (UPP,KIR).		"	9	UPP	iP	10 07 48.1	
"	6	UPP	iP	19 19 57.6			KIR	iP	10 08 59.6
				micr sec			UME	iP	10 08 24.7
			P	Z' 0.3 1.4			Tunisia (h = 15 km).		
		KIR	iP	19 19 18.2	"	9	UPP	iP	11 27 57.5
		Near east coast of Honshu, Japan (h = 45 km).							micr sec
"	6	UPP	iP	21 23 04.0				P	Z' 0.1 0.9
		Kuril Islands (h = N).				KIR	eP	11 27 05	
"	7	UPP	iP	22 23 01.5			UME	iP	11 27 30.5
		KIR	iP	22 22 23.4			Andreanof Islands, Aleutian Is. (h = N).		
		UME	iP	22 22 40.3	"	9	UPP	iP	13 53 32.1
		Near east coast of Honshu, Japan (h = 25 km).							micr sec
"	8	UPP	iP	07 26 38.1				i	Z' 1.2 1.1
		Qinghai Province, China (h = 30 km).					Mx	Z	32 19

(cont.)

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989			
Jan.				Jan.			
12	(cont.)			13	UPP	iP	18 12 52.7 C
	KIR	iP	19 57 47.4			iS	18 21 53
		i	19 57 48.4				micr sec
			micr sec			P	Z' 0.7 1.5
		i	Z' 0.2 1.0			Mx	Z 9.0 18
		Mx	Z 37 16		KIR	iP	18 12 05.1 C
	UME	iP	19 58 09.6				micr sec
		i	19 58 11.2			P	Z' 0.6 1.6
		iS	20 06 43			Mx	Z 12 15
	Kuril Islands (h = N).				UME	iP	18 12 27.4 C
	m = 6.3, M = 6.4 (UPP,KIR).				Kuril Islands (h = N).		
					m = 6.5, M = 6.0 (UPP,KIR).		
"	12	UME	iP 20 46 40.6	"	13	UME	iP 19 31 57.0
		Kuril Islands region (h = N).				Kuril Islands (h = N).	
"	13	UME	iP 01 35 05.0	"	14	UME	iPKP 01 09 40.0
		Alaska Peninsula (h = N).				Tonga Islands (h = N).	
"	13	UPP	iPKP1 04 01 45.1	"	14	UME	iP 04 23 58.6
			i 04 01 50.9			Kuril Islands (h = N).	
		South of Fiji Islands (h = N).					
"	13	UPP	iSg1 04 21 35.3	"	14	UPP	iP 04 32 08.8
		UME	iSg1 04 21 40.4				i 04 32 20.0
		UDD	iSg1 04 20 45.0				micr sec
		DEL	iSn 04 21 40.4			P	Z' 0.1 1.1
			iSg1 04 22 14.7		KIR	iP	04 31 19.9
		MYV	ePn 04 19 27				micr sec
			eSn 04 20 19			P	Z' 0.1 0.9
	Coast of southwestern Norway, near 62 3/4°N, 6°E.				UME	iP	04 31 42.6 C
	Origin time = 04 18 25.						i 04 31 52.8
	M _L (UPP) = 3.1 (0.07) 3.				Kuril Islands (h = 40 km).		
	By combination with Norwegian station readings.				m = 5.8 (UPP,KIR).		
"	13	UME	iP 11 54 19.9	"	14	UME	iP 06 02 33.0
		Kuril Islands (h = N).				Kuril Islands (h = N).	
"	13	UME	iP 14 08 44.9	"	14	UME	iP 08 05 37.5
			i 14 08 55.0			Kuril Islands (h = N).	
		Kuril Islands region (h = N).					
"	13	KIR	iP 14 34 36.2	"	15	UPP	iP 19 48 48.2
		UME	iP 14 34 13.5			KIR	iP 19 48 48.4
		Southern Iran (h = 70 km).				UME	iP 19 48 42.3
						Southern Xinjiang, China (h = 35 km).	
"	13	UME	iP 15 42 25.5	"	16	UME	iP 07 34 56.3
		Kuril Islands (h = N).				Hokkaido, Japan region (h = 80 km).	
"	13	UME	iPKP 16 18 40.0	"	16	UPP	iP 20 59 45.3
		Vanuatu Islands (h = 140 km).				UME	iP 20 59 50.3

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1989				1989			
Jan.	17	UPP	Mx	01 47	Jan.	21	(cont.)
				micr sec			KIR iP 02 59 50.3
			Mx	Z 19 19			i 02 59 54.3
		KIR	Mx	01 52			micr sec
				micr sec			P Z' 0.2 1.0
			Mx	Z 23 21			i Z' 0.4 1.5
		New Britain region (h = 30 km).					UME iP 02 59 36.5
		M = 6.7 (UPP,KIR).					Azores Islands (h = 10 km).
							m = 5.8 (UPP,KIR).
"	18	KIR	iP	17 45 33.6	"	21	UPP iP 14 17 55.1
			ipP	17 46 10.9			i 14 18 05.5
		UME	iP	17 45 33.5			micr sec
		Peru-Brazil border region.					P Z' 0.1 1.0
		h = 140 km (KIR).					i Z' 0.3 1.2
"	18	UPP	iP	18 32 59.9			Mx Z 5.5 12
		KIR	iP	18 32 45.8			KIR iP 14 17 23.9
		UME	iP	18 32 47.4			i 14 17 34.4
		Sichuan Province, China (h = 35 km).					micr sec
"	19	UPP	iP	07 05 36.9			i Z' 0.1 1.1
		Southern California (h = 10 km).					Mx Z 4.4 13
"	20	UPP	iPn	09 35 05.2 D			UME iP 14 17 36.5
			iSn	09 36 00.1			i 14 17 46.7
			i	09 36 13.4			Ryukyu Islands region.
			iSg1	09 36 25.7			h = 40 km (UPP,KIR,UME).
		UME	iPn	09 35 45.9			m = 6.0, M = 5.9 (UPP,KIR).
			iSn	09 37 12.0	"	21	UPP iP 14 25 39.6
			iSg1	09 38 03.7			KIR eP 14 25 12
		UDD	iPn	09 34 41.0 D			UME iP 14 25 29.5
			iSn	09 35 18.7			Ryukyu Islands region (h = 30 km).
			iSg1	09 35 29.7	"	21	KIR iP 14 40 26.3
		MYV	iPn	09 35 15.6			UME iP 14 40 48.3
			i	09 35 17.6			Kuril Islands (h = 40 km).
			iSg1	09 36 49.6	"	21	UPP iP 15 26 44.7
		Skagerrak, near 59°N, 8 1/2°E.					KIR iP 15 26 13.1
		Origin time = 09 33 50.					UME iP 15 26 26.1
		M _L (UPP) = 3.9 (0.11) 5.					Ryukyu Islands (h = 30 km).
		Felt.			"	21	UPP iP 17 49 20.7
"	20	UME	iP	12 45 50.2			UME iP 17 49 03.0
		Mariana Islands (h = 120 km).					Ryukyu Islands region (h = 30 km).
"	20	UME	iPKP	17 45 26.7	"	21	UME iP 18 08 02.2
		Santa Cruz Islands (h = 70 km).					Near east coast of Honshu, Japan
"	21	UPP	iP	02 59 14.9			(h = 55 km).
				micr sec			
			P	Z' 0.1 1.1			
		(cont.)					

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1989				1989			
Jan.	21	UPP	iP	20 54 22.0	Jan.	23	(cont.)
				micr sec			UDD iPn 14 07 37.7 D
			P	Z' 0.2 1.1			i 14 07 44.2
		KIR	iP	20 53 50.3			i 14 07 51.8
				micr sec			iSn 14 08 30.8
			P	Z' 0.2 1.1		DEL	iPn 14 08 10.7
		UME	iP	20 54 02.5			iSn 14 09 27.1
		Ryukyu Islands region (h = 35 km).				MYV	iPn 14 07 36.6
		m = 6.1 (UPP,KIR).					i 14 07 47.4
"	22	UPP	iP	04 04 04.3 C		Southwestern coast of Norway, near 62°N, 5°E.	
				micr sec		Origin time = 14 06 25.	
			P	Z' 1.1 0.8		Felt.	
		KIR	iP	04 03 48.7 C		"	23 UPP iSg1 16 43 57.0
				micr sec			UME i 16 43 35.9
			P	Z' 0.9 0.7			iSg1 16 44 20.2
		UME	iP	04 03 48.8 C		UDD	iSg1 16 42 57.5
		Eastern Kazakh SSR.				MYV	i 16 42 04.4
		m = 6.7 (UPP,KIR).					iSg1 16 42 51.2
		Underground explosion.				Coast of southwestern Norway, near 62°N, 4 1/2°E.	
"	22	UPP	iP	22 31 25.4 C		Origin time = 16 40 30.	
			iS	22 40 32		M _L (UPP) = 2.9 (0.25) 3.	
				micr sec		By combination with Norwegian station readings.	
			P	Z' 0.6 1.0		"	23 UDD iSg1 21 40 33.2
		Mx	Z	33 18		Off coast of southwestern Norway, 61.8°N, 4.5°E.	
		KIR	iP	22 30 41.3 C		Origin time = 21 38 08.	
				micr sec		M _L (UPP) = 2.7 1.	
			P	Z' 0.7 1.0		Solution from Norwegian station readings.	
			Mx	Z 18 15		"	24 UPP iP 05 00 55.0
		UME	iP	22 31 01.2 C			micr sec
		Hokkaido, Japan region (h = 25 km).					P Z' 0.1 1.0
		m = 6.7, M = 6.4 (UPP,KIR).				KIR	iP 05 00 25.7
"	22	UPP	iP	23 09 26.0		UME	iP 05 00 36.8
				micr sec		Ryukyu Islands (h = 70 km).	
			P	Z' 0.1 1.0	"	24	UPP iP 05 00 55.0
		KIR	iP	23 09 35.8			micr sec
		UME	iP	23 09 24.7			P Z' 0.1 1.0
		Tajik SSR (h = N).				KIR	iP 05 00 25.7
		This event triggered an extensive landslide.				UME	iP 05 00 36.8
"	23	UPP	iPn	14 08 03.6	"	24	UME iP 08 46 33.7
			iSn	14 09 17.1		Bonin Islands region (h = 35 km).	
		KIR	iPn	14 08 34.7	"	24	UPP iP 20 14 37.5 C
			i	14 08 46.6			micr sec
		UME	iPn	14 08 13.8			P Z' 0.3 1.3
			i	14 08 24.8		KIR	iP 20 13 54.2 C
			iSn	14 09 32.6		UME	iP 20 14 13.5 C
		(cont.)				Hokkaido, Japan region (h = 50 km).	

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989					
Jan.	25	UPP	iP	10 27 24.7	Jan.	29	UPP	iPn	16 39 47.9
		UME	iP	10 27 41.9				i	16 39 53.5
		Republic of South Africa (h = 5 km).						i	16 40 11.1
"	26	UPP	iPKP1	07 21 30.2				iSn	16 40 53.5
		South of Fiji Islands (h = 490 km).					UME	iSg1	16 41 21.4
"	26	UPP	iP	14 05 53.8				iPn	16 40 16.2
				micr sec				i	16 40 21.7
		P	Z'	0.1 1.1			UDD	iSg1	16 42 26.9
		Mx	Z	7.7 19				iPn	16 39 20.3
		KIR	iP	14 04 05.3				i	16 39 25.1
				micr sec				iPg1	16 39 30.4
		Mx	Z	6.9 18			DEL	iSg1	16 40 21.0
		UME	iP	14 05 27.5				iPn	16 39 40.6
		Kuril Islands (h = 30 km).						iSn	16 40 38.9
		M = 5.8 (UPP,KIR).						iSg1	16 41 02.4
"	27	UPP	iPKP1	00 17 45.9			MYV	iPn	16 39 38.4
		UME	iPKP1	00 17 36.1				i	16 39 55.4
		South of Kermadec Islands						iSg1	16 40 59.4
		(h = 140 km).					Southern Norway, near 59 3/4°N, 5 1/2°E.		
"	27	UPP	iP	03 58 08.7			Origin time = 16 38 18.		
		UME	iP	03 59 01.9			$M_L(\text{UPP}) = 4.7 (0.19) 4.$		
		Austria (h = 20 km).					Felt.		
"	27	UPP	iP	08 45 04.5	"	30	UPP	iP	07 58 07.7
			i	08 45 13.4			UME	iP	07 58 11.9
			iS	08 53 22			Northern Colombia (h = 40 km).		
				micr sec	"	30	UPP	iPKP1	17 31 26.1 C
		i	Z'	0.6 1.8			Kermadec Islands region		
		Mx	Z	24 22			(h = 460 km).		
		KIR	iP	08 44 08.4	"	31	UME	iPKP	16 40 01.3
			i	08 44 16.5			Santa Cruz Islands (h = 230 km).		
				micr sec	"	31	UPP	i(P)	19 08 14.8
		i	Z'	1.0 2.1					
		Mx	Z	10 17					
		UME	iP	08 44 36.6					
			iS	08 52 29					
		Komandorsky Islands region					August 30, 1990		
		(h = 30 km).					Conny Holmqvist		
		m = 6.4, M = 6.1 (UPP,KIR).					Ota Kulhánek		
"	28	UPP	iP	07 38 43.3			Klaus Meyer		
		UME	iP	07 38 21.2					
		Off east coast of Honshu, Japan							
		(h = 55 km).							

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 SWEDEN

SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, UMEÅ, UDDEHOLM

DELARY and MYRVIKEN

Uppsala	(UPP)	59°51.5'N,	17°37.6'E;	h = 14 m
Kiruna	(KIR)	67°50.4'N,	20°25.0'E;	h = 390 m
Umeå	(UME)	63°48.9'N,	20°14.2'E;	h = 16 m
Uddeholm	(UDD)	60°05.4'N,	13°36.4'E;	h = 240 m
Delary	(DEL)	56°28.2'N,	12°52.2'E;	h = 150 m
Myrviken	(MYV)	62°56.5'N,	14°20.8'E;	h = 345 m

FEBRUARY 1 - 28, 1989

1989					1989				
Feb.	1	UPP	iP	05 21 46.0	Feb.	4	UPP	iPKP	22 29 16.2
							UME	iPKP	22 29 08.6
									New Ireland region (h = 50 km).
"	1	UPP	iP	10 34 24.3	"	5	UPP	iP	02 11 30.5
				micr sec					micr sec
				P Z' 0.2 1.0					P Z' 0.1 0.9
		KIR	iP	10 33 49.5			UME	iP	02 11 09.4
									South of Honshu, Japan (h = 60 km).
"	3	UPP	iPKP1	01 13 09.2	"	7	UPP	iPKP1	13 01 02.6
									Kermadec Islands region (h = 170 km).
"	3	UPP	iP	15 22 25.3	"	7	UPP	iPKP1	13 53 50.4
		KIR	iP	15 21 04.7					South of Fiji Islands (h = 560 km).
"	3	UPP	iP	17 49 35.5	"	9	UPP		micr sec
									Mx Z 1.4 21
							KIR	iPKP	00 05 45.4
							UME	iPKP	00 05 38.9
		KIR	eP	17 59 34					South Sandwich Islands region (h = 25 km).
"	3	UPP	iP	23 48 34.7	"	9	UPP	iP	04 32 21.1
							KIR	iP	04 31 27.9
									micr sec
									P Z' 0.1 1.0
"	4	UPP	iP	09 56 40.1			UME	iP	04 31 54.1
									Fox Islands, Aleutian Islands (h = N).
"	4	UME	iP	19 37 11.8					
									South of Panama (h = 10 km).

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989			
Feb.	9	UPP iP	13 50 18.5	Feb.	10	KIR iP	15 37 08.8
		Southwestern Ryukyu Islands (h = 10 km).				Molucca Passage (h = 40 km).	
"	9	UME iP	21 32 52.3	"	10	UPP iP	17 11 08.5
		South of Kermadec Islands (h = 80 km).				i	17 11 22.0
"	10	UPP iP	00 00 18.5			KIR iP	17 11 11.7
		KIR iP	00 01 04.0				micr sec
		UME iP	00 00 40.6			P	Z' 0.2 1.0
		Lake Tanganyika region (h = 35 km).				UME iP	17 11 06.7
"	10	UPP iP	11 28 53.8	"	10	KIR iP	20 10 07.6
		i	11 29 19.6			Molucca Passage (h = N).	
		i	11 31 59.8	"	10	UPP iP	20 17 49.2
		iSKS	11 39 24				micr sec
		iS	11 40 06			P	Z' 0.1 1.0
			micr sec			KIR iP	20 17 14.7
		P	Z' 0.1 0.9			UME iP	20 17 34.4
		i	Z' 0.5 1.5			Southern Nevada. Underground explosion.	
		Mx	Z 131 26	"	10	KIR iP	20 42 57.9
		KIR iP	11 28 36.4			Molucca Passage (h = N).	
			micr sec	"	11	KIR iP	02 10 19.5
		P	Z' 0.4 1.0			Molucca Passage (h = 70 km).	
		Mx	Z 33 17	"	11	KIR iP	04 18 32.3
		UME iP	11 28 43.6			Molucca Passage (h = N).	
		iSKS	11 39 19	"	12	UPP iP	04 22 03.9 C
		Molucca Passage (h = 45 km). m = 6.4, M = 7.0 (UPP,KIR).					micr sec
"	10	KIR iP	12 20 55.7			P	Z' 1.0 0.9
		Molucca Passage (h = 40 km).				KIR iP	04 21 47.6 C
"	10	UPP iP	12 25 37.1				micr sec
		KIR iP	12 25 17.7			P	Z' 1.3 0.8
		Molucca Passage (h = 45 km).				UME iP	04 21 48.6 C
"	10	KIR iP	12 30 01.6			Eastern Kazakh SSR. m = 6.8 (UPP,KIR). Underground explosion.	
		Molucca Passage (h = N).		"	12	UPP iP	08 06 08.7
"	10	KIR iP	13 12 44.0			KIR iP	08 05 59.6
		UME iP	13 12 42.6			UME iP	08 05 59.3
		Molucca Passage (h = N).				Burma (h = N).	
"	10	KIR iP	13 41 42.8	"	12	UME iP	10 17 41.3
		Molucca Passage (h = 40 km).				North Atlantic Ocean (h = 10 km).	

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989					
Feb.	12	UPP	iP	11 11 32.4	Feb.	13	UPP	iPKP1	17 16 13.6
				micr sec					South of Fiji Islands (h = 280 km).
			P	Z' 0.2 1.3					
		KIR	iP	11 11 33.7	"	13	UPP	iP	23 56 14.4
		UME	iP	11 11 31.4			KIR	eP	23 55 42
				North Atlantic Ocean (h = 10 km).			UME	iP	23 55 54.5
									Volcano Islands region (h = 30 km).
"	12	UME	iPKP	11 36 57.3	"	14	KIR	iPg1	01 23 32.2
				Fiji Islands region (h = 540 km).				iSg1	01 23 38.9
"	12	UPP	iP	14 38 19.3 C			UME	iSg1	01 25 43.1
		KIR	iP	14 38 17.2					Sweden-Norway border region,
		UME	iP	14 38 21.8 C					68.3°N, 20.0°E.
				Cuba region (h = 60 km).					Origin time = 01 23 24.
"	12	KIR	ePg1	23 21 34					$M_L(\text{UPP}) = 2.5$ 1.
			iSg1	23 21 50.6					By combination with Finnish station
		UME	iSg1	23 22 52.4					readings.
				Norrbottnen, Sweden, 67.0°N, 22.6°E.	"	14	UPP	iP	04 11 46.1
				Origin time = 23 21 12.			UME	iP	04 11 26.8
				$M_L(\text{UPP}) = 2.3$ (0.16) 3.					Volcano Islands region (h = 80 km).
				By combination with Finnish station	"	14	UPP	ePKP	06 39 28
				readings.			UME	iPKP	06 39 22.0
"	12	UPP	iP	23 56 26.4					Solomon Islands (h = 30 km).
				Central USSR (h = N).	"	14	UPP	iSg1	20 47 57.0
"	13	UPP	iP	12 28 34.1			KIR	iSg1	20 49 24.8
		KIR	iP	12 28 17.3			UME	iSg1	20 48 28.8
				micr sec			UDD	iPn	20 45 38.1
			P	Z' 0.2 1.0				iSg1	20 46 54.1
		UME	iP	12 28 22.6			DEL	iSg1	20 47 52.6
				Talaud Islands (h = 90 km).			MYV	ePn	20 45 32
"	13	UPP	iPKP1	13 16 53.3				iSn	20 46 33.2
				South of Fiji Islands (h = 530 km).				iSg1	20 46 59.2
"	13	UPP	iP	14 57 00.4					Off coast of Southwestern Norway,
				micr sec					near 61 1/4°N, 4°E.
			P	Z' 0.2 1.4					Origin time = 20 44 22.
		UME	iP	14 58 00.8					$M_L(\text{UPP}) = 3.4$ (0.16) 5.
				North Atlantic Ocean (h = 10 km).	"	16	UPP	iPKP1	07 17 05.5
"	13	UPP	iP	15 20 23.1					Kermadec Islands (h = 200 km).
				micr sec	"	16	UPP	iPKP1	13 42 05.3
			P	Z' 0.2 1.5					South of Fiji Islands (h = 510 km).
		UME	iP	15 20 24.4	"	16	UPP	iP	22 01 31.2 C
				North Atlantic Ocean (h = 10 km).					micr sec
								P	Z' 0.2 1.0

(cont.)

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989			
Feb.	16	(cont.) KIR iP	22 00 43.7 C micr sec	Feb.	21	KIR iSg1	00 23 31.5
		P	Z' 0.2 1.0			Northern Finland, 69.5°N, 27.6°E.	
		UME iP	22 01 05.6			Origin time = 00 21 53.	
		Kuril Islands (h = 100 km).				M _L (UPP) = 2.6 (0.17) 2.	
		m = 6.2 (UPP,KIR).				Felt.	
						Solution from Finnish station readings.	
"	18	UPP iPKP1	03 02 25.7	"	21	UPP iSg1	02 58 04.3
		UME iPKP1	03 02 14.5			KIR iPn	02 55 09.1
		Kermadec Islands region (h = N).				i	02 55 13.8
						iPg1	02 55 17.8
"	18	UPP iP	11 13 34.3 micr sec			iSn	02 55 57.1
		P	Z' 0.2 1.3			iSg1	02 56 13.3
		KIR iP	11 13 35.6			UME iPg1	02 55 15.1
		UME iP	11 13 31.3			iSn	02 55 53.7
		Nicobar Islands region (h = N).				i	02 56 02.0
"	19	UPP eP	01 57 48			iSg1	02 56 11.1
		KIR iP	01 57 50.3			UDD iSg1	02 58 37.6
		UME iP	01 57 45.5			DEL iSg1	03 00 03.8
		Nicobar Islands region (h = 20 km).				MYV iSn	02 57 00.0
"	19	UPP iP	12 38 35.2			iSg1	02 57 38.2
		KIR iP	12 37 57.0			Central Finland, 65.4°N, 29.5°E.	
		UME iP	12 38 14.0			Origin time = 02 54 02.	
		Near s. coast of Honshu, Japan (h = 60 km).				M _L (UPP) = 3.2 (0.20) 5.	
						Felt.	
						By combination with Finnish station readings.	
"	19	UPP iSKP1	13 11 21.2	"	21	UME iPKP	22 28 06.2
		KIR iPKP	13 07 54.4			Off coast of southern Chile (h = 26 km).	
		Vanuatu Islands (h = 100 km).					
"	19	UPP iS	14 38 09	"	22	UPP iP	06 53 55.4 micr sec
		KIR iP	14 35 06.0			P	Z' 0.1 0.6
		Turkey (h = 10 km).				UME iP	06 53 35.2
						South of Honshu, Japan (h = 340 km).	
"	20	KIR iSg1	01 40 30.5	"	22	UPP iP	10 36 11.6 C
		UME iPg1	01 39 29.0			iS	10 44 56
		i	01 39 29.9			micr sec	
		iSg1	01 39 46.0			P	Z' 0.1 0.9
		i	01 39 48.0			Mx	Z 4.4 18
		Västerbotten, Sweden, 65.0°, 21.2°E.				KIR iP	10 35 22.5 C
		Origin time = 01 39 06.				micr sec	
		M _L (UPP) = 2.2 (0.27) 2.				P	Z' 0.5 0.9
		By combination with Finnish station readings.				Mx	Z 4.6 16
						UME iP	10 35 50.4 C
						iS	10 44 20
						(cont.)	

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1989				1989			
Feb.	22	(cont.) Kodiak Island region (h = N). m = 6.2, M = 5.6 (UPP,KIR).		Feb.	24	UPP iPKP1 22 45 06.9 iPKP2 22 45 09.8 UME iPKP1 22 44 54.3 Kermadec Islands region (h = 340 km).	
"	22	UME iP 12 08 25.2 Near east coast of Honshu, Japan (h = 70 km).		"	25	KIR iP 01 39 55.3 Kodiak Island region (h = N).	
"	23	UPP iSKP1 06 13 12.8 KIR iPKP 06 09 48.9 UME iPKP 06 09 54.7 Vanuatu Islands (h = 160 km).		"	25	UME iP 07 06 03.0 Hindu Kush region (h = 110 km).	
"	23	UPP iP 19 27 41.4 KIR iP 19 26 53.4 UME iP 19 27 16.2 Kuril Islands (h = N).		"	25	UPP iPKP 11 46 16.1 iPKP1 11 46 17.6 iPKP2 11 46 21.0 i 11 46 34.8 micr sec Mx Z 17 19 KIR iPKP 11 45 54.3 micr sec Mx Z 29 23 UME iPKP 11 46 05.3 Kermadec Islands (h = 30 km). M = 6.9 (UPP,KIR).	
"	23	KIR iP 22 18 13.0		"	25	UPP iP 11 52 04.1	
"	24	UPP iP 00 45 43.6 iS 00 49 59 KIR iP 00 46 49.6 micr sec P Z' 0.1 1.0 UME iP 00 46 14.0 iS 00 50 53 Turkey (h = 20 km).		"	25	UPP iPKP1 12 22 53.2 iPKP2 12 22 56.8 UME iPKP1 12 22 41.0 C Kermadec Islands (h = 50 km).	
"	24	UPP iP 07 46 28.5 micr sec P Z' 0.2 1.5 KIR iP 07 46 08.6 micr sec P Z' 0.3 1.5 UME iP 07 46 15.3 Luzon, Philippine Islands (h = 25 km). m = 6.1 (UPP,KIR).		"	25	UPP iPKP1 14 21 08.6 UME iPKP1 14 20 55.3 Kermadec Islands (h = 50 km).	
"	24	UME iP 12 24 49.8 Volcano Islands region (h = 45 km).		"	25	KIR eP 23 20 09 Luzon, Philippine Islands (h = 25 km).	
"	24	UPP iP 13 51 01.1 KIR iP 13 51 02.5 UME iP 13 50 58.2 Northern Sumatra (h = 60 km).		"	26	KIR eP 12 33 59 UME iP 12 33 59.0 Costa Rica (h = 25 km).	
"	24			"	26	UPP iPKP1 21 18 51.8 South of Fiji Islands (h = 25 km).	
"	24			"	26	UME iP 24 00 00.9 Aegean Sea (h = 10 km).	

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1989

Feb. 27 UME iP 20 09 20.5
Near east coast of Honshu, Japan
(h = 70 km).

" 27 UPP iP 23 52 51.5
iPP 23 56 45.8
iSKS 24 03 18
iS 24 04 02
micr sec
Mx Z 8.1 20
KIR iP 23 52 23.5
micr sec
P Z' 0.5 1.9
Mx Z 5.8 16
UME iP 23 52 30.3
iPP 23 56 23.7
iSKS 24 03 05
Halmahera (h = 55 km).
M = 6.1 (UPP,KIR).

" 28 UPP iP 01 04 55.4
KIR iP 01 04 40.5
micr sec
P Z' 0.5 1.9
UME iP 01 04 46.6
iPP 01 08 41.9
Molucca Passage (h = 55 km).

" 28 KIR iP 01 38 48.0
Molucca Passage (h = 60 km).

September 27, 1990

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SEISMOLOGICAL BULLETIN
 UPPSALA, KIRUNA, UMEÅ, UDDEHOLM

DELARY and MYRVIKEN

Uppsala	(UPP)	59°51.5'N,	17°37.6'E;	h = 14 m
Kiruna	(KIR)	67°50.4'N,	20°25.0'E;	h = 390 m
Umeå	(UME)	63°48.9'N,	20°14.2'E;	h = 16 m
Uddeholm	(UDD)	60°05.4'N,	13°36.4'E;	h = 240 m
Delary	(DEL)	56°28.2'N,	12°52.2'E;	h = 150 m
Myrviken	(MYV)	62°56.5'N,	14°20.8'E;	h = 345 m

MARCH 1 - 31, 1989

1989					1989				
Mar.	1	UPP	iP	02 53 04.3	Mar.	1	(cont.)		
			ipP	02 53 17.2					Kuril Islands region (h = 45 km).
				micr sec					m = 5.8 (UPP,KIR).
			P	Z' 0.2 1.0					
			Mx	Z 10 21	"	1	UPP	iP	17 32 12.2
		KIR	iP	02 52 18.6			KIR	iP	17 31 26.6
				micr sec			UME	iP	17 31 47.2
			P	Z' 0.3 1.5					Kuril Islands region (h = 55 km).
		UME	iP	02 52 39.5	"	2	UPP	iP	05 26 02.2
			ipP	02 52 52.2					Rat Islands, Aleutian Islands (h = N).
				Kuril Islands region.					
				h = 45 km (UPP,UME).					
				m = 6.2 (UPP,KIR).	"	2	UPP	iP	07 24 58.6
"	1	UPP	iP	03 35 56.7					micr sec
			i	03 36 00.7				P	Z' 0.1 1.0
				micr sec			KIR	iP	07 25 01.4 C
			i	Z' 0.1 0.9					micr sec
		KIR	iP	03 35 48.2				P	Z' 0.1 1.0
		UME	iP	03 35 48.5			UME	iP	07 25 03.6 C
			i	03 35 53.4					Mona Passage (h = 130 km).
				Burma (h = 15 km).					m = 5.6 (UPP,KIR).
"	1	UPP	iP	13 19 22.6	"	2	UPP	iP	22 29 06.4
			i	13 19 34.3			UME	iP	22 28 41.0
				micr sec					Kuril Islands (h = N).
			P	Z' 0.1 1.0	"	5	UPP	iP	11 08 08.2
		KIR	iP	13 18 36.3			KIR	iP	11 07 21.9
				micr sec			UME	iP	11 07 43.4
			P	Z' 0.1 1.0					Kuril Islands (h = 100 km).
		UME	iP	13 18 57.4					
			i	13 19 09.0					
				(cont.)					

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1989				1989					
Mar.	5	UPP	iP	20 24 20.1	Mar.	8	UPP	iPKP2	14 55 46.3
				micr sec			KIR	iPKP1	14 55 15.5
			P	Z' 0.1 1.1			East of North Island, N.Z. (h = N).		
		KIR	iP	20 23 26.6					
		UME	iP	20 23 53.1	"	8	UPP	iP	20 12 06.1 C
		Andreanof Islands, Aleutian Is. (h = N).					KIR	iP	20 11 59.4
							UME	iP	20 11 58.0
							Eastern India (h = N).		
"	6	UPP	iP	14 51 13.8 C	"	9	UPP	iP	02 48 37.3
			iS	15 00 36				ipP	02 48 46.4
				micr sec					micr sec
			P	Z' 0.4 1.1				P	Z' 0.2 1.5
			Mx	Z 6.5 27			KIR	iP	02 49 18.5
		KIR	iP	14 50 35.5 C				ipP	02 49 28.1
				micr sec			UME	iP	02 48 57.4 D
			P	Z' 0.3 1.0				ipP	02 49 06.5
		UME	iP	14 50 52.2 C			Malawi.		
			i	14 50 59.8			h = 30 km (UPP,KIR,UME).		
			iS	14 59 59	"	9	UME	iP	23 48 16.3
		Near east coast of Honshu, Japan (h = 40 km). m = 6.4 (UPP,KIR).					Near east coast of Honshu, Japan (h = 50 km).		
"	7	UPP	iP	20 49 47.4	"	10	KIR	iP	05 32 26.2
		KIR	iP	20 49 14.3			Near coast of Guerrero, Mexico (h = 45 km).		
		South of Honshu, Japan (h = 450 km).							
"	8	UPP	iP	02 48 01.8	"	10	UPP	iP	08 06 21.0
		KIR	iP	02 47 47.5 C			Turkey (h = 10 km).		
				micr sec	"	10	KIR	iP	10 47 53.7
			P	Z' 0.1 1.2			Kodiak Island region (h = N).		
		UME	iP	02 47 51.1	"	10	UPP	i(P)	18 50 05.5
		Molucca Sea (h = 35 km).			"	10	UPP	iP	22 01 22.4 D
"	8	UPP	iP	07 36 30.3					micr sec
		KIR	iP	07 35 37.8				P	Z' 0.9 1.7
		Andreanof Islands, Aleutian Is. (h = N).						Mx	Z 6.4 19
"	8	UPP	iP	11 58 06.1			KIR	iP	22 02 03.4 D
				micr sec					micr sec
			Mx	Z 6.3 23				P	Z' 0.7 1.5
		Molucca Passage (h = 30 km).						Mx	Z 3.8 15
"	8	KIR	iP	12 51 14.0			UME	iP	22 01 42.9 D
		Kirgiz-Xinjiang border region (h = N).						iS	22 11 34
							Malawi (h = 30 km). m = 6.5, M = 5.9 (UPP,KIR).		

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1989				1989					
Mar.	11	UPP	i(PKP)	05 23 45.8	Mar.	13	(cont.)		
			iSKP	05 26 38.1			i	13 06 56.5	
				micr sec			iLg2	13 07 41.0	
			(PKP)	Z' 0.1 1.0				micr sec	
		KIR	i(PKP)	05 23 27.6			Lg2	Z' 2.5 1.5	
			iPKP	05 23 40.7		KIR	eP	13 06 23	
				micr sec				micr sec	
			PKP	Z' 0.2 1.0			P	Z' 1.3 2.2	
		UME	i(PKP)	05 23 35.6			Mx	Z 4.3 7	
			i(PKP)	05 23 45.4		UME	iP	13 05 36.2	
			iPKP	05 23 50.1				Germany (h = 1 km).	
				Tonga Islands (h = 230 km).					
"	11	UPP	iP	07 23 49.0	"	15	UPP	micr sec	
		UME	iP	07 23 25.9 C			Mx	Z 1.8 14	
				Near east coast of Honshu, Japan			KIR	iP	01 40 08.1
				(h = 35 km).					Ryukyu Islands (h = N).
"	11	KIR	iPg1	17 38 54.3	"	15	UPP	iPKP1	04 32 59.0
			iSg1	17 39 28.4			KIR	iPKP1	04 32 41.3
			i	17 39 35.0			UME	iPKP1	04 32 50.1
		UME	i	17 39 55.0					Off e. coast of N. Island, N.Z.
			iSg1	17 40 17.1					(h = 90 km).
				Northwest coast of Norway,	"	15	UPP	iPKP1	04 37 08.1
				67.3°N, 14.1°E.			UME	iPKP1	04 37 01.3
				Origin time = 17 37 08.					Kermadec Islands (h = 55 km).
				$M_L(\text{UPP}) = 2.8$ 1.	"	16	UPP	iP	04 25 09.2
				By combination with Norwegian			KIR	iP	04 24 37.7
				station readings.			UME	iP	04 24 59.9
"	12	UPP	iPKP1	07 48 02.1					Northern Quebec (h = 10 km).
		UME	iPKP1	07 47 50.1	"	16	UPP	iP	08 23 38.2
				Kermadec Islands (h = 55 km).			KIR	iP	08 22 42.9
"	13	UPP	iPKP1	03 57 12.4					micr sec
				South of Fiji Islands (h = 70 km).			P	Z' 0.1 1.0	
"	13	KIR	iPg1	10 03 00.4			UME	iP	08 23 11.8
			iSg1	10 03 26.1					Kodiak Island region (h = 60 km).
		UME	iSg1	10 03 50.1	"	16	UPP	iPKP1	09 53 38.6
				Norrbottn, Sweden, 66.2°N, 22.7°E.				iPKP2	09 53 44.1
				Origin time = 10 02 26.			KIR	iPKP1	09 53 16.7
				$M_L(\text{UPP}) = 2.6$ (0.55) 3.			UME	iPKP1	09 53 27.3 C
				By combination with Finnish station					Kermadec Islands (h = 35 km).
				readings.	"	16	UPP	iP	13 45 55.9
"	13	UPP	iPn	13 04 42.5					micr sec
			iSn	13 06 22.5			P	Z' 0.1 1.0	
			i	13 06 46.5			KIR	iP	13 45 38.6
				(cont.)					(cont.)

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1989				1989			
Mar.	16	(cont.) UME iP	13 45 44.9	Mar.	17	UPP iP	16 48 48.6
		Mindoro, Philippine Islands (h = 140 km).				i	16 49 01.0
						P	Z' 0.1 1.0
"	17	UPP iP	00 55 11.3	KIR	iP		16 48 10.3 C
		KIR iP	00 56 32.0			P	Z' 0.1 1.0
		UME iP	00 55 53.2 C	UME	iP		16 48 27.0 C
		Albania (h = 25 km).					Near east coast of Honshu, Japan (h = 45 km). m = 5.8 (UPP,KIR).
"	17	UPP iP	02 33 33.6 C	"	17	UPP iP	17 36 24.1
			micr sec			KIR iP	17 35 28.5
		P	Z' 0.3 1.0				Alaska Peninsula (h = 150 km).
		KIR iP	02 33 05.0	"	17	UPP iPKP	19 52 49.7
			micr sec			iPKP1	19 52 57.6
		P	Z' 0.2 1.0			iPKP2	19 53 08.2
		UME iP	02 33 16.9 C				micr sec
		Ryukyu Islands (h = 90 km). m = 6.2 (UPP,KIR).				Mx	Z 4.9 25
"	17	UPP iP	04 10 34.0	KIR	iPKP1		19 52 38.1
		UME iP	04 10 27.2			Mx	Z 3.9 25
		Kashmir-Tibet border region (h = 35 km).		UME	iPKP		19 52 44.7
"	17	UPP iP	05 48 20.2			iPKP1	19 52 48.1
		iS	05 53 08			iPKP2	19 52 51.8
			micr sec				South of Kermadec Islands (h = 60 km). M = 6.1 (UPP,KIR).
		Mx	Z 4.6 13	"	18	UPP iP	09 48 51.3
		KIR iP	05 49 28.2			KIR iP	09 48 24.0 D
			micr sec			UME iP	09 48 35.5
		Mx	Z 7.7 15				Mariana Islands (h = 440 km).
		UME iP	05 48 52.9	"	18	UPP iPKP1	13 56 13.4
		iS	05 54 01				South of Fiji Islands (h = 540 km).
		Crete (h = 30 km). M = 5.3 (UPP,KIR).		"	18	KIR iPn	17 10 10.1
"	17	UME iP	12 03 22.0			iPg1	17 10 25.2
		Near east coast of Honshu, Japan (h = 70 km).				iSn	17 11 23.9
"	17	UPP Mx	14 41	UME	iPn		17 11 02.1
			micr sec	UDD	iPn		17 11 52.8
		Mx	Z 3.5 25				Norwegian Sea, 73.9°N, 11.2°E. Origin time = 17 08 29. By combination with Finnish station readings.
		KIR Mx	14 41				
			micr sec				
		Mx	Z 3.4 26				
		East Papua New Guinea region (h = 45 km). M = 5.8 (UPP,KIR).					

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989			
Mar.	18	KIR iP	23 13 37.2	Mar.	20	UPP iP	10 43 55.9
		UME iP	23 13 51.0			UME iP	10 44 35.9
		Volcano Islands region (h = N).				Aegean Sea (h = 10 km).	
"	19	UPP iP	05 41 42.9	"	20	UPP iP	12 48 18.2
		iS	05 45 40				
			micr sec				
		P	Z' 0.1 1.0	"	21	KIR iP	02 10 49.0
		KIR iP	05 42 57.9			UME iP	02 11 04.2
		UME iP	05 42 21.7			Sea of Japan (h = 400 km).	
		iS	05 46 42	"	23	UPP iP	09 43 06.6
		Aegean Sea (h = 10 km).					micr sec
						P	Z' 0.1 1.0
"	19	UME iP	05 54 57.6			KIR iP	09 42 29.1
		Aegean Sea (h = 10 km).				UME iP	09 42 45.3 D
"	19	UME iP	06 03 03.2			Off east coast of Honshu, Japan (h = 50 km).	
		Aegean Sea (h = 10 km).		"	24	UME iPKP1	01 17 00.4
"	19	UME iP	11 36 49.1			i	01 17 11.8
		Aegean Sea (h = 10 km).				East of North Island, N.Z. (h = 70 km).	
"	19	KIR iP	12 21 32.8	"	24	UME iP	15 44 07.5
		UME iP	12 21 57.2			Near coast of Nicaragua (h = 70 km).	
		Northwest of Kuril (h = 360 km).		"	25	UPP iP	17 16 41.5
"	20	UPP eP	01 16 30			UME iP	17 16 29.4
		i	01 16 52.3			Kermadec Islands (h = 55 km).	
		KIR iP	01 15 32.6	"	26	UPP iP	03 08 03.0
		UME iP	01 16 01.7				micr sec
		Southern Alaska (h = 130 km).				Mx	Z 2.3 16
"	20	UME iP	01 45 59.4			KIR iP	03 07 33.9
"	20	UPP iP	02 48 44.4			Philippine Islands region (h = 35 km).	
			micr sec	"	26	KIR iPn	09 30 53.2
		P	Z' 0.1 1.0			Greenland Sea (h = 10 km).	
		Mx	Z 4.1 19	"	26	KIR ePn	11 01 08
		KIR iP	02 48 18.3			Norwegian Sea (h = 10 km).	
		i	02 48 29.5	"	27	UME iP	15 58 55.2
			micr sec			South of Mariana Islands (h = 35 km).	
		P	Z' 0.1 1.0				
		Mx	Z 1.7 17				
		UME iP	02 48 27.7				
		Southwestern Ryukyu Islands (h = 30 km).					
		m = 5.8, M = 5.5 (UPP,KIR).					

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989					1989							
Mar.	28	UPP	iP	13 34 43.3	Mar.	30	UPP	iP	16 41 47.4			
			iS	13 39 15				i	16 41 50.7			
				micr sec			KIR	iP	16 42 30.7			
			P	Z' 0.2 1.4				i	16 42 33.3			
			Mx	Z 4.0 10			UME	iP	16 42 05.6			
		KIR	iP	13 35 51.6			Turkey-USSR border region (h = 10 km).					
				micr sec								
			P	Z' 0.2 1.0			"	30	UPP	iPKP	20 58 21.9	
			Mx	Z 7.0 11					KIR	iPKP	20 58 13.0	
		UME	iP	13 35 16.5						iSKP1	21 01 17.8	
			iS	13 40 04					UME	i(PKP)	20 58 12.1	
		Crete (h = 55 km).								iPKP	20 58 19.8	
		m = 6.0, M = 5.4 (UPP,KIR).								iSKP1	21 01 30.0	
"	28	UPP	iPKP1	17 24 49.6			Tonga Islands (h = 230 km).					
			iPKP2	17 24 53.1			"	31	UPP	iP	07 01 25.0	
		Kermadec Islands (h = 55 km).							UME	iP	07 01 50.6	
"	29	UPP	iP	00 26 38.9						i	07 01 58.0	
		KIR	iP	00 26 07.9			North of Ascension Island (h = 10 km).					
				micr sec			"	31	UPP	iP	07 13 24.6	
			P	Z' 0.1 1.0					UME	iP	07 13 50.3	
		UME	iP	00 26 19.2			North of Ascension Island (h = 10 km).					
		Bonin Islands region (h = 280 km).					"	31	UPP	iP	07 14 46.2	
"	29	UPP	iPg1	17 06 35.6					UME	iP	07 15 11.8	
			iSg1	17 06 40.0			North of Ascension Island (h = 10 km).					
			iRg	17 06 41.0			"	31	UPP	iP	07 14 46.2	
		Dannemora, Uppland, Sweden, 60.2°N, 17.8°E.							UME	iP	07 15 11.8	
		Rockburst at the Iron ore mine.					North of Ascension Island (h = 10 km).					
"	29	UPP	iP	21 40 17.3			"	31	KIR	iP	15 39 53.1	
			ipP	21 41 24.6					UME	iP	15 40 41.0	
				micr sec			Norwegian Sea (h = 10 km).					
			P	Z' 0.2 1.3			"	31	UPP	iSn	15 59 57.8	
		KIR	iP	21 40 26.5					KIR	iPn	15 55 42.0	
		UME	iP	21 40 15.9						iSn	15 56 50.5	
		Hindu Kush region (h = 210 km).							UME	iPn	15 56 28.8	
"	30	UPP	iP	14 23 19.2 C						iSn	15 58 19.0	
				micr sec			Greenland Sea (h = 10 km).					
			P	Z' 0.2 1.4								
		KIR	iP	14 22 38.0								
		UME	iP	14 22 55.0 C								
		Hokkaido, Japan region (h = 25 km).										

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SEISMOLOGICAL BULLETIN
 UPPSALA, KIRUNA, UMEÅ, UDDEHOLM

DELARY and MYRVIKEN

Uppsala	(UPP)	59°51.5'N,	17°37.6'E;	h = 14 m
Kiruna	(KIR)	67°50.4'N,	20°25.0'E;	h = 390 m
Umeå	(UME)	63°48.9'N,	20°14.2'E;	h = 16 m
Uddeholm	(UDD)	60°05.4'N,	13°36.4'E;	h = 240 m
Delary	(DEL)	56°28.2'N,	12°52.2'E;	h = 150 m
Myrviken	(MYV)	62°56.5'N,	14°20.8'E;	h = 345 m

APRIL 1 - 30, 1989

1989					1989						
Apr.	2	KIR	iP	06 50 19.3	Apr.	3	UPP	iP	19 49 48.0		
				micr sec				i	19 49 54.2		
			P	Z' 0.1 1.2					micr sec		
		UME	iP	06 49 59.1				i	Z' 0.2 0.8		
		Southern Iran (h = 45 km).					KIR	iP	19 49 41.8		
									micr sec		
"	2	UPP	iPKP	21 11 02.2				P	Z' 0.1 1.0		
			iPKP1	21 11 07.9			UME	iP	19 49 40.1		
				micr sec				i	19 49 46.3		
			PKP1	Z' 0.2 0.8			Burma-India border region				
		KIR	iPKP	21 10 41.0			(h = 70 km).				
		UME	iPKP	21 10 51.4			m = 6.1 (UPP,KIR).				
		Kermadec Islands region				"	4	UPP	iP	01 24 44.8	
		(h = 400 km).						UME	iP	01 24 20.6	
"	2	UPP	iP	21 31 15.9			Hokkaido, Japan region (h = N).				
				micr sec			"	4	UPP	iPKP	09 32 36.7
			P	Z' 0.1 0.6				KIR	ePKP	09 32 29	
			Mx	Z 0.8 8			South of Fiji Islands (h = 510 km).				
		KIR	iP	21 31 58.9			"	4	UPP	eP	20 22 25
				micr sec				KIR	iP	20 22 01.2	
			P	Z' 0.3 0.7				UME	eP	20 22 08	
			Mx	Z 1.4 12			Northeast of Taiwan (h = 140 km).				
		UME	iP	21 31 32.3		"	5	UPP	iP	01 41 14.3	
		Iran-Iraq border region (h = N).								micr sec	
		m = 6.1, M = 4.9 (UPP,KIR).							P	Z' 0.1 0.9	
"	3	KIR	eP	19 43 04				KIR	iP	01 40 24.9	
		UME	iP	19 43 21.9				UME	iP	01 40 48.4	
		Hokkaido, Japan region					Kuril Islands region (h = 35 km).				
		(h = 40 km).									

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989					
Apr.	5	UPP	eP	15 14 32	Apr.	7	UPP	iP	13 38 00.5
				micr sec					micr sec
			P	Z' 0.1 1.0				Mx	Z 1.9 20
		KIR	iP	15 15 41.1			KIR	iP	13 38 15.8
		UME	iP	15 15 05.7					micr sec
				Crete (h = N).				Mx	Z 0.9 13
"	5	UME	iP	16 21 34.3			UME	iP	13 38 11.2
				Carisberg Ridge (h = 10 km).					North Atlantic Ridge (h = 10 km).
									M = 4.6 (UPP,KIR).
"	5	UME	iP	22 47 05.8	"	7	KIR	eP	18 59 31
				Kuril Islands (h = N).					South of Timor (h = N).
"	6	UPP	iSKS	00 12 20	"	7	KIR	eP	21 56 15
				micr sec			UME	iP	21 56 15.5
			Mx	Z 1.2 18					Southeast Asia (h = 10 km).
		UME	iSKS	00 12 31	"	8	KIR	eP	00 15 51
				Northern Chile (h = 110 km).					North Atlantic Ridge (h = 10 km).
"	6	UPP	ePKP	08 24 56	"	8	UPP	iP	01 32 44.0
				micr sec			KIR	iP	01 31 51.3
			PKP	Z' 0.6 1.7			UME	iP	01 32 18.5
			Mx	Z 6.4 30					Gulf of Alaska (h = 10 km).
		KIR	iPKP	08 24 42.4	"	8	UPP	iP	03 42 26.0
				micr sec			UME	iP	03 42 53.5
			PKP	Z' 1.1 1.5					Portugal (h = 20 km).
			Mx	Z 2.6 19	"	8	UPP	Mx	04 21
		UME	iPKP	08 24 43.1					micr sec
				Vanuatu Islands (h = 170 km).				Mx	Z 1.9 23
				M = 6.0 (UPP,KIR).			KIR	Mx	04 21
				M uncorrected for focal depth.					micr sec
"	6	UPP	iP	13 59 32.6					Tonga Islands (h = N).
				micr sec					M = 5.8 (UPP,KIR).
			P	Z' 0.1 0.7	"	8	UME	iP	04 29 46.5
		KIR	iP	13 58 47.9					Yugoslavia (h = 40 km).
		UME	iP	13 59 08.3	"	8	UPP	iP	08 12 38.8
				Kuril Island (h = 120 km).					micr sec
"	6	UPP	iPKP	17 53 02.6				Mx	Z 1.1 17
		KIR	ePKP	17 52 46			KIR		micr sec
		UME	iPKP	17 52 50.9				Mx	Z 1.2 14
				Kermadec Islands (h = 55 km).			UME	iP	08 13 01.0
"	6	KIR	iP	23 43 29.5					Azores Islands region (h = 10 km).
				Crete (h = 45 km).					

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989			
Apr.	8	UPP iP	14 55 24.0	Apr.	12	UPP iP	05 14 02.7
		UME iP	14 54 58.2			UME iP	05 14 25.4
		Kuril Islands (h = 55 km).				Ethiopia (h = N).	
"	9	UPP iP	02 41 19.8	"	12	UPP eP	10 10 35
			micr sec			UME iP	10 11 14.9
		P	Z' 0.1 1.1			Greece (h = 10 km).	
		KIR iP	02 41 14.7	"	12	UME iP	17 12 37.2
			micr sec			Southern Honshu, Japan	
		P	Z' 0.1 1.5			(h = 370 km).	
		Mx	Z 1.5 16	"	12	UPP iP	19 28 53.8
		UME iP	02 41 12.4			UME iP	19 29 32.0
		Tibet (h = 10 km).				Greece (h = 30 km).	
		m = 5.7 (UPP,KIR).					
"	9	UPP iP	04 25 47.6	"	13	UPP iPKP	01 02 06.1
		KIR iP	04 24 51.2				micr sec
		Eastern Siberia (h = N).				PKP	Z' 0.1 1.5
"	9	UPP iP	05 18 47.6	KIR	iPKP	01 02 13.9	
		KIR iP	05 17 55.3				micr sec
		UME iP	05 18 22.2			PKP	Z' 0.8 2.5
		Andreasnof Islands (h = N).		UME	iPKP	01 02 12.0	
						Off coast of central Chile (h = N).	
"	10	UPP iSg1	21 15 51.4	"	13	UPP iP	01 43 05.7
		UME iSg1	21 16 54.3			KIR iP	01 42 48.3
		MYV iSg1	21 15 36.0			UME eP	01 42 51
		Southeastern Norway, 60.7°N, 11.5°E.				Luzon, Philippine Islands	
		Origin time = 21 14 15.				(h = 55 km).	
		M _L (UPP) = 2.6 1.		"	13	UPP iPKP	04 09 16.8
		Solution from Bergen regional bulletin.				Kermadec Islands region (h = N).	
"	11	UPP iP	04 07 26.2 D	"	13	UPP iP	04 12 02.0
		ipP	04 07 30.5			KIR iP	04 12 03.2
		i	04 07 33.2			i	04 12 14.5
		iS	04 16 14			UME iP	04 12 03.7
		iP'P'	04 35 37.0				
			micr sec	"	13	UPP iP	07 35 51.7
		P	Z' 2.4 1.4				micr sec
		Mx	Z 85 19			P	Z' 0.1 0.9
		KIR iP	04 06 35.3			Mx	Z 2.2 18
			micr sec			KIR iP	07 36 48.2
		P	Z' 1.8 1.2				micr sec
		Mx	Z 45 14			Mx	Z 3.4 19
		UME iP	04 06 59.4			UME iP	07 35 45.4
		iS	04 15 22			India-Bangladesh border region	
		Kuril Islands region (h = 16 km).				(h = N).	
		m = 7.1, M = 6.8 (UPP,KIR).				M = 5.4 (UPP,KIR).	

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989							
Apr.	13	UPP	iP	07 54 41.6	Apr.	14	UPP	iPKP	13 22 46.5		
			ipP	07 54 52.7			KIR	iPKP	13 22 39.1		
		KIR	iP	07 55 23.1			UME	iPKP	13 22 46.1		
		UME	eP	07 54 56			Fiji Islands region (h = 640 km).				
		Eastern Caucasus (h = N).					"	14	KIR	iP	23 02 28.0
"	13	UPP	iP	08 03 57.8			Burma-China border region (h = N).				
			P	Z' 0.1 1.0			"	14	KIR	iP	23 05 26.2
		KIR	iP	08 04 48.2			Kirghiz SSR (h = N).				
			P	Z' 0.2 1.5			"	14	KIR	iP	23 38 01.2
		UME	iP	08 04 21.0			UME	iP	23 37 34.6		
		Ethiopia (h = N).					Iran-Iraq border region (h = N).				
		m = 5.9 (UPP,KIR).					"	15	KIR	iP	06 44 55.7
"	13	UPP	eP	12 26 18			UME	iP	06 45 36.8		
		UME	eP	12 26 41			North of Franz Josef Land (h = 10 km).				
"	13	UPP	eP	14 38 04			"	15	UPP	iP	14 38 32.9 D
		KIR	iP	14 39 26.1					P	Z' 0.2 0.8	
		UME	iP	14 38 45.0			KIR	iP	14 38 45.0 D		
		Romania (h = 120 km).							P	Z' 0.2 1.4	
"	13	KIR	iPn	23 46 30.8			UME	iP	14 38 42.2 D		
			iPg1	23 46 38.0			Venezuela (h = 25 km).				
			iSn	23 47 21.6			m = 6.1 (UPP,KIR).				
		UME	iSn	23 48 28.9			"	15	UPP	iP	20 43 57.6
		MYV	eSn	23 48 35			KIR	iP	20 43 43.0		
		Norwegian Sea, 70.0°N, 9.5°E.					"	15	UPP	iP	20 44 19.1 D
		Origin time = 23 45 22.							iS	20 52 36	
		Solution from Bergen regional bulletin.							P	Z' 1.1 0.8	
"	14	UME	iP	10 14 49.6			Mx	Z 35 17			
		Dominican Republic region (h = 90 km).					KIR	iP	20 44 05.0 D		
"	14	UPP	iP	13 05 07.6					P	Z' 1.3 0.9	
		KIR	iP	13 04 40.4					Mx	Z 18 13	
		UME	iP	13 04 52.1			UME	iP	20 44 07.2 D		
			P	Z' 0.2 1.5					iS	20 52 10	
		Mariana Islands (h = 170 km).					Sichuan Province, China (h = 15 km).				
"	14	UPP	iPKP	13 20 56.4			m = 7.0, M = 6.4 (UPP,KIR).				
		KIR	iPKP	13 20 49.6			"	15	UME	iP	22 14 00.7
		UME	iPKP	13 20 56.1			Hokkaido Japan region (h = 70 km).				
		Fiji Islands region (h = 640 km).									

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989			
Apr.	15	KIR eSg1	23 36 26	Apr.	15	(cont.)	
		UME iPg1	23 34 57.1			$M_L(\text{UPP}) = 4.1 (0.06) 4.$	
		iSg1	23 35 06.7			Solution from Helsinki regional bulletin.	
		Västerbotten, Sweden, 64.6°N, 20.9°E.					
		Origin time = 23 34 42.					
		$M_L(\text{UPP}) = 2.4 1.$					
		Solution from Helsinki regional bulletin.		"	16	UME iP	07 03 48.3
						Minahassa Peninsula (h = 25 km).	
"	16	UPP iSn	04 14 41.9	"	16	UPP iP	08 45 57.2
		KIR iPn	04 12 38.8			KIR iP	08 46 31.8
		iSn	04 13 41.6			UME iP	08 46 18.3
		UME iSn	04 13 58.3			Central Mid-Atlantic Ridge	
		iSg1	04 14 18.3			(h = 10 km).	
		MYV iPn	04 12 26.2	"	16	UPP iP	11 02 10.8
		iSn	04 13 20.0				micr sec
		Norwegian Sea, near 66.6°N, 5.9°E.				P	Z' 0.1 1.4
		Origin time = 04 11 13.				Mx	Z 1.4 15
		$M_L(\text{UPP}) = 2.9 1.$				KIR iP	11 02 44.7
		Solution from Bergen regional bulletin.					micr sec
"	16	UPP iP	05 35 56.7			P	Z' 0.1 1.4
		ipP	05 36 31.8			Mx	Z 1.3 19
			micr sec			UME iP	11 02 30.8
		P	Z' 0.1 1.0			Central Mid-Atlantic Ridge	
		KIR iP	05 35 29.3			(h = 10 km).	
		UME iP	05 35 40.1	"	16	UPP iP	18 36 00.4
		ipP	05 36 15.4			KIR iP	18 35 45.5
		Ryukyu Islands.				Sichuan Province, China (h = 35 km).	
		h = 150 km (UPP,UME).		"	16	UPP iP	20 01 08.4
"	16	UPP iPn	06 37 12.2			Sichuan Province, China (h = 45 km).	
		iSn	06 39 05.6	"	16	UPP i(PKP)	20 06 25.2
		iLg1	06 40 07.0			iSKP1	20 09 14.7
		KIR iPn	06 35 58.2				micr sec
		iSn	06 37 01.7			(PKP)	Z' 0.1 0.8
		UME iPn	06 36 21.8			KIR i(PKP)	20 06 08.8
		i	06 36 22.9			i	20 06 18.8
		iSn	06 37 34.2			iSKP1	20 08 50.9
		iSg1	06 38 09.3				micr sec
		DEL iSn	06 40 40.4			i	Z' 0.1 0.9
		iLg1	06 42 08.6			UME i(PKP)	20 06 14.3
		MYV iPn	06 36 57.0			iSKP1	20 09 03.7
		iSn	06 38 37.4			Fiji Islands region (h = 610 km).	
		iSg1	06 39 34.0	"	17	UPP iP	03 09 17.2
		Northwestern USSR, near 67.6°N, 33.7°E.				KIR iP	03 09 03.2
		Origin time = 06 34 44.				Sichuan Province, China (h = 25 km).	
		(cont.)					

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989					
Apr.	17	UME	iP	14 43 35.8	Apr.	19	UPP	iS	15 12 58
"	17	UPP	iP	20 05 48.8				Mx	Z 2.0 15
		KIR	eP	20 05 25			KIR		micr sec
		Southwestern Ryukyu Islands						Mx	Z 1.9 15
		(h = 25 km).					UME	iS	15 12 40
"	18	UPP	i(PKP)	02 19 42.2			Off coast of Jalisco, Mexico		
				micr sec			(h = 10 km).		
			(PKP)	Z' 0.1 0.9			M = 5.6 (UPP,KIR).		
		KIR	e(PKP)	02 19 25	"	20	UPP	iP	00 21 30.5
		UME	i(PKP)	02 19 31.0			UME	iP	00 21 05.2
		Fiji Islands region (h = 580 km).					Kuril Islands (h = N).		
"	18	UPP	iPKP	12 52 18.8	"	20	UPP	eP	08 22 35
			i	12 54 30.0			Off coast of Northern Peru		
			i	12 55 10.5			(h = 60 km).		
		KIR	e(PKP)	12 51 59	"	20	UPP	iP	08 19 27.7
			i	12 54 49.5			UME	iP	08 19 47.7
		UME	i(PKP)	12 52 06.5			Azores Islands (h = 10 km).		
			i	12 55 00.0	"	20	UPP	eP	08 48 01
		South of Fiji Islands (h = 520 km).							micr sec
"	18	UPP	iPKP	19 29 30.5				Mx	Z 1.2 18
		KIR	ePKP	19 29 13			KIR		micr sec
		UME	iPKP	19 29 18.0				Mx	Z 0.8 15
		Kermadec Islands (h = 230 km).					UME	iP	08 49 18.7
"	19	UPP	iPKP	00 28 09.2			Azores Islands region (h = 10 km).		
				micr sec			M = 4.6 (UPP,KIR).		
			Mx	Z 2.3 19	"	20	UPP	iP	11 39 25.4
		KIR		micr sec			UME	iP	11 39 07.2
			Mx	Z 2.3 18			Bonin Islands region (h = 470 km).		
		UME	iPKP	00 27 56.6	"	20	UPP	iPKP	13 25 04.8
		Kermadec Islands region (h = 10 km).							micr sec
		M = 5.9 (UPP,KIR).						Mx	Z 1.2 18
"	19	UME	iPKP	07 23 30.7			Near coast of southern Chile (h = N).		
		Kermadec Islands region							
		(h = 60 km).		"	20	UPP	Mx	16 18	
"	19	UPP	iPKP	13 28 32.4					micr sec
			i	13 29 24.8				Mx	Z 1.4 20
				micr sec			Off coast of southern Chile		
			PKP	Z' 0.1 1.2			(h = 10 km).		
		UME	iPKP	13 28 22.5	"	20	UPP	iP	18 52 56.9
		Kermadec Islands region					KIR	iP	18 54 07.5
		(h = 270 km).					UME	iP	18 53 31.6
							Mediterranean Sea (h = 10 km).		

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989							
Apr.	20	KIR	iPg1	20 08 36.5	Apr.	22	UPP	iSg1	18 52 13.6		
			iSg1	20 09 00.7			UME	eSg1	18 52 38		
		UME	iSg1	20 09 18.8			MYV	iSg1	18 51 10.2		
			i	20 09 22.9			Norwegian Sea, 61.7°N, 3.1°E.				
		MYV	iSn	20 10 09.0			Origin time = 18 48 29.				
			iSg1	20 10 25.0			Solution from Bergen regional bulletin.				
		Norrbotten, Sweden, 66.1°N, 22.0°E.					"	22	UPP	iP	20 02 49.7
		Origin time = 20 08 05.							UME	iP	20 02 30.8
		M _L (UPP) = 2.9 (0.10) 3.							South of Honshu, Japan (h = N).		
		Solution from Helsinki regional bulletin.					"	23	UPP	iP	19 30 26.7
"	20	UPP	eP	20 44 23				ipP	19 30 28.7		
		KIR	eP	20 42 59				i	19 31 35.4		
		UME	iP	20 49 08.7					micr sec		
		South of Mariana Islands (h = N).						P	Z' 0.1 1.1		
"	20	UPP	iP	23 08 38.7 C			KIR	iP	19 29 26.8		
			i	23 08 41.4				ipP	19 29 28.6		
			iPP	23 10 34					micr sec		
			iS	23 15 41				pP	Z 0.3 1.1		
			iSS	23 19 14			UME	iP	19 29 57.7		
				micr sec				ipP	19 29 59.4		
			i	Z' 0.4 0.8			Alaska.				
			Mx	Z 51 20			h = 5 km (UPP,KIR,UME).				
		KIR	iP	23 07 50.9 C			m = 5.9 (UPP,KIR).				
				micr sec			"	23	UPP	iP	21 48 47.7
			P	Z' 0.4 0.7				KIR	iP	21 48 46.4	
			Mx	Z 55 15			Sunda Strait (h = 80 km).				
		UME	iP	23 08 11.4 C			"	24	UPP	iP	01 42 44.5
			iS	23 14 49				KIR	iP	01 41 56.1	
		Eastern USSR (h = 25 km).					Eastern USSR (h = N).				
		m = 6.4, M = 6.5 (UPP,KIR).					"	24	UPP	iP	18 21 57.7
"	21	UPP	iP	19 17 30.0			Burma (h = 100 km).				
		KIR	iP	19 16 40.5			"	24	KIR	iPKP	21 00 05.7
		Eastern USSR (h = N).					Vanuatu Islands (h = 35 km).				
"	21	UPP	iP	20 46 48.0			"	25	UPP	iPKP	00 50 12.5
		UME	iP	20 46 33.9						micr sec	
		Luzon, Philippine Islands							PKP	Z' 0.1 0.6	
		(h = 60 km).					South of Fiji Islands (h = 500 km).				
"	21	UPP	iP	23 24 08.1			"	25	UPP	iP	02 23 32.5 D
		UME	iP	23 24 06.3					ipP	02 23 37.3	
		Afghanistan-USSR border region							iPP	02 26 07.8	
		(h = 90 km).					(cont.)				

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989			
Apr.	25	(cont.)		Apr.	25	(cont.)	
		iS	02 31 47			Near coast of Guerrero, Mexico	
			micr sec			(h = 20 km).	
		P	Z' 1.6 1.3			m = 7.0, M = 6.8 (UPP,KIR).	
		Mx	Z 18 17				
		KIR	iP 02 23 18.5 D	"	25	UPP	iP 17 30 03.7
			micr sec				micr sec
		P	Z' 1.3 1.6				P Z' 0.1 1.0
		Mx	Z 11 10			KIR	iP 17 29 26.0
		UME	iP 02 23 21.1 D				micr sec
			ipP 02 23 25.9				P Z' 0.1 0.9
			iS 02 31 22			UME	iP 17 29 43.1 C
		Sichuan Province, China.				Near east coast of Honshu, Japan	
		h = 15 km (UPP,UME).				(h = 70 km).	
		m = 6.9, M = 6.2 (UPP,KIR).				m = 5.7 (UPP,KIR).	
"	25	UPP	iP 03 24 03.1	"	26	UME	iPKP 22 49 37.3
		Shichuan Province, China				Kermadec Islands region	
		(h = 10 km).				(h = 130 km).	
"	25	KIR	ePKP 03 30 17	"	27	UPP	eP 00 19 05
		UME	iP 03 30 24.0			Sichuan Province, China (h = N).	
		Vanuatu Islands (h = 15 km).					
"	25	UPP	eP 03 33 35	"	27	UPP	iP 02 31 56.2
		Tibet (h = N).				i	02 31 56.8
						iPP	02 34 52.3
						iS	02 41 36
							micr sec
						i	Z' 0.8 1.2
						Mx	Z 7.3 30
"	25	KIR	iP 13 53 14.9			KIR	iP 02 31 22.0
		Andreanof Islands, Aleutian Is.				i	02 34 23.0
		(h = N).				iPP	02 34 00.3
							micr sec
"	25	UPP	iP 14 41 49.9			i	Z' 0.9 1.4
		iPP	14 45 18.5			Mx	Z 8.4 27
		iS	14 52 21			UME	iP 02 31 36.2
			micr sec			iPP	02 34 25.4
		P	Z' 0.3 1.4			iS	02 41 05
		Mx	Z 38 18			South of Honshu, Japan (h = 90 km).	
		KIR	iP 14 41 33.9			m = 6.4, M = 5.8 (UPP,KIR).	
		iPP	14 44 54.1			M uncorrected for focal depth.	
			micr sec				
		P	Z' 15.7 4.5	"	27	UPP	iP 02 51 25.3
		Mx	Z 36 19			KIR	iP 02 51 11.3
		UME	iP 14 41 46.5			UME	iP 02 51 13.8
		i	14 41 54.0			Sichuan Province, China (h = 10 km).	
		iPP	14 45 10.2				
		iS	14 52 03				
		(cont.)					

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989			
Apr.	27	UPP iP	04 17 28.1	Apr.	28	UPP iP	04 07 18.7
		UME iP	04 17 09.4				micr sec
		South of Honshu, Japan (h = 90 km).				Mx	Z 1.8 10
"	27	UPP iP	04 30 49.3			KIR	micr sec
		UME iP	04 30 31.4			Mx	Z 2.2 14
		South of Honshu, Japan (h = 90 km).				UME iP	04 07 57.7
"	27	UPP iPKP	09 53 25.3			iS	04 12 22
		South of Fiji Islands (h = 520 km).				Aegean Sea (h = 25 km).	
"	27	UPP iP	15 38 06.6	"	28	UPP Mx	05 06
		KIR iP	15 37 27.8				micr sec
			micr sec			Mx	Z 1.2 22
		P	Z' 0.1 1.0			KIR Mx	05 05
		UME iP	15 37 45.3				micr sec
		Near east coast of Honshu, Japan (h = 70 km).				Mx	Z 1.4 20
"	27	KIR iP	18 48 13.3	"	28	UPP iP	08 00 58.7
		UME iP	18 48 44.4			KIR iP	08 00 49.0
		Alaska (h = 5 km).				UME iP	08 00 58.6
"	27	UPP iP	23 12 05.5 C			El Salvador (h = 60 km).	
		iS	23 16 21	"	28	UPP iP	09 32 19.3
			micr sec			Sichuan Province, China (h = 10 km).	
		P	Z' 0.2 1.4	"	28	UME iP	11 24 22.4
		Mx	Z 3.0 10			South of Honshu, Japan (h = 120 km).	
		KIR iP	23 13 11.2	"	28	UPP eP	13 25 09
			micr sec			Sichuan Province, China (h = 10 km).	
		P	Z' 0.2 1.0	"	28	UPP iP	13 35 32.2
		Mx	Z 1.4 9			iS	13 39 46
		UME iP	23 12 35.8				micr sec
		iPP	23 13 19.8			P	Z' 0.1 1.2
		iS	23 17 19			Mx	Z 4.0 9
		Turkey (h = 15 km).				KIR iP	13 36 38.3
		m = 5.7, M = 5.0 (UPP,KIR).					micr sec
"	28	UPP Mx	03 25			P	Z' 0.1 1.1
			micr sec			Mx	Z 2.1 11
		Mx	Z 1.4 21			UME iP	13 36 03.9
		KIR Mx	03 21			iS	13 40 43
			micr sec			Turkey (h = 15 km).	
		Mx	Z 1.7 22			m = 5.4, M = 5.1 (UPP,KIR).	
		Off coast of Jalisco, Mexico (h = 10 km).		"	28	UPP iP	14 44 51.5
		M = 5.3 (UPP,KIR).				KIR iP	14 43 54.1
						UME iP	14 44 30.0

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989						
Apr.	28	UPP	iP	17 51 26.7	Apr.	29	(cont.)			
			iS	18 02 18			KIR iP	06 33 35.2		
				micr sec				micr sec		
			Mx	Z 2.9 21			P	Z' 0.1 0.9		
		KIR	iP	17 51 27.8			Mx	Z 2.1 19		
				micr sec				Eastern USSR (h = 30 km).		
			P	Z' 0.2 1.0				m = 5.7, M = 5.1 (UPP,KIR).		
			Mx	Z 3.1 17						
		UME	iS	18 02 15	"	29	UPP	iPKP	07 59 32.3	
				Southern Sumatera (h = 30 km).					micr sec	
				M = 5.7 (UPP,KIR).					PKP	Z' 0.1 0.9
										South of Fiji Islands (h = 460 km).
"	28	UPP	iP	20 21 51.2	"	29	UPP	iP	15 22 59.8	
			iS	20 32 44					micr sec	
				micr sec					P	Z' 0.1 0.9
			Mx	Z 2.8 23			KIR	iP	15 22 07.2	
		KIR	iP	20 21 51.7			UME	iP	15 22 33.4	
				micr sec					Andeanof Islands, Aleutian Is.	
			P	Z' 0.1 1.0					(h = N).	
			Mx	Z 1.5 18	"	30	UPP	iP	05 15 41.7	
				Southern Sumatera (h = 30 km).			UME	iP	05 16 20.0	
				M = 5.5 (UPP,KIR).					Aegean Sea (h = 20 km).	
"	28	UPP	ePKP	20 45 15	"	30	UPP	iP	08 34 55.8	
				micr sec				iS	08 44 50	
				micr sec					micr sec	
			Mx	Z 3.1 21					P	Z' 0.2 1.6
		KIR	ePKP	20 45 29					Mx	Z 6.4 19
				micr sec			KIR	iP	08 35 01.1	
				micr sec					micr sec	
			Mx	Z 2.6 21					P	Z' 0.3 1.2
				South Sandwich Islands region					Mx	Z 2.1 16
				(h = 20 km).			UME	iP	08 35 01.6	
				M = 5.9 (UPP,KIR).				iS	08 45 03	
"	28	UPP	iP	21 22 56.8					Near coast of Venezuela (h = 20 km).	
		KIR	iP	21 22 57.6					m = 6.0, M = 5.7 (UPP,KIR).	
				micr sec						
			P	Z' 0.2 1.0	"	30	UPP	iP	11 14 32.6	
				Southern Sumatera (h = 30 km).					micr sec	
"	29	UPP	iP	01 16 13.8					P	Z' 0.1 0.8
		KIR	iP	01 16 14.6			UME	iP	11 14 21.0	
				Southern Sumatera (h = 40 km).					Sichuan Province, China (h = 45 km).	
"	29	UPP	iP	06 34 23.3	"	30	UPP	i(PKP)	15 51 58.2	
				micr sec				iSKP1	15 54 50.0	
				micr sec					(cont.)	
			P	Z' 0.1 0.8						
			Mx	Z 2.3 19						
				(cont.)						

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989

Apr.	30	(cont.)			
		KIR	iPKP	15 51	55.1
			iSKP1	15 54	25.9
				micr	sec
			PKP	Z' 0.2	1.2
		UME	iPKP	15 52	02.7
			iSKP1	15 54	38.6
		Fiji Islands region (h = 570 km).			
"	30	UPP	iP	23 15	37.0
			ipP	23 15	40.6
				micr	sec
			P	Z' 0.1	0.8
		KIR	iP	23 15	23.1
				micr	sec
			P	Z' 0.1	0.8
		UME	iP	23 15	25.7
			ipP	23 15	29.3
		Sichuan Province, China.			
		h = 10 km (UPP,UME).			
		m = 6.0 (UPP,KIR).			
"	30	UPP	iP	23 54	23.1
		Qinghai Province, China (h = N).			

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SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, UMEÅ, UDDEHOLM

DELARY and MYRVIKEN

Uppsala	(UPP)	59°51.5'N,	17°37.6'E;	h = 14 m
Kiruna	(KIR)	67°50.4'N,	20°25.0'E;	h = 390 m
Umeå	(UME)	63°48.9'N,	20°14.2'E;	h = 16 m
Uddeholm	(UDD)	60°05.4'N,	13°36.4'E;	h = 240 m
Delary	(DEL)	56°28.2'N,	12°52.2'E;	h = 150 m
Myrviken	(MYV)	62°56.5'N,	14°20.8'E;	h = 345 m

M A Y 1 - 31, 1989

1989				1989			
May	1	UME iP	01 37 51.1	May	1	(cont.)	
			Volcano Islands region (h = N).			KIR iP	21 09 54.0
							micr sec
"	1	UPP iP	02 52 29.1			Mx Z	1.4 10
		UME iP	02 52 28.4			UME iP	21 09 17.3
			Hindu Kush region (h = 230 km).				Southern Greece (h = 10 km).
							M = 4.8 (UPP,KIR).
"	1	UPP iP	04 45 21.4	"	2	UPP iP	02 43 43.3
		UME iP	04 45 11.0			KIR iP	02 43 26.3
"	1	UPP iP	08 58 20.4				Talud Islands (h = N).
		i	08 58 22.1	"	2	UPP iP	06 31 50.4
		iPP	09 01 53.8			KIR iP	06 32 16.4
		iSKS	09 08 46			UME iP	06 32 08.1
		iS	09 09 13				North Atlantic Ridge.
			micr sec	"	2	UPP iP	06 33 45.0
		i	Z' 0.1 1.1				micr sec
		Mx	Z 2.2 23			Mx Z	2.3 11
		KIR iP	08 58 21.6			KIR iP	06 34 11.8
		i	08 58 27.0				micr sec
			micr sec			P	Z' 0.2 1.3
		i	Z' 0.4 1.0			UME iP	06 34 02.1
		Mx	Z 1.1 15				North Atlantic Ridge (h = 10 km).
		UME iP	08 58 19.0	"	2	UPP iP	09 37 15.4
			Southern Sumatera (h = 30 km).				micr sec
			m = 6.3, M = 5.4 (UPP,KIR).			Mx Z	2.4 15
"	1	UPP iP	21 08 39.9			(cont.)	
		iS	21 12 38				
			micr sec				
		Mx	Z 1.4 9				
		(cont.)					

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989									1989									
May	1	(cont.)							May	3	(cont.)							
		KIR	iP	09 37 42.6							KIR	iP	06 02 57.5 D					
				micr sec									micr sec					
			P	Z' 0.2 1.0								P	Z' 2.1 1.8					
			Mx	Z 5.2 22								Mx	Z 13 11					
		UME	iP	09 37 32.7							UME	iP	06 02 59.8 D					
			i	09 37 37.6								iS	06 11 01					
		North Atlantic Ridge (h = 10 km).										Sichuan Province, China (h = 15 km).						
		M = 5.0 (UPP,KIR).										m = 7.0, M = 6.3 (UPP,KIR).						
"	2	UPP	iP	09 43 08.0					"	3	UPP	iP	06 51 43.6					
		KIR	iP	09 42 52.5									micr sec					
		UME	iP	09 43 02.9								P	Z' 0.1 0.7					
		Near coast of Guerrero, Mexico										KIR	iP	06 51 30.6				
		(h = 10 km).										UME	iP	06 51 33.0				
												Sichuan Province, China (h = 10 km).						
"	2	UPP	iP	23 11 29.6					"	3	UPP		micr sec					
		KIR	iP	23 10 36.4								Mx	Z 1.2 22					
		UME	iP	23 11 01.7							KIR	iP	09 20 35.9					
		Near east coast of Kamchatka											micr sec					
		(h = 60 km).											Mx	Z 1.1 13				
"	3	KIR	iP	03 05 33.4					"	3			Southern Iran (h = 10 km).					
		UME	iP	03 06 01.7									M = 4.7 (UPP,KIR).					
		Southern Alaska (h = 10 km).																
"	3	UPP	iSg1	05 46 56.6					"	3	UPP	iP	09 20 35.2					
		KIR	iSn	05 47 27.2							KIR	iP	09 21 14.2					
		UME	i	05 46 28.3							UME	iP	09 20 49.8					
			iSn	05 46 51.1							Southern Iran (h = N).							
		DEL	iSn	05 46 13.5					"	3	UPP	iP	10 02 13.9					
		MYV	iPn	05 44 31.8							KIR	iP	10 02 00.6					
			i	05 45 14.2							UME	iP	10 02 03.3					
			iSn	05 45 39.2							Sichuan Province, China (h = 10 km).							
		Norwegian Sea, 61.4°N, 2.2°E.																
		Origin time = 05 42 58.								"	3	UPP	iP	14 32 06.8				
		M _L (UPP) = 3.0 1.										KIR	iP	14 31 41.9				
		Solution from Bergen regional										UME	iP	14 31 52.1				
		bulletin.										Kuril Islands (h = N).						
"	3	UPP	iP	06 03 11.3 D					"	3	UPP	iP	15 51 41.7					
			iPP	06 05 22								i	15 51 43.0					
			iS	06 11 24								iS	16 00 00					
				micr sec									micr sec					
			P	Z' 1.5 1.1								P	Z' 1.6 1.1					
			Mx	Z 21 18								Mx	Z 11 16					
		(cont.)										(cont.)						

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989					1989			
May	3	(cont.)			May	4	(cont.)	
		KIR	iP	15 51 28.2 D			Off coast of northern California	
				micr sec			(h = 5 km).	
			P	Z' 0.2 0.9				
			Mx	Z 7.3 14	"	4	KIR	iPKP 13 33 16.0
		UME	iP	15 51 31.0 D				iSKP1 13 35 49.1
			iS	15 59 39			UME	i(PKP) 13 33 12.5
				Sichuan Province, China (h = 10 km).				iPKP 13 33 21.6
				m = 6.6, M = 6.0 (UPP,KIR).				iSKP1 13 36 00.2
							Fiji Islands region (h = 590 km).	
"	3	UPP	iP	17 24 37.8	"	4	UPP	iP 18 20 38.0
		UME	iP	17 24 22.4				i 18 20 40.1
							Sichuan Province, China (h = 10 km).	
"	3	UPP	iP	17 38 31.4 D				
			i	17 38 37.5				
				micr sec				
			P	Z' 0.1 0.8	"	4	UME	iPg1 19 30 52.1
		KIR	iP	17 38 18.0				iSg1 19 30 59.6
		UME	iP	17 38 20.4			Coast of Västerbotten, Sweden,	
				Sichuan Province, China (h = 10 km).			64.3°N, 20.6°E.	
							Origin time = 19 30 42.	
							$M_L(UPP) = 2.5$ 1.	
"	3	UPP	iP	17 40 32.0			Solution from Helsinki regional	
		KIR	iP	17 40 33.5			bulletin.	
		UME	iP	17 40 30.1				
				Nicobar Islands region (h = N).	"	4	UME	iPg1 19 47 14.4
								iSg1 19 47 21.8
							Coast of Västerbotten, Sweden,	
"	3	UPP	iP	17 44 25.0			64.4°N, 20.6°E.	
		KIR	iP	17 43 33.0			Origin time = 19 47 05.	
		UME	iP	17 43 59.3			$M_L(UPP) = 2.2$ 1.	
				Andreanof Islands, Aleutian Is.			Solution from Helsinki regional	
				(h = 50 km).			bulletin.	
"	3	UPP	iP	18 56 46.6				
		KIR	iP	18 56 49.1	"	4	UPP	iP 22 33 01.6
		UME	iP	18 56 44.9			UME	iP 22 32 58.4
				Nicobar Islands region (h = N).			Tajik SSR (h = 55 km).	
"	4	KIR	iP	00 34 15.1	"	5	UPP	iPKP1 13 50 28.0
		UME	iP	00 34 15.9			UME	iPKP1 13 50 18.5 C
				Near coast of Venezuela (h = 15 km).			Kermadec Islands region (h = 10 km).	
"	4	UPP	iP	01 41 31.0	"	5	UPP	iP 18 41 05.6 D
				micr sec			ipP	18 43 18.3
			P	Z' 0.1 1.0			iP'P'	19 05 56.2
		UME	iP	01 41 20.4				micr sec
				Sichuan Province, China (h = 10 km).			P	Z' 0.3 1.2
"	4	UPP	iP	03 49 28.4			KIR	iP 18 41 14.8 D
		UME	iP	03 49 11.8			ipP	18 43 27.9
				(cont.)				micr sec
							(cont.)	

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989			
May	5	(cont.)		May	7	UPP	iP 13 45 18.3
		P	Z' 0.6 1.1			UME	iP 13 46 04.4
		UME	iP 18 41 13.9 D			Greece-Albania border region (h = 10 km).	
		ipP	18 43 27.1				
		iP'P'	19 05 51.0				
		Western Brazil. h = 590 km (UPP,KIR,UME). m = 6.7 (UPP,KIR).		"	7	UME	iP 15 43 56.9
						Adriatic Sea (h = 5 km).	
"	6	UPP	iP 02 51 49.3	"	7	UPP	iP 16 36 50.3
		Burma-China border region (h = 10 km).					i 16 36 58.5
						KIR	iP 16 36 02.2
							i 16 36 10.3
"	6	UPP	iP 04 22 55.3			UME	iP 16 36 31.1
		Sichuan Province, China (h = 10 km).				Eastern USSR (h = 25 km).	
"	6	UPP	iP 06 40 21.9	"	7	UPP	iPKP 17 13 07.5
		Mindoro, Philippine Islands (h = N).				Tonga Islands (h = N).	
"	6	UPP	iP 12 13 17.2	"	8	UME	iP 00 00 27.2
		Rat Islands, Aleutian Islands (h = 40 km).				Honshu, Japan (h = 150 km).	
"	6	UPP	iP 21 22 15.9 C	"	8	UPP	i(PKP) 14 46 53.8
			micr sec				iPKP 14 46 56.3
		P	Z' 0.1 0.7				iSKP1 14 49 47.9
		KIR	iP 21 22 27.1 C			KIR	i(PKP) 14 46 32.2
			micr sec				iPKP 14 46 46.9
		P	Z' 0.2 0.7				iSKP1 14 49 26.9
		UME	iP 21 22 16.0 C			UME	i(PKP) 14 46 43.6
		Hindu Kush region (h = 220 km). m = 5.7 (UPP,KIR).					iPKP 14 46 53.9
							iSKP1 14 49 35.3
						South of Fiji Islands (h = 550 km).	
"	7	UPP	iP 00 49 02.0	"	8	UPP	iP 18 02 32.7
			iS 00 57 51			KIR	iP 18 01 55.3
			micr sec			UME	iP 18 02 12.1
		P	Z' 0.1 1.2			Near east coast of Honshu, Japan (h = 80 km).	
		Mx	Z 3.5 14				
		KIR	iP 00 48 52.5	"	8	UPP	iP 23 29 47.2
			micr sec				micr sec
		P	Z' 0.2 1.3				P Z' 0.2 0.8
		Mx	Z 2.7 12				Mx Z 0.6 15
		UME	iP 00 48 53.4			KIR	iP 23 29 13.8
			iS 00 57 35				micr sec
		Burma-China border region (h = N). m = 5.9, M = 5.6 (UPP,KIR).					P Z' 0.2 0.9
						UME	iP 23 29 28.1
"	7	UPP	iP 03 10 35.7			South of Honshu, Japan (h = 390 km). m = 5.8 (UPP,KIR).	
		Sichuan Province, China (h = 10 km).					

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989						
May	9	UPP	iP	02 38 04.5	May	12	KIR	iP	23 26 35.7	
				micr sec			UME	iP	23 26 50.9	
			Mx	Z 1.6 17			Bonin Islands region (h = N).			
		KIR	iP	02 38 56.6		"	13	UPP	iP	03 43 37.9
				micr sec				iS	03 50 35	
			Mx	Z 0.8 15				i	03 53 56.8	
		UME	iP	02 38 34.8					micr sec	
		Canary Islands region (h = 25 km).						Mx	Z 12 13	
		M = 4.8 (UPP,KIR).					KIR	eP	03 43 02	
"	10	UPP	iP	01 43 04.0			i	03 43 04.7		
		KIR	iP	01 44 11.8			i	03 44 52.0		
		Crete (h = 35 km).							micr sec	
"	10	KIR	iP	10 16 52.7			i	Z' 0.5 1.9		
		Off east coast of Honshu, Japan (h = N).					Mx	Z 3.8 10		
"	10	KIR	iP	20 27 47.9			UME	iP	03 43 14.4	
		Eastern Kashmir (h = 40 km).					i	03 43 17.0		
"	11	KIR	iP	02 57 50.4			iS	03 49 54		
		UME	iP	02 58 17.1			USSR-Mongolia border region (h = 35 km).			
		Fox Islands, Aleutian Islands (h = N).					M = 5.8 (UPP,KIR).			
"	11	KIR	iP	02 57 50.4	"	13	UPP	iP	23 28 53.2	
		UME	iP	02 58 17.1			KIR	eP	23 28 41	
		Fox Islands, Aleutian Islands (h = N).					Qinghai Province, China (h = N).			
"	11	UPP	iSg1	03 52 41.0	"	14	UPP	iPKP	01 19 28.2	
		KIR	iPn	03 50 06.7			iPKP1	01 19 32.5		
			iPg1	03 50 09.4			iPKP2	01 19 36.8		
			iSn	03 50 42.6				micr sec		
			iSg1	03 50 51.8			Mx	Z 23 25		
		UME	iPg1	03 50 23.3			KIR	iPKP	01 19 09.3	
			i	03 50 24.3				micr sec		
			iSn	03 50 58.5			Mx	Z 12 21		
			iSg1	03 51 15.4			UME	iPKP1	01 19 20.5	
		MYV	iPn	03 50 07.8			Kermadec Islands (h = 45 km).			
			iSg1	03 50 58.0			M = 6.7 (UPP,KIR).			
		Coast of central Norway, 66.5°N, 11.2°E.			"	14	UPP	iPKP1	08 22 04.1	
		Origin time = 03 49 18.					UME	iSKP1	08 24 48.6	
		M _L (UPP) = 3.4 (0.28) 4.					South of Fiji Islands (h = 510 km).			
		Solution from Bergen regional bulletin.			"	14	KIR	iPdiff	09 24 12.8	
"	11	UPP	iP	16 13 06.0			UME	iPdiff	09 24 17.7	
		KIR	iP	16 12 20.6			Ceram Sea (h = N).			
		UME	iP	16 12 41.5	"	14	UPP	iP	09 53 11.9	
		Kuril Islands (h = 70 km).						micr sec		
"	12	UME	ipP	22 38 19.9			Mx	Z 1.8 19		
		Near coast of Nicaragua (h = 55 km).					(cont.)			

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989										1989									
May	14	(cont.)								May	15	UME	iPKP	18 31 59.0					
		KIR	eP	09 53 38										Tonga Islands (h = 90 km).					
					micr	sec				"	15	UPP	iP	19 35 31.0					
			Mx	Z 2.1	16										micr	sec			
		UME	iP	09 53 23.8									P	Z' 0.1	1.0				
		Mid-Indian Rise (h = 10 km).											KIR	iP	19 34 45.8				
		M = 5.5 (UPP,KIR).													micr	sec			
"	14	UPP	iP	11 51 37.6									P	Z' 0.1	1.0				
		KIR	eP	11 51 58								UME	iP	19 35 05.9					
		UME	eP	11 51 37								Kuril Islands (h = N).							
		Western Kazakh SSR (h = N).											m = 5.8 (UPP,KIR).						
"	14	UPP	eP	22 59 44						"	15	UPP	iP	21 34 50.6					
			iS	23 04 19								KIR	iP	21 34 03.2					
					micr	sec						UME	iP	21 34 24.8					
			Mx	Z 2.5	10							Kuril Islands (h = N).							
		KIR	iP	22 59 47.3						"	15	UPP	iPKP	23 53 26.9					
					micr	sec									micr	sec			
			Mx	Z 6.0	19								Mx	Z 3.8	19				
		UME	iP	22 59 47.5								KIR	iPKP	23 53 14.6					
			iS	23 04 26											micr	sec			
		North Atlantic Ocean (h = 10 km).											Mx	Z 4.7	21				
		M = 5.1 (UPP,KIR).											UME	iPKP	23 53 20.0				
"	15	UPP	iP	09 27 31.2								Solomon Islands (h = 25 km).							
					micr	sec						M = 6.0 (UPP,KIR).							
			P	Z' 0.1	1.0					"	16	UPP	iP	12 32 41.8					
		KIR	iP	09 28 45.2								KIR	eP	12 32 01					
		UME	iP	09 28 08.7								UME	iP	12 32 22.4					
		Greece (h = 35 km).										Off coast of Oregon (h = 10 km).							
"	15	UPP	iP	10 05 45.4						"	16	UPP	iP	15 36 19.8					
		Kuril Islands (h = 35 km).										KIR	iP	15 35 33.1					
"	15	KIR	iP	12 01 04.0								Kuril Islands (h = N).							
		UME	iP	12 02 39.5						"	16	UPP	iP	16 11 59.4					
		MYV	iP	12 01 30.0											micr	sec			
		Jan Mayen Island region (h = 10 km).											P	Z' 0.1	1.0				
"	15	UPP	iP	18 17 23.1								KIR	iP	16 11 12.5					
		KIR	iP	18 16 59.1											micr	sec			
					micr	sec							P	Z' 0.1	1.0				
			P	Z' 0.1	1.0							UME	iP	16 11 34.6					
		UME	iP	18 17 07.6								Kuril Islands (h = N).							
		Taiwan region (h = 45 km).										m = 5.8 (UPP,KIR).							
"	15	KIR	iP	18 29 26.6						"	16	UPP	iP	17 15 13.6					
		Halmahera (h = 110 km).										KIR	iP	17 14 17.8					
												Kanai Peninsula, Alaska (h = 50 km).							

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989						1989				
May	16	UPP	Mx	18 58		May	18	UPP	iP	22 13 43.7
				micr sec				KIR	iP	22 13 16.4
			Mx	Z 3.5 20					P	Z' 0.2 1.5
			South Pacific Cordillera (h = 10 km).					UME	iP	22 13 27.4
"	16	KIR	iP	23 36 59.7				Mariana Islands region (h = 55 km).		
		UME	iP	23 37 26.0		"	19	UPP	iP	02 32 33.3 D
				Fox Islands, Aleutian Islands (h = N).				iS	02 41 10	
"	17	UPP	iP	05 13 21.2					P	Z' 0.5 0.8
			iS	05 20 25					Mx	Z 4.7 26
				micr sec				KIR	iP	02 31 39.3
			P	Z' 0.1 1.0					P	Z' 1.3 0.9
			Mx	Z 11 23					Mx	Z 5.2 22
		KIR	iP	05 12 32.6				UME	iP	02 32 06.4 D
				micr sec					iS	02 40 22
			P	Z' 0.4 1.0				Fox Islands, Aleutian Islands (h = 100 km).		
			Mx	Z 19 17				m = 6.7, M = 5.5 (UPP,KIR).		
		UME	iP	05 12 54.9				M uncorrected for focal depth.		
			iS	05 19 34						
				Eastern USSR (h = 30 km).		"	17	UPP	iP	18 29 38.9
				m = 5.9, M = 5.9 (UPP,KIR).						micr sec
"	17	UPP	iP	18 29 38.9		"	19	UPP	eP	03 00 53
				micr sec				UME	iP	03 01 10.4
			P	Z' 0.1 1.0		"	19	UPP	iP	03 44 16.7
		KIR	iP	18 28 50.7				KIR	iP	03 44 02.4
		UME	iP	18 29 13.1				Sichuan Province, China (h = N).		
				Kuril Islands region (h = N).		"	19	KIR	iPn	06 17 53.9
"	18	KIR	iSg1	02 43 03.1					iSg1	06 18 48.6
		UME	iPg1	02 41 42.5				UME	iSn	06 19 30.4
			iSg1	02 41 59.7				MYV	i	06 19 36.6
		MYV	iSg1	02 42 30.0					iSg1	06 19 47.0
				Lapland, Sweden, 64.6°N, 17.7°E.				Norwegian Sea, 68.5°N, 11.1°E.		
				Origin time = 02 41 19.				Origin time = 06 16 59.		
				M _L (UPP) = 2.6 1.				M _L (UPP) = 3.1 (0.31) 2.		
				Solution from Helsinki regional bulletin.				Solution from Bergen regional bulletin.		
"	18	KIR	iSn	03 38 56.2		"	20	UME	iPKP	06 18 46.5
		UME	iSn	03 39 09.3				Vanuatu Islands (h = N).		
			iSg1	03 39 30.6		"	20	UPP	iP	12 40 43.1
		MYV	iSn	03 38 31.2				KIR	iP	12 40 17.9
				Norwegian Sea, 65.9°N, 8.0°E.				Southwestern Ryukyu Islands (h = N).		
				Origin time = 03 36 41.						
				M _L (UPP) = 3.1 1.						
				Solution from Bergen regional bulletin.						

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989				
May	20	UPP	iP	13 09 25.6	May	21	KIR iP	19 36 51.7
				micr sec			UME iP	19 36 56.8
			P	Z' 0.1 0.8			Molucca Passage (h = 60 km).	
		KIR	iP	13 09 34.3	"	21	KIR iP	19 43 15.3
				micr sec			UME iP	19 43 20.4
			P	Z' 0.1 0.7			Molucca Passage (h = 80 km).	
		UME	iP	13 09 23.7	"	21	UPP i(PKP)	22 14 53.8
		Hindu Kush region (h = 210 km).					iSKP1	22 17 44.6
		m = 5.4 (UPP,KIR).				KIR	i(PKP)	22 14 40.1
"	20	UPP	iPKP	16 21 24.7			iPKP	22 14 49.3
			iPKP1	16 21 26.6			iSKP1	22 17 19.3
				micr sec			UME	i(PKP)
			Mx	Z 5.4 21			iPKP	22 14 41.3
		KIR	iPKP	16 21 04.1			iPKP	22 14 56.7
			i	16 21 11.2			iSKP1	22 17 30.5
				micr sec			Fiji Islands region (h = 580 km).	
			Mx	Z 5.8 21	"	22	UPP eP	00 19 24
		UME	iPKP1	16 21 14.5			iS	00 23 39
		Kermadec Islands (h = 30 km).						micr sec
		M = 6.3 (UPP,KIR).					Mx	Z 2.2 20
"	20	UPP	iP	20 49 21.3			KIR	iP
			i	20 49 41.5				micr sec
			iS	20 53 44				Mx
				micr sec				Z 1.1 13
			P	Z' 0.5 1.5			UME	iP
			Mx	Z 3.8 19			iS	00 19 23.5
		KIR	iP	20 50 11.4				00 23 44
				micr sec			North Atlantic Ocean (h = 10 km).	
			P	Z' 0.2 1.0			M = 4.5 (UPP,KIR).	
			Mx	Z 1.6 11	"	22	UPP iP	02 07 12.8
		UME	iP	20 49 41.0			iS	02 11 26
			iS	20 54 22				micr sec
		Turkey (h = 40 km).					Mx	Z 3.7 21
		m = 5.8, M = 4.9 (UPP,KIR).				KIR	iP	02 07 09.5
"	21	UPP	iPKP1	04 23 24.7				micr sec
			iPKP2	04 23 30.2				Mx
		UME	iPKP1	04 23 13.9 C				Z 1.9 15
		Kermadec Islands region (h = 50 km).				UME	iP	02 07 13.5
							iS	02 11 29
						North Atlantic Ocean (h = 10 km).		
						M = 4.7 (UPP,KIR).		
"	21	UPP	iPKP1	06 41 07.6	"	22	KIR iP	02 23 29.1
		UME	iPKP1	06 40 51.6			UME iP	02 23 47.5
		Kermadec Islands region (h = 40 km).				North Atlantic Ocean (h = 10 km).		
"	21	KIR	iP	13 14 21.4	"	22	KIR iP	02 34 18.2
		UME	iP	13 15 04.5			UME iP	02 34 23.5
						North Atlantic Ocean (h = 10 km).		

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989					
May	22	UPP	iP	02 43 47.4	May	22	UPP	iP	08 12 42.5
			iS	02 48 04				iS	08 16 58
				micr sec					micr sec
			Mx	Z 1.5 22				Mx	Z 1.9 20
		KIR	iP	02 43 42.6			KIR	iP	08 12 37.5
				micr sec					micr sec
			P	Z' 0.2 1.8				P	Z' 0.4 1.8
			Mx	Z 1.2 16				Mx	Z 1.5 14
		UME	iP	02 43 46.6			UME	iP	08 12 41.9
			iS	02 48 06				iS	08 17 01
		North Atlantic Ocean (h = 10 km).					North Atlantic Ocean (h = 10 km).		
		M = 4.4 (UPP,KIR).					M = 4.5 (UPP,KIR).		
"	22	UME	iP	02 41 55.5	"	22	KIR	iP	09 33 06.8
		North Atlantic Ocean (h = 10 km).					North Atlantic Ocean (h = 10 km).		
"	22	UPP	iP	02 51 44.2	"	22	UPP	iP	10 55 40.2
		KIR	iP	02 51 41.1			KIR	iP	10 55 35.1
				micr sec			North Atlantic Ocean (h = 10 km).		
			P	Z' 0.1 1.5					
		UME	iP	02 51 43.5	"	22	UPP	iP	11 18 31.1
		North Atlantic Ocean (h = 10 km).							micr sec
"	22	KIR	iP	03 14 09.1			Mx	Z 1.4 21	
		UME	iP	03 14 11.9			KIR	iP	11 17 37.3
		North Atlantic Ocean (h = 10 km).							micr sec
							P	Z' 0.1 1.0	
"	22	KIR	iP	03 17 59.6			Mx	Z 1.0 17	
		UME	iP	03 18 03.5			UME	iP	11 18 02.2
		North Atlantic Ocean (h = 10 km).					Off east coast of Kamchatka (h = 40 km).		
							M = 5.0 (UPP,KIR).		
"	22	KIR	iP	04 11 26.6	"	22	UPP	iSg1	12 17 02.0
		UME	iP	04 11 32.0			KIR	i	12 16 53.2
		North Atlantic Ocean (h = 10 km).						iSg1	12 17 27.2
"	22	UPP	iP	04 26 02.4			UME	iPg1	12 15 17.9
			iS	04 30 24				iSg1	12 15 28.6
		KIR	iP	04 25 58.4			MYV	iPg1	12 16 01.0
		UME	iP	04 26 03.9				i	12 16 27.8
			iS	04 30 23				iSg1	12 16 40.0
		North Atlantic Ocean (h = 10 km).					Coast of southwestern Finland, 63.2°N, 21.4°E.		
		M = 4.4 (UPP,KIR).					Origin time = 12 15 02.		
"	22	KIR	iP	04 50 40.6			M _L (UPP) = 2.7 (0.13) 3.		
		UME	iP	04 50 42.5			Felt.		
		North Atlantic Ocean (h = 10 km).					Solution from Helsinki regional bulletin.		

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989					
May	22	UPP KIR	iP iP	13 36 54.2 13 36 00.4	May	23	UPP DEL MYV	iSg1 eSg1 iSg1	17 04 01.5 17 04 37 17 03 03.0
		Near east coast of Kamchatka (h = N).					Southern Norway, 61.8°N, 7.4°E. Origin time = 17 01 20. Solution from Bergen regional bulletin.		
"	22	UPP KIR UME	iP iP iP	19 34 18.8 19 34 15.1 19 34 11.4	"	23	UPP	ePKP	17 31 43
		Nepal (h = 35 km).						Mx	Z 3.5 23
"	23	KIR UME MYV	iPg1 iSg1 iSg1 iSg1	03 45 41.1 03 46 19.3 03 46 51.3 03 46 39.8			KIR	ePKP	17 31 40
		Coast of central Norway, 66.6°N, 13.7°E. Origin time = 03 44 48. $M_L(\text{UPP}) = 2.4 (0.04) 3$. Solution from Bergen regional bulletin.						Mx	Z 2.4 20
"	23	UPP	iPKP	11 14 41.4			UME	iPKP1	17 31 41.0
				micr sec				North of Macquarie Island (h = 10 km). M = 6.0 (UPP,KIR).	
			PKP	Z' 0.2 1.5	"	24	UPP	iPKP1	00 11 01.7
			Mx	Z 440 24			UME	iPKP1	00 10 45.0
		KIR	iPKP	11 14 39.1			Kermadec Islands (h = 90 km).		
				micr sec	"	24	UPP	iP	00 12 56.3
			Mx	Z 435 21			UME	iP	00 12 39.8
		UME	iPKP	11 14 41.1	"	24	UPP	iPKP2	02 35 35.1
			iPKP1	11 44 50.7			UME	iPKP2	02 35 27.4
		Macquarie Islands region (h = 10 km). M = 8.2 (UPP,KIR).					Macquarie Islands region (h = 10 km).		
"	23	UPP	iPKP2	11 44 47.5	"	24	UPP	iP	02 37 29.8
		UME	iPKP2	11 44 39.5			KIR	iPKP1	02 36 59.9
		North of Macquarie Island (h = 10 km).					UME	iPKP1	02 37 02.6
"	23	UPP	iPKP2	14 30 07.1				iPKP2	02 37 21.8
		UME	iPKP2	14 29 58.7			Macquarie Islands region (h = 10 km).		
		Macquarie Islands region (h = 10 km).			"	24	UME	iPKP2	08 04 39.8
"	23	UPP	iPKP2	16 28 26.2			Macquarie Islands region (h = 10 km).		
		UME	iPKP2	16 28 18.2	"	24	KIR	iPdiff	08 19 22.8
		Macquarie Islands region (h = 10 km).					UME	iPdiff	08 19 26.3
"	23	UPP	iPKP2	13 41 29.2 D			Sulawesi (h = 20 km).		
			i	13 41 36.2	"	24	UPP	iP	13 41 29.2 D
			i	13 49 46				i	13 41 36.2
			iP'P'	14 10 50.3				iP'P'	14 10 50.3

(cont.)

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989								1989		
May	24	(cont.)				May	25			
				micr	sec			UPP	iPKP2	01 15 22.1
									i	01 15 26.5
			P	Z'	0.3 1.2					micr sec
			i	Z'	0.4 1.1				Mx	Z 1.5 22
			Mx	Z	18 19			KIR	iPKP	01 14 45.4
		KIR	iP		13 40 33.5 D					micr sec
			i		13 40 40.7				Mx	Z 1.4 20
					micr sec			UME	iPKP1	01 14 56.3
			P	Z'	1.0 2.0				iPKP2	01 15 14.2
			i	Z'	1.0 1.5			Macquarie Islands region (h = 10 km).		
			Mx	Z	11 13			M = 5.8 (UPP,KIR).		
		UME	iP		13 41 03.6					
			i		13 41 06.3			"	25	UPP iPKP2 05 03 42.4
		Komandorsky Islands region							25	UME iPKP2 05 03 34.5
		(h = 20 km).								Macquarie Islands region (h = 10 km).
		m = 6.5, M = 6.1 (UPP,KIR).								
"	24	UPP	iPKP2		15 41 36.1			"	25	UPP iPKP2 05 17 18.6
		UME	iPKP2		15 41 27.5				25	UME iPKP1 05 16 50.6
		North of Macquarie Island								iPKP2 05 17 01.9
		(h = 10 km).								Kermadec Islands region
										(h = 190 km).
"	24	UPP	iP		15 53 46.7 D			"	25	UME iPKP 07 05 59.7
					micr sec					Kermadec Islands region (h = N).
			P	Z'	0.1 1.0			"	25	UPP iPKP2 09 59 54.5
		KIR	iP		15 52 51.0 D				25	UME iPKP2 09 59 46.6
					micr sec					Macquarie Islands region (h = 10 km).
			P	Z'	0.1 1.0			"	25	UPP iPKP2 11 58 05.0
		UME	iP		15 53 17.6				25	UME iPKP2 11 57 57.3
		Komandorsky Islands region								Macquarie Islands region (h = 10 km).
		(h = 35 km).								
"	24	KIR	iP		16 48 23.3			"	25	UPP iPKP 12 14 32.2
		UME	iP		16 49 02.3					i 12 14 48.2
		North of Severnaya Zemlya								KIR iPdiff 12 10 03.2
		(h = 10 km).								ePKP 12 14 17
"	24	UPP	iP		18 05 01.7				25	UME iPKP 12 14 29.0
			iS		18 09 42					Banda Sea (h = 170 km).
					micr sec			"	25	UPP iPKP2 13 21 11.0
			Mx	Z	1.8 19				25	KIR iPKP1 13 20 40.6
		KIR	eP		18 05 01					Off e. coast of N. Island, N.Z.
					micr sec					(h = 290 km).
			Mx	Z	1.5 18			"	25	UPP iPKP1 13 47 36.9
		UME	iP		18 05 04.3				25	UME iPKP1 13 47 25.9
		North Atlantic Ocean (h = 10 km).								South of Kermadec Islands
		M = 4.6 (UPP,KIR).								(h = 170 km).

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989			
May	25	KIR	iP	19 06 41.2	May	27	(cont.)
				North Atlantic Ocean (h = 10 km).			Mx Z 6.1 17
"	25	UPP	iP	20 24 22.6			KIR iP 20 16 24.7 C
		KIR	iP	20 24 29.3			micr sec
				Near Islands, Aleutian Islands (h = N).			P Z' 0.2 1.0
"	26	UPP	iP	01 16 27.2			UME iP 20 16 00.0
		KIR	iP	01 16 27.0			iS 20 21 57
				Southern Xinjiang, China (h = 35 km).			Iran (h = 30 km). m = 5.9 (UPP,KIR).
"	27	UPP	iP	02 56 24.9	"	27	UPP iP 21 39 07.7
		KIR	iP	02 56 08.0			Southern Iran (h = N).
		UME	iP	02 56 13.3	"	28	UME iP 01 01 29.6
				Mindoro, Philippine Islands (h = 180 km).	"	28	UME iPKP 03 14 12.2
"	27	UPP	iP	04 24 51.9			Northern Territory, Australia (h = 10 km).
				Sichuan Province, China (h = N).	"	28	UME iP 05 46 46.5
"	27	UPP	Mx	04 30			Off east coast of Honshu, Japan (h = 40 km).
				micr sec	"	29	UPP iP 04 14 41.7
				Mx Z 5.1 26			Ryukyu Islands (h = 25 km).
		KIR	Mx	04 24	"	29	UPP iP 05 20 11.5
				micr sec			Sichuan Province, China (h = N).
				Mx Z 2.8 27	"	29	UPP iP 05 53 48.9
				South Pacific Cordillera (h = 10 km). M = 6.1 (UPP,KIR).			Iran (h = 40 km).
"	27	UPP	iP	04 47 11.1	"	29	UPP iP 08 40 46.1
"	27	UPP	iPdiff	08 45 35.7			UME iP 08 40 00.4
		UME	iPdiff	08 45 22.6			Hokkaido, Japan region (h = 70 km).
				West Irian (h = 50 km).	"	29	UPP iP 22 01 54.4
"	27	UPP	iPKP2	14 48 07.6			UME iP 22 01 51.6
		KIR	iPKP2	14 47 43.0			Guatemala (h = 25 km).
		UME	iPKP1	14 47 45.2	"	29	UPP iP 14 03 21.6
			iPKP2	14 47 59.2			iS 14 13 32
				North of Macquarie Island (h = 10 km).	"	30	KIR iP 14 03 07.3
"	27	UPP	iP	20 15 45.6 C			UME iP 14 03 16.7
			iS	20 21 28			Chiapas, Mexico (h = 140 km).
				micr sec			
				P Z' 0.2 0.8			
				(cont.)			

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989

May 30 UPP iP 20 23 52.2
Sichuan Province, China (h = N).

" 31 UPP iPKP1 06 14 25.2
iPKP2 06 14 44.9
micr sec
Mx Z 6.9 21
KIR iPKP 06 14 05.0
iPKP1 06 14 12.1
micr sec
Mx Z 4.6 22
UME iPKP 06 14 08.7
iPKP1 06 14 17.3

South Island, New Zealand

(h = 25 km).

M = 6.3 (UPP,KIR).

January 17, 1991

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SEISMOLOGICAL BULLETIN
 UPPSALA, KIRUNA, UMEÅ, UDDEHOLM

DELARY and MYRVIKEN

Uppsala	(UPP)	59°51.5'N,	17°37.6'E;	h = 14 m
Kiruna	(KIR)	67°50.4'N,	20°25.0'E;	h = 390 m
Umeå	(UME)	63°48.9'N,	20°14.2'E;	h = 16 m
Uddeholm	(UDD)	60°05.4'N,	13°36.4'E;	h = 240 m
Delary	(DEL)	56°28.2'N,	12°52.2'E;	h = 150 m
Myrviken	(MYV)	62°56.5'N,	14°20.8'E;	h = 345 m

JUNE 1 - 30, 1989

1989				1989			
June	1	UME iP	04 50 43.9	June	3	UPP iP	23 24 08.2
		Near east coast of Honshu, Japan (h = 70 km).				UME iP	23 23 48.9
"	1	UPP iSn	16 16 03.4	"	4	UPP iP 01 32 04.7 Sichuan Province, China (h = 10 km).	
		DEL iSg1	16 17 01.5	"	4	UPP iP	02 17 56.4
		MYV iSg1	16 15 27.0			KIR iP	02 17 33.1
		Southern Norway, 61.9°N, 7.4°E. Origin time = 16 13 44. Solution from Bergen regional bulletin.				UME iP	02 17 41.8
"	2	KIR iP	02 07 31.2	"	4	UME iP 22 55 22.8 Bonin Islands region (h = 40 km).	
		UME iP	02 08 21.8	"	5	UPP iP 01 42 j09.2 Sichuan Province, China (h = 10 km).	
		Greenland Sea, 79.0°N, 7.2°E. Origin time = 02 04 46. Solution from Helsinki regional bulletin.		"	5	UPP eP	18 00 05
"	2	UPP iP	19 00 10.8	"	5	KIR iP	17 58 37.6
		KIR iP	18 59 53.6			UME iP	17 59 24.2
		Luzon, Philippine Islands (h = 45 km).				North of Svalbard (h = 10 km).	
"	3	KIR iP	00 11 37.9	"	5	KIR iP	22 26 20.3
		Hokkaido, Japan region (h = 55 km).				UME iP	22 26 26.1
"	3	UPP iP	00 30 36.7	"	6	UPP iP	07 37 55.8
		KIR iP	00 31 15.7			KIR iP	07 37 27.7 C
		Iran (h = 35 km).					micr sec
"	3	KIR eP	02 21 33			P	Z' 0.3 1.0
						UME iP	07 37 39.7
						Mariana Islands (h = 60 km).	

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989			
June	6	UPP iP UME iP	08 34 00.0 08 33 40.8	June	8	UPP iP	13 58 15.9
		South of Honshu, Japan (h = 450 km).					micr sec
"	6	UPP iPKP1 UME iPKP1	13 37 14.8 13 37 03.0			Mx Z 0.7 11	
		Kermadec Islands (h = 240 km).				KIR iP	13 57 53.0
							micr sec
"	6	UPP eP	21 37 40	"	8	UDD iSg1 MYV iSg1	16 37 34.4 16 37 37.8
		North Atlantic Ocean (h = 25 km).				Southern Norway, 61.8°N, 7.4°E.	
"	7	UPP iP	12 29 00.2			Origin time = 16 35 53.	
			micr sec			$M_L(\text{UPP}) = 2.2$ 1.	
		Mx Z 0.8 19				Solution from Bergen regional bulletin.	
		KIR iP	12 29 38.4	"	9	UPP eP	08 17 41
			micr sec			KIR iP	08 16 29.2
		Mx Z 1.1 15					micr sec
		UME iP	12 29 15.6			P Z' 0.1 1.0	
		Eastern Gulf of Aden (h = 10 km).				Jan Mayen Island region (h = 10 km).	
		M = 4.9 (UPP,KIR).					
"	7	UPP iP	19 50 45.9 C	"	9	KIR iP	09 48 30.7
		iS	19 54 50			Jan Mayen Island region (h = 10 km).	
			micr sec				
		P Z' 0.2 0.7		"	9	KIR iP	11 25 35.6
		Mx Z 2.6 14					
		KIR iP	19 51 59.4	"	9	UPP iP	12 22 59.4
		i	19 52 08.9			iS	12 25 56
			micr sec				micr sec
		Mx Z 2.0 13				P Z' 0.1 1.1	
		UME iS	19 55 49			Mx Z 15 13	
		Greece (h = 25 km).				KIR iP	12 21 48.0 C
		M = 4.8 (UPP,KIR).					micr sec
"	7	KIR iP	22 00 17.0			P Z' 0.7 1.1	
		Mindanao, Philippine Islands (h = 170 km).				Mx Z 30 14	
						Jan Mayen Island region (h = 10 km).	
"	8	KIR iP	06 34 29.5	"	9	KIR iP	12 28 12.9
		Ethiopia (h = 20 km).				Jan Mayen Island region (h = 10 km).	
"	8	UPP Mx	11 11	"	9	UPP iP	14 56 28.1
			micr sec			KIR iP	14 56 13.3
		Mx Z 2.0 21				Sichuan Province, China (h = 10 km).	
		KIR Mx	11 07	"	9	KIR iPdiff	15 47 28.0
			micr sec			Bali Sea (h = 250 km).	
		Mx Z 1.7 19		"	9	UPP iP	17 04 51.3
		Tonga Islands (h = 25 km).				KIR iP	17 04 22.1
		M = 5.8 (UPP,KIR).				Mariana Islands (h = 150 km).	

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989						
June	9	UPP	iP	18 11 41.9	June	12	UPP	iSKP1	06 09 18.0	
				micr sec			KIR	iPKP	06 06 02.2	
			P	Z' 0.1 1.3			Vanuatu Islands (h = 250 km).			
		KIR	iP	18 11 43.4	"	12	UPP	iPKP	13 31 23.5	
				micr sec				iPKP1	13 31 26.2	
			P	Z' 0.1 1.0				iPKP2	13 31 30.7	
		Southern Xinjiang, China (h = N).					KIR	ePKP	13 31 04	
		m = 5.4 (UPP,KIR).					Kermadec Islands (h = 80 km).			
"	10	UPP	iP	04 56 46.7	"	12	KIR	iSKP1	18 43 37.2	
				micr sec			Tonga Islands region (h = 70 km).			
			Mx	Z 0.6 11						
		KIR	iP	04 55 35.1	"	13	UPP	iP	09 03 55.8 D	
				micr sec					micr sec	
			P	Z' 0.2 1.0				P	Z' 0.1 0.7	
			Mx	Z 1.6 15			KIR	iP	09 03 22.3 D	
		Jan Mayen Island region (h = 10 km).							micr sec	
"	11	UPP	iPKP2	12 42 15.3				P	Z' 0.1 0.8	
		North of Macquarie Island (h = 10 km).					South of Honshu, Japan (h = 390 km).			
							m = 5.6 (UPP,KIR).			
"	11	UPP	iP	13 32 22.8 D	"	13	UDD	iSg1	22 33 08.9	
			i	13 32 31.5			Southern Norway, 61.8°N, 7.5°E.			
			iS	13 38 40			Origin time = 22 31 24.			
				micr sec			M _L (UPP) = 2.4 1.			
			Mx	Z 8.7 19			Solution from Bergen regional bulletin.			
		KIR	iP	13 32 49.2 D	"	14	UPP	iP	00 39 59.8	
			i	13 32 58.1			KIR	iP	00 39 06.2	
				micr sec			Andreanof Islands, Aleutian Is. (h = N).			
			P	Z' 0.8 2.0						
			Mx	Z 5.7 20	"	14	UPP	iP	00 46 57.7 C	
		North Atlantic Ridge (h = 10 km).							micr sec	
		m = 6.2, M = 5.5 (UPP,KIR).						P	Z' 0.1 1.0	
"	11	UPP	iP	13 52 42.9			KIR	iP	00 46 04.6	
		Eastern India (h = N).					UME	iP	00 46 20.7	
"	12	UPP	iP	00 14 35.3 C				i	00 46 36.0	
			i	00 14 50.5			Andreanof Islands, Aleutian Is. (h = N).			
			iS	00 22 56						
				micr sec	"	14	UPP	iP	10 17 28.7	
			P	Z' 0.7 1.1						
			Mx	Z 3.4 21	"	14	UPP	ipP	10 31 17.4	
		KIR	iP	00 14 33.6 C			KIR	iP	10 30 19.3	
			i	00 14 48.9				i	10 30 47.4	
				micr sec			South of Mariana Islands. h = 110 km (KIR,UME).			
			Mx	Z 3.7 21						
		Bangladesh (h = 5 km).								
		m = 6.6, M = 5.5 (UPP,KIR).								

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989			
June	14	UPP	iP	18 12 12.1	June	16	(cont.)
			iS	18 16 42			
				micr sec			micr sec
			P	Z' 0.1 0.9			P Z' 0.1 0.9
			Mx	Z 3.7 14			Mx Z 1.0 18
		KIR	iP	18 13 18.9 C		KIR	iP 11 00 41.1
				micr sec			micr sec
			P	Z' 0.2 1.0			P Z' 0.1 1.0
		Crete (h = 15 km).				Kodiak Island region (h = 60 km).	
		m = 5.7 (UPP,KIR).				m = 5.8 (UPP,KIR).	
"	14	UPP	iP	21 55 51.8	"	16	UPP iP 20 23 40.3
			i	21 56 02.3			iS 20 32 44
				micr sec			micr sec
			P	Z' 0.1 1.0			Mx Z 3.7 24
		KIR	iP	21 55 09.4		KIR	iP 20 23 28.8
			i	21 55 20.5			Southeast Asia (h = N).
		Off east coast of Honshu, Japan.			"	16	UPP iP 23 53 45.9 D
		h = 40 km (UPP,KIR,UME).					ipP 23 55 12.7
"	14	KIR	iP	22 50 02.5			iS 24 02 57
		Mid-Indian Rise (h = 10 km).					micr sec
"	15	UPP	iP	12 22 54.2			P Z' 1.9 1.5
		KIR	iP	12 22 00.6			Mx Z 3.3 12
		Andreanof Islands, Aleutian Is.			KIR	iP 23 53 11.9 D	
		(h = N).				iS 24 01 52.8	
						micr sec	
						P Z' 0.9 1.1	
						Mx Z 2.7 12	
"	15	UPP	iP	16 04 14.9			South of Honshu, Japan.
		KIR	iP	16 04 17.4			h = 400 km (UPP).
		Northern Colombia (h = 160 km).				m = 6.5, M = 5.7 (UPP,KIR).	
"	15	KIR	eP	19 45 43			M uncorrected for focal depth.
		South of Panama (h = 10 km).		"	17	UPP iP 01 15 17.6	
"	16	UPP	iP	04 30 16.2 C		KIR	iP 01 14 24.2
				micr sec		Andreanof Islands, Aleutian Is.	
			P	Z' 0.1 1.1		(h = N).	
		KIR	iP	04 29 23.1	"	17	UPP eSg1 10 18 19
		Off east coast of Kamchatka (h = N).				UDD	iSg1 10 17 17.9
"	16	UPP	iP	07 31 54.1		MYV	iSg1 10 17 31.6
		KIR	iP	07 31 27.6		Norwegian Sea, 60.9°N, 3.5°E.	
				micr sec		Origin time = 10 14 41.	
			P	Z' 0.1 1.0		M _L (UPP) = 2.6 1.	
		Mariana Islands (h = 70 km).			Solution from Bergen regional bulletin.		
"	16	UPP	iP	11 01 37.8 D			
			iS	11 09 57			
			eP'P'	11 30 26			
		(cont.)					

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989					
June	17	UPP	Mx	17 22	June	22	UPP	iPKP	00 10 02.0
				micr sec				iSKP1	00 13 32.2
			Mx	Z 0.7 13				Fiji Islands region (h = 180 km).	
		KIR	Mx	17 22	"	22	UPP	iP	11 17 54.9
				micr sec				Ryukyu Islands (h = 35 km).	
			Mx	Z 1.8 16	"	22	UPP	iP	21 26 48.6
		Souther Iran (h = N).						Southern Nevada.	
		M = 4.8 (UPP,KIR).						Underground explosion.	
"	17	UPP	iP	20 58 23.4	"	23	UPP	iP	12 13 16.9
				micr sec				Volcano Islands region (h = 170 km).	
			Mx	Z 0.9 17	"	24	UPP	iP	03 15 28.0
		KIR	iP	20 58 04.7				P	Z' 0.1 1.0
				micr sec				Turkey (h = 40 km).	
			Mx	Z 0.9 16					
		Central Mid-Atlantic Ridge							
		(h = 10 km).							
		M = 5.1 (UPP,KIR).							
"	18	UPP	iP	05 14 00.2	"	24	UDD	iPg1	12 14 35.1
		KIR	iP	05 12 25.6				iSg1	12 15 22.2
				micr sec				Southern Norway, 61.8°N, 7.3°E.	
			P	Z' 0.2 1.0				Origin time = 12 13 37.	
		Greenland Sea (h = 10 km).						M _L (UPP) = 2.4 1.	
"	18	UPP	iP	14 17 53.0 D				Solution from Bergen regional bulletin.	
				micr sec	"	25	UPP	iP	09 21 42.7
			P	Z' 0.2 1.2				Kuril Islands (h = N).	
			Mx	Z 0.9 16	"	25	UPP	iP	11 24 22.3
		KIR	iP	14 17 56.1 D				North Atlantic Ridge (h = 10 km).	
				micr sec	"	25	UPP	iP	20 50 44.9
			P	Z' 0.3 1.0				iS	21 01 46
		Mona Passage (h = 60 km).						micr sec	
		m = 6.1 (UPP,KIR).						Mx	Z 7.7 21
"	20	UPP	iP	05 52 28.8 D			KIR		micr sec
			ipP	05 52 41.2				Mx	Z 6.4 22
				micr sec				Near coast of Ecuador (h = 15 km).	
			P	Z' 0.1 1.0				M = 6.0 (UPP,KIR).	
		Near Islands, Aleutian Islands.							
		h = 50 km (UPP,UME).							
"	20	UPP	iP	18 18 27.8	"	26	UPP	iP	03 40 54.2
				micr sec				iS	03 51 36
			P	Z' 0.1 1.0				micr sec	
		Near Islands, Aleutian Islands						Mx	Z 5.4 21
		(h = N).					KIR		micr sec
"	20	UPP	iP	23 53 05.4				Mx	Z 7.0 22
		South Indian Ocean (h = 10 km).						Hawaii (h = 10 km).	
								M = 6.0 (UPP,KIR).	

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 S-750 12 UPPSALA
 SWEDEN

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

Uppsala	(UPP)	59°51.5'N,	17°37.6'E;	h = 14 m
Kiruna	(KIR)	67°50.4'N,	20°25.0'E;	h = 390 m
Umeå	(UME)	63°48.9'N,	20°14.2'E;	h = 16 m
Uddeholm	(UDD)	60°05.4'N,	13°36.4'E;	h = 240 m
Delary	(DEL)	56°28.2'N,	12°52.2'E;	h = 150 m
Myrviken	(MYV)	62°56.5'N,	14°20.8'E;	h = 345 m

JULY 1 - 31, 1989

1989				1989			
July	1	UPP iP	05 57 54.4	July	3	UPP iP	14 58 38.0
		KIR iP	05 57 20.6			Tyrrhenian Sea (h = 10 km).	
		Bonin Islands region (h = N).					
"	1	KIR iP	11 57 01.9	"	3	UPP iP	15 23 35.2
		North Atlantic Ocean (h = 25 km).				KIR iP	15 22 48.2
						Kuril Islands (h = 50 km).	
"	1	UPP iS*	12 08 41.9	"	3	UPP iP	17 20 54.3
		iLg	12 09 11.8			i	17 21 08.8
		Poland (h = 10 km).				iS	17 29 50
"	1	UPP iP	14 40 51.6				micr sec
		Banda Sea (h = 160 km).				P	Z' 0.2 1.1
						Mx	Z 9.7 21
"	1	KIR iP	16 44 30.8			KIR iP	17 20 01.0
		North Atlantic Ocean (h = 10 km).					micr sec
						P	Z' 0.1 1.1
"	1	UPP iP	18 29 29.7			Mx	Z 3.1 17
		i	18 29 38.6			Andreanof Islands, Aleutian Is. (h = N).	
						m = 6.1, M = 5.7 (UPP,KIR).	
"	1	UPP iP	18 34 38.1	"	3	UPP iP	17 49 22.0
		KIR iP	18 34 44.1				
		Tajik SSR (h = 10 km).		"	4	UPP iP	02 39 12.4
"	2	UPP iP	08 05 42.2			Near Islands, Aleutian Islands (h = N).	
		Burma (h = N).		"	4	KIR iP	08 54 26.6
"	2	KIR iP	09 00 37.4			North of Franz Josef land (h = 10 km).	
		Mariana Islands (h = 600 km).		"	4	UPP iP	10 25 54.7
"	2	UPP iP	23 48 25.8			KIR iP	10 25 30.4
		North Atlantic Ocean (h = 10 km).				Taiwan region (h = 35 km).	

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989					1989				
July	4	UPP	iP	11 13 40.8	July	5	KIR	eP	16 29 35
		Afghanistan-USSR border region (h = N).					Talaud Islands (h = 90 km).		
"	4	UPP	iPKP2	17 17 33.7	"	5	UPP	iP	18 22 48.7
		Kermadec Islands (h = N).			"	5	UPP	iP	21 45 03.6
"	4	UPP	iP	17 33 58.0	"	6	UPP	iPKP1	04 48 56.8
"	4	UPP	iP	19 55 48.6			KIR	iPKP	04 48 44.4
		KIR	iP	19 55 31.9			Macquarie Islands region (h = 10 km).		
		Mindanao, Philippine Islands (h = 80 km).			"	6	UPP	iP	15 13 18.3
"	5	UPP	iSn	00 31 34.0			KIR	iP	15 12 42.2
			i	00 31 53.0			Near s. coast of Honshu, Japan (h = 5 km).		
			iSg1	00 32 08.0	"	6	UPP	Mx	18 45
		KIR	iPn	00 29 24.9				Mx	Z 1.4 20
			iPg1	00 29 32.8			KIR	Mx	18 37
			iSg1	00 30 16.2				Mx	Z 2.6 19
		UDD	ePn	00 30 08			Fiji Islands region (h = 25 km). M = 5.7 (UPP,KIR).		
			iSg1	00 31 50.5	"	6	KIR	iP	20 35 41.9
		MYV	iPn	00 29 29.6			Mindanao, Philippine Islands (h = 60 km).		
			iSg1	00 30 23.6	"	7	UPP	iPKP2	04 00 12.8
		Northern Norway, (h = 10 km). 66.6°N, 12.6°E. Origin time = 00 28 35. M _L (UPP) 3.4 (0.21) 4. Solution from Bergen regional bulletin.					KIR	iPKP	03 59 41.0
"	5	UPP	iSg1	01 33 16.6			North Island, New Zealand (h = 340 km).		
		KIR	iPn	01 30 35.3	"	7	UPP	iP	10 29 46.6
			iPg1	01 30 42.9	"	7	KIR	iP	19 55 07.0
			iSg1	01 31 25.1				i	19 55 17.6
		UDD	iPn	01 31 20.2			Banda Sea (h = 35 km).		
			i	01 32 35.0	"	7	UPP	iP	22 46 05.1
			iSg1	01 33 01.7	"	7	KIR	iPKP	23 48 18.7
		MYV	iPn	01 30 41.6			Vanuatu Islands (h = 100 km).		
			iSg1	01 31 34.6	"	8	UPP	iP	03 53 55.4 C
		Northern Norway, (h = 10 km). Near 66.5°N, 12.8°E. Origin time = 01 29 43. M _L (UPP) = 3.3 (0.06) 4. Solution from Bergen regional bulletin.						P	Z' 0.5 0.8
"	5	KIR	iP	14 42 38.0				Mx	Z 0.6 6
		North of Ascension Island (h = 10 km).					(cont.)		

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989			
July		(cont.)		July	9	(cont.)	
	8	KIR	iP	03 53	39.4	C	
				micr	sec		
		P	Z'	0.7	0.6		
		Eastern Kazakh SSR.					
		Underground explosion.					
		m = 6.6 (UPP,KIR).					
"	8	UPP	iP	09 42	25.4	C	
				micr	sec		
		P	Z'	0.2	1.2		
		KIR	iP	09 41	31.4		
				micr	sec		
		P	Z'	0.1	1.3		
		Off coast of Kamchatka (h = 30 km).					
		m = 6.1 (UPP,KIR).					
"	8	UPP	iP	10 46	32.7		
		KIR	iP	10 46	17.4		
				micr	sec		
		P	Z'	0.1	1.3		
		Minahassa Peninsula (h = 40 km).					
"	8	UPP	iP	11 07	48.8		
				micr	sec		
		Mx	Z	1.0	15		
		KIR	iP	11 06	56.1		
				micr	sec		
		Mx	Z	2.4	17		
		South of Alaska (h = N).					
		M = 5.2 (UPP,KIR).					
"	8	KIR	iPn	13 28	56.6		
		Jan Mayen region (h = 10 km).					
"	8	UPP	iP	15 44	38.4		
			i	15 44	54.3		
		KIR	iP	15 46	00.1		
		Romania (h = 140 km).					
"	8	UPP	iP	20 14	13.4		
		KIR	iP	20 13	18.7		
		Komandorsky Islands region					
		(h = 60 km).					
"	9	UPP	iP	02 20	46.5		
				micr	sec		
		Mx	Z	1.0	15		
		(cont.)					
		KIR	iP	02 20	09.2		
			i	02 20	10.9		
				micr	sec		
		Mx	Z	1.9	15		
		Near s. coast of Honshu, Japan					
		(h = 5 km).					
		M = 5.3 (UPP,KIR).					
"	9	UPP	iP	09 57	30.2		
			iS	10 06	20		
				micr	sec		
		Mx	Z	3.1	18		
		KIR	iP	09 58	15.2		
				micr	sec		
		Mx	Z	3.0	19		
		North of Ascension Island					
		(h = 10 km).					
		M = 5.5 (UPP,KIR).					
"	9	KIR	iPKP	18 05	30.9		
		South Sandwich Islands region					
		(h = N).					
"	9	UPP	iP	20 16	30.5	C	
		KIR	iP	20 15	42.1	C	
		Eastern USSR (h = N).					
"	10	KIR	iP	06 22	55.9		
		Azores Islands (h = 25 km).					
"	10	UPP	iP	14 57	16.3		
		KIR	iP	14 57	11.4		
		Burma-India border region					
		(h = 70 km).					
"	10	UPP	iP	18 30	13.2		
		KIR	iP	18 30	14.3		
		Southern Xinjiang, China (h = 10 km).					
"	11	UPP	iP	00 10	05.4		
				micr	sec		
		Mx	Z	1.5	26		
		KIR	iP	00 09	18.2	D	
			i	00 09	27.7		
				micr	sec		
		Mx	Z	1.4	20		
		Kuril Islands (h = 80 km).					
		M = 5.1 (UPP,KIR).					
		M uncorrected for focal depth.					

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1989				1989			
July	11	KIR iP	02 50 06.0	July	13	KIR iP	18 19 30.3
		Crete (h = 55 km).				Talaud Islands (h = 110 km).	
"	11	KIR iSg1	04 41 18.5	"	14	UPP iP	06 56 18.4
"	11	KIR iP	22 55 08.1			KIR eP	06 57 38
		South of Honshu, Japan (h = 90 km).				Albania (h = 30 km).	
"	12	UPP iP	02 53 41.8	"	14	UPP iP	11 06 17.6
		KIR iP	02 53 04.9			Tibet (h = N).	
		Chagos Archipelago region (h = 10 km).		"	14	UPP iP	15 54 07.7
"	12	KIR iP	13 49 03.5			iS	16 02 56
		Turkey (h = 130 km).					micr sec
"	12	KIR iPKP	19 01 20.1			P	Z' 0.1 1.1
		Fiji Islands region (h = 560 km).				Mx	Z 2.6 19
"	13	KIR eP	01 01 59			KIR iP	15 54 55.5
		Tajik SSR (h = 70 km).					micr sec
"	13	UPP iSg1	01 54 48.8			Mx	Z 0.2 1.5
		UDD iPg1	01 53 09.7	"	14	UPP iPdiff	20 56 49 C
		iSg1	01 53 55.2			iS	21 08 48
		MYV iSg1	01 53 55.0				micr sec
		Southern Norway, 61.8°N, 7.5°E. Origin time = 01 52 09. $M_L(\text{UPP}) = 2.4$ 1. Solution from Bergen regional bulletin.				KIR iP	20 56 38.2
"	13	UPP iPKP	02 21 05.4				micr sec
		KIR iPKP	02 20 52.4			P	Z' 0.4 2.0
		Vanuatu Islands (h = 200 km).				Timor (h = 10 km).	
"	13	KIR iPg1	08 11 52.5	"	15	UPP iP	00 19 39.1 C
		iSn	08 12 18.4			ipP	00 20 04.9
		iSg1	08 12 22.5				micr sec
		Northern Norway, 69.6°N, 25.3°E. Origin time = 08 11 13. $M_L(\text{UPP}) = 2.5$ 1. Solution from Finnish regional bulletin.				P	Z' 0.1 1.0
"	13	UPP iP	13 01 31.0			pP	Z 0.2 0.9
		KIR iP	13 01 29.1			KIR iP	00 19 32.8 C
		Kashmir-Tibet border region (h = N).				ipP	00 19 59.1
							micr sec
						P	Z' 0.1 0.9
						pP	Z 0.2 1.1
						Burma. h = 110 km (UPP,KIR). m = 6.0 (UPP,KIR).	
"	13	UPP iP	13 01 31.0	"	15	UPP iP	19 43 09.2
		KIR iP	13 01 29.1	"	16	UPP iP	04 29 30.3
		Kashmir-Tibet border region (h = N).				i	04 29 44.3
						Romania (h = 170 km).	

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989							
July	16	UPP	iPKP1	22 30 25.8	July	20	UPP	iP	04 55 16.4		
				micr sec			KIR	iP	04 55 00.7 C		
			PKP1	Z' 0.1 0.8			Talaud Islands (h = 60 km).				
		KIR	i(PKP)	22 30 03.9			"	20	UPP	iP	05 05 26.6
			iPKP	22 30 09.8							micr sec
		Kermadec Islands (h = 120 km).							P	Z' 0.1 0.8	
"	17	KIR	iP	02 36 26.8			KIR	iP	05 05 26.5		
		Fox Islands, Aleutian Islands (h = 110 km).							micr sec		
									P	Z' 0.1 0.9	
"	17	KIR	iPKP	15 28 31.6			Northern Sumatera (h = 190 km). m = 6.4 (UPP,KIR).				
		South Sandwich Islands region (h = N).					"	20	UPP	iP	06 39 23.4 C
"	17	UPP	iP	21 51 34.0					i	06 39 55.1	
		KIR	iP	21 52 14.2					P	Z' 0.4 1.1	
		Western Iran (h = 35 km).					KIR	iP	06 39 24.7 C		
"	18	UPP	iP	09 31 39.8					micr sec		
		KIR	iPn	09 29 51.5					P	Z' 0.6 1.1	
		UDD	iP	09 31 34.6			Northern Sumatera (h = 80 km). m = 6.6 (UPP,KIR).				
			i	09 31 37.4			"	20	UPP	i(PKP)	12 28 37.9
		DEL	iP	09 32 16.2					iPKP	12 28 49.9	
		MYV	iP	09 31 06.0			KIR	iPKP	12 28 34.3		
		Svalbard region (h = 10 km).					Tonga Islands (h = 240 km).				
"	18	UPP	iP	10 51 38.8			"	20	UPP	iSg1	19 32 21.0
		KIR	iP	10 50 45.5					UDD	iPg1	19 30 38.3
				micr sec					iSg1	19 31 24.4	
			P	Z' 0.1 0.9					MYV	iSg1	19 31 23.0
		Near east coast of Kamchatka (h = N).					Southern Norway, 61.9°N, 7.3°E. Origin time = 19 29 40. $M_L(UPP) = 2.4$ 1. Solution from Bergen regional bulletin.				
"	18	UPP	iP	19 31 17.5			"	20	KIR	ePg1	22 53 37
		KIR	iP	19 30 24.2					iSg1	22 54 04.0	
		Andreanof Islands, Aleutian Is. (h = N).					Norrbotten, Sweden, 65.9°N, 21.8°E. Origin time = 22 53 00. $M_L(UPP) = 2.3$ 1. Solution from Helsinki regional bulletin.				
"	18	KIR	iP	21 31 40.1							
		Western Iran (h = 35 km).									
"	19	KIR	iP	05 31 23.9							
			i	05 31 29.9							
		Iceland region (h = 10 km).									
"	20	UPP	iP	01 23 38.5			"	21	UPP	iPKP	02 42 08.7
		Near coast of Oaxaca, Mexico (h = 20 km).							KIR	iPKP	02 41 55.3
							Vanuatu Islands (h = N).				

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1989				1989			
July	21	UPP	iP	03 19 23.9 D	July	22	(cont.)
			i	03 22 04.0			Mx Z 5.7 18
			iS	03 27 32			Halmahera (h = 140 km).
				micr sec			m = 7.3, M = 6.0 (UPP,KIR).
			P	Z' 0.5 1.0			
			Mx	Z 3.8 16	"	22	UPP Mx 14 27
		KIR	eP	03 19 10 D			micr sec
				micr sec			Mx Z 1.6 23
			P	Z' 0.2 1.0			South Pacific Cordillera (h = 10 km).
			Mx	Z 2.7 15	"	22	UPP iPKP 21 55 28.6 C
		Sichuan Province, China (h = 35 km).					i 21 55 38.1
		m = 6.6, M = 5.5 (UPP,KIR).					KIR iPKP2 21 55 55.5
"	21	UPP	iP	03 37 17.4			Southern Pacific Ocean (h = 10 km).
		KIR	iP	03 37 03.7	"	22	UPP iP 23 54 33.8
		Sichuan Province, China (h = N).					micr sec
"	21	UPP	iPKP1	03 38 15.1			Mx Z 0.5 15
		South of Fiji Islands (h = 630 km).					KIR iP 23 55 19.4
"	21	UPP	iP	06 28 32.4			micr sec
			i	06 28 36.2			Mx Z 0.3 18
				micr sec			Iran-Iraq border region (h = 60 km).
			P	Z' 0.1 1.1			M = 4.6 (UPP,KIR).
			Mx	Z 1.8 8	"	23	UPP iP 12 11 43.0
		KIR	iP	06 28 27.8 C			KIR iP 12 09 53.9
				micr sec			Eastern USSR (h = 10 km).
			P	Z' 0.1 0.7	"	23	UPP iP 22 54 31.4 C
			Mx	Z 3.8 11			Mindoro, Philippine Islands (h = N).
		Southern Xinjiang, China					
		(h = 60 km).					
		m = 5.6, M = 5.4 (UPP,KIR).					
"	21	KIR	iP	18 39 38.8	"	23	UPP i 23 25 05.6
		Mindoro, Philippine Islands (h = N).					iSg1 23 25 52.8
"	22	KIR	eP	01 19 17			KIR iPn 23 22 45.1
		Unimak Island region (h = N).					i 23 23 09.1
"	22	UPP	iP	05 15 31.0 C			iSn 23 23 21.8
			iS	05 25 53			UDD iPn 23 23 39.9
			iPKKP	05 32 04.0			iSn 23 25 00.9
				micr sec			iSg1 23 25 40.6
			P	Z' 0.8 1.0			MYV iSg1 23 24 07.8
			Mx	Z 5.7 20			Coast of northern Norway, near
		KIR	iP	05 15 15.5 C			67.1°N, 13.0°E.
			iPKKP	05 32 13.2			Origin time = 23 21 56.
				micr sec			M _L (UPP) = 2.9 (0.18) 2.
			P	Z' 2.2 1.0			Solution from Bergen regional
							bulletin.

(cont.)

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989			
July	24	UPP	iP	03 35 25.8 C	July	25	(cont.)
			iS	03 41 35			UDD iPn 10 45 57.5
				micr sec			iPg1 10 46 03.3
			P	Z' 0.6 1.1			iSn 10 46 40.2
			Mx	Z 3.7 14			iSg1 10 46 53.6
		KIR		micr sec			DEL iSg1 10 48 29.0
			Mx	Z 3.0 10			MYV iPg1 10 45 28.8
		Afghanistan-USSR border region					iSg1 10 45 55.8
		(h = 100 km).				Coast of Ångermanland, Sweden, 63.0°N, 18.8°E.	
"	24	UPP	Mx	11 26			Origin time = 10 44 54.
				micr sec			M _L (UPP) = 3.3 (0.13) 6.
			Mx	Z 1.7 24			Felt.
		KIR	Mx	11 25			Solution from Helsinki regional bulletin.
				micr sec			
			Mx	Z 1.9 18			
		Fiji Islands region (h = N).			"	25	UPP iPKP 13 51 39.0
"	24	KIR	iPKP1	12 18 25.6			iPKP1 13 51 47.4
		Off w. coast of S. Island, N.Z.					South of Kermadec Islands
		(h = N).					(h = 200 km).
"	24	UPP	iP	13 43 06.7		25	UPP iPdiff 22 07 19.4
		KIR	iP	13 42 16.8			KIR iPdiff 22 07 08.7
		Afghanistan-USSR border region					Flores Sea (h = 620 km).
		(h = 80 km).			"	25	UPP iPKP1 22 35 56.4
"	24	UPP	ipP	20 01 31.3			South of Kermadec Islands (h = N).
		KIR	iP	20 00 30.3		25	UPP iP 23 37 09.5
		Near east coast of Honshu, Japan					micr sec
		(h = 70 km).					P Z' 0.1 1.0
"	25	UPP	iP	08 09 29.7			KIR iP 23 36 22.7
			i	08 09 40.0			Kuril Islands (h = N).
		KIR	iP	08 09 01.7	"	26	UPP iP 16 21 23.2
		Ryukyu Islands (h = N).					Guatemala (h = 60 km).
"	25	UPP	iP	09 19 14.4	"	26	UPP iP 16 25 50.7
		KIR	iP	09 18 45.3			Guatemala (h = 60 km).
		Ryukyu Islands (h = N).			"	26	UDD iPg1 22 11 56.6
"	25	UPP	iPg1	10 45 52.4			iSg1 22 12 42.6
			iSn	10 46 24.5			Southern Norway, 61.9°N, 7.2°E.
			i	10 46 30.5			Origin time = 22 10 58.
			iSg1	10 46 35.5			M _L (UPP) = 2.2 1.
		KIR	iSn	10 47 01.1			Solution from Bergen regional bulletin.
			iSg1	10 47 20.8			
		(cont.)					

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989				
July	27	UPP KIR	iP iP	01 41 34.9 C 01 42 16.9	July	30	KIR Tanimbar Islands region (h = N).	iP 20 43 09.1
		Western Iran (h = N).			"	30	KIR Tanimbar Islands region (h = N).	iP 21 23 49.0
"	27	KIR	iP	14 45 38.0	"	31	UPP	iP 12 29 59.5
		Mindanao, Philippine Islands (h = 210 km).					Mediterranean Sea (h = 45 km).	
"	27	UPP	iP	20 32 00.4	"	31	UPP	iPdif 17 21 28.7
"	28	UPP KIR	ipP ipP	14 18 39.0 14 18 01.9				i(PP) 17 25 25.1
		Off east coast of Honshu, Japan (h = 40 km).						iPP 17 25 45.1
"	29	UPP	iP	08 38 43.1				iS 17 33 11
		Hindu Kush region (h = 120 km).						micr sec Mx Z 13 22
"	29	KIR	iP	18 08 09.0			KIR	iP 17 21 18.2
		Tajik-Xinjiang border region (h = 40 km).						i(PP) 17 24 37.0
"	30	UPP KIR	eP iP	04 50 05 04 49 29.3				iPP 17 25 33.3
		South of Honshu, Japan (h = 60 km).						micr sec Mx Z 8.2 17
"	30	UPP KIR	iP iP	08 42 50.9 08 42 15.3	"	31	UPP KIR	iPKP 21 48 06.6 21 47 53.4
		South of Honshu, Japan (h = 60 km).					Vanuatu Islands (h = 140 km).	
"	30	UPP	Mx	10 38				
				micr sec				
			Mx	Z 3.8 20				
		KIR	Mx	10 39				
				micr sec				
			Mx	Z 2.6 21				
		Southwest of Africa (h = 10 km).						
		M = 5.9 (UPP,KIR).						
"	30	UPP	iP	19 26 44.1				
				micr sec				
			Mx	Z 1.6 20				
		KIR	iP	19 26 45.9				
				micr sec				
			Mx	Z 1.3 19				
		Northern Sumatera (h = 25 km).						
		M = 5.3 (UPP,KIR).						
"	30	KIR	iP	19 50 07.5				
		Banda Sea (h = 55 km).						

February 11, 1991

Conny Holmqvist
Ota Kulhánek

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

Uppsala	(UPP)	59°51.5'N,	17°37.6'E;	h = 14 m
Kiruna	(KIR)	67°50.4'N,	20°25.0'E;	h = 390 m
Umeå	(UME)	63°48.9'N,	20°14.2'E;	h = 16 m
Uddeholm	(UDD)	60°05.4'N,	13°36.4'E;	h = 240 m
Delary	(DEL)	56°28.2'N,	12°52.2'E;	h = 150 m
Myrviken	(MYV)	62°56.5'N,	14°20.8'E;	h = 345 m

AUGUST 1 - 31, 1989

1989					1989					
Aug.					Aug.					
	1	UPP	Mx	01 25	2	UPP	iPKP	11 31 26.1		
				micr sec		South of Kermadec Islands				
			Mx	Z 3.4 17		(h = 80 km).				
		KIR	Mx	01 25	"	2	UPP	iSn	15 53 24.0	
				micr sec			KIR	iPn	15 51 25.9	
			Mx	Z 2.7 17			i	15 51 28.0		
		West Irian (h = 15 km).					iSn	15 52 24.4		
		M = 5.9 (UPP,KIR).					i	15 52 36.2		
"	1	UPP	iP	02 28 12.6		UDD	iPn	15 51 46.8		
		Aegean Sea (h = 20 km).					iSn	15 53 01.9		
"	1	UPP	iP	11 36 49.5		MYV	iPn	15 51 15.0		
		South of Honshu, Japan					iSn	15 52 05.4		
		(h = 390 km).				Norwegian Sea, 66.4°N, 7.6°E.				
						Origin time = 15 50 09.				
						$M_L(\text{UPP}) = 3.0$				
	2	UPP	Mx	00 38		Solution from Bergen regional				
				micr sec		bulletin.				
			Mx	Z 2.6 19		3	KIR	iP	02 37 38.3	
		KIR	Mx	00 35		Molucca Passage (h = 70 km).				
				micr sec						
			Mx	Z 2.4 20		"	3	KIR	iPn	03 19 55.1
		New Ireland region (h = 10 km).						iSn	03 20 49.2	
		M = 5.7 (UPP,KIR).				Norwegian Sea, 71.9°N, 16.0°E.				
"	2	UPP	iP	10 36 37.1		Origin time = 03 18 49.				
		KIR	iP	10 36 40.3		Solution from Bergen regional				
				micr sec		bulletin.				
		P	Z'	0.1 0.7		"	3	UPP	iP	04 20 48.1
		Northern Sumatera (h = 30 km).							micr sec	
"	2	UPP	iP	11 00 23.9				P	Z'	0.1 0.6
		Northern Sumatera (h = 20 km).				(cont.)				

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddholm, DEL = Delary, MYV = Myrviken

1989				1989			
Aug.	3	(cont.) KIR iP	04 20 14.5 micr sec	Aug.	4	UPP iP	08 30 48.8 micr sec
		P	Z' 0.1 0.7			P	Z' 0.1 0.7
		South of Honshu, Japan (h = 420 km). m = 5.6 (UPP,KIR).				KIR iP	08 30 19.0 micr sec
						P	Z' 0.2 0.6
						Bonin Islands region (h = 480 km). m = 5.7 (UPP,KIR).	
"	3	UPP iP	07 47 49.0	"	4	KIR eP	09 28 45
		iS	07 52 03 micr sec			Eastern Caucasus (h = N).	
		P	Z 0.2 1.3				
		Mx	Z 6.2 11	"	5	UPP iP	07 03 12.7
		KIR iP	07 48 18.8 micr sec			iS	07 09 14 micr sec
		Mx	Z 6.5 9			P	Z' 0.1 1.0
		Eastern Caucasus (h = 20 km). M = 5.4 (UPP,KIR).				Mx	Z 1.8 17
						KIR iP	07 03 06.4 micr sec
"	3	UPP iPKP	11 26 12.2			P	Z' 0.1 1.0
		KIR iPKP	11 26 28.8			Mx	Z 2.5 15
		South Sandwich Islands region (h = N).				Lapten Sea (h = 10 km). m = 5.6, M = 4.9 (UPP,KIR).	
				"	5	UPP iPKP	10 13 51.0
						Kermadec Islands (h = 50 km).	
	3	UPP iP	11 43 12.3	"	5	UPP iP	13 43 56.8
		iS	11 52 59 micr sec			KIR iP	13 43 42.5 micr sec
		P	Z' 0.6 1.2			P	Z' 0.1 0.9
		Mx	Z 44 15			Sichuan Province, China (h = N).	
		KIR iP	11 42 51.1 micr sec	"	5	UPP iP	23 42 13.5
		P	Z' 0.4 0.9			KIR iP	23 41 37.9
		Mx	Z 39 13			South of Honshu, Japan (h = 55 km).	
		Taiwan (h = 10 km). m = 6.5, M = 6.8 (UPP,KIR).		"	6	UPP iP	06 49 53.0 micr sec
"	3	UPP i(PKP)	22 44 09.7			P	Z' 0.1 1.0
		KIR iPKP	22 44 02.0			Mx	Z 1.0 19
		South of Fiji Islands (h = 590 km).				KIR iP	06 49 38.0 micr sec
"	4	KIR iP	04 41 05.6			P	Z' 0.3 1.0
		Mindoro, Philippine Islands (h = N).				Mx	Z 1.9 20
"	4	KIR iP	05 21 12.8			Halmahera (h = 110 km). m = 6.7, M = 5.4 (UPP,KIR). M uncorrected for focal depth.	
		Kyushu, Japan (h = 50 km).					
"	4	KIR iP	05 51 25.1				
		Java (h = N).					

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989					
Aug.	6	KIR	iP	07 56 56.6	Aug.	8	UPP	Mx	00 40
				Molucca Passage (h = 50 km).					micr sec
"	6	UPP	iP	11 58 09.2				Mx	Z 1.0 18
				Southern Greece (h = N).					Northern Eastern I. Cordillera (h = 10 km).
"	6	UPP	iP	13 27 45.4	"	8	UPP	iPKP2	08 19 09.6
			iS	13 35 52				i	08 19 41.2
				micr sec			KIR	iPKP2	08 18 37.1
			P	Z' 0.1 1.0				i	08 19 14.2
			Mx	Z 1.4 15					Cook Strait, New Zealand (h = 120 km).
		KIR	iP	13 26 52.0	"	8	UPP	iP	20 29 45.6
				micr sec				i	20 29 51.6
			P	Z' 0.2 1.0				Mx	Z 0.6 16
			Mx	Z 1.7 14			KIR	eP	20 30 22
				Southeastern Alaska (h = 10 km).					micr sec
				m = 5.9, M = 5.2 (UPP,KIR).				Mx	Z 0.9 16
"	6	KIR	iP	15 23 55.4					Ascension Island region (h = 10 km).
				Southeastern Alaska (h = 0 km).					M = 5.1 (UPP,KIR).
"	6	UPP	iP	23 04 55.9 C	"	9	UPP	iP	14 49 28.7
			iS	23 13 54					Off coast of Hokkaido, Japan.
				micr sec	"	9	UPP	iP	16 11 42.2 C
			P	Z' 0.2 0.9				P	Z' 0.1 0.6
			Mx	Z 1.6 20					Burma-India border region (h = 90 km).
		KIR	iP	23 04 13.1	"	9	UPP	iP	17 07 09.7
				micr sec	"	10	UPP	iP	02 09 06.7
			P	Z' 0.2 0.9				iS	02 20 04
			Mx	Z 2.6 19					micr sec
				Hokkaido, Japan region (h = 45 km).				Mx	Z 3.4 17
				m = 6.3, M = 5.3 (UPP,KIR).			KIR	iP	02 08 49.3
"	7	UPP	iP	01 05 33.2					micr sec
				Greece (h = 10 km).				P	Z' 0.1 1.0
"	7	UPP	iSg1	13 33 24.5				Mx	Z 2.5 15
		KIR	iPg1	13 30 08.9					Mindanao, Philippine Islands (h = 55 km).
			iSg1	13 30 44.7					M = 5.8 (UPP,KIR).
		MYV	eSn	13 31 31	"	10	KIR	iP	10 52 02.9
				Off coast of northwestern Norway, 67.3°N, 13.5°E.					Mindanao, Philippine Islands (h = 40 km).
				Origin time = 13 29 19.					
				M _L (UPP) = 2.9 (0.00) 2.					
				Solution from Helsinki regional bulletin.					

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddholm, DEL = Delary, MYV = Myrviken

1989				1989						
Aug.	10	UPP		micr	sec	Aug.	12	UPP	iP	16 59 43.9
		Mx	Z	1.5	18				ipP	17 00 00.9
		KIR	iP	11 59 21.1					iS	17 10 36
				micr	sec					
			P	Z'	0.1 1.1				P	Z' 0.2 1.4
			Mx	Z	2.6 19				Mx	Z 1.9 18
		Mindanao, Philippine Islands (h = 10 km). M = 5.5 (UPP,KIR).						KIR	iP	16 59 26.0
"	10	UPP	eP	12 41 16					ipP	16 59 41.1
		Ionian Sea (h = 10 km).								micr sec
									P	Z' 0.2 1.6
"	10	UPP	iP	14 45 07.8					Mx	Z 2.6 19
		KIR	iP	14 45 16.1				UME	iP	16 59 29.9
		Afghanistan-USSR border region (h = 120 km).							Mindanao, Philippine Islands. h = 60 km (UPP,KIR). m = 6.1, M = 5.6 (UPP,KIR).	
"	11	UPP	iP	04 32 12.2		"	12	KIR	iP	17 30 38.2
		KIR	iP	04 31 24.8				Ascension Island region (h = 10 km).		
		UME	iP	04 31 48.4		"	13	UPP	iP	08 45 10.4
		Kuril Islands (h = 85 km).								micr sec
"	11	UPP	iP	07 52 22.4					P	Z' 0.1 0.9
		KIR	iP	07 52 05.4				KIR	iP	08 45 22.7
		Mindoro, Philippine Islands (h = 30 km).								micr sec
"	11	UPP	iP	10 47 17.2					P	Z' 0.1 1.0
								Kuril Islands (h = 35 km). m = 5.8 (UPP,KIR).		
"	12	UPP	eP	00 53 45		"	14	UPP	iP	03 01 59.4
				micr sec				KIR	iP	03 01 1.6
			Mx	Z	2.0 21			Kuril Islands (h = N).		
		KIR	iP	00 53 29.6		"	14	UPP	Mx	19 16
				micr sec						micr sec
			P	Z'	0.1 1.1				Mx	Z 3.3 19
			Mx	Z	2.7 18			KIR	Mx	19 09
		Molucca Passage (h = 50 km). M = 5.6 (UPP,KIR).								micr sec
"	12	UPP	iP	15 44 31.3					Mx	Z 2.6 21
		KIR	iP	15 44 15.3		"	15	UPP	iP	04 18 32.0
				micr sec					i	04 18 44.1
			P	Z'	0.1 0.9				iS	04 21 13
		UME	iP	15 44 25.5				KIR	iP	04 19 56.0
		Guerrero, Mexico (h = 70 km).						Rumania (h = 120 km).		

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989					
Aug.	15	UPP	iP	17 08 17.2	Aug.	20	UPP	iP	11 26 01.4 D
			iS	17 12 12				iS	11 33 23
				micr sec					micr sec
			Mx	Z 2.8 14				P	Z' 0.2 1.3
		KIR	iP	17 09 28.9				Mx	Z 12 16
				micr sec			KIR	iP	11 26 48.1 D
			Mx	Z 1.2 11					micr sec
		UME	iS	17 13 20				P	Z' 0.4 1.6
		Turkey (h = 10 km).						Mx	Z 13 17
		M = 4.7 (UPP,KIR).					UME	iP	11 26 21.9 D
							Ethiopia (h = 10 km).		
"	16	UPP	iSg1	13 19 40.6	"	20	UPP	iP	11 55 31.8 D
		UDD	i	13 18 36.0					micr sec
			iSg1	13 18 42.5				P	Z' 1.0 1.6
		Southern Norway, 58.2°N, 6.3°E.						Mx	Z 6.9 13
		Origin time = 13 16 33.					KIR	iP	11 56 19.3 D
		M _L (UPP) = 2.6 1.							micr sec
		Solution from Bergen regional bulletin.						P	Z' 1.4 2.0
"	17	KIR	iPKP	11 22 12.3				Mx	Z 5.7 12
		Vanuatu Islands (h = 10 km).					UME	iP	11 55 53.1 D
"	18	KIR	iP	03 35 28.7			Ethiopia (h = 10 km).		
							m = 6.6, M = 5.8 (UPP,KIR).		
"	18	UPP	iP	20 11 45.4	"	20	UPP	iP	12 05 24.5
		Rat Islands, Aleutian Islands (h = N).							micr sec
"	19	KIR	iP	13 33 01.0				P	Z' 0.2 1.8
		Banda Sea (h = 170 km).					KIR	iP	12 05 10.8
									micr sec
"	20	UPP	iP	04 53 37.0				P	Z' 0.7 2.5
		Burma (h = N).					UME	iP	12 05 44.2
							Ethiopia (h = 10 km).		
							m = 6.0 (UPP,KIR).		
"	20	UPP	eP	09 23 10	"	20	UPP	iP	13 34 30.5
		Negros, Philippine Islands (h = 55 km).					UME	iP	13 34 53.5
							Ethiopia (h = 10 km).		
"	20	KIR	iPg1	10 09 29.0	"	20	UPP	iP	13 35 24.9
			iSg1	10 09 39.9				iS	13 42 46
		UME	iSg1	10 11 09.6					micr sec
		MYV	eSg1	10 12 04				Mx	Z 5.4 14
		Lapland, Sweden, 67.4°N, 22.1°E.					KIR	iP	13 36 09.2
		Origin time = 10 09 14.							micr sec
		M _L (UPP) = 2.4 (0.10) 2.						Mx	Z 5.5 13
		Solution from Helsinki regional bulletin.					UME	iP	13 35 43.8
							Ethiopia (h = 10 km).		
							M = 5.7 UPP,KIR).		

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddholm, DEL = Delary, MYV = Myrviken

1989				1989					
Aug.	21	UPP	iP	18 39 41.9	Aug.	23	UPP	iP	06 40 02.2
		KIR	iP	18 39 13.2				i	06 40 11.2
		UME	iP	18 39 22.0					micr sec
"	21	UPP	iPKP	18 43 25.9				P	Z' 0.1 1.0
				micr sec			UME	iP	06 39 44.4
			Mx	Z 1.5 18					Ryukyu Islands (h = 10 km).
		KIR	iPKP	18 43 08.8	"	23	UPP	iP	07 19 09.7
				micr sec			KIR	iP	07 18 37.9
			Mx	Z 1.4 15					Ryukyu Islands (h = N).
		UME	iPKP	18 43 19.0	"	23	UPP	iP	07 23 37.6
				Solomon Islands (h = 500 km).			KIR	iP	07 23 07.5
				M = 5.6 (UPP,KIR).					Ryukyu Islands (h = 30 km).
				M uncorrected for focal depth.					
"	21	UPP	iP	23 24 27.2	"	23	UPP	eSg1	13 18 57
			i	23 24 29.9			UDD	iSg1	13 17 46.7
			iS	23 34 12					Southern Norway, 58.3°N, 6.4°E.
				micr sec					Origin time = 13 15 45.
			i	Z' 0.1 1.0					Solution from Bergen regional
			Mx	Z 57 18					bulletin.
		KIR	iP	23 24 02.7	"	23	UPP	iP	15 31 39.1
				micr sec			KIR	iP	15 30 45.7
			P	Z' 0.2 1.0					micr sec
			Mx	Z 16 15					P
		UME	iP	23 24 13.6					Z' 0.1 0.7
			iS	23 33 41			UME	iP	15 31 12.2
				Taiwan region (h = 45 km).					Fox Islands, Aleutian Islands (h = N).
				m = 5.9, M = 6.6 (UPP,KIR).					
"	22	UPP	iP	00 54 19.8	"	23	KIR	iP	17 46 55.5
		KIR	iP	00 54 23.9					Fox Islands, Aleutian Islands (h = N).
				Northern Colombia (h = 160 km).	"	23	UDD	iSg1	19 00 50.1
"	22	UPP	iP	08 07 09.7					Southern Norway, 62.3°N, 7.5°E.
			ipP	08 07 28.0					Origin time = 18 58 49.
				micr sec					Solution from Bergen regional
			P	Z' 0.1 1.0					bulletin.
		KIR	iP	08 06 27.6	"	23	UPP	iP	20 36 18.5
		UME	iP	08 06 46.3					micr sec
			ipP	08 07 04.1					P
				Hokkaido, Japan region.					Z' 0.1 1.0
				h = 70 km (UPP,KIR).			KIR	iP	20 35 25.3
									micr sec
"	22	UPP	iP	20 14 26.3					P
		KIR	eP	20 14 02			UME	iP	Z' 0.2 1.0
				Taiwan region (h = 40 km).					20 35 52.2
									Fox Islands, Aleutian Islands (h = N).
									m = 6.0 (UPP,KIR).
					"	23	KIR	iP	21 31 24.0
									Fox Islands, Aleutian Islands (h = N).

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddholm, DEL = Delary, MYV = Myrviken

1989				1989			
Aug.	24	UPP	iP	02 18 07.7	Aug.	27	(cont.)
				micr sec			KIR iP 01 27 48.4
							micr sec
			P	Z' 0.2 0.9			P Z' 0.3 0.9
			Mx	Z 5.1 12			Mx Z 4.7 14
		KIR	iP	02 19 21.9			UME iP 01 27 13.2
				micr sec			iS 01 32 18
							Crete (h = 60 km).
			P	Z' 0.2 1.1			m = 5.7, M = 5.1 (UPP,KIR).
			Mx	Z 2.5 11			
		UME	iP	02 18 45.8			
				Ionian Sea (h = 30 km).			
				m = 5.7, M = 5.1 (UPP,KIR).			
"	24	UPP	iP	02 43 08.2	"	27	UPP iP 03 57 51.7
				Ionian Sea (h = 40 km).			UME iP 03 58 29.3
							Ionian Sea (h = 10 km).
"	24	UPP	iP	19 00 57.0	"	27	UPP iP 05 06 48.6
			i	19 01 12.1			KIR iP 05 05 54.9
		KIR	iP	19 01 32.6			UME iP 05 06 21.8
				micr sec			Fox Islands, Aleutian Islands
							(h = 55 km).
			P	Z' 0.1 0.6			
		UME	iP	19 01 07.9	"	27	UPP iP 15 31 47.7
				Caspian Sea (h = N).			UME iP 15 31 34.9
							Burma (h = 10 km).
"	25	UPP	iP	20 59 29.2	"	28	KIR iP 01 36 42.6
		KIR	iP	20 58 54.1			Ryukyu Islands (h = 50 km).
		UME	iP	20 59 08.7	"	29	UPP iP 04 29 20.5
				South of Honshu, Japan			iS 04 39 54
				(h = 120 km).			micr sec
"	26	UPP	iP	00 23 10.8			Mx Z 22 25
				micr sec			KIR eP 04 28 58.3
							micr sec
			P	Z' 0.1 1.0			Mx Z 23 22
		KIR	iP	00 22 32.7			UME iP 04 29 10.4
				micr sec			iS 04 39 37
							Off coast of Jalisco, Mexico
			P	Z' 0.1 1.0			(h = 20 km).
		UME	iP	00 22 49.5			M = 6.5 (UPP,KIR).
				Near east coast of Honshu, Japan			
				(h = 50 km).			
				m = 5.7 (UPP,KIR).			
"	26	UPP	iP	08 01 14.2	"	29	UPP iP 09 50 55.4
				Greece (h = 10 km).			
"	27	UPP	iP	01 26 41.2	"	29	UPP iP 15 40 36.4
			i	01 26 42.6			micr sec
			iS	01 31 28			P Z' 0.1 0.9
				micr sec			KIR iP 15 39 49.6
							micr sec
			i	Z' 0.1 0.8			P Z' 0.1 1.0
			Mx	Z 3.4 17			UME iP 15 40 11.2
				(cont.)			(cont.)

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddholm, DEL = Delary, MYV = Myrviken

1989				1989			
Aug.	29	(cont.) Sea of Okhotsk (h = 410 km). m = 5.3 (UPP,KIR).		Aug.	30	UPP iP KIR iP Philippine Islands region (h = 90 km).	16 38 40.6 16 38 23.4
"	29	UPP ePKP Kermadec Islands (h = 160 km).	18 21 08	"	31	UPP iP KIR iP Luzon Philippine Islands (h = 70 km).	03 59 34.6 03 59 15.1
"	30	UPP iP iS P Mx KIR iP ipP P Mx UME iP iS Near east coast of Kamchatka (h = 30 km). m = 6.1, M = 5.3 (UPP,KIR).	03 17 16.4 03 25 43 micr sec Z' 0.3 1.5 Z 2.3 16 03 16 21.6 03 16 32.6 micr sec Z' 0.3 1.6 Z 1.8 13 03 16 46.7 03 24 52	"	31	KIR iPKP Chile-Argentina border region (h = 150 km). UPP iP KIR iP P Z' 0.1 1.4 North of Ascension Island (h = 10 km).	08 36 08.4 11 16 45.6 11 16 29.2 micr sec
"	30	KIR iP Near east coast of Kamchatka (h = 50 km).	06 15 46.8	"	31	UPP iP KIR iP UME iP Greece (h = N).	20 04 57.9 21 34 21.6 21 35 37.4 21 35 00.2
"	30	UPP ePKP UME iPKP Kermadec Islands (h = 150 km).	06 51 15 06 51 05.7	"	31	UPP iP KIR iP UME iP Greece (h = N).	21 34 21.6 21 35 37.4 21 35 00.2
"	30	UPP ePKP UME iPKP Kermadec Islands region (h = 80 km).	08 21 39 08 21 30.1	"	31	UPP iP KIR iP UME iP Greece (h = N).	21 34 21.6 21 35 37.4 21 35 00.2
"	30	UPP iP iS P Mx KIR iP P Mx UME iP Near east coast of Kamchatka (h = 70 km). m = 6.2, M = 4.8 (UPP,KIR). M uncorrected for focal depth.	11 48 21.1 11 56 33 micr sec Z' 0.2 1.0 Z 0.8 20 11 47 26.3 micr sec Z' 0.3 1.0 Z 0.6 12 11 47 52.5				

March 4, 1991

Conny Holmqvist
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SEISMOLOGICAL BULLETIN

UPPSALA, KIRUNA, UMEÅ, UDDEHOLM

DELARY and MYRVIKEN

Uppsala	(UPP)	59°51.5'N,	17°37.6'E;	h = 14 m
Kiruna	(KIR)	67°50.4'N,	20°25.0'E;	h = 390 m
Umeå	(UME)	63°48.9'N,	20°14.2'E;	h = 16 m
Uddeholm	(UDD)	60°05.4'N,	13°36.4'E;	h = 240 m
Delary	(DEL)	56°28.2'N,	12°52.2'E;	h = 150 m
Myrviken	(MYV)	62°56.5'N,	14°20.8'E;	h = 345 m

SEPTEMBER 1 - 30, 1989

1989					1989						
Sep.	2	UPP	iP	04 23 55.6	Sep.	3	KIR	iPKP1	21 11 51.4		
				micr sec			UME	iPKP1	21 12 00.1		
			P	Z' 0.1 0.9				i	21 12 08.3		
		KIR	iP	04 23 36.8 C			Off e. coast of N. Island, N.Z.				
		UME	iP	04 23 40.0 C			(h = 60 km).				
		Eastern Kazakh SSR.					"	4	UPP	iPdiff	05 35 16.5
		Underground explosion.							KIR	iPdiff	05 34 57.1
"	2	UPP	iPKP	14 39 11.7			West Irian region (h = 10 km).				
		UME	iPKP	14 39 04.2			"	4	UPP	Mx	06 25
		Fiji Islands region (h = 610 km).								Mx	Z 8.7 19
"	2	UPP	iP	22 41 12.7			KIR	Mx	06 25		
				micr sec						Mx	Z 7.6 19
			Mx	Z 2.1 16			West Irian region (h = 10 km).				
		KIR	eP	22 40 45			M = 6.2 (UPP,KIR).				
				micr sec			"	4	UPP	iPKP1	07 38 21.0
			Mx	Z 1.4 15					KIR	iPKP1	07 38 00.6
		UME	iP	22 40 57.3					UME	iPKP1	07 38 11.3 C
		Southwestern Ryukyu Islands								i	07 38 25.3
		(h = 30 km).							South of Kermadec Islands (h = N).		
		M = 5.4 (UPP,KIR).					"	4	UPP	iPKP1	08 51 14.7
"	3	UPP	iP	00 31 25.6						i	08 51 36.3
				micr sec					UME	iPKP1	08 51 04.4
			Mx	Z 3.5 14						i	08 51 19.5
		KIR	iP	00 30 58.1			South of Kermadec Islands (h = N).				
				micr sec							
			Mx	Z 2.5 15							
		UME	iP	00 31 08.3							
		Southwestern Ryukyu Islands									
		(h = 40 km).									
		M = 5.7 (UPP,KIR).									

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddholm, DEL = Delary, MYV = Myrviken

1989				1989			
Sep.	4	UPP	iP	13 25 37.1	Scp.	5	(cont.)
			i	13 25 38.7			UME iP
			iS	13 34 18			i
				micr sec			Aegean Sea (h = 10 km).
			i	Z' 0.8 1.0			
			Mx	Z 200 21	"	5	KIR iPKP
		KIR	iP	13 24 42.4			UME iPKP
			i	13 32 37.2			Fiji Islands region (h = 510 km).
				micr sec			
			i	Z' 2.3 0.8		5	UPP iP
			Mx	Z 132 19			micr sec
		UME	iP	13 25 10.6			Mx Z 5.9 14
			i	13 25 12.9			KIR iP
			iS	13 33 30.7			micr sec
				South of Alaska (h = 10 km).			Mx Z 4.7 12
				m = 7.1, M = 7.1 (UPP,KIR).			UME iP
							11 37 16.6
							East China Sea (h = 20 km).
"	4	UPP	iPKP1	15 17 15.6			M = 5.9 (UPP,KIR).
		KIR	iPKP1	15 16 54.6		5	UME iP
		UME	iPKP1	15 17 05.6			13 15 32.3
				South of Kermadec Islands		5	UDD iSg1
				(h = 40 km).			13 17 31.4
							Southern Norway, 58.1°N, 6.4°E.
"	5	UPP	iP	04 18 32.4			Origin time = 13 15 23.
		UME	iP	04 18 11.3			M _L (UPP) = 2.4 1.
				Near east coast of Honshu, Japan			Solution from Bergen regional
				(h = 70 km).			bulletin.
"	5	UPP	iP	06 05 17.5		5	UPP Mx
		KIR	iP	06 05 02.3			13 51
				micr sec			micr sec
			P	Z' 0.2 1.0			Mx Z 1.8 14
		UME	iP	06 05 07.4			KIR Mx
				Talau Islands (h = 40 km).			13 51
							micr sec
							Mx Z 2.2 14
							East China Sea (h = 10 km).
"	5	UPP	eP	06 41 00			M = 5.5 (UPP,KIR).
		KIR	iP	06 40 52.2		5	UPP iPKP1
		UME	iP	06 41 01.0			20 08 46.3
				Near coast of Chiapas, Mexico			KIR iPKP1
				(h = 35 km).			20 08 49.1
							UME iPKP1
							20 08 46.7
							West of Macquarie Island
							(h = 10 km).
"	5	UPP	iP	06 57 07.1		5	UPP iP
			i	06 57 12.4			21 01 03.6
				micr sec			UME iP
			Mx	Z 3.2 19			21 01 24.4
		KIR	eP	06 58 23			Malavi (h = 10 km).
				micr sec			
			Mx	Z 2.2 8			
				(cont.)			

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddholm, DEL = Delary, MYV = Myrviken

1989				1989						
Sep.	6	UPP	eS	03 15 40	Sep.	8	UPP	iP	20 17 30.3	
		KIR	iPn	03 11 52.7			KIR	eP	20 18 08	
			i	03 12 01.4			UME	iP	20 17 42.4	
			iSn	03 13 46.9			Eastern Caucasus (h = N).			
		UME	iP	03 12 29.2		"	9	UPP	iP	01 53 43.7 D
			iS	03 14 43.0				P	Z' 0.1 1.1	
		MYV	iP	03 12 14.2			KIR	iP	01 53 44.6 D	
			iS	03 14 15.2				P	Z' 0.4 1.6	
		Jan Mayen Island region (h = 10 km).					UME	iP	01 53 47.0 D	
"	6	UPP	iP	14 59 26.7			South of Panama (h = 5 km).			
			i	14 59 35.8			m = 6.4 (UPP,KIR).			
		KIR	iP	14 59 09.0 C		"	9	UME	iP	04 39 14.1
				micr sec			Afghanistan-USSR border region			
			P	Z' 0.2 1.4			(h = N).			
		UME	iP	14 59 14.8		"	9	UME	iP	08 06 25.2
		Molucca Passage (h = 35 km).					North of Ascension Island			
"	7	UPP	iPKP1	11 31 35.5		"	9	UPP	iP	10 49 06.7
		South of Fiji Islands (h = 500 km).						i	10 49 08.2	
"	7	UPP	iPKP1	13 51 41.5				iPcP	10 49 32.1	
		KIR	iPKP1	13 51 20.7				micr sec		
		UME	iPKP1	13 51 30.4				Z' 0.1 0.9		
		Kermadec Islands (h = 35 km).					KIR	iP	10 48 13.6	
"	7	UPP	iPKP1	20 20 35.1				iPcP	10 48 59.2	
		South of Fiji Islands (h = 490 km).					UME	iP	10 48 41.9	
"	7	UPP	iP	23 28 18.7				iPcP	10 49 15.0	
		KIR	iP	23 27 23.2			Andreanof Islands, Aleutian Is.			
		Off east coast of Kamchatka					(h = N).			
		(h = 35 km).			"	9	UPP	iP	10 53 54.6	
"	8	KIR	iP	03 18 15.5		"	10	KIR	iP	14 13 39.0
		Mindanao, Philippine Islands					UME	iP	14 13 30.7	
		(h = 180 km).					Tajik-Xinjiang border region			
"	8	UPP	iP	03 24 10.2			(h = 140 km).			
		Southern Sumatera (h = N).			"	10	UME	iP	20 50 14.7	
"	8	UPP	iPKP1	08 45 20.3		"	10	Azores Islands region (h = 10 km).		
			iPKP2	08 45 24.2		"	11	KIR	iP	21 37 07.9
		KIR	iPKP1	08 45 05.6			UME	iP	21 37 33.4	
		UME	iPKP1	08 45 08.6			Fox Islands, Aleutian Islands			
		Kermadec Islands (h = 45 km).					(h = N).			
"	8	UPP	iP	18 20 36.4						

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddholm, DEL = Delary, MYV = Myrviken

1989				1989					
Sep.	11	KIR	iSn	23 18 32.3	Sep.	13	UME iPKP1	06 41 12.6	Kermadec Islands (h = N).
			iSg1	23 18 50.0					
		UME	iSg1	23 19 37.5		"	13	UPP iP	07 07 59.9 D
		Northwestern USSR, 67.2°N, 32.4°E.							micr sec
		Origin time = 23 16 28.						P	Z' 0.1 1.0
		M _L (UPP) = 3.0 1.					KIR	iP	07 08 30.1 D
		Solution from Helsinki regional bulletin.					UME	iP	07 08 08.7 D
							Iran-USSR border region (h = N).		
"	12	KIR	iPg1	06 58 29.6	"	13	KIR iP	11 46 31.5	
			iSg1	06 58 57.2			UME iP	11 46 35.8	
		UME	iPg1	06 58 30.6			USSR-Mongolia border region (h = N).		
			iSg1	06 58 59.5					
		Norrbotten, Sweden, 65.9°N, 21.5°E.				"	13	UPP	micr sec
		Origin time = 06 57 52.						Mx	Z 5.4 20
		M _L (UPP) = 2.2 (0.20) 2.					KIR	iPP	11 58 38.3
		Solution from Helsinki regional bulletin.							micr sec
"	12	UPP	iP	07 04 07.6				Mx	Z 7.7 26
		KIR	iP	07 03 34.3			South Atlantic Ridge (h = 10 km).		
		UME	iP	07 03 48.5			M = 6.0 (UPP,KIR).		
		South of Honshu, Japan (h = 380 km).				"	13	UPP iP	21 57 26.6
"	13	UPP	Mx	10 00				i	21 57 34.1
				micr sec					micr sec
			Mx	Z 1.0 18				i	Z' 0.2 1.0
		KIR	Mx	10 03			KIR	iP	21 59 01.1
				micr sec				i	21 59 06.3
			Mx	Z 1.2 16					micr sec
		South of Java (h = N).						i	Z' 0.2 1.5
		M = 5.4 (UPP,KIR).					UME	iP	21 58 17.7
"	13	UPP	iP	00 10 22.6			Northern Italy (h = 10 km).		
		KIR	iP	00 10 05.6			m = 5.4 (UPP,KIR).		
		UME	iP	00 10 11.3		"	14	UPP iP	02 30 23.9
		Luzon, Philippine Islands (h = N).					UME	iP	02 29 57.3
"	13	UPP	iP	00 51 54.9			Andreanof Islands, Aleutian Is. (h = 60 km).		
		Central Mid-Atlantic Ridge (h = 10 km).				"	14	UPP iPKP1	05 07 29.3
"	13	UPP	iPKP	03 50 37.2			Kermadec Islands region (h = 270 km).		
		KIR	iPKP	03 50 31.5					
		UME	iPKP	03 50 28.9		"	14	UPP iSg1	18 18 13.0
			i	03 50 39.7			UDD	iSn	18 16 45.3
		Tonga Islands (h = 120 km).						iSg1	18 17 06.5
							DEL	iSg1	18 18 09.3
							MYV	iSg1	18 17 16.2
							(cont.)		

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989			
Sep.	14	(cont.) Near cost of southwestern Norway, 61.2°N, 4.2°E. Origin time = 18 14 42. $M_L(\text{UPP}) = 2.9 (0.16) 3$. Solution from Helsinki regional bulletin.		Sep.	16	UPP iP iS P Mx KIR iP i P i Mx UME iP iS Caspian Sea (h = 55 km). m = 6.7, M = 6.3 (UPP,KIR).	02 11 01.9 D 02 15 45 micr sec Z' 0.9 1.0 Z 92 20 02 11 34.3 D 02 11 45.6 micr sec Z' 1.3 0.8 Z' 2.3 1.0 Z 51 16 02 11 11.3 D 02 16 03
	14	UPP iP iS P KIR iP P UME iP iPP Halmahera (h = 100 km). m = 6.6 (UPP,KIR).	19 23 51.6 19 34 14 micr sec Z' 0.1 1.0 19 23 35.4 micr sec Z' 0.4 1.1 19 23 40.7 19 27 37.8	"	16	KIR iP UME iP Caspian Sea (h = N).	03 44 06.2 03 43 41.9
"	15	UPP iP P KIR iP UME iP Andreanof Islands, Aleutian Is. (h = N).	09 59 08.9 micr sec Z' 0.1 1.1 09 58 15.1 09 58 41.4	"	16	UPP Mx Mx Caspian Sea (h = N).	17 49 micr sec Z 1.4 20
"	15	KIR eP Andreanof Islands, Aleutian Is. (h = N).	10 09 10	"	16	KIR iP UME iP Fox Islands, Aleutian Islands (h = N).	23 02 08.0 23 02 32.9
"	15	UME iPKP1 South of Kermadec Islands (h = 80 km).	11 02 14.8	"	16	UPP iP ipP P KIR iP ipP P UME iP ipP Chiapas, Mexico. h = 100 km (UPP,KIR,UME). m = 6.9 (UPP,KIR).	18 09 11.4 Sichuan Province, China (h = 10 km). 23 33 23.2 C 23 33 51.4 micr sec Z' 1.2 1.6 23 33 11.1 C 23 33 38.5 micr sec Z' 4.1 1.8 23 33 19.7 C 23 33 48.1
"	15	UPP iP ipP P KIR iP P UME iP Near east coast of Kamchatka. h = 55 km (UPP). m = 5.9 (UPP,KIR).	18 44 35.6 18 44 50.5 micr sec Z' 0.2 1.1 18 43 42.8 micr sec Z' 0.1 1.2 18 44 07.5	"	17	UPP iP KIR iP UME iP (cont.)	00 25 14.9 00 25 23.9 00 25 13.8

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989								1989								
Sep.	17	(cont.)						Sep.	19	UPP	iP	08 01	46.7			
		Afghanistan-USSR border region										micr	sec			
		(h = 220 km).									P	Z'	0.1	0.7		
"	17	UPP	iP	00 59	34.9			KIR	iP			08 03	02.0			
			i	00 59	48.8			UME	iP			08 02	25.1			
			iS	01 04	21			Greece (h = 35 km).								
						micr	sec	"	20	KIR	iP	00 36	45.8			
			P	Z'	0.2	1.0		Yunnan Province, China (h = N).								
			Mx	Z	72	21		"	20	UPP	iP	05 12	02.9			
		KIR	iP	01 00	06.7			KIR	iP			05 11	46.1			
						micr	sec	Mindoro, Philippine Islands								
			P	Z'	0.5	0.6		(h = 150 km).								
			Mx	Z	36	15		"	20	UPP	iP	13 30	28.9			
		UME	iP	00 59	44.4	D						micr	sec			
			iS	01 04	36						P	Z'	0.1	1.0		
		Caspian Sea (h = 50 km).									Mx	Z	6.4	19		
		m = 6.1, M = 6.2 (UPP,KIR).						KIR	iP			13 29	36.6			
"	17	UPP	eP	01 27	24							micr	sec			
		KIR	iP	01 27	55.7						Mx	Z	7.6	18		
		UME	iP	01 27	33.1			UME	iP			13 30	01.3			
		Caspian Sea (h = 55 km).						Rat Islands, Aleutian Islands								
"	17	KIR	iP	01 57	05.3			(h = N).								
		Caspian Sea (h = N).						M = 5.8 (UPP,KIR).								
"	17	UPP	iP	09 45	01.0			"	20	UPP	iP	16 31	09.7			
		KIR	iP	09 45	33.2			Near Islands, Aleutian Islands								
		UME	iP	09 45	10.5			(h = N).								
		Caspian Sea (h = N).						"	21	KIR	iP	09 49	12.7			
"	17	KIR	iP	12 04	30.7			Tajik-Xinjiang border region								
		UME	iP	12 05	24.0			(h = 170 km).								
		Greenland Sea (h = 10 km).						"	22	UPP	iP	02 36	02.9			
"	18	UPP	iP	21 25	38.2						iS	02 44	20			
		KIR	iP	21 24	39.6							micr	sec			
		UME	iP	21 25	09.8						P	Z'	0.7	1.3		
		Northern Yukon Territory, Canada									Mx	Z	14	13		
		(h = 25 km).						KIR	iP			02 35	45.3			
"	18	UPP	iP	21 53	39.5							micr	sec			
						micr	sec				P	Z'	0.7	1.2		
			P	Z'	0.1	0.8					Mx	Z	27	13		
		KIR	iP	21 53	01.7			UME	iP			02 35	49.1			
		UME	iP	21 53	18.0	D					iS	02 43	51			
		South of Mariana Islands (h = N).						Sichuan Province, China (h = 15 km).								
								m = 6.5, M = 6.4 (UPP,KIR).								
"	22	UME	iP	11 31	40.5			"	22	UME	iP	11 31	40.5			

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddholm, DEL = Delary, MYV = Myrviken

1989				1989					
Sep.	22	UPP	iP	20 27 02.1	Sep.	24	KIR	iP	11 05 45.7
		KIR	iP	20 27 34.7			North Atlantic Ocean (h = 45 km).		
		UME	iP	20 27 11.6					
		Caspian Sea (h = 50 km).			"	24	UPP	iP	11 05 53.8 C
"	23	UPP	iPg1	05 41 28.0			ipP	11 06 27.1	
			iRg	05 41 34.0			P	Z' 0.2 1.0	
		Dannemora, Uppland, Sweden, 60.2°N, 17.8°E. Rockburst at the iron ore mine.					KIR	iP	11 05 48.8 C
							ipP	11 06 20.9	
								micr sec	
"	23	UPP	iP	15 38 16.9			P	Z' 0.2 1.1	
				micr sec			UME	iP	11 05 46.5 C
			P	Z' 0.1 1.3			ipP	11 06 19.7	
		KIR	iP	15 38 47.0			Burma. h = 120 km (UPP,KIR,UME). m = 5.9 (UPP,KIR).		
				micr sec					
			P	Z' 0.2 1.4	"	24	UME	iP	16 29 55.0
		UME	iP	15 38 36.1					
			i	15 38 40.6	"	24	UPP	iP	18 58 31.0
		Azores Islands (h = 15 km). m = 5.6 (UPP,KIR).					Oaxaca, Mexico (h = 45 km).		
"	23	UPP	iPKP1	16 11 17.3	"	24	UPP	iPKP1	22 28 15.3
		Kermadec Islands region (h = N).					South of Fiji Islands (h = 570 km).		
"	25	UPP	iP	18 03 32.3 C	"	25	UPP	iP	07 40 49.0
			i	18 03 43.0			Southern Greece (h = 45 km).		
			iS	18 13 20	"	25	UPP	iP	07 43 14.1
				micr sec			UME	iP	07 43 50.8
			P	Z' 0.2 1.0			Southern Greece (h = 55 km).		
			Mx	Z 1.4 15	"	25	UPP	i(PKP)	14 36 49.6
		KIR	iP	18 03 09.2 C			ipKP	14 37 04.6	
				micr sec				micr sec	
			P	Z' 0.2 1.0			PKP	Z' 0.1 1.0	
			Mx	Z 1.3 13			Mx	Z 14 22	
		UME	iP	18 03 16.9 C			KIR	iPKP	14 36 49.7
			iS	18 12 52				micr sec	
		Taiwan region (h = 30 km). m = 6.1, M = 5.4 (UPP,KIR).					PKP	Z' 0.3 1.0	
"	23	UPP	iP	22 49 28.2			Mx	Z 10 22	
		KIR	iP	22 48 51.9			UME	i(PKP)	14 36 46.2
		UME	iP	22 49 07.3			ipKP	14 36 56.8	
		South of Honshu, Japan (h = 70 km).					Vanuatu Islands (h = 35 km). M = 6.5 (UPP,KIR).		
"	24	KIR	eP	02 14 09	"	25	UPP	iPKP1	17 07 54.3
		Halmahera (h = 40 km).					UME	iPKP1	17 07 43.8

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UPPSALA, KIRUNA, UMEÅ, UDDEHOLM

DELARY and MYRVIKEN

Uppsala	(UPP)	59°51.5'N,	17°37.6'E;	h = 14 m
Kiruna	(KIR)	67°50.4'N,	20°25.0'E;	h = 390 m
Umeå	(UME)	63°48.9'N,	20°14.2'E;	h = 16 m
Uddeholm	(UDD)	60°05.4'N,	13°36.4'E;	h = 240 m
Delary	(DEL)	56°28.2'N,	12°52.2'E;	h = 150 m
Myrviken	(MYV)	62°56.5'N,	14°20.8'E;	h = 345 m

OCTOBER 1 - 31, 1989

1989					1989				
Oct.	1	KIR	iP	19 35 34.0	Oct.	5	UPP	iPKP1	23 27 54.9 D
				Kyushu, Japan (h = 50 km).					South of Fiji Islands (h = 510 km).
"	2	UPP	iP	08 08 40.2	"	7	UPP	iP	01 29 37.5
				Philippine Islands region (h = 25 km).			KIR	iP	01 27 55.7 D
									micr sec
"	2	KIR	iP	22 20 15.9				P	Z' 0.2 1.0
				Kuril Islands region (h = 35 km).			UME	iP	01 28 45.9
									Greenland Sea (h = 10 km).
"	3	UPP	iP	23 16 32.8	"	7	UPP		micr sec
			iS	23 21 58				Mx	Z 7.2 22
				micr sec			KIR	iPKP	07 14 43.8
			Mx	Z 2.0 14					micr sec
		KIR	iP	23 15 22.0				Mx	Z 3.7 21
				micr sec			UME	iPKP	07 14 49.8
			Mx	Z 2.0 13					Vanuatu Islands (h = 40 km).
		UME	eP	23 15 58					M = 6.1 (UPP,KIR).
			iS	23 20 52	"	7	KIR	iP	13 33 34.2
				East of Severnaya Zemlya			UME	iP	13 33 40.3
				(h = 30 km).					Samar, Philippine Islands
				M = 4.9 (UPP,KIR).					(h = 55 km).
"	4	UPP	iP	12 28 33.8 C	"	7	UPP	iP	15 59 29.6
				micr sec				i	15 59 31.3
			P	Z' 0.2 1.0				iS	16 08 27
		KIR	iP	12 27 44.7					micr sec
		UME	iP	12 28 05.5				i	Z 1.3 1.0
				Kuril Islands (h = 40 km).				Mx	Z 37 20
"	5	UPP	iP	08 22 09.2					(cont.)
		KIR	iP	08 22 41.0					
		UME	iP	08 22 51.7					
				East China Sea (h = 200 km).					

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989						
Oct.	7	(cont.)		Oct.	7	UPP	iP	17 53 36.0		
		KIR	iP				i	17 53 37.0		
			iP'P'					micr sec		
							i	Z' 0.5 1.0		
			P			KIR	iP	17 52 42.4		
			Mx					micr sec		
		UME	iP				P	Z' 0.2 0.7		
			i			UME	iP	17 53 08.7		
			iS			Andreanof Islands, Aleutian Is.				
			iP'P'			(h = N).				
		Andreanof Islands, Aleutian Is.					m = 6.5 (UPP,KIR).			
		(h = 20 km).								
		m = 6.9, M = 6.5 (UPP,KIR).			"	7	UPP	iP	18 03 46.7	
								micr sec		
"	7	UPP	iP				P	Z' 0.4 0.9		
						KIR	iP	18 02 53.8		
			P					micr sec		
		KIR	iP				P	Z' 0.1 0.9		
						UME	iP	18 03 20.0		
			P			Andreanof Islands, Aleutian Is.				
		UME	iP			(h = N).				
		Andreanof Islands, Aleutian Is.					m = 6.2 (UPP,KIR).			
		(h = N).			"	7	UPP	iP	18 12 17.7	
		m = 6.6 (UPP,KIR).					KIR	iP	18 11 23.6	
"	7	UPP	iP			Andreanof Islands, Aleutian Is.				
						(h = N).				
			P			"	7	UPP	iP	18 15 37.8
		KIR	iP					micr sec		
							P	Z' 0.1 0.9		
		UME	iP			KIR	iP	18 14 45.0		
		Andreanof Islands, Aleutian Is.					Andreanof Islands, Aleutian Is.			
		(h = N).					(h = N).			
"	7	UPP	iP			"	7	UPP	iP	18 34 59.8
			i					Andreanof Islands, Aleutian Is.		
								(h = N).		
			i					Z' 0.1 1.0		
		KIR	iP							
		UME	iP							
		Andreanof Islands, Aleutian Is.								
		(h = N).								
"	7	UPP	iP			"	7	UPP	iP	19 01 36.5
								i	19 01 40.5	
								micr sec		
		KIR	iP					i	Z' 0.4 0.9	
		Andreanof Islands, Aleutian Is.					KIR	iP	19 00 47.4	
		(h = N).							micr sec	
							P	Z' 0.1 0.7		
"	7	UPP	iP			UME	iP	19 01 13.3		
		KIR	iP			Andreanof Islands Aleutian Is.				
		Andreanof Islands, Aleutian Is.					(h = N).			
		(h = N).					m = 6.3 (UPP,KIR).			

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989					
Oct.	7	UPP	iP	19 06 49.7	Oct.	9	UPP	iP	18 11 57.5 D
				micr sec					micr sec
			P	Z' 0.1 1.0				P	Z' 0.4 1.1
		KIR	iP	19 05 55.6			KIR	iP	18 11 04.3 D
		UME	iP	19 06 22.0					micr sec
		Andreanof Islands, Aleutian Is.						P	Z' 0.5 1.0
		(h = N).					UME	iP	18 11 29.6 D
"	7	UPP	iP	19 17 33.2			Near Islands, Aleutian Islands		
				micr sec			(h = 25 km).		
			P	Z' 0.1 0.9			m = 6.5 (UPP,KIR).		
		KIR	iP	19 16 40.8	"	10	UPP	iP	06 39 50.7
		UME	iP	19 17 06.1			KIR	iP	06 39 12.8
		Andreanof Islands, Aleutian Is.					UME	iP	06 39 28.8 C
		(h = N).					Near east coast of Honshu, Japan		
"	7	UPP	iP	20 26 20.6			(h = 80 km).		
		KIR	iP	20 25 37.1	"	10	UPP	iP	07 47 52.9
		Andreanof Islands, Aleutian Is.					KIR	iP	07 46 59.8
		(h = N).					Andreanof Islands, Aleutian Is.		
"	8	UPP	iP	00 55 34.0			(h = N).		
		KIR	iP	00 54 40.3	"	11	KIR	iP	11 10 30.1
		Andreanof Islands, Aleutian Is.					Mindanao, Philippine Islands		
		(h = N).					(h = 55 km).		
"	8	UPP	iP	03 16 29.9	"	13	UPP	iPKP1	17 09 15.9 C
		KIR	iP	03 15 38.6			KIR	iPKP1	17 08 55.0
		Andreanof Islands, Aleutian Is.					UME	iPKP1	17 09 05.0 C
		(h = N).					South of Kermadec Islands		
"	8	UPP	iP	14 36 52.8			(h = 100 km).		
		KIR	iP	14 36 00.6	"	13	UPP	iP	19 44 10.3
		Andreanof Islands, Aleutian Is.						i	19 44 17.0
		(h = N).					KIR	iP	19 43 16.9
"	8	UPP	iP	15 58 02.2			Rat Islands, Aleutian Islands		
		KIR	iP	15 57 57.3			(h = N).		
		Southern Xinjiang, China		"	13	UPP	iPKP1	20 32 15.6	
		(h = 10 km).						i	20 32 19.4
"	9	UPP	iP	01 18 44.1			UME	iPKP1	20 32 03.1
		KIR	iP	01 17 51.8			Kermadec Islands (h = 60 km).		
		Andreanof Islands, Aleutian Is.		"	13	UPP	iP	21 31 34.8	
		(h = N).				KIR	iP	21 30 57.0	
"	9	UPP	iP	10 51 55.3			UME	iP	21 31 12.5
		KIR	iP	10 51 23.3			Near s. coast of Honshu, Japan		
		Kyushu, Japan (h = 170 km).				(h = 25 km).			

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989			
Oct.	14	UPP	iPKP1	02 50 26.2	Oct.	17	(cont.)
				South of Fiji Islands (h = 510 km).			KIR Mx 17 39
							micr sec
"	14	UPP	iP	23 18 19.1			Mx Z 2.6 19
		KIR	iP	23 18 22.5			New Britain region (h = 25 km).
				Kirghiz SSR (h = N).			M = 5.9 (UPP,KIR).
"	15	UPP	iP	01 57 07.2	"	17	UPP iPn 20 43 48.8
				Kuril Islands (h = 110 km).			iSn 20 45 09.9
							iSg1 20 45 47.0
"	15	UPP	iP	07 08 40.5			KIR iPn 20 43 32.6
				Kyushu, Japan (h = 5 km).			iSG1 20 45 14.5
							UME iPn 20 43 27.8
"	15	UPP	iP	08 16 34.2			iSn 20 44 29.2
		KIR	iP	08 15 39.3			iSg1 20 45 01.2
				Komandorsky Islands region (h = N).			UDD iPn 20 43 30.8
"	15	UPP	Mx	11 44			i 20 43 33.8
				micr sec			iSg1 20 45 07.1
				Mx Z 2.9 21			DEL iLg1 20 46 50.6
		KIR	Mx	11 42			MYV ePn 20 43 04
				micr sec			e 20 43 08
				Mx Z 4.6 22			eSn 20 43 58
				West of Macquarie Islands			Norwegian Sea, 65.1°N, 7.7°E.
				(h = 10 km).			Origin time = 20 42 06.
				M = 6.1 (UPP,KIR).			$M_L(UPP) = 3.6 (0.10) 5.$
							Solution from Helsinki regional bulletin.
"	15	UPP	iP	21 24 12.3	"	18	UPP iP 00 16 11.3
		KIR	iP	21 23 51.5 C			iS 00 26 06
			i	21 23 58.5			micr sec
		UME	iP	21 23 58.4			P Z' 1.1 1.3
				Philippine Islands region (h = N).			Mx Z 138 18
"	16	UPP	iPKP1	08 34 45.2			KIR iP 00 15 36.7
		UME	iPKP1	08 34 31.5			micr sec
				South of Kermadec Islands			P Z' 3.0 2.5
				(h = 55 km).			Mx Z 77 15
"	17	UPP	iP	12 04 22.2			UME iP 00 15 57.1 C
		KIR	iP	12 03 47.4			Central California (h = 20 km).
		UME	iP	12 04 00.9			m = 6.8, M = 7.2 (UPP,KIR).
				South of Honshu, Japan	"	18	UPP iP 03 20 14.3
				(h = 370 km).			i 03 20 17.0
"	17	UPP	Mx	17 38			Tibet (h = 45 km).
				micr sec			
				Mx Z 3.8 19			
				(cont.)			

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989					
Oct.	18	UPP	iPKP	11 59 42.3	Oct.	18	UPP	iP	18 54 53.3
			iPP	12 01 25.1				i	18 55 02.5
				micr sec			KIR	iP	18 54 37.3
			Mx	Z 3.2 23			UME	iP	18 54 41.7
		KIR	iPKP	11 59 28.9			Molucca Passage (h = 55 km).		
			iPP	12 00 37.8					
				micr sec	"	19	UPP	iP	09 56 55.6 C
			Mx	Z 3.7 21				P	Z' 1.5 0.9
		Solomon Islands (h = 45 km).					KIR	iP	09 56 38.9 C
		M = 5.9 (UPP,KIR).							micr sec
"	18	UPP	iP	13 17 22.4				P	Z' 1.4 0.8
		KIR	iP	13 17 44.9			UME	iP	09 56 39.7 C
				micr sec			Eastern Kazakh SSR.		
			P	Z' 0.1 1.5			m = 6.8 (UPP,KIR).		
		North Atlantic Ridge (h = 10 km).					Underground explosion.		
"	18	UPP	Mx	15 35	"	19	UPP	iP	14 39 24.7
				micr sec			KIR	iP	14 38 30.0
			Mx	Z 2.2 10			Andreanof Islands, Aleutian Is.		
		KIR	Mx	15 32			(h = 50 km).		
				micr sec	"	19	KIR	eSn	17 19 47
			Mx	Z 1.1 10			Northern Norway, 69.8°N, 25.6°E.		
		Northeastern China (h = 10 km).					Origin time = 17 18 33.		
		M = 5.4 (UPP,KIR).					M _L (UPP) = 2.2 1.		
"	18	UPP	iP	17 11 38.9			Solution from Helsinki regional		
			iS	17 19 48			bulletin.		
				micr sec	"	20	UME	iP	04 16 34.4
			Mx	Z 15 14			South of Mariana Islands (h = 40 km).		
		KIR	eP	17 11 06	"	20	UPP	iP	11 32 12.8
				micr sec				i	11 32 25.3
			Mx	Z 3.7 12			KIR	iP	11 32 44.9
		UME	eP	17 11 17			UME	iP	11 32 22.0
			iS	17 19 02			Caspian Sea (h = 50 km).		
		Northeastern China (h = 10 km).			"	20	KIR	iP	14 08 08.8
		M = 5.9 (UPP,KIR).							micr sec
"	18	UPP	iP	18 30 52.9				P	Z' 0.1 1.1
				micr sec			UME	iP	14 08 34.5
			Mx	Z 3.3 14			Fox Islands, Aleutian Islands		
		KIR	eP	18 30 19			(h = N).		
				micr sec	"	21	UPP	iP	02 31 50.3
			Mx	Z 1.8 11			KIR	iP	02 31 17.4
		Northeastern China (h = 10 km).					UME	iP	02 31 30.9
		M = 5.5 (UPP,KIR).					Bonin Islands region (h = 140 km).		

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989					
Oct.	21	UPP	iP	03 41 24.4	Oct.	26	UPP	iP	17 18 01.4
		KIR	iP	03 41 47.2				iS	17 27 18
		UME	iP	03 41 32.5					micr sec
		Chagos Archipelago region (h = 10 km).						P	Z' 0.6 1.3
"	21	UPP	iPKP1	06 33 32.0			KIR	iP	17 17 19.6
		South of Fiji Islands (h = 440 km).							micr sec
								P	Z' 0.3 1.1
"	22	KIR	iP	14 21 04.2				Mx	Z 22 15
		Fox Islands, Aleutian Islands (h = N).					UME	iP	17 17 37.8
								iS	17 26 33
"	22	UPP	iP	15 18 05.6			Off east coast of Honshu, Japan (h = 10 km).		
		KIR	iP	15 18 37.3			m = 6.5, M = 6.3 (UPP,KIR).		
		Caspian Sea (h = 45 km).							
"	23	UPP	iPKP1	13 27 06.1	"	27	UPP	iP	01 57 15.4 D
		KIR	i(PKP)	13 26 47.9				i	01 57 25.1
			iPKP	13 26 56.1				iS	02 06 30
			iSKP1	13 29 42.0					micr sec
		UME	i(PKP)	13 26 54.5				i	Z' 0.6 1.3
			iPKP	13 27 03.9				Mx	Z 16 15
			iSKP1	13 29 52.0			KIR	iP	01 56 33.2
		South of Fiji Islands (h = 440 km).						i	01 56 41.8
"	23	UPP	iP	13 42 09.2					micr sec
		UME	iP	13 41 42.4				i	Z' 0.9 2.0
		Northwest of Kuril Islands (h = 380 km).						Mx	Z 26 15
							UME	iP	01 56 51.3
"	25	UPP	iP	20 37 34.9				i	01 57 00.2
				micr sec				iS	02 05 47
			P	Z' 0.1 1.0			Off east coast of Honshu, Japan (h = 10 km).		
		KIR	iP	20 36 47.3			m = 6.6, M = 6.4 (UPP,KIR).		
				micr sec	"	27	UPP	iPKP1	02 06 58.5
			Mx	Z 3.1 16			South of Fiji Islands (h = 170 km).		
		UME	iP	20 37 07.5	"	27	KIR	iP	02 16 46.2
		East of Lake Baikal (h = 20 km).					UME	iP	02 17 05.0
"	26	KIR	iPg1	11 45 47.2			Off east coast of Honshu, Japan (h = 10 km).		
			iSg1	11 46 14.7					
		UME	iSg1	11 46 17.1	"	27	UPP	iPKP	21 23 51.7
		Norrbotten, Sweden, 65.9°N, 21.4°E. Origin time = 11 45 10. M _L (UPP) = 2.2 (0.01) 2. Solution from Helsinki regional bulletin.							micr sec
								Mx	Z 32 19
"	26	UPP	iPKP1	14 53 36.6			KIR	iPKP	21 23 38.1
		South of Fiji Islands (h = 190 km).							micr sec
								Mx	Z 31 19
							UME	iPKP	21 23 42.2
							Solomon Islands (h = 25 km).		
							M = 6.9 (UPP,KIR).		

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989							
Oct.	28	UPP	iPn	01 37 58.3	Oct.	29	UPP	iP	05 49 12.2		
			i	01 39 41.6			KIR	iP	05 48 30.7		
			iSg1	01 40 21.0			Off east coast of Honshu, Japan (h = 10 km).				
		KIR	iPn	01 39 43.7							
		UME	iPn	01 38 53.1	"	29	UPP	iP	11 02 45.3		
			iSn	01 41 06.3					micr sec		
		UDD	iPn	01 38 01.7			Mx	Z 2.0	17		
			i	01 38 10.0			KIR	iP	11 02 03.6		
			iSn	01 39 39.1					micr sec		
		DEL	iPn	01 37 12.1			Mx	Z 2.2	14		
			i	01 37 39.5			Off east coast of Honshu, Japan (h = 20 km).				
			iSn	01 38 08.1			M = 5.4 (UPP,KIR).				
			i	01 38 55.4							
		MYV	iPn	01 38 38.6	"	29	UPP	iP	16 04 32.0		
			iSn	01 40 44.0					micr sec		
			i	01 41 25.0			Mx	Z 2.4	18		
		Poland (h = 10 km).					KIR	iP	16 03 50.4		
		Origin time = 01 36 00.							micr sec		
		M _L (UPP) = 4.4 1.					Mx	Z 2.9	14		
"	29	UPP	iP	03 20 31.2 C			UME	iP	16 04 07.7		
			iS	03 29 48			Off east coast of Honshu, Japan (h = 10 km).				
				micr sec			M = 5.5 (UPP,KIR).				
			P	Z' 0.2 1.1							
			Mx	Z 10 19			"	29	UPP	iP	19 14 39.5
		KIR	iP	03 19 49.4 C					iS	19 19 14	
				micr sec						micr sec	
			P	Z' 0.2 1.4					P	Z' 0.3 0.9	
			Mx	Z 7.8 14					Mx	Z 9.1 17	
		UME	iP	03 20 07.5			KIR	iP	19 15 47.8		
			iS	03 29 03					micr sec		
		Off east coast of Honshu, Japan (h = 10 km).							P	Z' 0.5 1.5	
		m = 6.2, M = 6.0 (UPP,KIR).							Mx	Z 6.7 16	
"	29	UPP	iP	05 36 58.3			UME	iP	19 15 16.2		
			iS	05 46 18				iS	19 20 07		
				micr sec			Algeria (h = 5 km).				
			P	Z' 0.4 1.0			m = 6.1, M = 5.3 (UPP,KIR).				
			Mx	Z 52 15			"	29	UPP	iP	19 27 18.3
		KIR	iP	05 36 16.8						micr sec	
				micr sec					P	Z' 0.2 1.0	
			P	Z' 0.7 1.5			KIR	iP	19 28 26.7 C		
			Mx	Z 48 15					micr sec		
		UME	iP	05 36 34.1					P	Z' 0.3 1.5	
		Off east coast of Honshu, Japan (h = 10 km).					UME	iP	19 27 54.7		
		m = 6.6, M = 6.8 (UPP,KIR).					Algeria (h = 10 km).				
							m = 6.0 (UPP,KIR).				

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989

Oct.	29	KIR	iP	23 28 41.8
		UME	iP	23 28 00.0
		Off east coast of Honshu, Japan (h = 10 km).		
"	31	UPP	iPKP1	00 04 45.1
			iSKP1	00 07 34.8
		KIR	i(PKP)	00 04 26.7
			iPKP	00 04 37.1
			iSKP1	00 07 11.6
		UME	i(PKP)	00 04 32.3
			iPKP	00 04 44.2
			iSKP1	00 07 22.9
		Fuji Islands region (h = 580 km).		
"	31	UPP	iP	15 41 49.2
				micr sec
			P	Z' 0.1 1.3
		KIR	iP	15 41 14.3
		UME	iP	15 41 33.8
		Southern Nevada. Underground explosion.		
"	31	UPP	iP	18 58 04.1
		UME	iP	18 57 58.2
		South of Java (h = N).		
"	31	UPP	iP	19 48 44.5
		KIR	iP	19 48 39.2
		UME	iP	19 48 39.0
		South of Java (h = N).		

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SEISMOLOGICAL BULLETIN
 UPPSALA, KIRUNA, UMEÅ, UDDEHOLM

DELARY and MYRVIKEN

Uppsala	(UPP)	59°51.5'N,	17°37.6'E;	h = 14 m
Kiruna	(KIR)	67°50.4'N,	20°25.0'E;	h = 390 m
Umeå	(UME)	63°48.9'N,	20°14.2'E;	h = 16 m
Uddeholm	(UDD)	60°05.4'N,	13°36.4'E;	h = 240 m
Delary	(DEL)	56°28.2'N,	12°52.2'E;	h = 150 m
Myrviken	(MYV)	62°56.5'N,	14°20.8'E;	h = 345 m

NOVEMBER 1 - 30, 1989

1989				1989			
Nov.	1	UPP iP	10 03 02.8	Nov.	1	UPP iP	18 47 50.5 C
		KIR iP	10 02 43.5				micr sec
		UME iP	10 02 49.4			P	Z' 0.4 1.1
		Halmahera (h = 35 km).				KIR iP	18 47 08.7 C
							micr sec
"	1	UPP iP	10 37 17.9			P	Z' 0.7 1.5
		KIR iP	10 37 17.9			UME iP	18 47 27.8 C
		UME iP	10 37 20.6			Off east coast of Honshu, Japan	
		Mona Passage (h = 25 km).				(h = 30 km).	
						m = 6.5 (UPP,KIR).	
"	1	UME iPKP	11 49 55.3	"	1	UPP iP	20 04 03.6
		Solomon Islands (h = N).				i	20 04 12.3
"	1	UPP iP	12 35 20.5				micr sec
		KIR iP	12 34 39.8			i	Z' 0.1 1.0
		UME iP	12 34 58.3			KIR eP	20 03 22
		Off east coast of Honshu, Japan				i	20 03 30.8
		(h = 35 km).				UME iP	20 03 41.4
						i	20 03 50.0
"	1	UPP iP	18 36 50.2			Off east coast of Honshu, Japan	
		i	18 36 57.0			(h = 30 km).	
			micr sec				
		P	Z' 1.9 1.4	"	1	UPP iP	20 31 13.2 C
		Mx	Z 358 19			KIR iP	20 30 32.2 C
		KIR iP	18 36 07.6			UME iP	20 30 51.3 C
			micr sec			Near east coast of Honshu, Japan	
		P	Z' 2.3 1.6			(h = 55 km).	
		Mx	Z 410 16				
		UME iP	18 36 26.5	"	1	UPP iP	23 17 04.1
		Near east coast of Honshu, Japan					micr sec
		(h = 30 km).				P	Z' 0.1 1.0
		m = 7.0, M = 7.6 (UPP,KIR).				(cont.)	

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989				
Nov.	1	(cont.)		Nov.	2	UPP	iP	12 11 07.2
		KIR	iP					micr sec
						Mx	Z	1.6 12
			P			KIR	iP	12 10 25.8
			Z'					micr sec
		UME	iP				Mx	Z 2.9 14
		Near east coast of Honshu, Japan (h = 40 km). m = 5.8 (UPP,KIR).				Off east coast of Honshu, Japan (h = 25 km). M = 5.5 (UPP,KIR).		
"	1	UME	iP	"	2	UPP	iP	13 53 29.5 C
		Off east coast of Honshu, Japan (h = 30 km).						micr sec
							P	Z' 0.2 1.2
"	2	UPP	iP				Mx	Z 2.0 19
		UME	iP			KIR	iP	13 52 47.4 C
		Off east coast of Honshu, Japan (h = 25 km).						micr sec
							P	Z' 0.2 1.2
"	2	UPP	iP				Mx	Z 3.3 15
		UME	iP			UME	iP	13 53 07.2 C
		Off east coast of Honshu, Japan (h = N).				Off east coast of Honshu, Japan (h = 30 km). m = 6.1, M = 5.5 (UPP,KIR).		
"	2	UME	iP	"	2	UME	iP	16 06 12.2
		Off east coast of Honshu, Japan (h = N).				Off east coast of Honshu, Japan (h = N).		
"	2	UPP	iP	"	2	UPP	iP	17 26 04.8
		KIR	iP			Qinghai Province, China (h = 10 km).		
		UME	iP	"	2	UME	i(PKP)	21 07 14.6
		Northern China (h = 10 km).					iPKP	21 07 22.9
"	2	UME	iP			Fiji Islands region (h = 600 km).		
		Off east coast of Honshu, Japan (h = N).		"	3	UPP	iP	06 01 05.4
						UME	iP	06 00 42.5
"	2	UPP	iP			Off east coast of Honshu, Japan (h = 25 km).		
				"	3	UPP	iP	14 22 01.5
			micr sec			KIR	iP	14 21 44.4
			P			UME	iP	14 21 51.0
			Z'			Mindanao, Philippine Islands (h = 60 km).		
		KIR	iP					
		UME	iP					
		Ryukyu Islands (h = 80 km).						
"	2	UPP	iP					
		KIR	iP					
		UME	iP					
		Off east coast of Honshu, Japan (h = 25 km).						

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989						1989					
Nov.						Nov.					
3	UPP		micr sec			4	(cont.)				
	Mx	Z	1.8 22							micr sec	
	KIR	iPKP	17 57 37.7					P	Z'	0.1 1.1	
			micr sec					Mx	Z	6.8 14	
		Mx	Z 4.3 20					KIR	iP	20 22 42.8	
	UME	iPKP	17 57 55.4							micr sec	
	Admiralty Islands region							P	Z'	0.1 1.0	
	(h = 15 km).							Mx	Z	10 15	
	M = 5.7 (UPP,KIR).							UME	iP	20 23 02.8	
								iS		20 32 00	
"	4	UPP	iP	18 07 20.7				Off east coast of Honshu, Japan			
				micr sec				(h = 30 km).			
			P	Z' 0.1 1.0				m = 5.9, M = 6.1 (UPP,KIR).			
			Mx	Z 15 17							
		KIR	iP	18 05 58.1		"	4	KIR	iP	20 55 23.0	
			i	18 06 08.7				Iran (h = N).			
			i	18 06 13.5							
			iS	18 07 23.9		"	4	UPP	iP	21 02 35.4	
			micr sec							21 02 44.4	
			Mx	Z 21 14				KIR	iP	21 01 53.9	
		UME	iP	18 06 41.1						21 02 02.5	
			i	18 06 43.7				UME	iP	21 02 11.8 C	
			iS	18 08 38.5				Off east coast of Honshu, Japan			
		UDD	iP	18 07 09.8				(h = 25 km).			
			i	18 07 20.4							
		DEL	iP	18 07 56.6		"	4	UPP	iP	22 08 02.7 C	
		MYV	iP	18 06 35.2						22 08 12.2	
			iS	18 08 42.0						micr sec	
		Norwegian Sea (h = 10 km).								P	Z' 0.1 1.0
		M = 5.0 (UPP,KIR).							KIR	iP	22 07 20.9
								UME	iP	22 07 40.6	
"	4	UPP	iP	18 20 32.2				Off east coast of Honshu, Japan			
				micr sec				(h = 20 km).			
			Mx	Z 11 17							
		KIR	iP	18 19 09.9		"	5	UPP	iP	02 47 01.0	
			i	18 19 19.9				Southern Greece (h = 10 km).			
			iS	18 20 35.4							
			micr sec			"	5	UPP	iPKP1	05 35 37.7	
			Mx	Z 14 16				South of Fiji Islands (h = 550 km).			
		UDD	iP	18 20 21.2							
		DEL	iP	18 21 07.4		"	5	UPP	iP	13 53 24.9	
		MYV	iP	18 19 47.0				KIR	iP	13 52 43.5	
			iS	18 21 37.0				UME	iP	13 53 01.5	
		Norwegian Sea (h = 10 km).						Off east coast of Honshu, Japan			
		M = 4.8 (UPP,KIR).						(h = 30 km).			
"	4	UPP	iP	20 23 25.3		"	5	UPP	iP	15 19 38.0	
			i	20 23 35.3				KIR	iP	15 18 56.3	
			iS	20 32 44				UME	iP	15 19 15.1	
		(cont.)						(cont.)			

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989			
Nov.	5	(cont.) Near east coast of Honshu, Japan (h = 45 km).		Nov.	7	KIR iP Panama-Colombia border region (h = 10 km).	03 37 39.8
"	5	UPP iP i KIR iP UME iP Off east coast of Honshu, Japan (h = 30 km).	16 07 41.5 16 07 51.0 16 06 59.5 16 07 18.3	"	7	KIR iP UME iP Fox Islands, Aleutian Islands (h = N).	11 02 52.5 11 03 18.4
"	5	KIR iP Mindanao, Philippine Islands (h = 60 km).	16 59 03.7	"	7	UPP iP KIR eP UME iP Off east coast of Honshu, Japan (h = N).	15 11 55.7 15 11 11 15 11 27.5
"	5	KIR iPKP1 Easter Island Cordillera (h = 10 km).	22 49 45.3	"	7	UME iP Hokkaido, Japan region (h = 70 km).	21 03 38.7
"	5	KIR iP	22 56 00.6	"	8	UPP iP KIR iP UME iP Volcano Islands region (h = 140 km).	17 07 43.3 17 07 12.7 17 07 26.3
"	6	UPP iP P KIR iP P UME iP Near east coast of Honshu, Japan (h = 50 km). m = 5.9 (UPP,KIR).	09 07 29.5 C micr sec Z' 0.1 1.0 09 06 47.8 C micr sec P Z' 0.1 1.0 09 07 06.7 C	"	8	UPP iP KIR iP UME iP South of Honshu, Japan (h = 40 km).	20 19 08.6 20 18 33.1 20 18 47.2
"	6	UPP iP Greece (h = 10 km).	10 45 15.7	"	9	UPP iP KIR iP UME iP South of Honshu, Japan (h = 110 km).	00 41 05.3 00 40 31.1 00 40 45.7
"	6	UPP Mx KIR eP Mx Southwestern Ryukyu Islands (h = 30 km). M = 5.9 (UPP,KIR).	micr sec Z 5.9 14 15 24 16 micr sec Z 2.7 12	"	9	UPP iP KIR iP UME iP Kuril Islands (h = 190 km).	01 47 30.8 01 46 43.6 01 47 05.1
"	6	UPP iPKP Mx KIR Mx Solomon Islands (h = 40 km). M = 5.9 (UPP,KIR).	21 11 25.5 micr sec Z 3.3 22 micr sec Z 3.4 18	"	10	UPP iP KIR iP Kyushu, Japan (h = 55 km).	04 17 08.0 04 16 35.4
"	6	UPP iPKP Mx KIR Mx Solomon Islands (h = 40 km). M = 5.9 (UPP,KIR).	21 11 25.5 micr sec Z 3.3 22 micr sec Z 3.4 18	"	10	KIR iSn iSg1 UME iSn iSg1 Central Finland, 65.0°N, 27.1°E. Origin time = 07 06 18. M _L (UPP) = 2.4 (0.21) 2. Solution from Helsinki regional bulletin.	07 07 57.7 07 08 18.1 07 07 29.5 07 07 54.1

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989			
Nov.	10	UPP iP	08 14 11.8	Nov.	13	UPP iPn	21 23 00.0
		KIR iP	08 13 58.9			iPg1	21 23 08.5
		UME iP	08 14 00.2			iSn	21 23 46.6
		Yunnan Province, China (h = 10 km).				iSg1	21 24 01.0
"	10	UPP i(P)	11 07 29.3			UDD iPg1	21 22 36.0
"	10	UPP iP	23 04 06.7			iSg1	21 23 09.5
		KIR iP	23 03 15.2			DEL iPg1	21 22 41.4
		Kuril Islands region (h = 30 km).				iSg1	21 23 21.5
"	10	UPP iP	23 08 39.8			MYV iSg1	21 24 28.0
			micr sec			Off coast of southern Norway, 58.3°N, 10.2°E.	
		Mx	Z 1.8 17			Origin time = 21 22 01.	
		KIR iP	23 07 47.9			$M_L(\text{UPP}) = 2.6$ 1.	
		Kuril Islands region (h = 20 km).				Solution from Norwegian station readings.	
"	10	UPP iP	23 32 32.8	"	13	UPP iSg1	21 36 36.5
			micr sec			UDD iPg1	21 35 11.5
		P	Z' 0.1 1.0			i	21 35 14.2
		KIR iP	23 31 45.8			iSg1	21 35 45.5
			micr sec			DEL iPg1	21 35 16.5
		P	Z' 0.1 0.9			iSg1	21 35 50.1
		UME iP	23 32 06.6			MYV iSg1	21 37 06.0
		Kuril Islands (h = 55 km).				Off coast of southern Norway, 58.5°N, 10.2°E.	
		m = 5.9 (UPP,KIR).				Origin time = 21 34 37.	
"	11	KIR iP	03 15 41.0			$M_L(\text{UPP}) = 2.6$ 1.	
		Svalbard region, 80.0°N, 19.6°E.				Solution from Norwegian station readings.	
		Origin time = 03 12 52.				Probably explosion.	
		Solution from Helsinki regional bulletin.		"	14	UPP iP	04 25 45.6
"	12	UPP iP	00 11 19.5			Qinghai Province, China (h = N).	
		KIR eP	00 10 28	"	14	KIR iP	15 42 40.3
		Andreanof Islands, Aleutian Is. (h = N).				Mindanao, Philippine Islands (h = 120 km).	
"	13	UPP iP	08 52 18.5	"	14	UPP iP	17 52 32.9
		Rat Islands, Aleutian Islands (h = N).				KIR iP	17 52 14.9
"	13	UPP iP	16 06 41.2			Philippine Islands region (h = N).	
		KIR iP	16 06 43.1	"	14	UPP iPKP1	19 46 13.3
		UME iP	16 06 39.0			Kermadec Islands (h = 180 km).	
		Off w. coast of Northern Sumatera (h = 55 km).		"	15	UPP iP	04 11 35.3
						KIR iP	04 12 16.9
						(cont.)	

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989			
Nov.	15	(cont.) UME iP	04 11 59.0	Nov.	17	KIR iP	13 38 49.7
		Central Mid-Atlantic Ridge (h = 10 km).				UME iP	13 39 26.5
						Jan Mayen Island region (h = 10 km).	
"	16	UPP e(PKP)	08 57 50	"	17	UPP iPKP1	17 03 38.6
		iPKP	08 58 00.0			UME iPKP	17 03 33.4
		iSKP1	09 00 43.4			South of Fiji Islands (h = 480 km).	
		KIR iPKP	08 57 45.3	"	18	UPP iP	07 43 20.5
		iSKP1	09 00 21.4			UME iP	07 42 56.3
		UME i(PKP)	08 57 42.5			Hokkaido, Japan region (h = 10 km).	
		iPKP	08 57 55.0	"	18	UPP iP	16 07 51.3 C
		iSKP1	09 00 33.1			micr sec	
		Fiji Islands region (h = 540 km).				P Z' 0.1 0.9	
"	16	UME iPg1	13 22 50.5			KIR iP	16 07 06.1
		iSg1	13 22 55.2			micr sec	
		MYV iSn	13 24 14.0			P Z' 0.2 1.0	
		Västerbotten, Sweden 64.3°N, 20.5°E.				UME iP	16 07 27.1 C
		Origin time = 13 22 40.				Hokkaido, Japan region (h = 45 km).	
		Solution from Helsinki regional bulletin.				m = 6.0 (UPP,KIR).	
"	16	KIR iSg1	18 37 48.3	"	18	UPP eP	17 32 04
		Northern Norway, 68.8°N, 23.6°E.				UME iP	17 32 04.2
		Origin time = 18 37 03.				Caribbean Sea (h = 10 km).	
		Solution from Helsinki regional bulletin.		"	19	UPP iP	04 36 48.3 C
"	17	UPP iP	04 12 00.5			micr sec	
		iS	04 17 29			P Z' 0.2 0.9	
		micr sec				KIR iP	04 36 57.2 C
		P Z' 0.1 1.0				micr sec	
		Mx Z 3.9 14				P Z' 0.2 1.0	
		KIR iP	04 10 50.1			UME iP	04 36 46.5 C
		micr sec				Hindu Kush region (h = 200 km).	
		P Z' 0.5 1.5				m = 5.7 (UPP,KIR).	
		Mx Z 3.8 10		"	20	UPP iP	03 31 40.7
		UME iP	04 11 24.4			micr sec	
		iS	04 16 21			P Z' 0.1 1.0	
		East of Severnaya Zemlya (h = 10 km).				KIR iP	03 31 21.5
		m = 5.9, M = 5.2 (UPP,KIR).				micr sec	
"	17	UPP iP	08 12 08.1			P Z' 0.1 1.0	
		UME iP	08 11 47.3			UME iP	03 31 26.6
		Off east coast Honshu, Japan (h = 15 km).				Sichuan Province China (h = N).	
						m = 5.9 (UPP,KIR).	

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989				
Nov.	20	UPP	iP	04 26 42.6	Nov.	21	UPP iP	20 47 13.3
			iS	04 32 50			Central Mid-Atlantic Ridge (h = 10 km).	
			P	Z' 0.2 1.0				
		KIR	iP	04 27 10.6	"	22	UPP i(P)	22 24 12.6
				micr sec				
			P	Z' 0.3 1.3	"	23	KIR iP	16 00 16.3
			Mx	Z 8.3 14			Off east coast of Honshu, Japan (h = 35 km).	
		UME	iP	04 26 51.0	"	24	KIR iP	00 48 27.5
			iS	04 33 07			Molucca Passage (h = 25 km).	
				Southern Iran (h = 30 km).				
				m = 5.9, M = 5.6 (UPP,KIR).				
"	20	UPP	iP	19 06 48.4	"	24	UPP Mx	02 02
				micr sec				micr sec
			Mx	Z 2.2 13			Mx	Z 1.7 10
		KIR	iP	19 06 20.3			Dodecanese Islands (h = 10 km).	
				micr sec	"	24	UPP iP	13 00 02.6
			Mx	Z 1.4 11			KIR iP	12 59 10.1
		UME	iP	19 06 29.6			Andreanof Islands, Aleutian Islands (h = 50 km).	
				Ryukyu Islands (h = 35 km).				
				M = 5.5 (UPP,KIR).				
"	21	UPP	iP	02 47 44.0	"	24	UPP iPKP1	18 40 45.9
		KIR	iP	02 46 58.0			South of Fiji Islands (h = 510 km).	
		UME	iP	02 47 18.2	"	24	UPP iP	18 57 27.8
				Kuril Islands (h = 55 km).			KIR eP	18 56 52
"	21	UPP	iPKP1	03 30 00.0 C			UME iP	18 57 06.3
		KIR	iPKP	03 29 46.3			Bonin Islands region (h = 35 km).	
		UME	iPKP1	03 29 49.5	"	25	UME iP	07 13 51.5
				Kermadec Islands region (h = 55 km).			Near east coast of Honshu, Japan (h = 80 km).	
"	21	KIR	iP	04 57 35.9	"	25	UPP iP	08 03 21.5
		UME	iP	04 57 53.9				micr sec
				Near east coast of Honshu, Japan (h = 50 km).			Mx	Z 3.5 20
"	21	UPP	ipPKP2	14 58 24.1			KIR	micr sec
				micr sec			Mx	Z 2.4 16
			Mx	Z 3.9 22			UME iP	08 03 39.1
		KIR	iPKP2	14 57 52.1			Eastern Gulf of Aden (h = 10 km).	
				micr sec			M = 5.8 (UPP,KIR).	
			Mx	Z 1.6 21	"	25	UPP iP	18 18 42.4
		UME	ipPKP1	14 57 54.4			KIR iP	18 18 15.1
				Auckland Islands region (h = 25 km).			UME iP	18 18 28.2
				M = 6.0 (UPP,KIR).			Mariana Islands (h = 210 km).	
"	21	UPP	i(P)	20 31 44.1				

UPP = Uppsala, KIR = Kiruna, ÜME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989

Nov.	26	UPP	iPKP1	23 15 37.6	
		UME	iPKP1	23 15 26.6	
		South of Kermadec Islands			
		(h = 45 km).			
"	27	KIR	iPn	02 35 59.9	
		Greenland Sea, 77.1°N, 11.6°E.			
		Origin time = 02 33 44.			
		Solution from Helsinki regional bulletin.			
"	27	KIR	iP	16 17 29.5	
		Mindanao, Philippine Islands			
		(h = 140 km).			
"	28	KIR	iP	21 12 26.4	
		Tadzhik-Sinkiang border region			
		(h = 120 km).			
"	29	UPP	iSKS	01 24 43	
			iS	01 25 56	
				micr sec	
			Mx	Z 5.4 20	
		UME	iSKS	01 24 50	
				micr sec	
			Mx	Z 4.3 26	
		Southern Peru (h = 70 km).			
		M = 5.9 (UPP,KIR).			
"	29	UPP	iPKP1	06 07 35.4	
			iSKP1	06 10 28.4	
		KIR	iPKP	06 07 19.3	
			iSKP1	06 10 08.1	
		UME	iPKP	06 07 29.5	
			iSKP1	06 10 17.1	
		South of Fiji Islands (h = 490 km).			
"	30	UME	iPKP2	09 18 25.1	
		Off e. coast of N. Island, N.Z.			
		(h = 35 km).			
"	30	UPP	iPKP1	09 56 32.3	July 9, 1991
		South of Fiji Islands (h = 300 km).			
"	30	UPP	iPKP1	20 04 26.2	Conny Holmqvist
		South of Fiji Islands (h = 560 km).			Ota Kulhánek
					Klaus Meyer

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SEISMOLOGICAL BULLETIN
 UPPSALA, KIRUNA, UMEÅ, UDDEHOLM

DELARY and MYRVIKEN

Uppsala	(UPP)	59°51.5'N,	17°37.6'E;	h = 14 m
Kiruna	(KIR)	67°50.4'N,	20°25.0'E;	h = 390 m
Umeå	(UME)	63°48.9'N,	20°14.2'E;	h = 16 m
Uddeholm	(UDD)	60°05.4'N,	13°36.4'E;	h = 240 m
Delary	(DEL)	56°28.2'N,	12°52.2'E;	h = 150 m
Myrviken	(MYV)	62°56.5'N,	14°20.8'E;	h = 345 m

DECEMBER 1 - 31, 1989

1989					1989				
Dec.	1	UPP	iP	05 08 19.8	Dec.	1	UPP	iPKP	19 17 55.6
		KIR	iP	05 07 46.9				iSKP1	19 21 03.2
		UME	iP	05 08 01.2					micr sec
		South of Honshu, Japan (h = 490 km).						PKP	Z' 0.1 1.1
							KIR	iPKP	19 17 42.5
									micr sec
"	1	UPP	iP	05 17 07.6				PKP	Z' 0.1 0.5
			i	05 17 23.5			UME	iPKP	19 17 48.7
				micr sec			Vanuatu Islands (h = 230 km).		
			P	Z' 0.1 0.5					
		KIR	iP	05 16 15.1	"	2	UPP	iPKP	16 28 21.3
		UME	iP	05 16 41.8			South of Fiji Islands (h = 530 km).		
		Andreanof Islands, Aleutian Is. (h = 45 km).			"	2	UPP	iP	19 55 02.6
								ipP	19 55 16.9
									micr sec
"	1	UPP	iSg1	16 28 11.2				P	Z' 0.1 0.6
		KIR	iSn	16 27 07.1			Burma (h = 50 km).		
			iSg1	16 27 19.4					
		UME	iPn	16 26 06.7	"	3	UPP	iP	01 23 55.3
			iPg1	16 26 15.1			Mariana Islands (h = 370 km).		
			iSn	16 26 52.3					
			iSg1	16 27 07.1	"	3	UPP	iP	07 44 55.8
		UDD	iSg1	16 27 49.4			N.W. Iran-USSR border region (h = 10 km).		
		MYV	iPg1	16 25 53.0	"	3	UPP	iP	11 08 54.5
			iSg1	16 26 24.0			Burma (h = 45 km).		
		Near coast of central Norway, 65.2°N, 11.9°E. Origin time = 16 25 07. M _L (UPP) = 3.1 (0.18) 5. Solution from Helsinki regional bulletin.			"	3	UPP	iP	14 30 07.2
								ipP	14 30 45.4
								iS	14 40 28

(cont.)

UPP = Uppsala, KIR = Kiruna, UME = Umeå, UDD = Uddeholm, DEL = Delary, MYV = Myrviken

1989				1989			
Dec.		(cont.)		Dec.		(cont.)	
			micr sec				
		P	Z' 0.2 1.5			UME iP	00 14 54.7
		UME iS	14 41 27			ipP	00 15 07.9
		Peru-Brazil border region (h = 150 km).				Burma. h = 50 km (UPP,UME).	
"	5	UDD iSg1	13 09 56.9	"	8	UPP iP	10 36 10.2
		i	13 10 17.6			iS	10 47 00
		Southern Norway, 59.5°N, 11.6°E. Origin time = 13 09 28. Solution from Bergen regional bulletin.					micr sec
						P	Z' 0.2 1.2
						Mx	Z 9.6 16
						KIR	micr sec
						Mx	Z 7.1 14
						UME iP	10 35 59.0
"	5	UPP iP	16 22 06.1			iS	10 46 39
		Greece (h = N).				Philippine Islands region (h = 45 km). M = 6.2 (UPP,KIR).	
"	6	UPP iP	00 51 38.1				
		iS	00 54 06.5				
		UME iP	00 52 21.6	"	8	UPP iP	12 24 47.6
		Rumania (h = 30 km).					micr sec
						P	Z' 0.1 0.7
"	6	UME iP	04 14 54.5			UME iP	12 24 26.3
		North Atlantic Ocean (h = 10 km).				ipP	12 24 42.9
						South of Honshu, Japan (h = 60 km).	
"	6	UPP iP	05 37 02.3				
			micr sec	"	8	UPP iP	17 34 55.9
		P	Z' 0.2 1.2				micr sec
		UME iP	05 37 48.6			P	Z' 0.1 0.7
		Yugoslavia (h = 10 km).				UME iP	17 34 33.9
						Near east coast of Honshu, Japan (h = 45 km).	
"	6	UME iP	05 33 39.7				
		Banda Sea (h = 120 km).		"	9	UPP	micr sec
"	7	UPP iP	13 07 44.0			Mx	Z 10 17
		iS	13 14 18			KIR	micr sec
			micr sec			Mx	Z 13 20
		P	Z' 0.2 1.0			UME iP	20 51 16.2
		Mx	Z 10 12			Minahassa Peninsula (h = 150 km). M = 6.3 (UPP,KIR). M uncorrected for focal depth.	
		KIR	micr sec				
		Mx	Z 6.1 11	"	11	UPP iP	04 56 28.4
		Southern Iran (h = 15 km). M = 5.8 (UPP,KIR).				UME iP	04 56 04.3
"	8	UPP iP	00 15 01.5			Eastern Sea of Japan (h = 230 km).	
		ipP	00 15 15.2				
			micr sec	"	11	UPP iSKP1	16 22 17.6
		P	Z' 0.3 0.9			UME iP	16 18 57.2
		(cont.)				iSKP1	16 22 01.4
						Vanuatu Islands (h = 200 km).	

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1989				1989			
Dec.	16	UPP iP	21 15 59.7	Dec.	17	UPP iP	21 52 25.3
		i	21 16 27.8			UME iP	21 52 24.1
		UME iP	21 16 29.4			Hindu Kush region (h = 100 km).	
		Crete (h = 90 km).		"	18	UME iP	07 24 28.0
"	16	UPP iP	22 52 30.6			Central Mid-Atlantic Ridge (h = 10 km).	
		Ryukyu Islands (h = 30 km).		"	19	UPP iPKP2	01 51 50.4
						UME iPKP	01 51 29.6
						South of Kermadec Islands (h = N).	
"	16	UPP iP	23 36 52.0				
			micr sec				
		P	Z' 0.4 1.4	"	20	UPP iP	00 21 30.1
		UME iP	23 36 27.7			iSKS	00 32 00
		Off east coast of Honshu, Japan (h = 20 km).				iS	00 32 29
"	17	UPP iP	03 25 14.8				micr sec
		UME iP	03 25 15.1			P	Z' 0.3 1.0
		South Indian Ocean (h = 25 km).				Mx	Z 22 17
"	17	UME iP	00 40 40.8			UME iP	00 21 17.8
		Mindanao, Philippine Islands (h = 45 km).				iS	00 32 07
"	17	UPP iP	05 42 15.4			Mindanao, Philippine Islands (h = 20 km).	
			micr sec	"	20	UPP iP	01 04 22.9
		P	Z' 0.2 0.9			UME iP	01 04 11.2
		UME iP	05 41 54.3			Mindanao, Philippine Islands (h = 40 km).	
		Off east coast of Honshu, Japan (h = 40 km).		"	20	UPP iPKP1	04 43 38.4
"	17	UPP iP	08 22 22.4			UME iPKP1	04 43 29.1
		i	08 22 25.4			East of North Island N.Z. (h = 30 km).	
			micr sec	"	20	UME iP	08 48 15.4
		i	Z' 0.1 1.0			Mindanao, Philippine Islands (h = 40 km).	
		UME iP	08 22 01.8	"	20	UPP iPKP1	12 04 40.4
		Off east coast of Honshu, Japan (h = 20 km).				UME iPKP1	12 04 31.3
"	17	UME iP	10 48 51.4			South of Kermadec Islands (h = 30 km).	
		Mindanao, Philippine Islands (h = 30 km).		"	20	UPP iPg1	12 56 02.0
"	17	UPP iP	14 47 31.6			iSg1	12 56 06.0
		UME iP	14 47 19.1			iRg	12 56 07.3
		Mindanao, Philippine Islands (h = 40 km).				UDD iSg1	12 57 05.4
"	17	UME iP	19 51 10.2			Dannemora, Uppland, Sweden, 60.2°N, 17.8°E. Rockburst at the iron ore mine.	
		Mindanao, Philippine Islands (h = 40 km).					

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1989						1989				
Dec.	21	UPP iP	08 20 20.5			Dec.	25	UME iP	20 03 33.5	
		UME iP	08 20 20.5					Halmahera (h = 100 km).		
		Northern Sumatera (h = 20 km).					"	27	UPP iP	19 37 11.6
"	21	UME iP	11 56 54.7					Southern Sumatera (h = 60 km).		
		Svalbard region (h = 10 km).					"	27	UPP iP	20 14 05.1
"	21	UPP iP	17 00 09.8					UME iP	20 14 02.1	
			micr sec					Southern Sumatera (h = 70 km).		
		Mx	Z	13 17			"	27	UME iP	21 58 11.8
		UME iP	16 59 44.3					Volcano Islands region (h = 130 km).		
		Kuril Islands (h = 45 km).					"	27	UME iPKP	23 46 20.3
"	22	UPP iP	20 08 41.0					Near s. e. coast of Australia		
		Rat Islands, Aleutian Islands (h = N).						(h = 10 km).		
"	22	UPP iP	24 12 51.4			"	28	UME iSg1	14 27 23.5	
		Mindanao, Philippine Islands						i	14 27 28.0	
		(h = 40 km).						Gulf of Bothnia, 65.8°N, 22.6°E.		
"	23	UPP iPKP1	01 52 27.6					Origin time = 14 26 13.		
			micr sec					M _L (UPP) = 2.4 (0.21) 2.		
		PKP1	Z'	0.1 0.8				Solution from Helsinki regional		
		Kermadec Islands (h = 35 km).						bulletin.		
"	23	UPP eP	11 36 56			"	28	UPP iP	14 36 11.8	
			micr sec					UME iP	14 36 12.9	
		Mx	Z	4.9 19				Uzbek SSR (h = N).		
		Mariana Islands (h = 160 km).				"	28	UME iP	16 12 35.8	
"	24	UME iP	19 00 07.1					Bonin Islands regional (h = 480 km).		
		South of Honshu, Japan				"	29	UME iSg1	00 16 02.3	
		(h = 250 km).						Norrbotten, Sweden, 65.3°N, 20.7°E.		
"	24	UME iPKP1	23 58 57.8					Origin time = 00 15 16.		
		West of Macquarie Island						Solution from Helsinki regional		
		(h = 10 km).						bulletin.		
"	25	UPP iP	04 33 44.3			"	29	UPP iP	11 17 26.4	
		UME iP	04 33 30.9					UME iP	11 17 32.2	
		Northern Quebec (h = 10 km).						Iran (h = N).		
"	25	UPP iP	14 32 26.0 C			"	29	UPP iP	16 01 22.6	
		iS	14 38 43					UME iP	16 01 14.5	
			micr sec					Burma-India border region		
		P	Z'	0.6 1.0				(h = 100 km).		
		Mx	Z	8.5 18		"	29	UME iP	17 13 59.0	
		UME iP	14 32 12.8					Mariana Islands region (h = 35 km).		
		Northern Quebec (h = 5 km).								

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1989

Dec.	30	UPP	iPKP	05 01	41.6
			iSKP1	05 04	49.9
		UME	iPKP	05 01	33.3
			iSKP1	05 04	36.5
		Vanuatu Islands (h = 180 km).			
"	30	UPP	iPKP	11 09	47.0
		South of Fiji Islands (h = 630 km).			
"	30	UME	iP	12 58	44.5
		Philippine Islands region (h = N).			
"	31	UPP	Mx	24 26	
				micr	sec
			Mx	Z 17	17
		KIR	Mx	24 23	
				micr	sec
			Mx	Z 17	23
		Near n. coast of Papua New Guinea (h = 40 km). M = 6.6 (UPP,KIR).			
"	31	UME	iPg1	11 14	14.7
			iSg1	11 14	26.6
		Västerbotten, Sweden, 64.6°, 21.1°E. Origin time = 11 13 59. Solution from Helsinki regional bulletin.			
"	31	UPP	iP	23 25	25.7
		UME	iP	23 25	22.9
		Northern Sumatra (h = 80 km).			

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