

MONTHLY BULLETIN of REGIONAL and TELESEISMIC EVENTS RECORDED with GRF- and GRSN-STATIONS in GERMANY

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(produced by SZGRF/BGR - ERLANGEN and partly by CLL - Observatory)

OCTOBER 2002 UPDATED 11.FEBRUARY.2003

Please note that local events recorded in Germany are part of the "LOCAL BULLETIN".

(Format description at the end of the bulletin)

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source	
2002/10/01	02:51: 6.2	35.290N	71.720E	150.7	5.1			SZGRF	
2002/10/01	02:51:25.3	36.390N	70.711E	150D	5.1			NEIC	
Pakistan									
Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z 02:59:08.0	42.4	87.3	1.1	38	5.0		
RUE	e P	Z 02:59:07.8	42.4	88.9	0.7	29	5.1		
	e pP	Z 02:59:41.0							
GEC2	e P	Z 02:59:09.9	42.7	84.9	1.3	24	4.8		
	e pP	Z 02:59:43.5							
CLL	e P	Z 02:59:11.9	43.0	87.0	0.9	18	4.8		
	e pP	Z 02:59:45.1							
	e sP	Z 03:00:06.2							
	e PP	Z 03:00:54.9							
WET	e P	Z 02:59:13.7	43.2	84.6	1.4	8	4.5		
	e pP	Z 02:59:47.7							
MOX	e P	Z 02:59:19.7	43.9	85.3	1.0	16	4.9		
GRA1	e P	Z 02:59:22.9	44.2	84.1	1.0	21	5.1		
	e pP	Z 02:59:56.7							
FUR	e P	Z 02:59:23.5	44.4	82.5	1.1	28	5.2		
STU	e P	Z 02:59:33.5	45.6	81.8	0.8	24	5.4		
TNS	e P	Z 02:59:35.8	45.9	82.7	1.0	15	5.1		
	e pP	Z 03:00:09.8							
IBBN	e P	Z 02:59:37.2	46.1	84.2	0.7	48	5.7		
BFO	e P	Z 02:59:37.9	46.3	80.8	1.0	11	4.9		
	e pP	Z 03:00:11.7							
BUG	e P	Z 02:59:40.3	46.5	83.0	0.9	29	5.4		
	e pP	Z 03:00:14.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/01	07:00:57.3	18.860N	63.910W	33.0N	5.2			SZGRF
2002/10/01	07:00:57.8	18.651N	63.046W	38*	4.9	4.7		NEIC

Leeward Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WLF	e P	Z	07:11:20.9	62.5	266.8					
BUG	e P	Z	07:11:25.8	63.3	266.8					
TNS	e P	Z	07:11:30.9	64.0	268.3					
GRA1	e P	Z	07:11:41.8	65.8	270.7	1.7	25	5.2		
	e		07:11:54.3							
WET	e P	Z	07:11:49.1	66.9	272.2					
CLL	e P	Z	07:11:48.6	66.9	271.3	0.8	7	4.9		
	e pP	Z	07:12:00.6							
GEC2	e P	Z	07:11:52.6	67.4	272.9					
BRG	e P	Z	07:11:52.8	67.5	272.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/01	08:47: 8.9	8.770S	162.240E	33.0N		5.6		SZGRF
2002/10/01	08:46:59.4	10.857S	161.154E	33N	5.8	5.5		NEIC

Bougainville - Solomon Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e PP	Z	09:08:23.3	130.8	44.4					
BRG	e PKPdf	Z	09:06:14.2	131.8	45.6					
	e PP	Z	09:08:30.6							
CLL	e PKPdf	Z	09:06:14.5	132.0	44.2	3.0	148			
	e PP	Z	09:08:34.8							
	e PKS	E	09:09:42.4							
	e PPS	Z	09:20:26.9							
	e SS	T	09:26:12.6							
	e		09:27:59.0							
	e		09:32:55.6							
	e LQ	T	09:51:14.3							
MOX	e PKPdf	Z	09:06:16.4	133.0	42.9					
	e PP	Z	09:08:38.1							
IBBN	e PP	Z	09:08:38.9	133.3	37.2					
GEC2	e PP	Z	09:08:40.5	133.4	46.6					
WET	e PP	Z	09:08:41.5	133.5	45.4					
GRFO	e PKPdf	Z	09:06:18.4	133.9	43.1					
	e PP	Z	09:08:43.0							
	e L	Z	10:06:52.9			21.3	1252		5.6	
GRB1	e PKPdf	Z	09:06:18.4	133.9	43.8					
	e PP	Z	09:08:44.3							
	e L	Z	10:06:25.9			21.3	1267		5.6	
BUG	e PP	Z	09:08:45.8	134.2	37.1					

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TNS	e PP	Z	09:08:48.4	134.7	39.3
FUR	e PP	Z	09:08:50.8	135.0	44.2
STU	e PP	Z	09:08:54.2	135.5	41.2
WLF	e PP	Z	09:08:57.1	136.0	36.7
BFO	e PP	Z	09:08:57.7	136.2	40.4

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/02	01:38:25.1	22.389S	171.102E	33N	5.2	4.7		NEIC

Southeast of Loyalty Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e PKPbc	Z	01:58:00.1	145.3	38.7					
BRG	e PKPbc	Z	01:58:03.9	146.4	40.5					
CLL	e PKPdf	Z	01:58:01.4	146.5	38.6					
	i PKPbc	+ Z	01:58:03.6			0.9	67			
	e LR	Z	02:48:26.6							
	e L	Z	03:02:06.3			20.0	187		4.9	
MOX	e PKPbc	Z	01:58:06.8	147.5	37.1					
GEC2	e PKPbc	Z	01:58:08.4	148.1	42.2					
WET	e PKPbc	Z	01:58:08.9	148.2	40.6					
BUG	e PKPbc	Z	01:58:09.0	148.4	29.4					
GRA1	e PKPbc	Z	01:58:09.4	148.4	37.4					
	e L	Z	03:08:58.7			20.0	103		4.6	
TNS	e PKPbc	Z	01:58:10.9	149.0	32.4					
FUR	e PKPbc	Z	01:58:12.2	149.6	39.1					
STU	e PKPbc	Z	01:58:13.1	150.0	35.0					
BFO	e PKPbc	Z	01:58:14.4	150.7	34.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/02	02:45:59.9	38.910N	19.350W	33.0N	4.8			SZGRF
2002/10/02	02:45:23.3	36.984N	23.250W	10G	4.7			NEIC

North Atlantic Ocean

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	02:51:13.5	27.8	256.0	1.9	58	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/02	04:31:30.0	38.910N	25.890E	33.0N	4.2			SZGRF
2002/10/02	04:31:41.7	36.270N	27.780E	67	4.3			NEIC

Aegean Sea

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z	04:35:27.8	16.2	135.5	0.9	27			

WET	e P	Z	04:35:34.0	16.8	134.3	0.7	16	
FUR	e P	Z	04:35:36.1	17.0	128.4	1.0	44	
BRG	e P	Z	04:35:43.1	17.6	140.5	0.9	8	
GRA1	e P	Z	04:35:48.3	18.0	132.0	0.9	21	
CLL	e P	Z	04:35:52.7	18.4	139.2	0.7	24	
STU	e P	Z	04:35:54.3	18.5	125.7	0.8	35	
MOX	e P	Z	04:35:54.3	18.5	134.9	1.1	22	
BFO	e P	Z	04:35:56.1	18.7	123.0	0.6	10	4.2
TNS	e P	Z	04:36:06.5	19.7	127.7	0.8	20	4.3

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/02	07:33:49.7	47.760N	146.810E	33.0N	5.6	4.3		SZGRF
2002/10/02	07:33:40.6	44.532N	146.479E	116D	5.2			NEIC

Northwest of Kuril Islands, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e P	Z	07:45:02.3	73.2	32.9	1.2	51	5.5		
RUE	e P	Z	07:45:11.5	74.8	32.9	1.2	74	5.7		
CLL	i P	- Z	07:45:17.9	76.1	32.2	1.2	69	5.7		
	e pP	Z	07:45:49.8							
	e S	Z	07:55:02.7							
	e LR	Z	08:10:17.5							
	e L	Z	08:24:20.5			20.0	132		4.2	
BRG	e P	Z	07:45:18.4	76.1	32.8	1.5	43	5.2		
MOX	e P	Z	07:45:24.1	77.1	31.2	1.3	51	5.4		
BUG	e P	Z	07:45:27.6	77.8	28.5	1.2	81	5.6		
GEC2	e P	Z	07:45:28.6	77.9	32.4	1.3	56	5.5		
WET	e P	Z	07:45:29.3	77.9	31.9	1.2	75	5.7		
GRA1	e P	Z	07:45:29.9	78.0	30.9	1.2	126	5.9		
	e L	Z	08:30:11.7			19.2	134		4.3	
TNS	e P	Z	07:45:31.8	78.5	29.1	1.3	68	5.6		
FUR	e P	Z	07:45:36.7	79.3	30.7	1.1	104	5.9		
STU	e P	Z	07:45:37.3	79.5	29.5	1.3	92	5.8		
BFO	e P	Z	07:45:40.8	80.2	28.9	1.3	60	5.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/02	15:57: 6.1	1.210S	13.040W	33.0N	5.2			SZGRF

North of Ascension Island

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	16:06:34.6	55.0	210.1	2.2	50	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
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2002/10/02 19:34:05.6 18.885S 175.027W 33N 5.1 NEIC
Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 19:53:50.6	148.8	11.5					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/02	21:10:58.1	3.330N	98.000E	33.0N	4.9			SZGRF
2002/10/02	21:10:04.4	5.779S	103.178E	10G	5.3			NEIC

Northern Sumatera, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z 21:23:24.1	94.0	94.2	0.9	8	5.0		
GEC2	e P	Z 21:23:24.1	94.0	94.2	1.1	13	5.1		
WET	e P	Z 21:23:26.5	94.6	93.6	1.3	7	4.7		
CLL	e P	Z 21:23:26.6	94.6	93.5	1.1	8	4.9		
GRA1	e P	Z 21:23:32.1	95.7	92.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/02	22:15:12.5	37.080N	21.040E	14				NEIC

Southern Greece

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 22:18:45.7	14.5	147.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/02	22:57: 8.8	36.920N	14.770E	10.0G		4.1		SZGRF
2002/10/02	22:57:31.5	38.779N	13.869E	10G	4.6			NEIC

Sicily, Italy

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
FUR	e Pn	Z 22:59:51.3	9.6	167.7					
GEC2	e Pn	Z 22:59:57.4	10.1	179.3					
BFO	e Pn	Z 23:00:00.7	10.4	155.2					
WET	e Pn	Z 23:00:01.8	10.4	175.7					
STU	e Pn	Z 23:00:06.0	10.5	159.7					
GRA1	e Pn	Z 23:00:11.4	11.1	169.2					
	e L	Z 23:04:59.9			18.2	1532		4.1	
MOX	e Pn	Z 23:00:23.4	12.0	171.5					
TNS	e Pn	Z 23:00:27.5	12.1	159.4					
WLF	e Pn	Z 23:00:28.0	12.2	150.3					
CLL	e Pn	Z 23:00:31.5	12.5	176.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/03	04:26:10.7	10.908S	161.377E	33N	5.7	5.6		NEIC

Bougainville - Solomon Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPdf	Z 04:45:21.8	132.2	44.0	2.2	36			
	e PP	Z 04:47:48.7							
	e PKS	E 04:49:01.4							
	e	05:11:38.9							
	e L	Z 05:44:37.4			22.0	1231		5.6	
GRA1	e PKP	Z 04:45:26.0	134.0	42.8					
	e L	Z 05:46:04.9			22.0	1111		5.5	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/03	15:56:54.9	56.350N	159.280E	33.0N	5.6			SZGRF
2002/10/03	15:56:39.3	54.643N	161.516E	36D	5.1			NEIC

Kamchatka Peninsula, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e P	Z 16:07:37.0	67.7	19.2	0.9	104	6.1		
RUE	e P	Z 16:07:48.3	69.6	19.2	1.0	72	5.9		
CLL	e P	Z 16:07:55.6	70.8	18.7	1.1	76	5.9		
IBBN	e P	Z 16:07:56.0	70.9	15.7	1.0	61	5.8		
BRG	e P	Z 16:07:57.1	71.1	19.1	1.0	31	5.5		
MOX	e P	Z 16:08:01.5	71.8	17.8	1.0	48	5.6		
BUG	e P	Z 16:08:01.3	71.8	15.4	0.9	33	5.5		
GRA1	e P	Z 16:08:07.9	72.7	17.5	0.8	79	5.9		
TNS	e P	Z 16:08:07.5	72.7	15.9	0.8	23	5.4		
WET	e P	Z 16:08:08.9	72.9	18.4	1.0	36	5.5		
GEC2	e P	Z 16:08:09.2	73.0	18.8	1.0	30	5.4		
WLF	e P	Z 16:08:12.9	73.7	14.6	1.3	31	5.3		
STU	e P	Z 16:08:14.7	74.0	16.2	1.1	29	5.3		
FUR	e P	Z 16:08:16.0	74.2	17.4	0.9	37	5.5		
BFO	e P	Z 16:08:18.0	74.6	15.7	1.0	30	5.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/03	16:08:49.2	25.190N	109.280W	33.0N	5.5			SZGRF
2002/10/03	16:08:28.4	23.227N	108.492W	10G	5.4	6.2		NEIC

Gulf of California, Mexico

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
IBBN	e P	Z 16:21:21.9	86.4	304.3	1.7	111	5.8		
BUG	e P	Z 16:21:22.8	86.6	304.0	1.2	27	5.3		

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WLF	e P	Z	16:21:22.3	87.0	303.2	1.3	44	5.4
TNS	e P	Z	16:21:29.4	87.9	304.9	1.5	48	5.4
BFO	e P	Z	16:21:34.0	88.9	304.9	4.7	368	6.0
MOX	e P	Z	16:21:35.9	89.3	307.3	2.0	64	5.6
CLL	e (P)	Z	16:21:28.4	89.6	308.4	1.5	18	
	e PP	Z	16:25:38.1					
	e S	T	16:32:23.2					
	e SS	T	16:38:09.1					
	e LQ	T	16:45:21.0					
	e LR	Z	16:48:14.9					
	e L	Z	17:04:42.2			20.0	40317	6.8
GRA1	e P	Z	16:21:38.3	89.7	307.0	2.3	264	6.1
BRG	e P	Z	16:21:40.4	90.3	309.1	1.8	43	5.4
WET	e P	Z	16:21:43.4	90.8	308.3	1.6	20	5.1
GEC2	e P	Z	16:21:46.0	91.4	308.9	1.3	19	5.1

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/03	19:05:10.6	7.424S	115.784E	315D	6.0			NEIC

Bali Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i Pdiff	+ Z 19:18:37.6	103.7	84.7	1.2	20			
	e PP	Z 19:22:59.4							
	e SKSac	E 19:28:46.3							
	e sSKSac	E 19:31:09.0							
	e PS	E 19:32:15.3							
	e sPS	E 19:33:48.7							
	e PKKPbc	Z 19:34:29.9			1.2	8			
	e L	Z 20:07:43.1			20.0	468		5.0	
GRB2	e PP	Z 19:23:03.2	104.8	84.1					
GRA1	e Pdiff	Z 19:18:44.4	105.1	83.7					
	e PP	Z 19:23:02.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/04	14:15:53.9	51.310N	169.250W	0.0G	5.6			SZGRF
2002/10/04	14:16:14.6	53.441N	168.765W	104D	5.1			NEIC

Fox Islands, Aleutian Islands, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 14:27:59.7	76.9	360.0			5.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/04	16:23:42.2	43.740N	153.190E	33.0N	5.1			SZGRF

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2002/10/04 16:23:51.3
North Pacific Ocean

45.184N 150.697E 45* 4.7 NEIC

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 16:35:53.2	78.8	27.8			5.1		

Date Origin Time Lat Long Depth mb Ms ML Source
2002/10/04 17:33:0.1 24.770N 126.210E 33.0N 5.0 SZGRF
2002/10/04 17:33:06.7 25.623N 124.854E 59* 5.0 NEIC
Ryukyu Islands, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 17:45:37.1	84.5	56.1			5.0		

Date Origin Time Lat Long Depth mb Ms ML Source
2002/10/04 19:05:49.6 20.855S 178.957W 621D 6.1 NEIC
Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPdf	- Z 19:24:22.4	148.2	21.6	1.3	158			
	i PKPbc	Z 19:24:27.4			0.9	1054			
	i PKPab	Z 19:24:33.1			0.9	629			
	e pPKPbc	Z 19:26:54.3							
	e sPKPbc	Z 19:27:48.0							
	e sPP	Z 19:31:17.4							
	e sPPP	Z 19:34:23.7							
	e SKKSdf	T 19:39:29.3							
	e	19:41:34.0							
	e SS	N 19:47:03.0							
	e sSS	E 19:50:09.4							
	e sSSS	E 19:55:37.8							
GRA1	e PKPdf	Z 19:24:25.9	150.1	19.3					
	e PKPbc	Z 19:24:32.1							
	e PKPab	Z 19:24:41.4							
	e (pPKPdf)	Z 19:27:01.0							

Date Origin Time Lat Long Depth mb Ms ML Source
2002/10/05

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 06:09:11.4							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/05	19:45:04.8	23.616S	179.771E	600G	4.7			NEIC

South of Fiji Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	+ Z	20:03:51.7	150.5	25.3	0.8	52			
	e PKPab	Z	20:04:00.8			0.8	13			
	e pPKPdf	Z	20:05:55.0							
	e pPKPbc	Z	20:05:58.8							
GRA1	e PKPbc	Z	20:03:56.0	152.4	23.1					
	e PKPab	Z	20:04:10.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/05	23:50:54.5				4.8			SZGRF

Mid-Indian Ridge

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	00:03:28.8					4.8		
BEAM			00:03:28.8			1.6	11			
GRA1	e pP	Z	00:03:32.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/06	01:18:43.9	58.580N	31.150W	33.0N	5.4	5.2		SZGRF
2002/10/06	01:18:35.8	58.476N	31.797W	10G	5.2	5.4		NEIC

North Atlantic Ocean

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
IBBN	e P	Z	01:23:43.4	22.9	301.3	2.4	780	5.8		
BUG	e P	Z	01:23:43.9	23.1	303.0	1.9	432	5.6		
TNS	e P	Z	01:23:57.4	24.4	305.2	1.5	73	5.0		
BFO	e P	Z	01:24:06.9	25.5	308.5	1.9	122	5.3		
STU	e P	Z	01:24:09.0	25.7	307.7	2.2	204	5.5		
MOX	e P	Z	01:24:10.3	25.8	304.5	1.9	199	5.4		
RUE	e P	Z	01:24:11.4	26.0	301.5	1.9	218	5.5		
GRFO	e P	Z	01:24:13.8	26.2	306.1	1.9	199	5.4		
GRA1	e P	Z	01:24:13.5	26.2	306.1	2.0	240	5.5		
	e L	Z	01:33:35.3			21.8	8483		5.2	
CLL	e P	Z	01:24:13.1	26.2	303.4	2.1	155	5.3		
BRG	e P	Z	01:24:20.0	26.9	304.2	3.4	460	5.6		
FUR	e P	Z	01:24:22.4	27.1	308.5	1.7	188	5.5		
WET	e P	Z	01:24:23.7	27.4	306.9	1.9	87	5.2		
GEC2	e P	Z	01:24:30.0	28.0	307.4	2.2	169	5.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/06	01:41:10.3	58.660N	32.000W	33.0N	5.0			SZGRF
2002/10/06	01:41:07.7	58.434N	31.698W	10G	5.0			NEIC

North Atlantic Ocean

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
IBBN	e P	Z	01:46:15.3	22.9	301.2	1.5	86	5.1		
BUG	e P	Z	01:46:15.7	23.1	302.9	1.7	153	5.3		
WLF	e P	Z	01:46:20.7	23.5	306.4	1.6	104	5.1		
TNS	e P	Z	01:46:29.9	24.4	305.1	2.0	70	5.0		
BFO	e P	Z	01:46:38.3	25.5	308.4	1.3	32	4.8		
STU	e P	Z	01:46:40.1	25.6	307.6	1.4	46	4.9		
MOX	e P	Z	01:46:41.5	25.8	304.4	1.5	55	5.0		
GRFO	e P	Z	01:46:44.7	26.1	306.0	1.3	36	4.8		
GRA1	e P	Z	01:46:44.8	26.1	306.0	1.1	35	4.9		
CLL	e P	Z	01:46:44.2	26.2	303.3	1.4	23	4.6		
BRG	e P	Z	01:46:51.1	26.9	304.1					
FUR	e P	Z	01:46:53.6	27.1	308.4	1.5	80	5.2		
WET	e P	Z	01:46:55.2	27.3	306.8					
GEC2	e P	Z	01:47:00.5	27.9	307.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/06	07:24:29.2	45.590N	154.170E	33.0N	5.2			SZGRF
2002/10/06	07:24:49.4	46.067N	149.610E	151D	4.9			NEIC

East of Kuril Islands, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	07:36:32.6	77.7	28.1			5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/06	07:29:44.8	14.485S	175.850W	33N	4.7			NEIC

Samoa Island Region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z	07:49:18.9	144.4	11.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/06	15:46:36.2	8.212S	118.341E	33N	5.7	6.0		NEIC

Sumbawa Region, Indonesia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e PP	Z	16:05:11.3	105.4	83.4					

	e SP	Z	16:14:21.3									
BRG	e Pdiff	Z	16:00:45.9	105.4	84.0							
	e PP	Z	16:05:11.6									
	e SP	Z	16:14:21.1									
GEC2	e Pdiff	Z	16:00:51.0	105.8	84.4							
CLL	e Pdiff	Z	16:00:41.4	106.0	83.1							
	e PP	Z	16:05:11.2									
	e PPP	Z	16:07:40.1									
	e SKSac	R	16:11:20.0									
	e Sdiff	T	16:12:39.6									
	e PS	Z	16:14:24.5									
	e PPS	Z	16:15:30.0									
	e SS	T	16:20:09.2									
	e LR	Z	16:41:14.8									
	e L	Z	16:55:13.3			20.0	5520		6.1			
WET	e Pdiff	Z	16:00:49.4	106.3	83.7							
	e PP	Z	16:05:15.3									
MOX	e SP	Z	16:14:35.2	106.9	82.2							
GRA1	e Pdiff	Z	16:00:59.6	107.3	82.2							
	e PP	Z	16:05:17.7									
	e PPP	Z	16:07:46.6									
FUR	e PP	Z	16:05:22.0	107.5	82.7							
	e PPP	Z	16:07:43.2									
	e SP	Z	16:14:40.5									
STU	e PPP	Z	16:07:47.4	108.7	80.9							
	e SP	Z	16:14:54.2									
TNS	e PP	Z	16:05:31.3	109.0	79.8							
	e PPP	Z	16:07:56.2									
	e SP	Z	16:14:52.4									
IBBN	e PP	Z	16:05:33.8	109.0	78.5							
	e SP	Z	16:14:59.0									
BFO	e PP	Z	16:05:35.1	109.4	80.4							
	e PPP	Z	16:07:55.5									
	e SP	Z	16:15:01.1									
BUG	e PP	Z	16:05:40.3	109.5	78.4							
	e SP	Z	16:14:59.8									
WLF	e PPP	Z	16:08:08.1	110.5	78.1							
	e SP	Z	16:15:16.0									

Date Origin Time Lat Long Depth mb Ms ML Source
 2002/10/06 19:59:33.6 15.121S 173.302W 55D 4.9
 Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 20:19:08.6	145.2	7.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/07	03:01:48.0	43.471N	87.041E	33N	4.7			NEIC

Qinghai, China

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 03:10:45.7	50.2	66.3			4.8		
	e pP	Z 03:10:55.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/07	13:11:19.5	42.250N	69.370E	21.7	4.6			SZGRF
2002/10/07	13:10:59.8	41.161N	71.735E	33N	4.5			NEIC

Central Kazakhstan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 13:18:53.4	42.1	77.7			4.6		
	e pP	Z 13:18:59.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/07	16:28:42.1	58.710N	31.570W	33.0N	5.0	4.5		SZGRF
2002/10/07	16:28:35.9	58.371N	31.956W	10G	5.0	4.8		NEIC

North Atlantic Ocean

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
IBBN	e P	Z 16:33:43.7	23.0	301.0	1.9	261	5.4		
BUG	e P	Z 16:33:45.5	23.2	302.7	2.0	274	5.4		
WLF	e P	Z 16:33:49.7	23.6	306.2	1.8	126	5.1		
TNS	e P	Z 16:33:57.6	24.5	305.0	1.3	39	4.8		
BFO	e P	Z 16:34:07.3	25.6	308.2	1.3	24	4.7		
STU	e P	Z 16:34:09.5	25.8	307.4	1.7	64	5.0		
MOX	e P	Z 16:34:10.6	25.9	304.3	1.4	57	5.0		
RUE	e P	Z 16:34:11.6	26.1	301.3					
GRFO	e P	Z 16:34:14.3	26.3	305.8	1.6	60	5.0		
GRA1	e P	Z 16:34:14.3	26.3	305.8	1.6	75	5.1		
	e L	Z 16:43:38.8			21.7	1635		4.5	
CLL	e P	Z 16:34:13.4	26.3	303.2	1.4	30	4.7		
BRG	e P	Z 16:34:20.3	27.0	304.0	1.5	24	4.7		
FUR	e P	Z 16:34:23.2	27.2	308.3	1.4	66	5.2		
WET	e P	Z 16:34:24.6	27.5	306.7	1.9	40	4.8		
GEC2	e P	Z 16:34:30.5	28.1	307.2					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/07	17:02:49.5			N	4.6			SZGRF

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2002/10/07 17:02:54.8
North Atlantic Ocean

58.423N 31.864W 10G 4.7 NEIC

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 17:08:32.5	26.2	306.0			4.6		

Date Origin Time Lat Long Depth mb Ms ML Source
2002/10/07 18:05:39.7 N 4.4 SZGRF
2002/10/07 18:05:39.9 58.426N 32.058W 10G 4.6 NEIC
North Atlantic Ocean

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 18:11:18.3	26.3	306.0			4.4		

Date Origin Time Lat Long Depth mb Ms ML Source
2002/10/07 18:11:56.9 17.080N 41.700E 33.0N 4.4 SZGRF
2002/10/07 18:10:47.6 13.671N 50.881E 10G 4.7 4.1 NEIC
Western Arabian Peninsula

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 18:19:35.5	48.4	124.0			4.4		

Date Origin Time Lat Long Depth mb Ms ML Source
2002/10/07 19:00:32.8 18.665S 169.235E 249D 5.5 NEIC
Vanuatu Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKP	Z 19:19:31.8	142.4	38.8	0.9	17			
	i SKP	Z 19:22:50.5			0.9	21			
	e SKKPdf	Z 19:32:06.3							
GRA1	e PKP	Z 19:19:39.7	144.4	37.5					
	e SKP	Z 19:22:55.2							

Date Origin Time Lat Long Depth mb Ms ML Source
2002/10/07 20:03:40.4 N 4.3 SZGRF
2002/10/07 20:03:21.7 58.253N 31.945W 10G 4.5 NEIC
North Atlantic Ocean

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 20:09:00.0	26.3	305.6			4.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/07	20:03:56.9	58.350N	32.550W	33.0N	5.2	5.3		SZGRF
2002/10/07	20:03:54.1	58.275N	31.870W	10G	4.9	5.5		NEIC

North Atlantic Ocean

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 20:09:32.5	26.2	305.6			5.2		
	e L	Z 20:18:58.2			21.6	9336		5.3	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/08	01:23:58.8	42.033S	88.320E	10G	5.2	5.7		NEIC

Southeast Indian Ridge

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PS	Z 01:53:11.5	113.6	128.1					
	e SS	T 01:59:13.2							
	e LQ	T 02:09:39.8							
	e L	Z 02:29:35.8			20.0	1302		5.5	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/08	09:18:23.6				4.8			SZGRF
2002/10/08	09:18:57.9	52.719N	160.076E	81D	4.9			NEIC

South of Aleutian Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i P	Z 09:30:19.0	72.7	20.3	1.0	23	5.3		
	e PcP	Z 09:30:35.1							
	e PP	Z 09:32:47.2							
	e S	Z 09:39:41.0							
	e SS	Z 09:45:21.3							
	e L	Z 10:03:22.3			22.0	200		4.4	
GRA1	e P	Z 09:30:30.4	74.3	19.0			4.8		
	e pP	Z 09:30:46.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/08	12:40:46.4	8.680N	82.700W	33.0N	5.0	4.9		SZGRF
2002/10/08	12:40:43.0	9.061N	84.048W	12	4.8	4.9		NEIC

Panama-Costa Rica border region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 12:53:23.5	86.5	279.9			5.0		

GRA3	e L	Z	13:28:20.9	86.5	279.9	20.2	552		4.9
CLL	i P	+ Z	12:53:27.3	86.8	279.8	1.2	20	5.1	
	e pP	Z	12:53:35.0						
	e PP	Z	12:56:57.1						
	e S	Z	13:04:03.0						
	e PS	Z	13:05:10.0						
	e SS	Z	13:10:04.1						
	e (SSS)	Z	13:13:56.2						
	e LR	Z	13:21:42.7						
	e L	Z	13:29:49.9			20.0	309		4.7

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/09								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPdf	Z 08:50:30.8							
	e PKPbc	Z 08:50:34.6			0.6	23			
	e PKPab	Z 08:50:38.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/10								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 00:36:41.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/10	05:45:39.5	18.013S	178.542W	591D	5.0			NEIC
Fiji Islands region								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPbc	Z 06:04:19.6	147.4	17.4					
	e PKPab	Z 06:04:23.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/10	10:50:20.2	3.220S	134.580E	33.0N		7.6		SZGRF
2002/10/10	10:50:19.9	1.684S	134.149E	10G	6.5	7.8		NEIC
Irian Jaya, Indonesia, region								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e Pdiff	Z 11:04:50.5	109.3	66.1					
BRG	e Pdiff	Z 11:04:52.9	109.9	66.7					

CLL	e Pdiff	Z	11:04:53.9	110.3	65.8			2.5	293
	e PKiKP	Z	11:09:00.4						
	e PP	Z	11:09:30.1						
	e PPP	Z	11:11:43.0						
	e SKSac	Z	11:15:28.6						
	e SKKSac	R	11:16:22.8						
	e Sdiff	N	11:17:07.6						
	e PS	R	11:18:59.8						
	e PPS	Z	11:20:06.6						
	e SS	T	11:24:58.8						
	e LQ	T	11:39:38.0						
	e LR	Z	11:44:31.0						
	e L	Z	12:02:53.5			22.0	175535		7.6
GEC2	e Pdiff	Z	11:04:57.0	110.8	67.2				
WET	e Pdiff	Z	11:04:58.7	111.2	66.4				
MOX	e Pdiff	Z	11:04:59.3	111.3	64.8				
	e PP	Z	11:09:42.1						
	e SP	Z	11:19:15.0						
CLZ	e Pdiff	Z	11:05:00.1	111.5	63.2				
GRA1	e Pdiff	Z	11:05:02.0	112.0	64.8				
	e PP	Z	11:09:46.5						
	e SP	Z	11:19:18.5						
	e L	Z	11:58:45.8			21.7	150302		7.6
GRFO	e Pdiff	Z	11:05:02.0	112.0	64.8				
FUR	e Pdiff	Z	11:05:04.7	112.6	65.4				
TNS	e Pdiff	Z	11:05:08.1	113.3	62.1				
BUG	e Pdiff	Z	11:05:08.5	113.4	60.6				
STU	e Pdiff	Z	11:05:09.1	113.5	63.3				
BFO	e Pdiff	Z	11:05:12.3	114.3	62.8				
WLF	e Pdiff	Z	11:05:15.1	114.9	60.3				

Date Origin Time Lat Long Depth mb Ms ML Source
 2002/10/10 12:28:25.7 1.507S 133.988E 10G 6.1 6.7
 Irian Jaya, Indonesia, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKiKP	Z 12:46:59.8	110.1	65.9	1.1	16			
	e PP	Z 12:47:31.6							

Date Origin Time Lat Long Depth mb Ms ML Source
 2002/10/10 12:29:35.6 1.299S 133.914E 10G 6.0
 Irian Jaya, Indonesia, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKiKP	Z 12:48:07.8	109.9	65.8	1.0	22			

e PP Z 12:48:43.3

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/10	14:17:20.1	22.360S	177.985W	300G	4.4			NEIC

South of Fiji Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	- Z 14:36:35.1	149.9	20.6	0.9	27			
	e PKPab	Z 14:36:41.4			0.9	11			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/10	18:33:37.2	1.420S	134.084E	10G	5.4	5.6		NEIC

Irian Jaya, Indonesia, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PP	Z 18:52:36.3	110.1	65.7					
	e PS	R 19:02:08.8							
	e PPS	Z 19:03:14.4							
	e SS	T 19:08:08.8							
	e LQ	T 19:27:09.9							
	e LR	Z 19:28:23.3							
	e L	Z 19:43:14.7			20.0	1444		5.5	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/10	21:19:58.5	1.437S	134.065E	10G	5.7	5.7		NEIC

Irian Jaya, Indonesia, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKiKP	Z 21:38:30.7	110.1	65.7	0.9	10			
	e PP	Z 21:39:06.6							
	e SKSac	R 21:45:08.5							
	e Sdiff	T 21:46:45.1							
	e PS	Z 21:48:25.4							
	e SS	T 21:54:35.8							
	e LQ	T 22:11:00.7							
	e LR	Z 22:13:02.8							
	e L	Z 22:29:57.9			20.0	1376		5.5	
GRA1	e PP	Z 21:39:17.6	111.7	64.7					
	e SS	N 21:54:55.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
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2002/10/10 23:42: 4.6 44.750N 10.810E 10.0G 3.8 SZGRF
2002/10/10 23:42:01.6 44.566N 10.735E 10G NEIC

Northern Italy

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z	23:43:05.6	4.1	155.4					3.8
GEC2	e Pn	Z	23:43:13.7	4.7	206.5					
	e Sn	N	23:44:06.1							
WET	e Pn	Z	23:43:14.4	4.8	198.5					
	e Sn	N	23:44:07.5							
GRA1	e Sn	N	23:44:15.0	5.1	183.9					
TNS	e Pn	Z	23:43:29.4	5.9	163.8					
	e Sn	N	23:44:33.4							
MOX	e Pn	Z	23:43:33.2	6.1	185.9					
	e Sn	E	23:44:37.6							
BRG	e Pn	Z	23:43:39.2	6.7	200.1					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/11	01:04: 9.5	38.590N	142.360E	33.0N	5.2			SZGRF
2002/10/11	01:04:02.2	37.824N	142.566E	34*	5.0	5.4		NEIC

Near east coast of eastern Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	01:16:14.4	80.5	38.7	1.0	9	4.6		
CLL	e P	Z	01:16:14.3	80.6	38.1	1.0	18	5.0		
CLZ	e P	Z	01:16:17.9	81.1	36.3	1.0	20	5.1		
MOX	e P	Z	01:16:20.2	81.6	37.1					
GEC2	e P	Z	01:16:23.2	82.2	38.4	1.0	10	4.9		
WET	e P	Z	01:16:24.4	82.3	37.8					
GRA1	e P	Z	01:16:25.4	82.5	36.7	0.9	16	5.1		
TNS	e P	Z	01:16:28.2	83.1	34.8					
FUR	e P	Z	01:16:30.7	83.7	36.7	2.8	367	6.1		
STU	e P	Z	01:16:32.8	84.0	35.3	0.9	16	5.3		
BFO	e P	Z	01:16:36.2	84.7	34.6	0.8	12	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/11	14:41:31.0	17.280N	96.820W	33.0N	6.1			SZGRF
2002/10/11	14:41:24.0	15.555N	95.603W	33N	5.2	5.0		NEIC

Oaxaca, Mexico

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	14:54:18.1	88.6	292.7	3.7	382	6.1		

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Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/11	15:16:24.0	16.516S	172.971W	33N	4.9			NEIC

Samoa Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 15:36:06.2	146.7	7.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/11	18:48:53.2	44.720N	10.660E	10.0G			3.6	SZGRF
2002/10/11	18:48:49.9	44.463N	10.898E	4				NEIC

Northern Italy

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
FUR	e Sn	N 18:50:31.5	3.7	184.2					3.9
BFO	e Pn	Z 18:49:54.2	4.3	154.5					3.5
	e Sn	E 18:50:38.6							
GEC2	e Pn	Z 18:50:02.8	4.8	204.7					3.6
	e Sn	N 18:50:54.9							
WET	e Pn	Z 18:50:03.2	4.9	196.9					3.4
	e Sn	N 18:50:56.3							
TNS	e Sn	N 18:51:23.2	6.0	163.0					
MOX	e Sn	N 18:51:27.8	6.2	184.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/11	18:48:08.7	22.857S	179.648W	550G	4.5			NEIC

South of Fiji Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPdf	Z 19:06:50.1	149.9	23.8	0.7	5			
	i PKPbc	+ Z 19:06:59.4			1.1	63			
	e PKPab	Z 19:07:07.2			0.7	19			
GRA1	e PKPdf	Z 19:07:04.5	151.9	21.7					
	e PKPab	Z 19:07:16.0							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/12	03:46:54.2	71.230N	3.640W	33.0N	4.9	3.7		SZGRF
2002/10/12	03:46:46.5	71.690N	2.760W	10G	4.9	4.0		NEIC

Jan Mayen Island region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLZ	e P	Z 03:51:29.1	20.7	348.3	1.1	46	4.6		
BUG	e P	Z 03:51:28.6	20.7	351.1	1.5	69	4.7		
CLL	e P	Z 03:51:38.6	21.6	346.6	1.5	96	4.9		
MOX	e P	Z 03:51:43.4	22.0	348.0	1.4	87	5.0		

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TNS	e P	Z	03:51:43.2	22.1	350.6	1.2	38	4.7
BRG	e P	Z	03:51:44.1	22.1	346.1	1.5	92	5.0
GRA1	e P	Z	03:51:52.4	22.9	348.8	1.2	69	5.0
	e L	Z	04:00:15.9			20.5	282	3.7
WET	e P	Z	03:52:00.4	23.7	347.8	1.5	48	4.8
BFO	e P	Z	03:52:01.8	23.9	351.4	1.3	60	5.0
GEC2	e P	Z	03:52:04.5	24.1	347.4	1.4	67	5.0
FUR	e P	Z	03:52:08.3	24.4	349.4	1.9	182	5.3

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/12	05:59:3.1	35.600N	25.540E	10.0G		4.2		SZGRF
2002/10/12	05:58:50.1	34.770N	26.377E	10G	5.0	4.8		NEIC

Crete, Greece

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 06:02:49.3	16.9	141.7					
FUR	e Pn	Z 06:02:54.1	17.5	134.5					
WET	e Pn	Z 06:02:55.8	17.5	140.3					
BRG	e Pn	Z 06:03:06.2	18.4	146.0					
GRA1	e Pn	Z 06:03:07.3	18.6	137.7					
	e L	Z 06:11:30.2			22.0	1444		4.2	
BFO	e Pn	Z 06:03:13.2	19.0	128.8					
CLL	e Pn	Z 06:03:13.8	19.1	144.6					
MOX	e Pn	Z 06:03:14.0	19.1	140.4					
TNS	e Pn	Z 06:03:25.6	20.2	133.0					
CLZ	e Pn	Z 06:03:28.3	20.6	139.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/12	07:49:50.6	24.046S	179.223E	545?	4.9			NEIC

South of Fiji Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	Z 08:08:42.2	150.8	26.5	0.8	41			
	e PKPab	Z 08:08:51.5			1.1	27			
	e	08:10:49.6							
GRA1	e PKP	Z 08:09:00.4	152.7	24.4					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/12	10:59:40.2	38.650N	143.180E	33.0N	5.7	5.7		SZGRF
2002/10/12	10:59:33.8	37.771N	142.604E	31D	5.4	5.1		NEIC

Off east coast of Honshu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
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BRG	e P	Z	11:11:46.4	80.6	38.7	1.1	59	5.4
CLL	i P	+ Z	11:11:46.3	80.6	38.1	1.0	98	6.0
	e pP	Z	11:11:56.1					
	e PP	Z	11:14:53.0					
	e S	T	11:21:47.7					
	e SKSac	R	11:22:04.7					
	e SS	R	11:27:39.8					
	e LQ	T	11:38:31.6					
	e LR	Z	11:42:52.3					
	e L	Z	11:50:39.5			18.0	4320	5.9
CLZ	e P	Z	11:11:49.8	81.2	36.3	1.1	112	5.8
MOX	e P	Z	11:11:52.2	81.7	37.1	1.1	50	5.4
GEC2	e P	Z	11:11:55.2	82.3	38.4	1.1	59	5.6
WET	e P	Z	11:11:56.2	82.4	37.8	1.2	55	5.6
GRA1	e P	Z	11:11:57.6	82.6	36.7	1.1	113	5.9
	e PP	Z	11:15:11.0					
	e L	Z	11:52:04.3			18.0	3346	5.7
BUG	e P	Z	11:11:56.7	82.6	34.1	0.9	38	5.5
TNS	e P	Z	11:12:00.1	83.2	34.8	2.5	224	6.0
FUR	e P	Z	11:12:03.4	83.8	36.7	1.0	92	6.0
WLF	e P	Z	11:12:07.2	84.5	33.2	1.8	203	6.1
BFO	e P	Z	11:12:08.2	84.8	34.6	1.1	78	5.9

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/12								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 20:01:02.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/12	20:08:42.0	8.130S	64.820W	500.0G	6.7			SZGRF
2002/10/12	20:09:11.2	8.270S	71.695W	533D	6.5			NEIC

Western Brazil

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WLF	e P	Z 20:21:07.3	88.6	255.4	0.8	1648	7.3		
BFO	e P	Z 20:21:11.7	89.6	257.1	0.9	264	6.5		
BUG	e P	Z 20:21:12.3	89.7	256.2	1.9	1665	6.9		
TNS	e P	Z 20:21:14.3	90.1	257.2	0.9	504	6.7		
FUR	e P	Z 20:21:20.8	91.5	259.3	1.2	1218	6.9		
CLZ	e P	Z 20:21:21.9	91.6	258.7	1.2	370	6.4		
GRA1	e P	Z 20:21:21.6	91.8	259.3	0.9	334	6.5		
MOX	e P	Z 20:21:24.5	92.2	259.6	1.0	316	6.6		
WET	e P	Z 20:21:27.0	92.7	260.5	0.9	344	6.7		
CLL	e P	Z 20:21:28.5	93.2	260.7	2.3	1080	6.7		

CLL	e PS	E	20:34:27.1						
	e sSP	E	20:36:31.2						
	e sSSSS	N	20:48:14.8						
GEC2	e P	Z	20:21:28.8	93.2	261.1	0.9	539	6.8	
BRG	e P	Z	20:21:32.0	93.7	261.4	1.5	387	6.4	
RGN	e P	Z	20:21:32.0	93.9	261.2	0.8	972	7.1	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/12	23:43:18.1	15.760N	118.120E	33.0N	5.7			SZGRF
2002/10/12	23:43:12.6	15.031N	118.421E	33N	5.6	5.6		NEIC

Philippine Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z 23:55:57.4	87.2	69.4	1.7	129	5.8		
CLL	e P	Z 23:55:59.3	87.6	68.7	1.6	82	5.8		
	e PP	Z 23:59:25.2							
	e SKSac	R 00:06:25.0							
	e S	T 00:06:36.1							
	e SS	T 00:12:31.6							
	e LQ	T 00:18:59.9							
	e LR	Z 00:29:07.2							
	e L	Z 00:36:38.6			18.0	6067		6.1	
GEC2	e P	Z 23:56:01.6	88.1	69.2	1.4	61	5.5		
WET	e P	Z 23:56:03.8	88.5	68.6	2.3	122	5.8		
MOX	e P	Z 23:56:04.3	88.7	67.6	1.5	45	5.6		
CLZ	e P	Z 23:56:05.8	88.9	66.7	1.5	77	5.8		
GRA1	e P	Z 23:56:07.6	89.3	67.3	1.4	55	5.6		
FUR	e P	Z 23:56:10.0	89.8	67.3	1.7	113	5.8		
TNS	e P	Z 23:56:14.0	90.7	65.2	1.5	36	5.4		
BUG	e P	Z 23:56:14.6	90.8	64.3	2.8	275	6.0		
BFO	e P	Z 23:56:17.5	91.5	65.1	1.5	34	5.5		
WLF	e P	Z 23:56:21.6	92.2	63.4	1.5	89	5.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/13	20:55:11.0	14.705S	175.409W	33N	5.9	6.0		NEIC

Samoa Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLZ	e PKP	Z 21:14:44.0	142.6	9.2					
CLL	e PKP	Z 21:14:44.8							
CLL	e PKPpre	Z 21:14:38.6	142.8	13.5					
	e PKPdf	Z 21:14:44.4	142.8	13.5	1.3	43			
	e PP	Z 21:18:01.9							
	e SS	T 21:36:25.2							
	e SSS	T 21:41:56.9							

	e LQ	T	21:54:20.7							
	e LR	Z	22:02:19.2							
	e L	Z	22:14:16.7			22.0	3632		6.1	
BUG	e PKP	Z	21:14:44.6	143.2	4.3					
MOX	e PKP	Z	21:14:45.5	143.6	11.5					
TNS	e PKP	Z	21:14:45.6	144.3	6.4					
GRA1	e PKP	Z	21:14:46.6	144.6	11.1					
WET	e PKP	Z	21:14:47.5	144.9	14.0					
WLF	e PKP	Z	21:14:48.1	145.0	2.6					
GEC2	e PKP	Z	21:14:48.0	145.0	15.5					
FUR	e PKP	Z	21:14:51.3	146.1	11.6					
BFO	e PKP	Z	21:14:51.6	146.2	6.5					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/13	23:19:19.4	28.740N	57.510E	33.0N	4.8			SZGRF
2002/10/13	23:19:30.5	30.650N	56.932E	33N	4.6			NEIC

Southern Iran

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 23:26:56.8	39.0	101.8	1.2	25	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/14	14:12:47.8	42.530N	143.150E	62.9	6.2	6.1		SZGRF
2002/10/14	14:12:42.8	41.201N	142.252E	53D	5.8			NEIC

Hokkaido, Japan, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e P	Z 14:24:20.4	74.8	37.3	1.5	626	6.4		
RUE	e P	Z 14:24:28.7	76.3	37.3	1.6	591	6.5		
BRG	e P	Z 14:24:35.4	77.5	37.2	1.8	311	6.1		
CLL	i P	+ Z 14:24:35.6	77.5	36.6	1.2	241	6.2		
	e pP	Z 14:24:52.9							
	e PP	Z 14:27:33.2							
	e PPP	Z 14:29:20.3							
	e S	T 14:34:24.1							
	e (SS)	R 14:40:16.3							
	e LQ	T 14:47:23.4							
	e LR	Z 14:50:11.3							
	e L	Z 15:01:10.3			22.0	11581		6.2	
IBBN	e P	Z 14:24:41.0	78.5	33.2	1.5	486	6.4		
MOX	e P	Z 14:24:41.3	78.5	35.6	2.0	498	6.3		
GEC2	e P	Z 14:24:44.9	79.2	36.8	1.6	288	6.1		
WET	e P	Z 14:24:45.7	79.3	36.3	1.4	276	6.1		
BUG	e P	Z 14:24:45.7	79.4	32.8	1.5	292	6.1		
GRA1	e P	Z 14:24:46.9	79.5	35.3	1.2	417	6.3		

	e pP	Z	14:25:04.2								
	e PP	Z	14:27:51.0								
	e S	R	14:35:09.1								
	e L	Z	15:02:51.5			20.6	8800		6.1		
TNS	e P	Z	14:24:49.4	80.0	33.5	1.7	293		5.9		
FUR	e P	Z	14:24:53.2	80.7	35.1	1.3	360		6.2		
STU	e P	Z	14:24:54.3	81.0	33.8	1.4	298		6.0		
WLF	e P	Z	14:24:56.4	81.3	31.9	2.3	841		6.4		
BFO	e P	Z	14:24:58.0	81.7	33.2	1.7	408		6.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/14	23:56:16.2	2.190N	64.740W	33.0N				SZGRF
2002/10/14	23:55:13.4	15.657S	69.330W	185?	4.9			NEIC

Venezuela

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 00:08:18.7	95.9	252.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/16	01:31:47.2	23.910N	89.540E	41.2	5.4			SZGRF
2002/10/16	01:31:15.1	21.195N	93.555E	41D	5.2			NEIC

Bangladesh

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i P	Z 01:42:11.6	63.4	84.4	2.2	97	5.6		
	e PP	R 01:44:53.5							
	e S	Z 01:51:22.1							
	e L	Z 02:16:12.4			20.0	274		4.5	
GRA1	e P	Z 01:42:20.7	69.1	81.4			5.4		
	e pP	Z 01:42:32.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/16	04:04:27.1	33.750N	141.510E	33.0N	5.0			SZGRF
2002/10/16	04:04:35.8	35.736N	140.556E	59*	4.7			NEIC

Off east coast of Honshu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 04:17:02.8	83.5	39.2			5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/16	06:06:42.2	24.310N	125.760E	33.0N	5.3			SZGRF

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2002/10/16 06:07:19.4 27.954N 126.213E 270 4.7 NEIC
Southwestern Ryukyu Islands, Japan

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML
GRA1 e P Z 06:19:19.8 83.3 53.7 5.3

Date Origin Time Lat Long Depth mb Ms ML Source
2002/10/16 09:13:5.6 27.610N 59.030E 33.0N 4.6 SZGRF
2002/10/16 09:13:37.7 31.356N 56.523E 33N 4.7 NEIC
Southern Iran

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML
GRA1 e P Z 09:20:57.2 38.2 101.3 4.6

Date Origin Time Lat Long Depth mb Ms ML Source
2002/10/16 09:20:18.6 27.620N 58.800E 33.0N 4.6 SZGRF
Southern Iran

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML
GRA1 e P Z 09:28:09.0 42.3 103.4 4.6

Date Origin Time Lat Long Depth mb Ms ML Source
2002/10/16 10:12:17.5 52.070N 155.790E 33.0N 6.3 5.4 SZGRF
2002/10/16 10:12:21.2 51.905N 157.357E 102D 6.2 NEIC
Northwest of Kuril Islands, Russia

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML
RGN e P Z 10:23:21.5 69.4 22.8 1.5 567 6.6
CLL i P - Z 10:23:39.0 72.5 22.1 1.8 544 6.4
e pP Z 10:24:06.7
e sP Z 10:24:17.4
e PP Z 10:26:22.8
e PPP Z 10:28:15.4
e S T 10:32:56.5
e sS T 10:33:43.5
e SS T 10:37:38.1
e sSS R 10:38:12.1
e sSSS T 10:41:26.6
e LQ T 10:46:10.1
e LR Z 10:47:25.8
e L Z 10:56:59.3 22.0 1599 5.3
CLZ e P Z 10:23:40.6 72.6 20.6 1.6 538 6.4
BRG e P Z 10:23:40.3 72.7 22.7 1.4 136 5.9

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IBBN	e P	Z	10:23:40.9	72.7	19.1	2.2	878	6.5		
BUG	e P	Z	10:23:46.2	73.6	18.7	1.3	258	6.2		
GRA1	e P	Z	10:23:51.4	74.4	20.9	1.5	520	6.3		
	e PP	Z	10:26:38.6							
	e S	T	10:33:18.6							
	e L	Z	10:57:15.3			21.0	1870		5.4	
GRFO	e P	Z	10:23:51.3	74.4	20.9					
TNS	e P	Z	10:23:51.8	74.5	19.3	2.5	907	6.4		
WET	e P	Z	10:23:51.9	74.5	21.8	1.2	226	6.1		
GEC2	e P	Z	10:23:51.9	74.6	22.3					
WLF	e P	Z	10:23:58.1	75.5	17.9	2.4	1296	6.5		
BFO	e P	Z	10:24:01.9	76.3	19.1	1.3	167	6.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/16	14:13:12.6	15.639S	173.114W	33N	5.7	5.7		NEIC
Tonga Islands								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPpre	Z	14:32:45.1	144.1	10.1	0.7	9			
	i PKPpdf	Z	14:32:47.1			0.6	19			
	e PP	Z	14:35:59.4							
	e SS	T	14:54:44.5							
	e SSS	T	15:00:21.8							
	e LR	Z	15:23:37.0							
	e L	Z	15:41:23.9			22.0	1330		5.7	
GRA1	e PKP	Z	14:32:50.5	145.8	7.4					
	e PP	Z	14:36:15.5							
	e SS	T	14:55:07.4							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/17	00:53:0.7	38.570N	40.570E	33.0N	5.1	3.9		SZGRF
2002/10/17	00:53:02.0	39.400N	40.229E	5G	4.8	3.9		NEIC
Turkey								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z	00:57:49.5	21.1	106.6	2.0	173	5.1		
BRG	e P	Z	00:57:55.6	21.6	111.8	1.3	35	4.6		
WET	e P	Z	00:57:56.3	21.7	106.3	1.1	34	4.7		
CLL	e P	Z	00:58:03.0	22.3	111.5	1.2	64	5.0		
RUE	e P	Z	00:58:01.3	22.4	115.2	1.7	161	5.3		
FUR	e P	Z	00:58:05.2	22.5	102.1	1.6	98	5.1		
GRA1	e P	Z	00:58:09.2	22.9	105.6	1.0	142	5.4		
	e L	Z	01:11:12.9			19.3	437		3.9	
MOX	e P	Z	00:58:09.2	22.9	108.3	1.7	49	4.8		
STU	e P	Z	00:58:17.8	24.0	101.3	1.2	72	5.3		

CLZ	e P	Z	00:58:19.2	24.1	109.3	1.0	66	5.3
TNS	e P	Z	00:58:26.4	24.8	103.6	1.6	149	5.4
BUG	e P	Z	00:58:36.4	25.8	104.8	1.3	54	5.1

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/17	04:23:52.5	19.671S	178.584W	583?	5.5			NEIC

Fiji Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e PKPbc	Z	04:42:29.1	145.8	21.0					
	e PKPab	Z	04:42:31.6							
CLZ	e PKPbc	Z	04:42:32.8	147.1	15.6					
	e PKPab	Z	04:42:36.4							
CLL	e PKPdf	Z	04:42:30.9	147.1	20.4	0.7	50			
	i PKPbc	+ Z	04:42:32.6			0.9	139			
	i PKPab	Z	04:42:36.2			0.8	122			
	e pPKPbc	Z	04:44:52.3							
	e SKP	Z	04:45:04.4							
	e		04:45:14.7							
	e sPKPbc	Z	04:45:51.6							
	e pPP	Z	04:48:03.3							
	e sPP	Z	04:49:09.9							
	e SKKSac	N	04:51:53.6							
	e SKSP	Z	04:55:15.0							
	e SS	T	05:04:13.4							
	e sSS	T	05:08:05.2							
	e SSS	T	05:09:53.6							
BRG	e PKPbc	Z	04:42:33.1	147.3	22.2					
	e PKPab	Z	04:42:37.5							
BUG	e PKPbc	Z	04:42:34.3	147.9	10.4					
MOX	e PKPbc	Z	04:42:34.9	148.0	18.3					
	e PKPab	Z	04:42:40.0							
TNS	e PKPbc	Z	04:42:37.2	148.9	12.9					
	e PKPab	Z	04:42:44.1							
GRA1	e PKPbc	Z	04:42:37.8	149.0	18.1					
	e PKPab	Z	04:42:44.6							
	e pPKP	Z	04:44:57.2							
	e SKSdf	N	04:48:21.8							
	e SS	E	05:04:37.8							
WET	e PKPbc	Z	04:42:37.7	149.1	21.4					
	e PKPab	Z	04:42:45.2							
GEC2	e PKPbc	Z	04:42:37.8	149.2	23.0					
	e PKPab	Z	04:42:45.4							
STU	e PKPbc	Z	04:42:40.5	150.2	14.9					
	e PKPab	Z	04:42:49.2							
FUR	e PKPbc	Z	04:42:40.8	150.4	19.1					
	e PKPab	Z	04:42:50.7							

BFO	e PKPbc	Z	04:42:41.5	150.8	13.4
	e PKPab	Z	04:42:51.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/17	17:53:40.3	2.960N	138.270E	33.0N		6.3		SZGRF
2002/10/17	17:52:43.8	3.593S	140.104E	33N	5.6	6.2		NEIC

Irian Jaya, Indonesia, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e PP	Z	18:12:19.1	113.4	60.6					
RUE	e PP	Z	18:12:26.5	114.2	61.8					
BRG	e PP	Z	18:12:30.8	114.8	62.6					
CLL	e PP	Z	18:12:32.9	115.2	61.6					
	e PPS	N	18:23:14.2							
GEC2	e PP	Z	18:12:39.0	115.9	63.3					
MOX	e PP	Z	18:12:42.4	116.3	60.6					
WET	e PP	Z	18:12:42.1	116.3	62.4					
CLZ	e PP	Z	18:12:41.8	116.3	58.9					
GRA1	e Pdiff	Z	18:07:47.2	116.9	60.6					
	e PP	Z	18:12:45.2							
	e Sdiff	N	18:20:32.7							
	e SP	Z	18:22:29.8							
	e L	Z	19:04:47.0			21.2	7828		6.3	
IBBN	e PP	Z	18:12:48.9	117.4	56.2					
FUR	e PP	Z	18:12:49.8	117.7	61.4					
BUG	e PP	Z	18:12:53.5	118.2	56.1					
TNS	e PP	Z	18:12:53.9	118.2	57.8					
STU	e PP	Z	18:12:56.7	118.5	59.2					
BFO	e PP	Z	18:13:02.8	119.3	58.6					
WLF	e PP	Z	18:13:06.1	119.7	55.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/18	14:51:53.6	66.320N	2.160E	425.0N	4.2			SZGRF
2002/10/18	14:50:27.4	71.456N	2.424W	10G	4.4			NEIC

Norwegian Sea

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLZ	e P	Z	14:55:06.4	20.4	348.4	1.1	22			
BUG	e P	Z	14:55:06.4	20.5	351.2					
CLL	e P	Z	14:55:15.7	21.3	346.5	1.3	31	4.3		
MOX	e P	Z	14:55:20.7	21.8	348.0	1.4	48			
TNS	e P	Z	14:55:21.4	21.8	350.7					
GRA1	e P	Z	14:55:31.6	22.6	348.8					
STU	e P	Z	14:55:37.3	23.3	350.7					
BFO	e P	Z	14:55:40.0	23.7	351.5	1.3	19	4.1		

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GEC2 e P Z 14:55:42.5 23.8 347.4

Date Origin Time Lat Long Depth mb Ms ML Source
2002/10/18 17:25:5.1 38.470N 13.860E 10.0G
Sicily, Italy

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
KBA	e Pn	Z 17:27:08.5	8.6	177.3					
ARSA	e Pn	Z 17:27:12.1	8.9	188.5					
MOA	e Pn	Z 17:27:19.5	9.4	181.9					
GEC2	e Pn	Z 17:27:31.5	10.4	179.3					
BFO	e Pn	Z 17:27:35.8	10.6	155.9					
WET	e Pn	Z 17:27:36.2	10.7	175.9					
GRA1	e Pn	Z 17:27:47.0	11.4	169.5					
MOX	e Pn	Z 17:27:57.9	12.3	171.7					

Date Origin Time Lat Long Depth mb Ms ML Source
2002/10/18 21:55:52.6 16.864S 177.134W 33N 4.8 4.9
Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 22:15:36.2	146.5	14.6					

Date Origin Time Lat Long Depth mb Ms ML Source
2002/10/18 22:53:14.3 16.882S 177.403W 33N 4.8 5.0
Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 23:12:59.3	146.5	15.1					

Date Origin Time Lat Long Depth mb Ms ML Source
2002/10/18 23:00:16.8 17.075S 176.954W 33N 4.6
Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 23:19:57.2	146.7	14.3					

Date Origin Time Lat Long Depth mb Ms ML Source
2002/10/19 00:43:52.6 3.630S 140.284E 10G 5.3 5.9
NEIC

Irian Jaya, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PP	Z 01:04:25.4	117.1	60.5					
	e S	T 01:11:43.3							
	e SS	R 01:20:38.1							
	e L	Z 01:56:14.9			20.8	2487		5.8	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/19	07:24:43.0	35.500N	92.690E	33.0N	5.2	4.5		SZGRF
2002/10/19	07:24:37.0	35.734N	93.258E	33N	5.0	4.5		NEIC

Qinghai, China

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 07:34:37.0	58.8	70.0	1.0	26	5.2		
	e L	Z 08:00:58.4			18.4	377		4.5	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/19	12:09: 6.1	44.070N	150.730E	33.0N	5.9	6.2		SZGRF
2002/10/19	12:09:04.8	44.335N	149.802E	33N	5.2	6.2		NEIC

East of Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z 12:20:52.8	76.1	30.8					
CLL	i P	Z 12:20:59.6	77.3	30.1	1.1	142	6.0		
	e sP	Z 12:21:12.3							
	e PP	Z 12:23:56.0							
	e PPP	Z 12:25:46.6							
	e S	T 12:30:50.4							
	e SKSac	R 12:31:10.7							
	e SS	R 12:35:49.2							
	e LQ	T 12:44:08.0							
	e LR	Z 12:46:07.0							
	e L	Z 12:59:53.2			18.0	14505		6.3	
BRG	e P	Z 12:21:00.2	77.4	30.7					
CLZ	e P	Z 12:21:02.6	77.7	28.4					
MOX	e P	Z 12:21:05.8	78.3	29.1					
BUG	e P	Z 12:21:08.9	78.9	26.3					
GEC2	e P	Z 12:21:10.8	79.2	30.3					
WET	e P	Z 12:21:11.2	79.2	29.8					
GRA1	e P	Z 12:21:11.6	79.3	28.8	1.1	163	5.9		
	e S	R 12:31:13.2							
	e SS	R 12:37:10.1							
	e L	E 12:58:09.7			18.0	8985		6.2	
TNS	e P	Z 12:21:13.0	79.6	27.0					

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FUR	e P	Z	12:21:18.8	80.6	28.7
STU	e P	Z	12:21:18.9	80.7	27.4
BFO	e P	Z	12:21:22.2	81.4	26.8

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/19	13:49:36.2	24.530N	141.330E	33.0N	5.7			SZGRF

Volcano Islands, Japan, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 14:02:49.3	93.6	44.2	1.4	57	5.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/19	15:57:45.4	41.010N	51.500E	33.0N	4.9			SZGRF
2002/10/19	15:57:13.6	39.000N	54.896E	33N	5.1	5.0		NEIC

Caspian Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z 16:03:29.4	30.8	92.9	1.0	13	4.7		
BRG	e P	Z 16:03:30.2	30.8	96.5	1.0	24	5.0		
CLL	e P	Z 16:03:35.1	31.5	96.4	1.1	20	4.9		
MOX	e P	Z 16:03:42.9	32.3	94.1	1.0	32	5.1		
GRA1	e P	Z 16:03:44.4	32.5	92.3	1.2	16	4.7		
CLZ	e P	Z 16:03:50.3	33.2	94.9	1.5	26	4.8		
STU	e P	Z 16:03:55.5	33.8	89.3	1.2	62	5.4		
TNS	e P	Z 16:04:00.7	34.3	90.9	1.2	18	4.9		
BUG	e P	Z 16:04:06.5	35.1	91.7	1.1	14	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/19	17:28:38.9	21.983S	171.404E	33N				NEIC

Southeast of Loyalty Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 17:48:18.7	148.2	36.6					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/19	18:24:22.5	18.433S	174.689W	131D	4.8			NEIC

Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e PKP	Z 18:43:46.2	145.3	14.2					
CLZ	e PKP	Z 18:43:49.6	146.4	8.7					

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CLL	i PKPbc	- Z	18:43:50.1	146.6	13.3	0.9	86
	e pPKPbc	Z	18:44:25.1				
BRG	e PKP	Z	18:43:50.7	146.8	15.1		
BUG	e PKP	Z	18:43:50.9	147.0	3.4		
MOX	e PKP	Z	18:43:52.3	147.4	11.1		
TNS	e PKP	Z	18:43:54.1	148.1	5.6		
GRA1	e PKP	Z	18:43:56.0	148.4	10.7		
GEC2	e PKP	Z	18:43:56.7	148.8	15.5		
STU	e PKP	Z	18:43:58.7	149.5	7.3		
FUR	e PKP	Z	18:43:59.7	149.9	11.3		
BFO	e PKP	Z	18:43:59.7	150.0	5.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/20	01:35:1.7	54.720N	159.840E	33.0N	5.8	4.4		SZGRF
2002/10/20	01:34:49.3	52.909N	160.255E	49D	5.3			NEIC

Near east coast of Kamchatka Peninsula, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z	01:46:05.3	70.9	20.6	1.0	147	6.1		
CLL	e P	Z	01:46:12.4	72.2	20.0	1.0	118	6.0		
CLZ	e P	Z	01:46:13.5	72.2	18.5	1.0	168	6.1		
BRG	e P	Z	01:46:13.7	72.4	20.5	1.1	48	5.5		
MOX	e P	Z	01:46:18.3	73.1	19.1	1.0	74	5.7		
BUG	e P	Z	01:46:18.6	73.2	16.6	0.9	90	5.9		
GRA1	e P	Z	01:46:24.6	74.1	18.8	0.9	140	6.1		
	e L	Z	02:21:01.5			21.2	234		4.4	
TNS	e P	Z	01:46:24.5	74.2	17.2	0.9	61	5.7		
WET	e P	Z	01:46:25.4	74.3	19.7	1.0	69	5.8		
GEC2	e P	Z	01:46:25.5	74.4	20.2	1.1	70	5.7		
STU	e P	Z	01:46:31.4	75.4	17.6	1.1	75	5.6		
FUR	e P	Z	01:46:32.5	75.5	18.7	1.0	92	5.8		
BFO	e P	Z	01:46:34.7	76.0	17.0	1.1	60	5.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/20	08:18:53.9	56.477S	158.363	10G	5.1	4.7		NEIC

Macquiere Island Region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z	08:39:31.2	159.3	121.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/20	13:28:32.0	44.880N	150.180E	33.0N	5.2			SZGRF
2002/10/20	13:28:51.8	46.652N	150.574E	165*	4.7			NEIC

East of Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 13:40:32.6	77.4	27.3	0.7	18	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/20	16:06:4.3	37.140N	142.100E	33.0N	5.8	5.2		SZGRF
2002/10/20	16:06:00.5	36.406N	141.074E	40D	5.4	4.9		NEIC

Off east coast of Honshu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e P	Z 16:18:01.8	78.6	40.5	1.1	251	6.1		
RUE	e P	Z 16:18:09.2	80.0	40.6	1.1	73	5.5		
BRG	e P	Z 16:18:15.2	81.2	40.5	1.0	57	5.6		
CLL	i P	+ Z 16:18:15.2	81.2	39.9	0.9	108	6.0		
	e pP	Z 16:18:27.4							
	e PP	Z 16:21:21.0							
	e SS	T 16:33:51.5							
	e LQ	T 16:41:35.9							
	e LR	Z 16:44:15.5							
	e L	Z 16:57:53.3			18.0	1275		5.3	
CLZ	e P	Z 16:18:18.9	81.8	38.1	0.9	64	5.7		
MOX	e P	Z 16:18:21.0	82.3	38.8	0.9	31	5.4		
IBBN	e P	Z 16:18:21.6	82.4	36.2	1.0	81	5.8		
GEC2	e P	Z 16:18:23.7	82.8	40.1	1.0	52	5.7		
WET	e P	Z 16:18:24.7	82.9	39.6	1.0	34	5.5		
GRA1	e P	Z 16:18:26.3	83.2	38.5	0.9	115	6.1		
	e L	Z 16:59:20.7			20.2	1114		5.2	
BUG	e P	Z 16:18:25.8	83.3	35.8	0.8	24	5.5		
TNS	e P	Z 16:18:29.1	83.8	36.6	1.1	30	5.4		
FUR	e P	Z 16:18:31.8	84.3	38.4	0.9	111	6.1		
STU	e P	Z 16:18:33.5	84.7	37.0	0.9	114	6.1		
WLF	e P	Z 16:18:36.1	85.1	34.9					
BFO	e P	Z 16:18:36.8	85.4	36.4	1.0	92	6.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/20	18:21:56.0	45.960N	14.540E	10.0G			3.7	SZGRF
2002/10/20	18:21:54.3	45.953N	14.392E	10G				NEIC

Northwestern Balkan Peninsula

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 18:22:42.2	2.9	170.6					3.5
FUR	e Sg	E 18:23:33.3	3.1	135.0					4.0
WET	e Pn	Z 18:22:47.8	3.4	161.7					3.3
	e Sn	Z 18:23:29.7							

GRA1	e Pn	Z	18:23:04.8	4.3	149.2							4.0
	e Sg	E	18:24:15.9									
BFO	e Pn	Z	18:23:07.9	4.8	117.7							3.8
	e Sg	N	18:24:32.0									
MOX	e Pn	Z	18:23:10.7	5.0	157.5							
	e Sn	N	18:24:07.0									
CLL	e Pn	Z	18:23:17.2	5.4	169.7							
TNS	e Sn	N	18:24:27.8	5.8	134.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/21	11:42:35.5	53.440N	2.250W	10.0G				SZGRF
2002/10/21	11:42:34.9	53.478N	2.219W	5				NEIC

United Kingdom

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BUG	e Pn	Z	11:44:05.2	6.1	293.1					
	e Sn	N	11:45:13.4							
TNS	e Pn	Z	11:44:22.4	7.3	300.4					
CLZ	e Pn	Z	11:44:28.6	7.8	287.1					
	e Sn	N	11:45:54.3							
BFO	e Pn	Z	11:44:36.5	8.4	311.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/22	11:39:04.9	20.461S	178.572W	552D	5.5			NEIC

Fiji Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e PKP	Z	11:57:40.8	144.7	19.5					
RUE	e PKPbc	Z	11:57:46.1	146.6	21.3					
CLL	e PKPdf	Z	11:57:44.8	147.8	20.7	1.7	98			
	i PKPbc	- Z	11:57:49.2			0.9	418			
	e PKPab	Z	11:57:54.0			0.8	288			
	e pPKPbc	Z	11:59:59.1							
	e SKP	Z	12:00:37.9							
	e sPKPbc	Z	12:00:49.5							
	e pPP	Z	12:03:17.4							
	e SKSdf	R	12:04:00.6							
	e sPP	Z	12:04:14.8							
	e SKKSac	R	12:07:18.3							
	e PPS	Z	12:14:19.4							
	e SS	T	12:19:43.6							
CLZ	e PKPdf	Z	11:57:45.7	147.9	15.9					
	e PKPbc	Z	11:57:49.6							
	e PKPab	Z	11:57:54.1							
BRG	e PKPdf	Z	11:57:45.0	148.0	22.5					

	e	PKPbc	Z	11:57:49.9				
	e	PKPab	Z	11:57:54.7				
BUG	e	PKPbc	Z	11:57:50.9	148.7	10.6		
	e	PKPab	Z	11:57:57.2				
MOX	e	PKPdf	Z	11:57:46.6	148.8	18.6		
	e	PKPbc	Z	11:57:51.6				
	e	PKPab	Z	11:57:57.8				
TNS	e	PKPdf	Z	11:57:48.3	149.7	13.1		
	e	PKPbc	Z	11:57:53.7				
	e	PKPab	Z	11:58:01.6				
GRA1	e	PKPbc	Z	11:57:54.2	149.7	18.4		
	e	PKPab	Z	11:58:02.2				
WET	e	PKPdf	Z	11:57:47.9	149.9	21.8		
	e	PKPbc	Z	11:57:54.0				
	e	PKPab	Z	11:58:02.8				
GEC2	e	PKPdf	Z	11:57:48.5	150.0	23.4		
	e	PKPbc	Z	11:57:54.3				
	e	PKPab	Z	11:58:03.0				
WLF	e	PKPdf	Z	11:57:49.8	150.6	9.0		
	e	PKPbc	Z	11:57:55.8				
	e	PKPab	Z	11:58:05.3				
STU	e	PKPdf	Z	11:57:50.3	151.0	15.1		
	e	PKPbc	Z	11:57:56.5				
	e	PKPab	Z	11:58:06.9				
FUR	e	PKPdf	Z	11:57:50.0	151.2	19.4		
	e	PKPbc	Z	11:57:57.0				
	e	PKPab	Z	11:58:08.3				
BFO	e	PKPdf	Z	11:57:50.2	151.6	13.7		
	e	PKPbc	Z	11:57:57.2				
	e	PKPab	Z	11:58:09.2				

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/22	15:52: 3.6	38.490N	41.720E	33.0N	4.4	3.9		SZGRF
2002/10/22	15:52:13.0	39.400N	40.211E	10G	4.6	3.9		NEIC

Turkey

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z 15:57:00.1	21.1	106.6	1.8	113	5.1		
BRG	e P	Z 15:57:07.6	21.6	111.8	0.8	6	4.2		
WET	e P	Z 15:57:08.0	21.7	106.3	0.8	6	4.2		
CLL	e P	Z 15:57:13.4	22.3	111.6	0.9	14	4.5		
GRA1	e P	Z 15:57:19.1	22.9	105.6	0.9	28	4.8		
	e L	Z 16:10:34.8			18.0	367		3.9	
MOX	e P	Z 15:57:19.6	22.9	108.3	0.8	4	3.9		
STU	e P	Z 15:57:29.5	24.0	101.3	0.8	9	4.4		
CLZ	e P	Z 15:57:30.2	24.0	109.3	0.8	16	4.7		
BFO	e P	Z 15:57:35.5	24.4	99.5	0.9	4	4.1		

TNS	e P	Z	15:57:37.4	24.7	103.7	1.1	13	4.5
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Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/22	18:08:38.6	19.345S	177.531W	500G	4.1			NEIC

Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 18:27:34.8	148.9	16.1					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/23	01:49:23.3	49.300N	153.000E	33.0N	5.4			SZGRF
2002/10/23	01:49:06.4	46.987N	153.819E	33N	5.0			NEIC

Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z 02:00:47.2	74.8	27.0	1.1	56	5.6		
CLL	e P	Z 02:00:54.1	76.1	26.4	1.0	56	5.6		
BRG	e P	Z 02:00:54.7	76.2	26.9	1.1	23	5.1		
CLZ	e P	Z 02:00:55.7	76.3	24.7	1.0	44	5.5		
MOX	e P	Z 02:01:00.1	77.1	25.4	1.1	34	5.3		
BUG	e P	Z 02:01:02.1	77.5	22.7	0.9	32	5.3		
GRA1	e P	Z 02:01:05.9	78.1	25.1	1.0	60	5.7		
GRFO	e P	Z 02:01:05.8	78.1	25.1	1.0	51	5.6		
WET	e P	Z 02:01:05.3	78.1	26.1	1.1	33	5.4		
GEC2	e P	Z 02:01:05.9	78.1	26.6	1.4	30	5.2		
TNS	e P	Z 02:01:06.9	78.3	23.3	0.8	24	5.4		
BFO	e P	Z 02:01:16.1	80.1	23.1	1.0	30	5.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/23	02:51:35.6	45.940N	23.720E	10.0G			4.0	SZGRF
2002/10/23	02:52:16.6	47.642N	19.775E	10G				NEIC

Romania

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 02:53:22.6	4.2	104.3					4.0
WET	e Pn	Z 02:53:30.4	4.8	105.6					
BRG	e Pn	Z 02:53:32.5	5.0	128.1					
CLL	e Pn	Z 02:53:42.9	5.7	127.2					
MOX	e Pn	Z 02:53:49.3	6.1	116.2					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
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2002/10/23 11:01:32.5 42.810N 16.710E 10.0G SZGRF
 2002/10/23 11:01:27.2 42.661N 17.197E 33N 4.4 NEIC
 Adriatic Sea

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z	11:03:05.6	6.6	157.2					
	e Sn	N	11:04:16.9							
FUR	e Sn	E	11:04:20.8	6.9	140.8					
WET	e Pn	Z	11:03:12.1	7.1	153.6					
	e Sn	E	11:04:27.7							
BFO	e Pn	Z	11:03:28.2	8.4	129.1					
BRG	e Pn	Z	11:03:31.8	8.5	163.6					
MOX	e Pn	Z	11:03:35.4	8.8	152.3					
	e Sn	N	11:05:08.1							
TNS	e Pn	Z	11:03:46.5	9.7	138.2					
	e Sn	E	11:05:26.5							

Date Origin Time Lat Long Depth mb Ms ML Source
 2002/10/23 11:27:36.6 65.090N 146.590W 33.0N 6.3 6.3
 2002/10/23 11:27:19.3 63.576N 148.088W 14G 6.1 6.7
 Northern Alaska, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z	11:37:50.1	63.1	351.1	1.3	364	6.4		
CLZ	e P	Z	11:37:52.2	63.4	349.5	2.2	833	6.6		
BUG	e P	Z	11:37:51.8	63.4	348.0	1.7	474	6.4		
CLL	i P	- Z	11:37:56.7	64.2	350.8	1.2	86	5.8		
	e PP	Z	11:40:25.1							
	e S	T	11:46:30.9							
	e SS	R	11:50:29.9							
	e LQ	T	11:54:05.3							
	e LR	Z	11:57:44.1							
	e L	Z	12:06:40.1			22.0	25415		6.4	
MOX	e P	Z	11:38:00.5	64.7	350.2	1.5	325	6.2		
BRG	e P	Z	11:38:00.5	64.7	351.3	1.5	261	6.2		
TNS	e P	Z	11:38:01.0	64.7	348.7	2.1	622	6.4		
WLF	e P	Z	11:38:02.8	65.0	347.7	2.0	546	6.4		
GRA1	e P	Z	11:38:06.8	65.6	350.1			6.5		
	e PP	Z	11:40:40.2							
	e S	R	11:46:59.4							
	e L	Z	12:08:24.6			21.7	23502		6.3	
WET	e P	Z	11:38:11.5	66.3	350.9	1.4	295	6.3		
BFO	e P	Z	11:38:12.8	66.6	348.8	1.6	234	6.2		
GEC2	e P	Z	11:38:13.7	66.7	351.3	1.7	507	6.5		
FUR	e P	Z	11:38:16.1	67.1	350.2	0.9	201	6.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/23	19:15:14.2	30.678S	179.821W	361D	5.0			NEIC

Kermadec Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e PKPab	Z 19:34:55.8	156.0	29.9					
CLL	e PKPdf	Z 19:34:26.1	157.3	29.6					
	e PKPdif	Z 19:34:38.5							
	i PKPab	+ Z 19:35:01.3			0.8	50			
BRG	e PKPab	Z 19:35:01.2	157.4	32.1					
CLZ	e PKPab	Z 19:35:02.2	157.5	23.5					
MOX	e PKPab	Z 19:35:05.5	158.3	27.5					
GEC2	e PKPab	Z 19:35:09.0	159.1	34.4					
WET	e PKPab	Z 19:35:09.9	159.2	32.1					
GRA1	e PKPab	Z 19:35:10.3	159.3	27.7					
TNS	e PKPab	Z 19:35:10.7	159.5	20.7					
WLF	e PKPab	Z 19:35:14.8	160.5	15.5					
FUR	e PKPab	Z 19:35:15.9	160.6	29.8					
BFO	e PKPab	Z 19:35:18.2	161.3	22.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/24	02:27:51.3	23.570N	123.820E	33.0N	5.4			SZGRF
2002/10/24	02:27:51.5	25.183N	123.774E	10G	5.3	4.8		NEIC

Southwestern Ryukyu Islands, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 02:40:26.7	84.3	57.1	1.4	45	5.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/24	02:32:30.7	23.320N	123.730E	33.0N	5.3			SZGRF
2002/10/24	02:32:31.0	25.194N	123.878E	10G	5.1			NEIC

Southwestern Ryukyu Islands, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 02:45:06.8	84.3	57.1	1.8	50	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/24	03:34:44.8	50.800N	153.440E	33.0N	5.7	5.3		SZGRF
2002/10/24	03:34:26.6	48.210N	154.356E	33N	5.5			NEIC

Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
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RUE	e P	Z	03:46:01.2	73.9	26.1	1.0	78	5.8	
CLL	e P	Z	03:46:08.1	75.1	25.5	0.9	89	5.9	
BRG	e P	Z	03:46:09.0	75.3	26.0	1.2	40	5.4	
CLZ	e P	Z	03:46:10.2	75.3	23.9	1.3	109	5.8	
MOX	e P	Z	03:46:14.1	76.1	24.6	1.1	56	5.5	
BUG	e P	Z	03:46:16.0	76.4	21.9	1.2	73	5.6	
GRA1	e P	Z	03:46:20.2	77.1	24.2	1.1	125	5.9	
	e L	Z	04:23:48.5			20.6	1432		5.3
WET	e P	Z	03:46:20.3	77.1	25.2	1.0	90	5.7	
GEC2	e P	Z	03:46:20.1	77.2	25.7	1.0	58	5.6	
TNS	e P	Z	03:46:21.1	77.3	22.5	1.1	73	5.6	
STU	e P	Z	03:46:27.3	78.4	22.9	1.1	71	5.7	
FUR	e P	Z	03:46:27.6	78.5	24.1	1.1	149	6.0	
BFO	e P	Z	03:46:30.7	79.1	22.3	1.1	88	5.8	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/24	04:35:12.4	24.140N	124.540E	33.0N	5.1			SZGRF
2002/10/24	04:35:16.4	25.154N	123.486E	33N	5.5			NEIC

Southwestern Ryukyu Islands, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 04:47:47.4	84.1	57.4			5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/24	06:08:51.9	0.180S	29.860E	33.0G	6.0	5.8		SZGRF

Zaire

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
FUR	e P	Z 06:17:50.2	51.0	155.8	1.6	490	6.2		
GEC2	e P	Z 06:17:50.9	51.0	159.0	1.9	688	6.3		
WET	e P	Z 06:17:53.9	51.4	158.1	1.8	360	6.0		
BFO	e P	Z 06:17:57.7	52.0	152.2	1.6	306	6.0		
STU	e P	Z 06:17:59.0	52.1	153.4	2.1	562	6.1		
GRA1	e P	Z 06:18:01.1	52.4	156.2	1.7	446	6.1		
	e PP	Z 06:20:10.7							
	e S	R 06:25:41.5							
	e SS	R 06:29:22.1							
	e L	Z 06:40:32.6			18.7	8244		5.8	
BRG	e P	Z 06:18:04.3	52.8	159.9	1.6	188	5.8		
MOX	e P	Z 06:18:06.6	53.1	157.0	1.9	312	5.9		
CLL	e P	Z 06:18:08.4	53.4	158.8	1.8	224	5.8		
	e PP	Z 06:20:11.8							
	e PPP	Z 06:21:35.2							
	e S	T 06:25:49.9							
	e SS	T 06:29:33.3							

	e L	Z	06:42:27.7			22.0	8833		5.8
TNS	e P	Z	06:18:10.0	53.6	153.0	1.3	208	5.9	
WLF	e P	Z	06:18:11.2	53.8	150.1	1.6	302	6.1	
RUE	e P	Z	06:18:15.5	54.4	160.1	1.3	233	6.0	
CLZ	e P	Z	06:18:17.2	54.6	155.8	1.7	258	6.0	
BUG	e P	Z	06:18:20.6	55.0	152.0	1.4	242	6.0	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/24	07:12:25.7	1.290S	29.500E	33.0N	5.5			SZGRF
2002/10/24	07:12:17.3	1.988S	28.875E	10G	5.3	5.5		NEIC

Lake Tanganyika region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
FUR	e P	Z 07:21:30.4	52.4	157.6	0.9	75	5.6		
GEC2	e P	Z 07:21:31.3	52.5	160.8	1.1	67	5.5		
WET	e P	Z 07:21:34.4	53.0	159.8	1.3	43	5.2		
BFO	e P	Z 07:21:37.8	53.4	154.1	1.4	76	5.4		
STU	e P	Z 07:21:39.1	53.6	155.3	1.4	70	5.4		
GRA1	e P	Z 07:21:41.2	53.9	158.0	1.5	126	5.6		
BRG	e P	Z 07:21:44.4	54.4	161.5	1.4	42	5.3		
MOX	e P	Z 07:21:47.0	54.7	158.7	1.3	44	5.3		
CLL	e P	Z 07:21:48.8	55.0	160.5	1.5	48	5.3		
TNS	e P	Z 07:21:50.2	55.1	154.8	1.0	66	5.6		
WLF	e P	Z 07:21:51.3	55.2	152.0	1.5	106	5.6		
RUE	e P	Z 07:21:55.7	55.9	161.7	1.2	71	5.6		
CLZ	e P	Z 07:21:57.3	56.1	157.5	2.0	120	5.6		
BUG	e P	Z 07:22:00.7	56.5	153.8	1.3	78	5.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/24	21:53:39.4	5.730N	94.530E	33.0N	6.3			SZGRF
2002/10/24	21:53:42.8	6.052N	94.465E	63D	6.2			NEIC

Northern Sumatera, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z 22:05:43.9	79.3	93.5	1.2	282	6.1		
GEC2	e P	Z 22:05:44.3	79.4	93.0	1.0	769	6.6		
RUE	e P	Z 22:05:44.7	79.5	93.7	0.9	659	6.5		
WET	e P	Z 22:05:47.2	79.9	92.4	1.0	286	6.1		
RGN	e P	Z 22:05:47.1	79.9	93.7	1.3	491	6.3		
CLL	i P	+ Z 22:05:46.6	79.9	92.9	1.1	208	6.0		
	e pP	Z 22:06:08.2							
	e PP	Z 22:08:54.2							
	e pPP	Z 22:09:07.2							
	e PPP	Z 22:10:48.0							
	e S	T 22:15:40.9							

	e PS	Z	22:16:44.2								
	e SS	R	22:21:01.2								
	e L	Z	22:48:03.8			22.0	468		4.8		
MOX	e P	Z	22:05:51.6	80.8	91.7	1.6	336	6.1			
FUR	e P	Z	22:05:52.1	81.0	91.0	0.8	214	6.2			
GRA1	e P	Z	22:05:53.4	81.0	91.2	1.1	398	6.4			
CLZ	e P	Z	22:05:55.9	81.6	90.9	1.1	315	6.4			
STU	e P	Z	22:05:59.5	82.3	89.5	0.9	139	6.2			
TNS	e P	Z	22:06:02.3	82.8	89.2	1.1	188	6.2			
BFO	e P	Z	22:06:02.3	82.9	88.8	0.9	159	6.2			
BUG	e P	Z	22:06:05.9	83.5	88.4	1.3	360	6.4			
WLF	e P	Z	22:06:10.3	84.3	87.4	1.3	270	6.3			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/25	02:49:46.3	27.480N	121.590E	33.0N	4.8	5.0		SZGRF
2002/10/25	02:49:24.2	25.241N	123.750E	10G	5.3	5.0		NEIC

Near coast of southeastern China

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 03:01:59.4	84.2	57.1			4.8		
	e L	Z 03:43:48.5			20.8	740		5.0	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/25	03:49:33.4	16.320S	172.968W	33N	5.1			NEIC

Samoa Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 04:09:17.8	146.5	7.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/25	14:40:39.6	30.690N	131.400E	33.0N	5.9			SZGRF
2002/10/25	14:40:51.2	30.601N	130.016E	119D	5.3			NEIC

Kyushu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z 14:52:51.1	80.1	51.6	1.2	170	5.9		
BRG	e P	Z 14:52:55.9	81.0	51.5	0.9	27	5.4		
CLL	e P	Z 14:52:56.5	81.2	50.9	0.9	88	5.9		
CLZ	e P	Z 14:53:01.9	82.1	49.0	1.4	240	6.2		
MOX	e P	Z 14:53:02.7	82.3	49.8	1.5	111	5.9		
GEC2	e P	Z 14:53:03.2	82.4	51.1					
WET	e P	Z 14:53:04.6	82.6	50.6	1.6	70	5.7		
GRA1	e P	Z 14:53:07.4	83.1	49.4	1.3	261	6.3		

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GRFO	e P	Z	14:53:07.3	83.1	49.4				
BUG	e P	Z	14:53:09.9	83.8	46.7	1.5	165	6.0	
FUR	e P	Z	14:53:12.0	84.1	49.4	1.5	262	6.3	
TNS	e P	Z	14:53:11.8	84.1	47.5	1.5	142	6.0	
STU	e P	Z	14:53:14.6	84.7	47.9	1.4	111	5.8	
BFO	e P	Z	14:53:18.1	85.4	47.3	1.5	107	5.7	
WLF	e P	Z	14:53:19.1	85.5	45.8				

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/25	23:34:48.3	45.820N	10.540E	10.0G			3.6	SZGRF
2002/10/25	23:34:49.2	45.988N	10.534E	10G				NEIC

Northern Italy

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
DAVA	e Pn	Z	23:35:15.6	1.4	160.7					
	e Sn	N	23:35:38.6							
KBA	e Pn	Z	23:35:27.2	2.2	241.6					
	e Sn	N	23:35:57.0							
FUR	e Sn	N	23:36:01.4	2.2	193.3					3.6
BFO	e Pn	Z	23:35:36.4	2.8	146.6					
STU	e Sg	N	23:36:25.5	2.9	161.4					
MOA	e Pn	Z	23:35:39.5	3.2	235.2					
WET	e Pn	Z	23:35:44.7	3.5	207.5					
GEC2	e Pn	Z	23:35:44.8	3.6	218.1					
GRA1	e Sg	N	23:36:50.0	3.7	187.4					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/26	16:20:55.6	20.337S	178.573W	600G	4.6			NEIC

Fiji Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	- Z	16:39:35.4	147.8	20.7	0.9	74			
	i PKPab	Z	16:39:39.7			0.8	34			
	e pPKPbc	Z	16:41:50.1							
GRA1	e PKPbc	Z	16:39:40.5	149.6	18.4					
	e PKPab	Z	16:39:48.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/26	20:29: 7.0	35.640N	93.280E	33.0N	5.1	5.3		SZGRF
2002/10/26	20:28:47.4	35.156N	96.069E	33N	5.1	5.1		NEIC

Qinghai, China

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
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CLL	i P	Z	20:38:50.6	57.5	72.2	1.4	37	5.2		
	e PP	Z	20:41:04.1							
	e S	Z	20:47:01.4							
	e SS	Z	20:51:44.5							
	e LR	Z	20:57:33.9							
	e L	Z	21:05:27.3			22.0	1492		5.1	
GRA1	e P	Z	20:39:02.9	60.9	68.8				5.1	
	e L	Z	21:06:48.4			20.1	2092		5.3	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/28	02:38:32.7	33.922S	178.759W	33N	4.9	4.9		NEIC

South of Kermadec Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPab	Z 02:59:10.5	160.6	30.7	1.2	33			
GRA1	e PKPab	Z 02:59:20.4	162.6	28.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/28	13:15:05.5	15.926S	179.313E	33N	4.9	5.1		NEIC

Fiji Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 13:34:44.4	144.9	20.2					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/28								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 13:55:33.5							
BEAM		13:55:33.5			0.9	20			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/29	11:01:44.4	36.050N	71.650E	121.6	4.8			SZGRF
2002/10/29	11:01:35.3	37.016N	71.336E	33N	4.6			NEIC

Afghanistan-Tajikistan border region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 11:09:47.6	44.2	82.9			4.8		
	e pP	Z 11:10:15.4							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/29	15:04:48.9	52.310N	163.330E	33.0N	5.0			SZGRF
2002/10/29	15:04:56.2	53.172N	160.131E	61D	4.6			NEIC

Off east coast of Kamchatka Peninsula, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 15:16:29.1	73.8	18.8			5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/29	19:11:27.4	50.590N	171.720W	33.0G	5.0			SZGRF
2002/10/29	19:11:29.4	51.617N	173.609W	33N	4.8			NEIC

South of Aleutian Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 19:23:32.1	78.6	3.1			5.0		
	e	19:23:45.7							
	e	19:24:15.1							
	e	19:24:30.6							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/30	02:45:52.4	15.480S	173.277W	38D	4.6			NEIC

Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 03:05:31.0	145.7	7.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/30	14:43:05.5	17.487S	174.350W	87D	5.3			NEIC

Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	+ Z 15:02:36.5	145.8	12.5	1.2	145			
	e pPKPbc	Z 15:03:01.0							
	e PP	Z 15:05:45.2							
	e SS	T 15:24:35.7							
	e sSS	T 15:25:12.2							
	e SSS	T 15:30:09.7							
	e sSSS	T 15:30:55.3							
	e LR	Z 15:52:06.6							
	e L	Z 15:54:27.4			22.0	84		4.5	
GRA1	e PKP	Z 15:02:42.2	147.5	9.9					
	e pPKP	Z 15:03:06.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/30	16:26:38.6	25.308S	175.641W	40D	5.8	5.3		NEIC

South of Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPdf	Z 16:46:26.0	153.2	17.6	1.6	41			
	i PKPbc	Z 16:46:33.5			1.1	69			
	e PKPab	Z 16:46:45.1			1.1	48			
	e PP	Z 16:50:16.9							
	e SS	T 17:09:48.6							
	e SSS	N 17:15:36.2							
	e SSSS	N 17:19:48.1							
	e LR	Z 17:38:48.7							
	e L	Z 18:05:31.9			18.0	483		5.4	
	GRA1	e PKPdf	Z 16:46:28.7	155.0	14.8				
	e PKPab	Z 16:46:53.8							
	e PP	Z 16:50:27.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/30	20:25: 9.0	44.720N	10.720E	10.0G			3.4	SZGRF
2002/10/30	20:25:04.1	44.292N	10.815E	10G				NEIC

Northern Italy

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z 20:26:11.1	4.4	156.1					3.4
	e Sn	E 20:26:55.9							
GEC2	e Pn	Z 20:26:18.6	5.0	204.6					
	e Sn	N 20:27:11.6							
WET	e Pn	Z 20:26:19.4	5.1	197.0					
	e Sn	E 20:27:13.4							
GRA1	e Sn	N 20:27:21.0	5.4	183.1					
MOX	e Sn	E 20:27:43.2	6.4	185.2					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/31	01:35:20.0	3.420S	148.473E	33N	5.3	6.0		NEIC

Bismarck Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 01:54:11.4	121.3	52.5					
CLL	e SSS	N 02:16:07.6	119.5	53.6					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/31	03:15:36.1	42.270N	140.750E	33.0N	5.0			SZGRF
2002/10/31	03:15:41.9	42.861N	142.558E	118D	4.4			NEIC

Hokkaido, Japan, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 03:27:31.5	78.1	34.2	0.8	11	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/31	10:33:0.6	41.760N	15.350E	10.0G				SZGRF
2002/10/31	10:32:58.7	41.777N	14.905E	10G	5.3	5.6		NEIC

Southern Italy

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
KBA	e Pn	Z 10:34:22.1	5.4	167.6					
ARSA	e Pn	Z 10:34:22.3	5.5	184.8					
WTTA	e Pn	Z 10:34:30.9	6.0	155.8					
	e Sn	N 10:35:39.8							
MOA	e Pn	Z 10:34:31.4	6.1	175.5					
	e Pn	N 10:34:31.8							
DAVA	e Pn	Z 10:34:38.7	6.6	145.2					
	e Sn	N 10:35:56.2							
FUR	e Pn	Z 10:34:43.3	6.9	156.8					
GEC2	e Pn	Z 10:34:44.3	7.1	172.7					
	e Sn	N 10:36:04.2							
WET	e Pn	Z 10:34:49.6	7.5	168.3					
	e Sn	N 10:36:12.2							
BFO	e Pn	Z 10:34:56.6	8.0	142.3					
GRA1	e Pn	Z 10:35:01.1	8.3	160.7					
	e Sn	E 10:36:29.3							
BRG	e Pn	Z 10:35:11.7	9.1	175.5					
MOX	e Pn	Z 10:35:11.8	9.2	164.4					
	e Sn	N 10:36:53.4							
TNS	e Pn	Z 10:35:18.2	9.6	149.6					
	e Sn	N 10:37:01.6							
CLL	e Pn	Z 10:35:18.3	9.6	171.5					
BUG	e Pn	Z 10:35:39.9	11.0	148.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/31	11:56:39.4	41.750N	15.010E	10.0G				SZGRF
2002/10/31	11:56:38.5	41.835N	14.882E	10G	4.7			NEIC

Southern Italy

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
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GEC2	e Pn	Z	11:58:23.2	7.1	172.8						
	e Sn	N	11:59:41.6								
WET	e Pn	Z	11:58:28.4	7.4	168.4						
	e Sn	N	11:59:50.5								
BFO	e Sn	N	12:00:03.9	8.0	142.2						

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/31	13:03:56.8	42.150N	14.830E	10.0G				SZGRF
2002/10/31	13:03:46.8	41.734N	14.781E	10G	4.4			NEIC

Central Italy

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z	13:05:32.4	7.2	173.5					
	e Sn	N	13:06:50.0							
WET	e Sn	E	13:06:58.3	7.5	169.1					
BFO	e Sn	N	13:07:11.6	8.0	143.0					
GRA1	e Sn	N	13:07:16.6	8.3	161.4					
MOX	e Sn	N	13:07:36.6	9.2	165.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/31	14:51:16.3	35.690N	34.770E	33.0N				SZGRF
2002/10/31	14:51:36.9	35.774N	31.310E	33N	4.4			NEIC

Cyprus region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	14:56:09.3	20.2	126.1					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/31	16:56:47.1	41.940N	14.950E	10.0G				SZGRF
2002/10/31	16:56:41.6	41.720N	14.952E	10G				NEIC

Southern Italy

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z	16:58:28.2	7.2	172.5					
	e Sn	N	16:59:46.5							
WET	e Pn	Z	16:58:33.1	7.6	168.2					
	e Sn	Z	16:59:53.8							
BFO	e Pn	Z	16:58:41.8	8.1	142.3					
	e Sn	N	17:00:07.1							
GRA1	e Sn	E	17:00:11.5	8.4	160.5					
MOX	e Pn	Z	16:58:55.1	9.2	164.3					
	e Sn	N	17:00:31.7							
TNS	e Sn	N	17:00:44.1	9.6	149.6					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/10/31	21:15:55.8	21.130N	120.240E	33.0N	5.3			SZGRF
2002/10/31	21:15:52.3	21.839N	121.391E	33N	4.8	4.2		NEIC

Taiwan region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 21:28:30.8	85.6	60.9	1.8	42	5.3		

Format description

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(K. Klinge Email:klinge@szgrf.bgr.de and A. Schick)

In general all regional and teleseismic events clearly recorded with GRF-Array stations and stronger events recorded with stations of the German Regional Seismological Network (GRSN) are included in this bulletin. Additionally, some selected events are analysed more comprehensively at CLL-station and included in the bulletin (ISOP-analyses).

Each event is reported by several EPICENTER LINES with possible COMMENT LINES, a REGION LINE and a block of PHASE LINES.

EPICENTER LINES:

The epicenter locations of several authorities can be reported. The epicenter location with the highest priority (i.e. the most reliable one) is written in the undermost EPICENTER LINE. The REGION LINE and all origin related parameter in the PHASE LINES (i.e. Def, Dist, EvAz) are determined regarding this epicenter location with the highest priority.

Date	Date of the event
Origin Time	Origin time of the event
Lat	Geographic latitude (N/S) of epicenter in degree
Long	Geographic longitude (E/W) of epicenter in degree
Depth	Depth of the hypocenter beneath the surface in kilometer
	Appended flag indicates the method by which the depth was determined:
	BLANK - free
	N - preset depth of 33 kilometer
	G - geophysicist preset depth
mb, Ms, ML	Magnitudes of the event and magnitude type
Source	Abbreviations for the authority (e.g. SZGRF, NEIC, PIDC, SED)

COMMENT LINE:

Each EPICENTER LINE can be followed by a COMMENT LINE about interesting topics submitted by the preceding authority.

REGION LINE:

The region name of the epicenter location with the highest priority (undermost EPICENTER LINE).

PHASE LINE:

Sta	Station code of the reported phase
Phase	Preceded flag for the sharpness of the onset of the phase
	e - emergent
	i - impulsive
	w - weak
	ISC phase code
	Flag for the direction of the first motion
	'+' - compression
	'-' - dilatation
	Component where the phase was picked
Time	Arrival time of the reported phase
Dist	Distance from the epicenter location with the highest priority to the station in kilometer
BAz	Backazimuth from the epicenter location with the highest priority to the station in degree
T[s]	Phase Period
A[nm]	Phase Amplitude
mb	Body wave magnitude
MS	Surface wave magnitude
ML	Local Richter magnitude