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

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

NOVEMBER 2003 UPDATED 11.OCTOBER.2004

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

(Format desciption at the end of the bulletin)

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/01	00:27: 0.9	37.260N	142.280E	33.0N	5.2			SZGRF
2003/11/01	00:26:57.3	37.893N	143.157E	10G	5.3			NEIC

Off east coast of Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	00:39:08.5	79.6	36.0	1.2	22	5.0		
BRG	e P	Z	00:39:13.8	80.7	38.3	1.2	12	4.8		
CLL	e P	Z	00:39:13.4	80.7	37.7	1.1	22	5.1		
CLZ	e P	Z	00:39:17.2	81.3	35.9	1.3	30	5.3		
WET	e P	Z	00:39:23.7	82.5	37.4	1.2	13	5.0		
GRA1	e P	Z	00:39:24.5	82.7	36.3	2.0	151	5.9		
BFO	e P	Z	00:39:35.3	84.9	34.2	1.5	52	5.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/01	03:19:31.8	42.178N	144.480E	33.0N	4.9			SZGRF
2003/11/01	03:19:22.8	41.670N	144.395E	10G	5.0			NEIC

Hokkaido, Japan, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	03:31:35.1	79.8	33.6	1.0	15	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/01	13:10:11.8	37.216N	142.900E	33.0N	6.4	5.8		SZGRF
2003/11/01	13:10:07.9	37.817N	143.087E	10G	5.8	5.5		NEIC

Off east coast of Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	13:22:35.1	82.7	36.4	2.0	480	6.4		
	e PP	Z	13:25:50.8							
	e S	E	13:32:55.1							
	e L	Z	13:59:58.9			19.6	4281		5.8	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/01	23:44: 8.2	40.926N	145.382E	33.0N	4.9			SZGRF
2003/11/01	23:44:13.7	42.197N	144.286E	33N	5.0	4.5		NEIC

Off east coast of Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	23:56:19.2	79.3	33.4	1.3	16	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/02	00:39:34.7	17.055S	178.539W	550G	3.9			NEIC

Fiji region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z	00:58:14.6	146.4	17.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/02	02:14:40.9	45.020N	149.720E	44.0	5.7	5.6		SZGRF
2003/11/02	02:14:37.0	44.596N	150.179E	33N	5.4	5.2		NEIC

Kuril Islands, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e P	Z	02:26:14.4	74.3	30.4	1.1	209	6.1		
BSEG	e P	Z	02:26:22.5	75.7	28.3	1.1	84	5.8		
RUE	e P	Z	02:26:23.7	76.0	30.4	1.0	149	6.1		
NRDL	e P	Z	02:26:30.0	77.0	28.0	1.2	71	5.7		
CLL	i P	+ Z	02:26:30.6	77.2	29.8	0.9	145	6.1		
	e pP	Z	02:26:43.3							
	e PP	Z	02:29:27.3							
	e S	T	02:36:12.1							
	e SS	R	02:41:26.6							
	e L	Z	03:04:50.8			18.0	2404		5.6	
BRG	e P	Z	02:26:31.1	77.3	30.3	1.2	64	5.6		
CLZ	e P	Z	02:26:33.1	77.5	28.1	1.2	148	6.0		
	e pP	Z	02:26:45.7							
IBBN	e P	Z	02:26:34.6	77.8	26.4	1.1	106	5.9		
WERD	e P	Z	02:26:36.3	78.2	29.2	1.5	79	5.6		
MOX	e P	Z	02:26:36.4	78.2	28.8	1.5	91	5.7		

GUNZ	e P	Z	02:26:36.8	78.2	29.2	1.3	63	5.6	
UBBA	e P	Z	02:26:38.1	78.5	27.7	1.7	131	5.8	
BUG	e P	Z	02:26:39.5	78.8	26.0	1.4	96	5.6	
GEC2	e P	Z	02:26:41.4	79.1	30.0	1.1	26	5.2	
WET	e P	Z	02:26:42.0	79.1	29.5	1.2	58	5.5	
GRA1	e P	Z	02:26:42.3	79.2	28.4	1.1	79	5.7	
	e S	N	02:36:47.5						
	e L	Z	03:05:05.3			20.5	2674		5.6
TNS	e P	Z	02:26:43.9	79.5	26.6	1.1	34	5.3	
FUR	e P	Z	02:26:49.0	80.5	28.3	1.1	107	5.7	
STU	e P	Z	02:26:49.5	80.6	27.0	1.2	58	5.4	
WLF	e P	Z	02:26:50.2	80.7	25.1	1.5	68	5.4	
BFO	e P	Z	02:26:53.0	81.2	26.4	1.1	58	5.5	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/02	02:58:24.4	38.500N	142.010E	33.0N	5.2			SZGRF
2003/11/02	02:58:14.1	37.728N	143.073E	10G	5.4	4.9		NEIC

Near east coast of eastern Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z	03:10:24.7	79.6	38.5	1.3	54	5.4		
BSEG	e P	Z	03:10:25.6	79.7	36.2	1.2	49	5.4		
BRG	e P	Z	03:10:31.0	80.8	38.4	1.1	21	5.0		
CLL	i P	- Z	03:10:31.0	80.8	37.8	1.1	40	5.4		
	e L	Z	03:50:06.9			18.0	1338		5.3	
NRDL	e P	Z	03:10:31.7	81.0	35.9	1.3	19	4.9		
CLZ	e P	Z	03:10:34.4	81.4	36.0	1.3	44	5.3		
WERD	e P	Z	03:10:36.1	81.8	37.2	1.1	10	4.8		
GUNZ	e P	Z	03:10:36.6	81.8	37.3	1.1	20	5.1		
MOX	e P	Z	03:10:36.8	81.9	36.8	1.3	20	5.0		
IBBN	e P	Z	03:10:36.9	81.9	34.2	0.8	24	5.3		
UBBA	e P	Z	03:10:39.4	82.4	35.7	1.4	20	5.0		
GEC2	e P	Z	03:10:39.8	82.5	38.1					
WET	e P	Z	03:10:40.7	82.6	37.5	1.4	28	5.2		
GRA1	e P	Z	03:10:41.8	82.8	36.4	1.1	52	5.6		
BUG	e P	Z	03:10:41.4	82.8	33.8	1.1	26	5.3		
TNS	e P	Z	03:10:45.0	83.4	34.5	1.0	11	5.0		
FUR	e P	Z	03:10:48.1	84.0	36.4	0.8	23	5.4		
STU	e P	Z	03:10:49.4	84.3	35.0	1.2	32	5.4		
WLF	e P	Z	03:10:52.4	84.7	32.9	1.5	54	5.6		
BFO	e P	Z	03:10:52.7	85.0	34.3	1.4	66	5.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/02	04:08:30.2	43.728N	145.775E	33.0N	5.2			SZGRF
2003/11/02	04:08:44.1	44.498N	146.295E	143	4.8			NEIC

Hokkaido, Japan, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	04:20:10.9	74.7	30.9	0.9	16	5.2		
CLL	e P	Z	04:20:18.0	76.0	32.3	0.8	34	5.5		
	e pP	Z	04:20:56.0							
BRG	e P	Z	04:20:18.6	76.1	32.9	1.0	10	4.9		
CLZ	e P	Z	04:20:21.1	76.4	30.7	1.0	25	5.3		
IBBN	e P	Z	04:20:22.9	76.8	29.0	0.8	25	5.4		
MOX	e P	Z	04:20:24.2	77.1	31.4	1.1	14	5.0		
GRA1	e P	Z	04:20:28.6	78.0	31.0	1.0	25	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/02	05:32:15.7	45.194S	166.547E	10G	5.3	6.3		NEIC

Off west coast of South Island, New Zealand

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e PP	Z	05:56:58.9	160.8	78.6					
BRG	e PP	Z	05:56:57.3	160.9	83.4					
CLL	e PKPdf	Z	05:52:20.2	161.5	81.1	2.2	105			
	e PKPab	Z	05:53:02.1							
	e PP	Z	05:56:42.9							
	e PPP	R	06:00:35.9							
	e SKKSac	R	06:03:34.1							
	e SKSP	R	06:07:18.5							
	e PPS	R	06:10:29.2							
	e SS	T	06:17:05.7							
	e SSS	R	06:23:31.7							
	e LR	Z	06:49:47.8							
	e L	Z	07:07:53.2			22.0	4668		6.3	
WET	e PP	Z	05:57:01.0	161.8	87.5					
MOX	e PP	Z	05:57:07.4	162.4	81.7					
GRA1	e PKP	Z	05:52:18.0	162.8	84.3					
	e L	Z	07:20:23.5			18.3	4878		6.4	
UBBA	e PP	Z	05:57:11.3	163.4	79.3					
TNS	e PP	Z	05:57:16.0	164.5	79.5					
BUG	e PP	Z	05:57:21.9	164.9	73.6					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/02	13:35:45.5	46.360N	147.760E	33.0N	5.7	5.5		SZGRF
2003/11/02	13:35:30.8	44.577N	150.279E	33N	5.5	5.2		NEIC

Northwest of Kuril Islands, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML

BSEG	e	P		Z	13:47:16.5	75.7	28.2	1.1	85	5.7
RUE	e	P		Z	13:47:18.1	76.0	30.4	1.1	164	6.0
NRDL	e	P		Z	13:47:24.7	77.1	27.9	1.1	62	5.6
CLL	i	P	+	Z	13:47:24.7	77.3	29.7	1.0	139	6.0
	e	S		T	13:57:19.8					
	e	PS		R	13:57:55.6					
	e	SS		R	14:02:38.9					
	e	SSS		R	14:05:49.4					
	e	LQ		T	14:11:35.6					
	e	L		Z	14:25:54.6			18.0	2259	5.5
BRG	e	P		Z	13:47:25.5	77.3	30.3	1.1	53	5.5
CLZ	e	P		Z	13:47:27.5	77.6	28.0	1.2	154	6.0
IBBN	e	P		Z	13:47:29.3	77.9	26.3	1.1	101	5.9
WERD	e	P		Z	13:47:30.6	78.2	29.2	1.5	69	5.6
MOX	e	P		Z	13:47:30.5	78.3	28.7	1.2	50	5.5
GUNZ	e	P		Z	13:47:31.2	78.3	29.2	1.3	52	5.5
UBBA	e	P		Z	13:47:32.6	78.6	27.7	1.8	113	5.7
BUG	e	P		Z	13:47:33.9	78.8	25.9	1.3	95	5.8
WET	e	P		Z	13:47:36.2	79.2	29.4	1.5	82	5.6
GRA1	e	P		Z	13:47:36.4	79.2	28.4	1.9	294	6.1
	e	L		Z	14:25:59.5			20.5	2634	5.5
TNS	e	P		Z	13:47:38.9	79.6	26.6	1.0	30	5.4
STU	e	P		Z	13:47:44.3	80.6	27.0	1.0	46	5.4

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/03	07:11:25.3	35.222N	145.085E	37.9	5.4	5.3		SZGRF
2003/11/03	07:11:37.3	37.425N	142.334E	33N	5.1	4.8		NEIC

Off east coast of Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	07:24:01.7	82.8	37.1	1.4	49	5.4		
	e pP	Z	07:24:12.7							
	e L	Z	08:04:03.5			18.9	1051		5.3	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/03								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	14:00:19.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/03	20:34:14.2	27.408N	129.844E	33.0N	5.2			SZGRF
2003/11/03	20:34:06.2	25.096N	127.956E	33N	5.2	4.8		NEIC

Ryukyu Islands, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	20:46:49.9	86.6	54.1	1.2	27	5.2		
	e		20:47:02.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/04								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z	02:11:52.1							
	e		02:11:59.1							
	e		02:12:04.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/04	17:16:35.9	43.068N	143.352E	33.0N	4.5			SZGRF
2003/11/04	17:16:23.6	41.864N	144.922E	33N	4.6			NEIC

Hokkaido, Japan, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	17:28:32.8	79.9	33.2	0.9	4	4.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/04	18:45:35.6	4.120S	102.538E	33N	5.3			NEIC

Southern Sumatra, Indonesia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z	18:58:51.5	94.0	91.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/04	22:08:26.0	51.180N	84.600E	33.0N	4.7			SZGRF
2003/11/04	22:07:59.9	49.767N	88.064E	10G	4.8			NEIC

Southwestern Siberia, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z	22:16:16.0	44.6	62.3	0.8	31	5.1		
BRG	e P	Z	22:16:20.9	45.3	61.0	0.8	6	4.4		
CLL	e P	Z	22:16:23.4	45.6	60.9	0.6	19	5.0		
WERD	e P	Z	22:16:30.3	46.4	59.9	0.8	7	4.4		
GUNZ	e P	Z	22:16:30.7	46.4	59.8	1.3	18	4.6		
MOX	e P	Z	22:16:32.5	46.7	59.7	1.3	18	4.6		

WET	e	P	Z	22:16:32.9	46.7	59.0	1.1	9	4.4
CLZ	e	P	Z	22:16:33.1	46.7	60.1	1.7	34	4.8
GRA1	e	P	Z	22:16:38.3	47.4	58.7	1.3	27	5.0
BUG	e	P	Z	22:16:47.8	48.6	58.2	1.3	29	5.1
TNS	e	P	Z	22:16:47.9	48.6	57.9	0.7	7	4.8

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/05	00:59: 0.1	5.640N	76.310W	33.0N	5.9	5.5		SZGRF
2003/11/05	00:58:50.9	4.952N	77.742W	33N	5.7	5.4		NEIC

Colombia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WLF	e P	Z	01:11:11.4	82.3	268.6	1.1	150	5.9		
BUG	e P	Z	01:11:15.0	83.0	269.2	1.5	148	5.9		
IBBN	e P	Z	01:11:16.7	83.3	269.5	1.4	161	6.0		
BFO	e P	Z	01:11:17.9	83.7	270.4	1.3	36	5.4		
TNS	e P	Z	01:11:19.1	83.8	270.3	1.4	124	5.8		
STU	e P	Z	01:11:21.2	84.3	271.0	1.3	102	5.9		
UBBA	e P	Z	01:11:24.0	84.7	271.4	1.9	130	5.8		
NRDL	e P	Z	01:11:24.5	84.8	271.3	1.3	90	5.8		
BSEG	e P	Z	01:11:24.7	84.9	271.4	1.3	102	5.9		
CLZ	e P	Z	01:11:25.3	84.9	271.6	1.5	121	5.9		
GRA1	e P	Z	01:11:28.4	85.6	272.4	1.5	126	5.9		
	e		01:11:39.6							
	e PP	Z	01:14:43.9							
	e S	R	01:21:51.0							
	e SS	R	01:27:46.0							
	e L	Z	01:45:39.6			21.7	2405		5.5	
FUR	e P	Z	01:11:28.8	85.7	272.6	1.9	303	6.2		
MOX	e P	Z	01:11:29.3	85.8	272.6	1.6	118	5.9		
WERD	e P	Z	01:11:31.6	86.2	273.2	1.5	124	5.9		
GUNZ	e P	Z	01:11:31.9	86.2	273.2	1.6	138	5.9		
RGN	e P	Z	01:11:33.8	86.6	273.7	1.4	246	6.3		
CLL	i P	- Z	01:11:33.3	86.6	273.7	1.3	108	5.8		
	e pP	Z	01:11:45.0							
	e PP	Z	01:14:53.1							
	e SKSac	R	01:21:58.3							
	e PS	Z	01:23:08.5							
	e SS	R	01:27:55.6							
	e SSS	R	01:31:28.7							
	e LQ	T	01:35:49.0							
	e LR	Z	01:40:34.8							
	e L	Z	01:46:08.9			22.0	2141		5.5	
WET	e P	Z	01:11:34.0	86.7	273.7	1.3	159	6.1		
RUE	e P	Z	01:11:35.3	87.0	274.2	1.3	120	5.9		
BRG	e P	Z	01:11:36.6	87.2	274.4	1.3	99	5.8		
GEC2	e P	Z	01:11:36.4	87.2	274.3	1.4	85	5.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/05	07:58:44.7	26.890N	56.767E	16.5	5.4			SZGRF
2003/11/05	07:58:51.9	27.524N	56.155E	33N	5.2			NEIC

Southern Iran

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	08:06:31.2	40.7	106.0	1.0	91	5.4		
	e pP	Z	08:06:35.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/05								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z	11:58:12.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/05	22:20:12.2	5.890N	34.060W	33.0N	5.1			SZGRF

Central Mid-Atlantic Ridge

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e P	Z	22:29:44.5	55.6	234.4	1.2	24	5.1		
TNS	e P	Z	22:29:52.8	56.8	233.5	1.8	46	5.2		
BUG	e P	Z	22:29:53.7	56.9	231.6	1.3	28	5.1		
GRA1	e P	Z	22:30:01.0	57.9	236.5	1.4	52	5.4		
WET	e P	Z	22:30:05.2	58.5	238.4	1.3	14	4.8		
MOX	e P	Z	22:30:06.1	58.7	236.4	1.8	36	5.1		
GEC2	e P	Z	22:30:07.4	58.8	239.4	1.3	21	5.0		
GUNZ	e P	Z	22:30:08.2	58.9	237.3	1.4	28	5.1		
WERD	e P	Z	22:30:07.3	58.9	237.2	1.2	19	5.0		
NRDL	e P	Z	22:30:08.5	58.9	234.0	1.3	21	5.0		
CLL	e P	Z	22:30:13.8	59.8	237.5	1.3	9	4.7		
BSEG	e P	Z	22:30:14.5	59.9	233.5	1.3	41	5.3		
BRG	e P	Z	22:30:16.0	60.0	238.6	1.5	26	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/06	00:33:10.7	13.496N	58.743E	33.0N	5.0			SZGRF
2003/11/06	00:33:06.4	12.851N	58.062E	10G	4.9			NEIC

Arabian Sea

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML

	GRA1	e P	Z	00:42:24.1	53.1	117.1	0.9	18	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/06	01:01:36.2	38.741N	14.036E	10G	4.3			NEIC

Sicily, Italy

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z	01:04:03.2	10.1	178.5					
BFO	e Pn	Z	01:04:07.2	10.4	154.6					
WET	e Pn	Z	01:04:07.5	10.4	175.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/06	02:13:10.4	31.698N	70.023E	33.0N	4.8			SZGRF
2003/11/06	02:13:01.9	30.686N	69.928E	33N	4.7			NEIC

Pakistan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	02:21:36.4	47.3	90.8	1.7	15	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/06	10:38: 7.4	19.074S	170.008E	118.2				SZGRF
2003/11/06	10:38:04.1	19.253S	168.840E	114D	6.0			NEIC

Vanuatu Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e PKP	Z	10:57:18.6	141.5	39.8					
BSEG	e PKP	Z	10:57:18.3	141.6	33.8					
BRG	e PKP	Z	10:57:21.8	142.7	41.3					
CLL	e PKPpre	Z	10:57:22.1	142.7	39.7					
	e PKPdf	Z	10:57:26.3							
	e pPKPdf	Z	10:57:53.8							
	e PP	Z	11:00:39.5							
	e pPP	Z	11:01:12.0							
	e PSKS	Z	11:10:42.0							
	e PPPr	Z	11:12:15.3							
	e PPS	Z	11:13:24.9							
	e SS	E	11:19:14.7							
	e sSS	E	11:19:55.1							
	e SSS	N	11:24:31.5							
	e L	Z	11:59:55.5			22.0	2331		5.9	
NRDL	e PKP	Z	10:57:22.5	142.9	34.6					
CLZ	e PKP	Z	10:57:23.9	143.3	35.4					

WERD	e PKP	Z	10:57:25.4	143.7	39.4	
GUNZ	e PKP	Z	10:57:25.8	143.7	39.5	
MOX	e PKP	Z	10:57:25.2	143.8	38.2	
IBBN	e PKP	Z	10:57:25.5	143.8	31.2	
UBBA	e PKP	Z	10:57:27.1	144.3	35.7	
GEC2	e PKP	Z	10:57:27.4	144.3	42.8	
WET	e PKP	Z	10:57:28.1	144.4	41.4	
BUG	e PKP	Z	10:57:28.3	144.7	31.1	
GRA1	e PKP	Z	10:57:29.3	144.7	38.5	
	e pPKP	Z	10:58:00.9			
	e PP	Z	11:00:52.1			
	e SS	T	11:19:47.1			
	e SSS	T	11:25:02.0			
TNS	e PKP	Z	10:57:31.2	145.3	33.8	
FUR	e PKP	Z	10:57:32.4	145.9	39.9	
STU	e PKP	Z	10:57:33.7	146.2	36.2	
WLF	e PKP	Z	10:57:35.3	146.6	30.7	
BFO	e PKP	Z	10:57:35.4	146.9	35.3	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/06	14:30:57.0	17.944S	175.470W	268D	4.8			NEIC

Tonga

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	- Z	14:50:06.9	146.0	14.5	0.7	47			
	e pPKPbc	Z	14:51:11.7							
GRA1	e PKP	Z	14:50:12.0	147.8	12.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/07	02:34:16.1	9.102N	93.542E	33.0N	4.9			SZGRF

Nicobar Islands, India, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	02:46:12.2	78.1	89.9	1.2	11	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/07	03:59:17.4	52.670N	154.480E	33.0N	5.2	4.9		SZGRF
2003/11/07	03:59:07.9	50.948N	157.221E	67D	5.5			NEIC

Northwest of Kuril Islands, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e P	Z	04:10:34.5	73.3	22.6	1.0	24	5.3		
CLZ	e P	Z	04:10:36.4	73.5	21.1	1.2	34	5.4		

BRG	e	P	Z	04:10:35.2	73.5	23.1	1.4	15	4.9
MOX	e	P	Z	04:10:40.4	74.3	21.7	1.1	22	5.2
WERD	e	P	Z	04:10:40.8	74.3	22.1	1.4	18	5.0
GUNZ	e	P	Z	04:10:41.5	74.4	22.1	2.2	83	5.5
BUG	e	P	Z	04:10:42.2	74.5	19.1	1.1	21	5.2
UBBA	e	P	Z	04:10:41.7	74.5	20.7	1.5	28	5.2
GRA1	e	P	Z	04:10:46.6	75.3	21.4	1.1	42	5.5
	e	L	Z	04:45:15.5			21.7	679	4.9
WET	e	P	Z	04:10:47.3	75.4	22.3	1.3	32	5.3
TNS	e	P	Z	04:10:47.6	75.4	19.7	1.3	26	5.1
STU	e	P	Z	04:10:54.1	76.6	20.1	0.9	17	5.1
FUR	e	P	Z	04:10:54.9	76.7	21.3	1.5	96	5.6
BFO	e	P	Z	04:10:57.4	77.2	19.5	0.8	12	4.9

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/07								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z	18:00:00.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/07	23:50:43.8	41.891N	142.726E	33.0N	4.7			SZGRF

Hokkaido, Japan, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	00:02:45.1	79.0	34.6	1.0	8	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/08	01:57:50.5	38.855N	141.577E	33.0N	4.8			SZGRF
2003/11/08	01:57:41.5	38.165N	143.167E	41*	4.9	4.0		NEIC

Near east coast of eastern Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	02:10:03.6	82.5	36.1	1.0	8	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/08	05:58:57.7	22.574N	93.033E	33.0N	5.1			SZGRF
2003/11/08	05:58:56.4	23.579N	93.615E	33N	4.9			NEIC

Myanmar-India border region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML

	GRA1	e P	Z	06:09:52.8	67.4	79.6	1.2	14	5.1	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/08								

	Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	GRA1	e PKP	Z	20:58:11.4							
		e		20:58:33.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/09	02:59:32.2	5.786N	38.566W	33.0N	4.4			SZGRF
2003/11/09	02:59:42.2	8.362N	38.524W	10G	4.3			NEIC

North Atlantic Ocean

	Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	GRA1	e P	Z	03:09:39.4	58.4	242.5	1.1	4	4.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/09	08:26: 9.6	30.174N	125.628E	33.0N	5.3			SZGRF
2003/11/09	08:25:51.1	29.499N	130.599E	33N	4.9			NEIC

Off east coast of southeastern China

	Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	GRA1	e P	Z	08:38:22.8	84.3	49.7	1.4	43	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/09	08:36:24.3	53.150N	159.290E	33.0N	4.8			SZGRF
2003/11/09	08:36:17.1	52.781N	160.698E	33N	4.7	4.9		NEIC

Near east coast of Kamchatka Peninsula, Russia

	Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	GRA1	e P	Z	08:47:55.2	74.3	18.6	1.1	11	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/09	09:50: 0.3	39.905N	76.927E	33.0N	4.7			SZGRF
2003/11/09	09:50:05.9	40.062N	75.135E	33N	4.5			NEIC

Southern Xinjiang, China

	Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML

GRA1	e P	Z	09:58:21.6	44.9	76.9	1.1	9	4.7	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/09	10:48:27.4	46.437N	12.655E	10.0G			2.4	SZGRF
2003/11/09	10:48:26.5	46.450N	12.659E	10G				NEIC

Northern Italy

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
KBA	e Pg	Z	10:48:41.8	0.8	217.0					2.1
	e Sg	N	10:48:52.8							
WTTA	e Pg	Z	10:48:46.6	1.1	139.0					
	e Sg	N	10:49:00.6							
MOA	e Pg	Z	10:48:59.9	1.8	218.6					2.2
	e Sg	N	10:49:23.8							
DAVA	e Pg	Z	10:49:04.8	2.1	112.8					2.8
	e Sg	N	10:49:33.8							
GEC2	e Pn	Z	10:49:08.7	2.5	196.7					
	e Sg	N	10:49:47.9							
WET	e Pn	Z	10:49:11.3	2.7	183.2					
	e Sn	N	10:49:45.5							
BFO	e Pn	Z	10:49:22.3	3.5	121.1					
MOX	e Pn	Z	10:49:30.8	4.3	170.3					
	e Sn	N	10:50:19.9							
TNS	e Sn	N	10:50:33.4	4.7	141.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/09	13:05:44.3	36.098N	141.978E	33.0N	4.7			SZGRF
2003/11/09	13:05:44.8	37.370N	143.014E	33N	4.5			NEIC

Near east coast of eastern Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	13:18:10.7	83.1	36.6	1.3	6	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/09	17:40:24.5	15.224N	92.667W	33.0N	4.5			SZGRF
2003/11/09	17:40:16.9	14.450N	93.210W	33N	4.8	4.4		NEIC

Mexico-Guatemala border region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	17:53:07.4	88.0	290.2	1.1	5	4.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/09	19:23:28.6	1.568N	127.328E	134D	5.7			NEIC

Northern Molucca Sea

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e Pdiff	Z	19:37:23.8	105.3	68.5					
	e PP	Z	19:41:47.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/09	19:52:32.7	1.220S	19.320W	33.0N	5.8	5.9		SZGRF
2003/11/09	19:52:36.4	0.753S	19.654W	10G	5.5	6.0		NEIC

Central Mid-Atlantic Ridge

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e P	Z	20:02:00.0	54.7	215.1	1.1	104	5.8		
STU	e P	Z	20:02:04.7	55.4	215.9	1.0	102	5.8		
FUR	e P	Z	20:02:07.9	55.8	218.4	1.1	242	6.1		
TNS	e P	Z	20:02:11.9	56.3	214.5	1.3	120	5.8		
BUG	e P	Z	20:02:16.3	56.9	212.7	1.1	101	5.8		
GRA1	e P	Z	20:02:15.9	57.0	217.7	1.1	149	5.9		
	e PP	Z	20:04:23.1							
	e L	Z	20:24:55.1			21.5	10000		5.9	
CLL	e P	Z	20:02:36.0	58.8	219.1	1.2	58	5.5		
	e PcP	Z	20:03:26.3							
	e PP	Z	20:04:42.4							
	e PPP	Z	20:06:13.3							
	e S	R	20:10:44.2							
	e SS	Z	20:14:48.1							
	e SSS	Z	20:17:11.5							
	e LQ	T	20:19:10.9							
	e LR	Z	20:20:16.7							
	e L	Z	20:30:00.9			20.0	13727		6.1	
WET	e P	Z	20:02:17.8	57.2	219.8	1.0	144	6.0		
UBBA	e P	Z	20:02:19.9	57.4	216.0	1.6	78	5.5		
MOX	e P	Z	20:02:23.1	57.9	217.8	1.2	102	5.7		
WERD	e P	Z	20:02:23.5	58.0	218.6	1.3	64	5.5		
BSEG	e P	Z	20:02:37.6	60.0	215.2	0.9	141	6.0		
RUE	e P	Z	20:02:38.7	60.1	219.4	1.2	148	5.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/09	21:32:56.7	19.730S	174.443W	33N	4.7			NEIC

Tonga

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPdf	Z	21:52:39.3	147.9	13.3					

		i PKPbc	Z	21:52:40.8			0.7	21
	GRA1	e PKP	Z	21:52:45.6	149.7	10.6		
		e		21:52:51.0				

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/09	22:56:28.3	0.454N	21.921W	33.0N	4.9			SZGRF
2003/11/09	22:56:25.5	0.491S	19.640W	10G	4.9	4.4		NEIC

Central Mid-Atlantic Ridge

	Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	GRA1	e P	Z	23:06:09.6	56.7	217.8	1.2	16	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/10	02:32: 1.2	43.820N	146.014E	33.0N	5.0			SZGRF
2003/11/10	02:32:43.3	45.596N	142.767E	306	4.7			NEIC

Kuril Islands, Russia

	Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	GRA1	e P	Z	02:43:59.5	75.8	32.7	1.1	17	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/10	08:11:32.2	38.204N	141.618E	31.9	4.8			SZGRF
2003/11/10	08:11:22.6	37.720N	143.644E	33N	5.0	4.6		NEIC

Near east coast of eastern Honshu, Japan

	Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	GRA1	e P	Z	08:23:48.6	83.0	36.0	1.0	7	4.8		
		e pP	Z	08:23:57.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/10	14:46:14.6	42.880N	65.960E	33.0N	5.0			SZGRF
2003/11/10	14:45:54.6	40.978N	67.893E	33N	5.0	4.2		NEIC

Central Kazakhstan

	Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	BRG	e P	Z	14:53:11.5	37.9	83.5	1.2	30	5.0		
	GEC2	e P	Z	14:53:15.4	38.3	80.8	1.2	38	5.1		
		e PP	Z	14:54:54.2							
		e L	Z	15:11:33.9			18.0	754		4.6	
	WET	e P	Z	14:53:19.3	38.8	80.7	1.1	22	4.8		

WERD	e P	Z	14:53:20.6	39.0	81.9	1.2	19	4.7
GRA1	e P	Z	14:53:28.3	39.8	80.3	1.0	52	5.2
BSEG	e P	Z	14:53:26.7	39.8	84.7	1.1	37	5.0
CLZ	e P	Z	14:53:29.1	40.0	82.3	1.6	48	5.0
NRDL	e P	Z	14:53:29.6	40.1	82.9	1.7	89	5.2
UBBA	e P	Z	14:53:31.8	40.4	80.8	1.9	64	5.0
IBBN	e P	Z	14:53:41.7	41.5	81.0	1.4	66	5.1
WLF	e P	Z	14:53:54.2	43.0	77.1	0.9	24	4.9

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/10								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z	15:19:49.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/10	19:54:27.9	48.223N	97.986E	33.0N	4.8			SZGRF
2003/11/10	19:55:10.0	49.939N	87.735E	10G	4.6	4.0		NEIC

Mongolia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	20:03:46.3	47.1	58.7	1.0	9	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/11								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z	00:51:55.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/11	13:44:53.1	30.499S	179.061W	33N	5.5	5.9		NEIC

Kermadec Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPdf	Z	14:04:54.2	157.4	27.9					
	i PKPab	- Z	14:05:27.1			2.0	109			
	e PP	Z	14:09:00.1							
	e SS	T	14:28:51.6							
	e SSS	T	14:34:53.3							
	e LQ	T	14:49:47.8							
	e LR	Z	15:00:06.9							

		e	L	Z	15:12:28.2			22.0	2536	6.0
	GRA1	e	PKP	Z	14:05:27.9	159.3	25.8			
		e	PP	Z	14:09:14.0					
		e	L	Z	15:24:09.1			21.8	2976	6.1

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/11	15:39:33.8	30.593S	179.417W	33N	5.7	6.0		NEIC

Kermadec Islands region

	Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	CLL	e PKPdf	Z	15:59:34.5	157.3	28.8					
		e PKPab	Z	16:00:03.6			1.7	69			
		e PP	Z	16:03:42.7							
		e SS	T	16:23:35.6							
		e SSS	T	16:29:34.0							
		e LQ	T	16:43:31.9							
		e LR	Z	16:58:29.4							
		e L	Z	17:12:32.6			20.0	3579			6.2
	GRA1	e PKP	Z	16:00:07.3	159.3	26.7					
		e PP	Z	16:03:50.8							
		e L	Z	17:17:52.6			21.4	3294			6.1

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/11	16:51:58.8	15.318N	94.051W	33.0N	4.8			SZGRF
2003/11/11	16:51:56.3	15.042N	93.782W	33N	4.7			NEIC

Near coast of Oaxaca, Mexico

	Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	GRA1	e P	Z	17:04:45.3	87.9	291.0	1.2	6	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/11	18:48:25.1	22.315N	143.228E	114D	6.0			NEIC

West of Mariana Islands

	Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	RUE	e PP	Z	19:05:15.6	93.3	45.7					
	BSEG	e P	Z	19:01:31.0	93.7	42.8					
		e PP	Z	19:05:19.9							
	BRG	e P	Z	19:01:33.7	94.3	45.9					
		e PP	Z	19:05:23.7							
	CLL	i P	- Z	19:01:34.2	94.4	45.1	1.1	30	5.6		
		e pP	Z	19:02:01.0							
		e PP	Z	19:05:22.9							

	e pPP	R	19:05:55.9						
	e SKSac	R	19:11:55.9						
	e S	T	19:12:32.7						
	e SP	R	19:13:53.0						
	i PKKPbc	Z	19:18:31.6			0.9	13		
	e SS	R	19:19:03.2						
	e sSS	R	19:19:51.6						
	e LQ	T	19:31:10.8						
	e LR	Z	19:33:23.5						
	e L	Z	19:47:27.7			22.0	855	5.2	
CLZ	e P	Z	19:01:37.9	95.2	42.9				
WERD	e P	Z	19:01:38.4	95.3	44.6				
GUNZ	e P	Z	19:01:39.1	95.4	44.6				
	e PP	Z	19:05:33.1						
MOX	e P	Z	19:01:39.6	95.5	44.0				
	e PP	Z	19:05:32.9						
GEC2	e P	Z	19:01:40.8	95.8	45.8				
	e PP	Z	19:05:34.9						
IBBN	e P	Z	19:01:41.3	95.9	40.7				
WET	e PP	Z	19:05:37.0	96.0	45.1				
UBBA	e P	Z	19:01:41.8	96.1	42.7				
GRA3	e PKKP	Z	19:18:26.6	96.3	43.8				
GRA1	e P	Z	19:01:43.6	96.4	43.8				
	e PP	Z	19:05:40.1						
GRFO	e P	Z	19:01:43.9	96.4	43.8				
FUR	e pP	Z	19:02:14.6	97.4	43.9				
STU	e P	Z	19:01:50.9	97.9	42.2				
BFO	e P	Z	19:01:53.7	98.7	41.5				

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/11	22:42:46.5	51.560N	87.090E	33.0N	5.0			SZGRF
2003/11/11	22:42:30.8	50.169N	87.873E	10G	5.1	4.4		NEIC

Southwestern Siberia, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z	22:50:44.6	44.3	61.9	0.9	25	5.0		
CLL	e P	Z	22:50:51.6	45.3	60.5	0.8	19	4.9		
WERD	e P	Z	22:50:58.9	46.1	59.5	1.5	15	4.5		
GUNZ	e P	Z	22:50:59.1	46.1	59.4	1.4	27	4.8		
MOX	e P	Z	22:51:00.9	46.3	59.3	1.3	19	4.6		
WET	e P	Z	22:51:02.0	46.4	58.6	1.6	24	4.7		
GRA1	e P	Z	22:51:06.8	47.1	58.4	1.6	77	5.4		
FUR	e P	Z	22:51:13.5	47.8	57.2	1.7	67	5.4		
TNS	e P	Z	22:51:16.6	48.3	57.5	1.3	17	4.9		
STU	e P	Z	22:51:18.6	48.7	56.8	1.4	43	5.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/12	00:29:45.3	1.622N	126.436E	33N	5.8	6.2		NEIC

Northern Molucca Sea

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e Pdiff	Z	00:43:38.2	102.2	70.7					
BRG	e Pdiff	Z	00:43:40.6	102.7	71.2					
	e PP	Z	00:47:57.0							
CLL	i Pdiff	- Z	00:43:44.1	103.1	70.3	1.1	10			
	e PP	Z	00:48:05.6							
	e PPP	Z	00:50:02.9							
	e SKSac	R	00:54:19.2							
	e Sdiff	T	00:55:44.4							
	e PS	R	00:57:09.4							
	e SS	R	01:02:33.3							
	e L	Z	01:32:11.5			22.0	6180		6.1	
GEC2	e PP	Z	00:47:59.2	103.5	71.4					
WET	e Pdiff	Z	00:43:45.8	103.9	70.7					
	e PP	Z	00:48:04.0							
MOX	e PP	Z	00:48:07.4	104.1	69.3					
NRDL	e Pdiff	Z	00:43:48.1	104.3	67.6					
CLZ	e PP	Z	00:48:24.8	104.4	68.0					
GRA1	e Pdiff	Z	00:43:49.9	104.7	69.2					
	e PP	Z	00:48:12.4							
	e PPP	Z	00:50:22.9							
	e L	Z	01:37:02.0			21.2	8080		6.2	
FUR	e PP	Z	00:48:16.1	105.2	69.7					
TNS	e Pdiff	Z	00:43:57.4	106.2	66.8					
BUG	e Pdiff	Z	00:43:57.6	106.4	65.5					
	e PP	Z	00:48:25.9							
WLF	e PP	Z	00:48:33.1	107.7	65.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/12	04:55: 3.8	29.992N	114.722W	33.0N	5.8	5.6		SZGRF
2003/11/12	04:54:55.9	28.938N	113.234W	10G	5.5	5.4		NEIC

Baja California, Mexico

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
IBBN	e P	Z	05:07:30.0	83.8	311.0	1.3	213	6.2		
BSEG	e P	Z	05:07:29.9	83.9	312.8	1.8	592	6.5		
BUG	e P	Z	05:07:31.3	84.2	310.7	1.7	195	6.1		
NRDL	e P	Z	05:07:34.9	84.8	312.8	2.1	386	6.3		
WLF	e P	Z	05:07:35.6	84.8	310.0	1.6	146	6.0		
CLZ	e P	Z	05:07:36.9	85.3	313.0	1.1	41	5.6		
TNS	e P	Z	05:07:38.5	85.5	311.7	5.6	1976	6.4		

UBBA	e P	Z	05:07:39.7	85.9	312.8	1.1	33	5.4	
RUE	e P	Z	05:07:41.5	86.4	315.6	1.5	88	5.7	
MOX	e P	Z	05:07:43.3	86.7	314.0	1.5	56	5.5	
BFO	e P	Z	05:07:43.1	86.7	311.7	1.2	40	5.4	
STU	e P	Z	05:07:44.0	86.9	312.3	1.0	42	5.5	
CLL	e P	Z	05:07:43.3	86.9	315.0	1.6	82	5.6	
WERD	e P	Z	05:07:45.4	87.2	314.5	1.2	27	5.2	
GRA1	e P	Z	05:07:46.2	87.2	313.7	1.6	189	6.0	
	e L	Z	05:45:19.1			18.4	2263		5.6
GUNZ	e P	Z	05:07:45.9	87.3	314.5	1.1	41	5.4	
BRG	e P	Z	05:07:47.4	87.6	315.7	1.2	46	5.7	
WET	e P	Z	05:07:49.7	88.4	315.0	1.9	56	5.6	
GEC2	e P	Z	05:07:53.6	89.0	315.6	1.2	20	5.2	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/12	06:39:32.0	28.213S	13.621W	33.0N	4.7			SZGRF

Southern Mid-Atlantic Ridge

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	06:51:43.8	81.0	202.0	1.6	13	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/12	08:26:49.5	34.280N	137.520E	406.5	6.5			SZGRF
2003/11/12	08:26:44.4	33.319N	136.893E	396D	6.3			NEIC

Near south coast of eastern Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e P	Z	08:38:12.6	79.7	45.1	1.0	498	6.5		
	e PcP	Z	08:38:16.8							
RUE	e P	Z	08:38:19.5	80.9	45.1	1.1	587	6.5		
	e PcP	Z	08:38:22.5							
BSEG	e P	Z	08:38:20.2	81.3	42.8	1.1	670	6.6		
	e PcP	Z	08:38:23.4							
BRG	e P	Z	08:38:24.7	82.0	45.1	0.9	406	6.5		
	e PcP	Z	08:38:27.9							
HLG	e P	Z	08:38:25.0	82.1	41.0	1.0	368	6.5		
	e PcP	Z	08:38:28.3							
CLL	e P	Z	08:38:25.7	82.1	44.5	1.0	1007	7.0		
	e		08:38:28.3							
	e pP	Z	08:39:58.9							
	e sP	Z	08:40:37.7							
	e PP	Z	08:41:36.8							
	e SKSac	R	08:48:04.1							
	e S	T	08:48:11.3							
	e SP	Z	08:48:55.3							

	e sS	T	08:50:38.7						
	e SS	T	08:53:34.9						
	i PKKPbc	Z	08:56:51.6						
	e SSS	T	08:56:58.3						
	e SSSS	T	08:59:56.7						
	e PKPPKPdf	Z	09:04:55.6						
	e SKPPKPdf	Z	09:07:50.6						
	e L	Z	09:21:29.6			18.0	2816		5.7
NRDL	e P	Z	08:38:27.0	82.5	42.5	1.0	309	6.4	
	e PcP	Z	08:38:30.0						
CLZ	e P	Z	08:38:29.2	82.8	42.6	1.0	1071	7.0	
	e PcP	Z	08:38:32.4						
WERD	e P	Z	08:38:29.9	83.0	43.9	1.0	320	6.5	
	e PcP	Z	08:38:33.2						
	e sP	Z	08:40:43.2						
GUNZ	e P	Z	08:38:30.3	83.1	43.9	0.9	496	6.7	
	e PcP	Z	08:38:33.5						
	e pP	Z	08:40:03.0						
MOX	e P	Z	08:38:30.7	83.2	43.4	1.0	311	6.5	
	e PcP	Z	08:38:33.8						
GEC2	e P	Z	08:38:32.3	83.5	44.7	0.9	228	6.4	
	e PcP	Z	08:38:35.5						
IBBN	e P	Z	08:38:32.3	83.6	40.7	0.9	970	7.1	
	e PcP	Z	08:38:35.7						
WET	e P	Z	08:38:33.4	83.7	44.2	1.1	182	6.2	
	e PcP	Z	08:38:36.5						
UBBA	e P	Z	08:38:33.4	83.7	42.2	1.5	318	6.3	
	e PcP	Z	08:38:36.1						
GRA1	e P	Z	08:38:35.5	84.0	43.0	1.0	617	6.8	
	e PcP	Z	08:38:38.6						
	e pP	Z	08:40:05.8						
	e PP	Z	08:41:58.2						
	e S	T	08:48:28.6						
	e sS	T	08:51:05.0						
	e SS	T	08:54:12.0						
	e PKKPbc	Z	08:56:46.8						
	e SSS	T	08:57:34.3						
GRFO	e P	Z	08:38:35.5	84.1	43.0				
BUG	e P	Z	08:38:36.4	84.4	40.3	1.1	527	6.7	
	e PcP	Z	08:38:39.5						
	e pP	Z	08:40:09.1						
	e sP	Z	08:40:49.2						
TNS	e P	Z	08:38:38.9	84.9	41.1	1.4	188	6.1	
	e PcP	Z	08:38:41.9						
	e pP	Z	08:40:11.1						
FUR	e P	Z	08:38:40.5	85.1	43.0	0.9	396	6.6	
	e PcP	Z	08:38:43.8						
STU	e P	Z	08:38:42.6	85.6	41.5	1.2	258	6.3	
	e PcP	Z	08:38:45.4						

		e pP	Z	08:40:15.2						
	WLF	e P	Z	08:38:46.1	86.2	39.4	1.1	119	5.9	
		e PcP	Z	08:38:48.6						
	BFO	e P	Z	08:38:45.7	86.3	40.9	0.9	140	6.1	
		e PcP	Z	08:38:48.7						
		e pP	Z	08:40:18.3						

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/12								

	Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	BRG	e PKP	Z	11:52:50.4							
	CLL	e PKP	Z	11:52:49.7							
	GEC2	e PKP	Z	11:52:55.7							
	GRA1	e PKP	Z	11:52:55.3							
	GUNZ	e PKP	Z	11:52:52.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/12	16:02: 4.8	28.343N	138.580E	33.0N	5.2			SZGRF
2003/11/12	16:02:44.4	28.384N	139.688E	429*	4.8			NEIC

Bonin Islands, Japan, region

	Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	GRA1	e P	Z	16:14:56.9	89.5	43.5	1.1	18	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/12	17:29:30.0	20.970S	178.440W	600.0G				SZGRF
2003/11/12	17:29:29.3	20.844S	178.985W	600G	4.8			NEIC

Fiji Islands region

	Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	BSEG	e PKPbc	Z	17:48:03.6	146.2	15.7					
	RUE	e PKPbc	Z	17:48:06.4	146.9	22.2					
	NRDL	e PKPbc	Z	17:48:08.1	147.6	16.0					
		e PKPab	Z	17:48:12.7							
	IBBN	e PKPbc	Z	17:48:09.5	148.1	12.0					
		e PKPab	Z	17:48:15.1							
	CLL	e PKPbc	Z	17:48:09.6	148.1	21.6					
		e PKPab	Z	17:48:14.9							
	CLZ	e PKPbc	Z	17:48:10.0	148.2	16.7					
		e PKPab	Z	17:48:15.6							
	BRG	e PKPbc	Z	17:48:10.3	148.3	23.4					
		e PKPab	Z	17:48:15.8							

BUG	e PKPbc	Z	17:48:11.5	149.0	11.4
MOX	e PKPbc	Z	17:48:11.9	149.1	19.5
	e PKPab	Z	17:48:19.1		
WERD	e PKPbc	Z	17:48:12.2	149.1	20.9
	e PKPab	Z	17:48:19.3		
GUNZ	e PKPbc	Z	17:48:12.6	149.2	21.0
	e PKPab	Z	17:48:20.0		
UBBA	e PKPbc	Z	17:48:12.0	149.2	16.6
GRA1	e PKPbc	Z	17:48:14.4	150.0	19.4
	e PKPab	Z	17:48:23.9		
GRFO	e PKPbc	Z	17:48:14.5	150.0	19.4
TNS	e PKPbc	Z	17:48:14.2	150.0	14.0
	e PKPab	Z	17:48:23.1		
WET	e PKPbc	Z	17:48:14.6	150.2	22.7
	e PKPab	Z	17:48:24.0		
GEC2	e PKPbc	Z	17:48:14.6	150.2	24.4
WLF	e PKPbc	Z	17:48:16.7	150.9	9.9
	e pPKPbc	Z	17:50:41.5		
STU	e PKPbc	Z	17:48:17.0	151.3	16.1
	e PKPab	Z	17:48:28.2		
FUR	e PKPbc	Z	17:48:17.4	151.5	20.4
BFO	e PKPbc	Z	17:48:18.1	151.9	14.6
	e PKPab	Z	17:48:30.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/12	19:24:22.2	40.989N	63.670E	33.0N	5.0			SZGRF
2003/11/12	19:24:15.8	40.517N	63.368E	10G	4.7			NEIC

Northwestern Uzbekistan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	19:31:29.7	37.1	83.9	1.3	40	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/13	02:35:23.0	35.570N	102.700E	33.0N	5.2			SZGRF
2003/11/13	02:35:10.6	34.767N	103.878E	10G	5.1	5.2		NEIC

Qinghai, China

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	02:45:45.5	63.7	66.4	0.9	8	4.8		
CLL	e P	Z	02:45:47.8	64.1	66.0	1.8	29	5.1		
BSEG	e P	Z	02:45:51.2	64.5	65.3	1.2	26	5.2		
GEC2	e P	Z	02:45:52.0	64.7	65.3	1.3	12	5.0		
WET	e P	Z	02:45:54.8	65.0	65.0	1.7	25	5.2		
MOX	e P	Z	02:45:55.1	65.1	64.8	1.7	26	5.2		
NRDL	e P	Z	02:45:55.5	65.2	64.6	1.6	37	5.4		

CLZ	e P	Z	02:45:56.8	65.3	64.5	1.3	27	5.3
GRA1	e P	Z	02:45:59.9	65.8	64.1	1.0	17	5.2
FUR	e P	Z	02:46:04.1	66.4	63.6	1.9	116	5.8
BFO	e P	Z	02:46:13.7	68.1	61.8	1.4	21	5.2
WLF	e P	Z	02:46:18.5	68.7	60.9	1.3	40	5.5

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/13	02:49:02.1	54.206S	143.609E	10G	5.5	5.7		NEIC

West of Macquarie Island

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPdf	Z	03:08:51.3	150.5	115.2					
	e PKPbc	Z	03:08:54.3							
	e PKPab	Z	03:09:01.3							
	e		03:09:14.9							
	e SS	T	03:31:52.3							
	e PSPS	R	03:33:05.0							
	e SSS	T	03:37:34.8							
	e LQ	T	03:54:53.5							
	e LR	Z	04:01:27.7							
	e L	Z	04:23:34.0			22.0	1336		5.7	
GRA1	e PKP	Z	03:08:54.8	150.9	117.4					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/13	04:46:44.9	21.037S	177.614E	33N	4.7			NEIC

South of the Fiji Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
NRDL	e PKP	Z	05:06:26.2	147.1	21.8					
CLL	e PKPdf	Z	05:06:24.4	147.4	27.4					
	e PKPbc	Z	05:06:26.8			0.8	14			
	e pPKPbc	Z	05:06:37.4							
BRG	e PKP	Z	05:06:27.2	147.5	29.3					
CLZ	e PKP	Z	05:06:27.8	147.6	22.6					
GEC2	e PKP	Z	05:06:32.3	149.4	30.5					
WET	e PKP	Z	05:06:32.6	149.4	28.8					
GRA1	e PKP	Z	05:06:32.4	149.4	25.5					
WLF	e PKP	Z	05:06:35.9	150.6	16.4					
BFO	e PKP	Z	05:06:36.4	151.4	21.2					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/13	17:17:15.2	30.900N	127.110E	33.0N	4.7			SZGRF
2003/11/13	17:16:55.0	28.470N	130.209E	33N	4.8			NEIC

Northwest of Ryukyu Islands, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	17:29:18.7	82.7	50.2	0.7	8	4.7		
BRG	e P	Z	17:29:19.1	82.9	52.6	1.1	8	4.5		
CLL	e P	Z	17:29:20.3	83.1	52.0	1.0	14	4.9		
NRDL	e P	Z	17:29:24.0	83.7	49.9	1.1	8	4.7		
WERD	e P	Z	17:29:25.2	83.9	51.4	0.8	4	4.5		
GUNZ	e P	Z	17:29:25.9	84.0	51.4	0.8	6	4.7		
CLZ	e P	Z	17:29:25.9	84.0	50.1	0.8	16	5.1		
MOX	e P	Z	17:29:26.3	84.2	50.9	1.0	5	4.5		
GEC2	e P	Z	17:29:26.6	84.2	52.2	1.0	5	4.5		
GRA1	e P	Z	17:29:30.3	85.0	50.5	1.5	34	5.2		
TNS	e P	Z	17:29:36.7	86.0	48.5					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/13	17:25:26.0	29.077N	129.366E	33.0N	4.8			SZGRF
2003/11/13	17:25:17.2	28.258N	130.287E	33N	4.7			NEIC

Ryukyu Islands, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	17:37:53.6	85.2	50.6	0.8	5	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/13	22:39:21.1	42.610N	141.890E	33.0G	5.2			SZGRF
2003/11/13	22:39:20.4	41.917N	142.083E	73D	5.0			NEIC

Hokkaido, Japan, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	22:51:01.5	75.6	35.0	0.9	29	5.3		
BRG	e P	Z	22:51:07.8	76.8	36.9	0.9	10	4.9		
CLL	i P	+ Z	22:51:07.7	76.8	36.4	0.9	29	5.4		
	e pP	Z	22:51:27.1							
NRDL	e P	Z	22:51:08.3	76.9	34.6	0.8	10	5.0		
CLZ	e P	Z	22:51:11.1	77.3	34.7	0.8	29	5.5		
WERD	e P	Z	22:51:13.3	77.8	35.8	1.1	8	4.8		
GUNZ	e P	Z	22:51:13.8	77.8	35.8	0.8	8	4.9		
IBBN	e P	Z	22:51:13.6	77.8	33.0	0.7	36	5.6		
MOX	e P	Z	22:51:13.7	77.9	35.4	1.0	11	4.9		
GEC2	e P	Z	22:51:17.5	78.5	36.5	0.8	8	4.9		
WET	e P	Z	22:51:18.3	78.6	36.0	1.0	19	5.2		
BUG	e P	Z	22:51:18.6	78.7	32.6	0.9	25	5.4		
GRA1	e P	Z	22:51:19.5	78.8	35.0	0.9	46	5.6		
TNS	e P	Z	22:51:21.8	79.3	33.2	1.2	13	4.8		
FUR	e P	Z	22:51:26.0	80.0	34.9	0.9	39	5.4		

	BFO	e P	Z	22:51:30.6	81.0	33.0	1.1	22	5.1

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/14	00:22: 2.4	40.685N	13.835E	10.0G				SZGRF
2003/11/14	00:22:01.1	40.393N	14.350E	361	4.6			NEIC

Tyrrhenian Sea

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
FUR	e Pn	Z	00:23:56.1	8.1	163.1					
GEC2	e Pn	Z	00:24:01.2	8.5	176.6					
WET	e Pn	Z	00:24:04.8	8.8	172.7					
BFO	e Pn	Z	00:24:06.1	9.0	149.4					
GRA1	e Pn	Z	00:24:13.6	9.6	165.5					
GUNZ	e Pn	Z	00:24:21.0	10.1	171.2					
WERD	e Pn	Z	00:24:21.7	10.2	171.1					
BRG	e Pn	Z	00:24:26.7	10.5	178.3					
TNS	e Pn	Z	00:24:27.8	10.7	155.0					
WLF	e Pn	Z	00:24:30.6	10.9	145.0					
CLL	e Pn	Z	00:24:31.9	11.0	174.6					
CLZ	e Pn	Z	00:24:40.9	11.8	165.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/14	02:23:59.5	39.090N	31.160W	33.0N	5.2	4.7		SZGRF
2003/11/14	02:24:08.3	40.146N	29.727W	10G	5.3	4.8		NEIC

Azores Islands, Portugal

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WLF	e P	Z	02:29:51.4	26.8	263.0	1.3	77	5.4		
BUG	e P	Z	02:29:59.8	27.8	260.7	1.2	45	5.2		
BFO	e P	Z	02:30:02.9	28.1	267.5	1.3	72	5.3		
IBBN	e P	Z	02:30:04.1	28.2	259.6	1.3	39	5.1		
TNS	e P	Z	02:30:04.9	28.4	264.0	1.9	79	5.2		
NRDL	e P	Z	02:30:17.1	29.7	261.5	1.4	51	5.3		
CLZ	e P	Z	02:30:17.7	29.7	262.9	1.5	45	5.2		
BSEG	e P	Z	02:30:20.1	30.0	259.2	1.2	73	5.5		
GRA1	e P	Z	02:30:20.5	30.1	267.3	1.2	42	5.2		
	e L	Z	02:41:06.3			18.9	1371		4.7	
FUR	e P	Z	02:30:20.8	30.1	270.0	2.2	160	5.6		
WERD	e P	Z	02:30:26.9	30.8	267.0	1.3	38	5.2		
GUNZ	e P	Z	02:30:27.0	30.8	267.1	1.3	42	5.2		
WET	e P	Z	02:30:29.3	31.2	269.6	1.4	44	5.2		
CLL	e P	Z	02:30:31.2	31.3	266.1	1.3	27	5.0		
GEC2	e P	Z	02:30:34.3	31.7	270.7	1.3	17	4.8		
BRG	e P	Z	02:30:36.0	31.9	267.6	1.4	28	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/14	04:28:33.0	16.812S	172.318E	10G	5.7	5.7		NEIC

Vanuatu Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPpre	Z	04:47:59.4	141.8	33.2					
	e PKPdf	Z	04:48:05.6			1.0	12			
	e PKiKP	Z	04:48:10.1							
	e		04:50:12.3							
	e PP	Z	04:51:19.7							
	e PPS	N	05:03:40.2							
	e SS	T	05:09:49.4							
	e SSS	T	05:15:08.4							
	e LQ	T	05:25:52.9							
	e LR	Z	05:35:57.1							
	e L	Z	05:48:05.6			22.0	2088		5.8	
GRA1	e PKP	Z	04:48:07.5	143.7	31.6					
	e L	Z	05:49:39.5			20.8	1332		5.7	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/14	07:33:11.2	3.591S	100.962E	33.0N	5.2			SZGRF
2003/11/14	07:33:05.8	3.627S	102.005E	33N	5.2			NEIC

Southern Sumatera, Indonesia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	07:46:19.6	93.3	91.8	0.9	10	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/14	17:05:37.5	43.677N	143.344E	33.0N	4.6			SZGRF
2003/11/14	17:05:25.5	42.108N	144.147E	33N	4.7			NEIC

Hokkaido, Japan, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	17:17:31.4	79.4	33.6	1.2	6	4.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/14	18:43:51.6	36.560N	141.530E	42.9	6.2	5.5		SZGRF
2003/11/14	18:43:50.8	36.393N	141.062E	39D	5.7	5.1		NEIC

Near east coast of eastern Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML

RGN	e	P	Z	18:55:52.2	78.6	40.5	1.4	480	6.3
RUE	e	P	Z	18:55:59.7	80.0	40.6	1.3	341	6.1
BSEG	e	P	Z	18:56:00.6	80.2	38.2	1.2	257	6.1
BRG	e	P	Z	18:56:05.7	81.2	40.5	1.0	135	6.0
CLL	e	P	Z	18:56:05.6	81.2	39.9	1.0	286	6.4
	e	pP	Z	18:56:17.8					
NRDL	e	P	Z	18:56:06.9	81.4	37.9	1.0	88	5.8
CLZ	e	P	Z	18:56:09.4	81.8	38.1	1.2	230	6.2
WERD	e	P	Z	18:56:11.0	82.1	39.3	1.1	89	5.9
GUNZ	e	P	Z	18:56:11.4	82.2	39.3	1.0	117	6.1
IBBN	e	P	Z	18:56:12.1	82.4	36.2	1.1	221	6.3
UBBA	e	P	Z	18:56:14.0	82.8	37.7	1.7	142	5.9
GEC2	e	P	Z	18:56:14.2	82.8	40.2	1.0	84	5.9
WET	e	P	Z	18:56:15.2	82.9	39.6	1.1	113	6.0
GRA1	e	P	Z	18:56:16.8	83.2	38.5	1.0	382	6.6
	e	pP	Z	18:56:29.4					
	e	PP	Z	18:59:34.8					
	e	L	Z	19:36:19.6			20.0	1937	5.5
BUG	e	P	Z	18:56:16.5	83.3	35.8	2.4	514	6.3
TNS	e	P	Z	18:56:19.7	83.8	36.6	1.3	113	5.9
FUR	e	P	Z	18:56:22.4	84.3	38.4	0.9	282	6.5
STU	e	P	Z	18:56:24.1	84.7	37.0	1.0	220	6.3
WLF	e	P	Z	18:56:26.7	85.2	34.9	1.6	314	6.2
BFO	e	P	Z	18:56:27.4	85.4	36.4	1.0	250	6.3

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/15	07:10:34.5	17.235S	172.243W	33N	5.8	5.5		NEIC

Tonga Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	- Z	07:30:11.6	145.7	8.9	1.1	149			
	e		07:30:15.7							
	e pPKPbc	Z	07:30:24.8							
	e PP	Z	07:33:37.8							
	e LR	Z	08:18:59.4							
	e L	Z	08:39:26.0			20.0	935		5.6	
GRA1	e PKP	Z	07:30:15.2	147.4	6.2					
	e L	Z	08:41:00.4			19.2	631		5.4	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/16	00:39:59.6	54.172N	171.855E	33.0N	5.3			SZGRF
2003/11/16	00:39:49.8	53.059N	171.032E	33N	5.0	4.3		NEIC

Near Islands, Aleutian Islands, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML

BSEG	i	P	Z	00:51:13.6	71.8	12.1	0.8	25	5.4
RUE	i	P	Z	00:51:19.0	72.8	14.1			
IBBN	i	P	Z	00:51:24.8	73.7	10.4			
CLZ	e	P	Z	00:51:25.8	73.9	12.0	1.0	25	5.3
CLL	i	P	Z	00:51:26.1	74.0	13.5	0.6	22	5.4
BRG	i	P	Z	00:51:27.9	74.3	14.1	0.6	28	5.4
BUG	e	P	Z	00:51:29.4	74.6	10.0			
MOX	i	P	Z	00:51:31.4	74.9	12.6	0.9	18	5.1
UBBA	e	P	Z	00:51:31.1	74.9	11.7			
WERD	i	P	Z	00:51:32.0	75.0	13.1			
GUNZ	e	P	Z	00:51:32.5	75.0	13.1			
TNS	e	P	Z	00:51:36.1	75.7	10.7	1.2	10	4.7
GRA1	i	P	Z	00:51:37.4	75.8	12.4	0.7	38	5.5
WET	i	P	Z	00:51:39.2	76.1	13.3	0.7	21	5.4
GEC2	i	P	Z	00:51:39.9	76.3	13.8	0.6	36	5.7
WLF	i	P	Z	00:51:40.8	76.5	9.3			
STU	e	P	Z	00:51:43.6	77.0	11.1			
FUR	e	P	Z	00:51:45.7	77.3	12.3			
BFO	e	P	Z	00:51:46.7	77.6	10.5	0.7	11	5.1

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/16	06:34:59.3	44.670N	10.975E	10.0G				SZGRF
2003/11/16	06:34:56.9	44.435N	11.140E	10G				NEIC

Northern Italy

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
FUR	e Sg	E	06:36:53.4	3.7	181.5					
BFO	e Pn	Z	06:36:02.1	4.4	152.5					
	e Sn	N	06:36:47.8							
GEC2	e Pn	Z	06:36:07.5	4.7	202.7					
WET	e Pn	Z	06:36:09.3	4.9	194.8					
	e Sn	N	06:37:02.7							
GRA1	e Sg	N	06:37:45.9	5.3	180.6					
TANN	e Pn	Z	06:36:25.1	6.0	189.0					
	e Sn	N	06:37:30.0							
TNS	e Pn	N	06:36:25.8	6.1	161.5					
MOX	e Pn	Z	06:36:27.5	6.2	183.1					
BRG	e Pn	Z	06:36:33.9	6.7	197.4					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/16	07:22:54.7	38.647N	20.727E	10.0G		4.0		SZGRF
2003/11/16	07:22:49.4	38.222N	20.361E	10G	5.0	4.5		NEIC

Greece

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML

GEC2	e Pn	Z	07:25:34.7	11.7	153.2				
	e Sn	N	07:27:38.8						
FUR	e Pn	Z	07:25:39.7	11.9	143.1				
	e Sn	N	07:27:43.5						
WET	e Pn	Z	07:25:42.9	12.2	151.0				
	e L	Z	07:31:16.8			20.0	2604	4.2	
GRA1	e Pn	Z	07:25:55.3	13.2	146.9				
	e Sn	N	07:28:13.0						
	e L	Z	07:31:14.1			18.0	786	3.8	
BFO	e Pn	Z	07:26:00.2	13.3	134.8				
	e Sn	N	07:28:22.3						
TANN	e Pn	Z	07:26:01.9	13.4	152.3				
MOX	e Pn	Z	07:26:06.0	13.9	150.1				
	e L	Z	07:31:44.8			19.2	1538	4.1	
CLL	e L	Z	07:31:23.4	14.1	155.6	18.0			
TNS	e Pn	Z	07:26:17.8	14.7	140.2				
	e Sn	N	07:28:51.1						

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/16	07:45: 5.8	40.352N	143.276E	33.0N	5.2			SZGRF
2003/11/16	07:44:51.4	37.971N	142.836E	33N	5.0	4.1		NEIC

Off east coast of Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	07:56:58.3	79.4	36.2					
BRG	e P	Z	07:57:04.6	80.5	38.5					
CLL	e P	Z	07:57:03.5	80.5	37.9	1.0	20	5.1		
NRDL	e P	Z	07:57:05.1	80.7	35.9					
CLZ	e P	Z	07:57:07.5	81.1	36.1	1.1	23	5.1		
MOX	e P	Z	07:57:10.3	81.6	36.8					
IBBN	e P	Z	07:57:10.2	81.6	34.2					
GEC2	e P	Z	07:57:13.5	82.2	38.1					
WET	e P	Z	07:57:14.2	82.3	37.6					
GRA1	e P	Z	07:57:15.4	82.5	36.5	1.1	30	5.2		
BUG	e P	Z	07:57:14.7	82.5	33.8					
TNS	e P	Z	07:57:18.2	83.1	34.6					
FUR	e P	Z	07:57:21.3	83.7	36.4					
STU	e P	Z	07:57:22.7	84.0	35.0					
BFO	e P	Z	07:57:26.2	84.7	34.4	1.1	23	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/16								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRC1	e (P)	Z	17:42:45.4							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/16	18:30:52.3	38.465N	20.524E	10.0G		3.4		SZGRF
2003/11/16	18:30:48.7	38.351N	20.595E	10G	4.5			NEIC

Greece

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z	18:33:33.0	11.6	152.1					
	e Sn	E	18:35:37.8							
	e L	Z	18:39:22.2			18.2	250		3.2	
WET	e Pn	Z	18:33:40.2	12.1	149.9					
	e Sn	N	18:35:50.3							
GRA1	e Pn	Z	18:33:58.4	13.2	145.9					
	e L	Z	18:40:42.5			18.1	492		3.6	
BFO	e Pn	Z	18:34:00.9	13.4	133.8					
	e Sn	N	18:36:17.6							
MOX	e Pn	Z	18:34:04.1	13.8	149.2					
TNS	e Pn	Z	18:34:14.2	14.7	139.4					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/17	01:35:56.7	50.870N	87.320E	33.0N	5.5	4.6		SZGRF
2003/11/17	01:35:47.6	50.191N	87.601E	10G	5.5	4.7		NEIC

Southwestern Siberia, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z	01:43:59.4	44.1	62.0					
	e PcP	Z	01:45:47.0							
BRG	e P	Z	01:44:04.8	44.8	60.7	1.6	80	5.2		
CLL	e P	Z	01:44:07.1	45.1	60.6	0.7	64	5.5		
BSEG	e P	Z	01:44:09.0	45.3	61.6	1.9	283	5.7		
GUNZ	e P	Z	01:44:14.2	45.9	59.5					
GEC2	e P	Z	01:44:14.3	46.0	58.8	1.9	71	5.1		
NRDL	e P	Z	01:44:15.5	46.1	60.2					
MOX	e P	Z	01:44:16.1	46.2	59.4					
	e PP	Z	01:46:03.4							
CLZ	e P	Z	01:44:16.7	46.3	59.8	0.8	24	5.0		
	e PP	Z	01:46:03.4							
WET	i P	+ Z	01:44:16.9	46.3	58.7	1.4	53	5.1		
GRA1	e P	Z	01:44:22.2	46.9	58.5	1.7	253	5.9		
	e PcP	Z	01:45:54.1							
	e PP	Z	01:46:09.3							
	e L	Z	02:03:24.4			19.1	670		4.6	
UBBA	e P	Z	01:44:22.1	47.0	58.8					
IBBN	e P	Z	01:44:25.7	47.4	58.9					
FUR	e P	Z	01:44:28.3	47.7	57.3	1.9	269	5.9		

	e PcP	Z	01:45:56.3						
	e PP	Z	01:46:18.3						
BUG	e P	Z	01:44:31.2	48.1	58.0				
TNS	e P	Z	01:44:31.4	48.1	57.6	2.2	262	5.9	
	e PcP	Z	01:45:58.2						
	e PP	Z	01:46:22.1						
STU	e P	Z	01:44:34.0	48.5	56.9				
	e PcP	Z	01:45:58.8						
	e PP	Z	01:46:25.7						
BFO	e P	Z	01:44:39.3	49.2	56.2	2.3	179	5.8	
	e PP	Z	01:46:32.5						

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/17	06:43: 6.3	50.930N	177.250E	33.0N	6.9	7.4		SZGRF
2003/11/17	06:43:07.0	51.128N	178.745E	33N	6.0	7.2		NEIC

Rat Islands, Aleutian Islands, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e P	Z	06:54:39.3	73.6	9.5	1.4	2623	7.2		
HLG	e P	Z	06:54:44.3	74.4	5.9					
BSEG	e P	Z	06:54:44.5	74.5	7.5	1.5	2174	7.1		
RUE	e P	Z	06:54:50.5	75.6	9.7					
NRDL	e P	Z	06:54:52.6	75.9	7.3					
IBBN	e P	Z	06:54:54.8	76.3	5.8					
CLZ	e P	Z	06:54:56.4	76.6	7.5	2.2	4161	7.1		
CLL	e P	Z	06:54:57.5	76.9	9.1	1.3	362	6.3		
	e PP	Z	06:58:00.2							
	e S	E	07:04:49.1							
	e SS	N	07:09:52.1							
	e LR	Z	07:20:23.6							
	e PKPPKPdf	Z	07:22:04.4							
	e SKPPKP	Z	07:25:54.8							
	e L	Z	07:32:24.7			20.0	197448		7.4	
	e P’P’P’ab	Z	07:42:14.2							
BRG	e P	Z	06:54:59.2	77.2	9.7					
UBBA	e P	Z	06:55:01.8	77.6	7.2					
MOX	e P	Z	06:55:02.1	77.6	8.2	2.1	1816	6.8		
GUNZ	e P	Z	06:55:04.0	77.9	8.7	1.3	704	6.6		
TNS	e P	Z	06:55:06.1	78.3	6.2	1.1	481	6.6		
GRA1	e P	Z	06:55:07.7	78.6	7.9	1.2	1432	7.0		
	e S	N	07:05:16.6							
	e L	Z	07:36:12.6			20.2	182642		7.4	
WET	e P	Z	06:55:09.9	79.0	9.0					
GEC2	e P	Z	06:55:10.7	79.2	9.5	1.3	818	6.7		
STU	e P	Z	06:55:13.4	79.7	6.6					
FUR	e P	Z	06:55:15.8	80.1	7.9					
BFO	e P	Z	06:55:16.2	80.2	6.1	1.7	1059	6.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/17	07:12:41.0	50.841N	177.566W	39.7	5.6			SZGRF
2003/11/17	07:12:42.2	51.328N	177.584E	33N	5.3			NEIC

Andreanof Islands, Aleutian Islands, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	i P	+ Z	07:24:43.1	78.3	8.7	1.1	95	5.6		
	e pP	Z	07:24:54.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/17	07:35:35.0	51.311N	177.939W	39.1				SZGRF
2003/11/17	07:35:32.2	51.191N	177.377E	33N	4.8			NEIC

Andreanof Islands, Aleutian Islands, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	07:47:34.3	78.4	8.8					
	e pP	Z	07:47:45.6							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/17	07:56:37.7	51.032N	178.126W	33.0N				SZGRF
2003/11/17	07:56:37.3	51.218N	178.237E	33N	5.2			NEIC

Andreanof Islands, Aleutian Islands, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	08:08:38.5	78.5	8.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/17	11:04:29.3	51.321N	178.593E	39.0	5.3			SZGRF

Rat Islands, Aleutian Islands, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	11:16:27.2	78.4	8.0	1.4	46	5.3		
	e pP	Z	11:16:38.4							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/17	23:37:10.2	51.040N	178.690E	33N	4.7			NEIC

Rat Islands, Aleutian Islands, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRB4	e P	Z	23:47:46.4	79.1	8.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/17								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	23:53:43.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/18	02:12:35.9	52.863N	177.433E	40.9	5.3	4.9		SZGRF
2003/11/18	02:12:22.1	51.253N	178.037E	33N	5.5	5.0		NEIC

Rat Islands, Aleutian Islands, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	02:24:01.1	74.3	7.9	1.1	69	5.7		
RUE	e P	Z	02:24:07.0	75.4	10.1					
NRDL	e P	Z	02:24:09.1	75.8	7.8	1.1	34	5.3		
IBBN	e P	Z	02:24:11.5	76.1	6.2					
CLZ	e P	Z	02:24:13.0	76.4	7.9	1.1	54	5.5		
CLL	e P	Z	02:24:13.8	76.7	9.6	1.2	26	5.1		
BRG	e P	Z	02:24:15.7	77.0	10.1	1.3	28	5.2		
BUG	e P	Z	02:24:16.1	77.0	5.9					
UBBA	e P	Z	02:24:18.5	77.4	7.6					
MOX	e P	Z	02:24:18.6	77.5	8.7	1.1	22	5.2		
GUNZ	e P	Z	02:24:20.1	77.7	9.1	1.4	42	5.4		
TNS	e P	Z	02:24:22.6	78.1	6.6	0.9	21	5.3		
GRA1	e P	Z	02:24:24.6	78.4	8.4	1.2	59	5.6		
	e pP	Z	02:24:36.3							
	e L	Z	03:05:19.3			19.4	556		4.9	
GRFO	e P	Z	02:24:24.6	78.4	8.4					
WET	e P	Z	02:24:26.6	78.8	9.4	1.6	42	5.3		
WLF	e P	Z	02:24:27.0	78.8	5.2	1.1	23	5.2		
GEC2	e P	Z	02:24:27.4	79.0	9.9	1.5	36	5.3		
STU	e P	Z	02:24:29.9	79.5	7.1	1.0	27	5.3		
FUR	e P	Z	02:24:32.5	79.9	8.4	1.2	49	5.4		
BFO	e P	Z	02:24:32.9	80.0	6.5	1.7	61	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/18	07:50:14.9	51.385N	179.493W	33.0N	5.3			SZGRF
2003/11/18	07:50:10.3	51.136N	178.837E	33N	5.3	5.3		NEIC

Andreanof Islands, Aleutian Islands, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e P	Z	08:02:02.1	77.2	9.1					
	e PP	Z	08:05:00.4							
	e PPP	Z	08:06:51.8							
	e S	Z	08:12:08.5							
	e SS	Z	08:17:01.6							
	e LR	Z	08:27:26.9							
	e L	Z	08:39:11.3			18.0	2094		5.5	
GRA1	e P	Z	08:02:13.2	78.6	7.9	1.0	33	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/18	11:34:36.6	52.166N	178.581E	33.0N	5.0			SZGRF
2003/11/18	11:34:28.7	51.327N	177.569E	33N	4.8			NEIC

Rat Islands, Aleutian Islands, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	11:46:29.7	78.3	8.7	0.8	11	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/18	11:55: 3.4	51.148N	178.812W	33.0N	5.2			SZGRF
2003/11/18	11:55:00.9	51.272N	178.145E	33N	5.4	4.8		NEIC

Andreanof Islands, Aleutian Islands, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	12:07:03.3	78.4	8.3	1.3	32	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/18	17:14:46.3	17.408N	124.290E	47.5	6.1	6.6		SZGRF
2003/11/18	17:14:22.7	12.036N	125.435E	35G	6.0	6.5		NEIC

Philippine Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z	17:27:33.9	93.1	65.6					
BRG	e P	Z	17:27:36.6	93.7	65.8	3.0	805	6.4		
CLL	i P	- Z	17:27:40.0	94.0	65.0	1.6	156	6.1		
	e pP	Z	17:27:52.8							
	e		17:29:16.2							
	e PP	Z	17:31:38.3							
	e SKSac	R	17:38:09.2							
	e S	T	17:38:46.0							
	e SP	Z	17:40:00.8							
	e PPS	E	17:40:41.4							
	e SS	R	17:45:07.4							

	e SSS	R	17:48:46.4							
	e SSSS	Z	17:52:21.9							
	e PKPPKPdf	Z	17:52:50.0							
	e L	Z	18:14:14.9			20.0	34124		6.8	
BSEG	e P	Z	17:27:39.6	94.3	62.6	1.6	173	6.0		
GEC2	e P	Z	17:27:41.2	94.7	65.7	1.4	110	5.9		
GUNZ	e P	Z	17:27:42.0	94.8	64.5					
WET	e P	Z	17:27:43.1	95.0	65.1	2.1	278	6.1		
MOX	e P	Z	17:27:43.1	95.1	63.9	1.4	106	5.9		
NRDL	e P	Z	17:27:43.5	95.1	62.6					
CLZ	e P	Z	17:27:44.2	95.3	62.8	1.2	131	6.1		
GRA1	e P	Z	17:27:46.5	95.8	63.7	1.6	166	6.1		
	e pP	Z	17:28:00.4							
	e SKSac	E	17:38:14.9							
	e L	Z	18:13:57.2			21.2	23317		6.6	
GRFO	e P	Z	17:27:46.5	95.8	63.7					
UBBA	e P	Z	17:27:46.9	96.0	62.6					
FUR	e P	Z	17:27:49.4	96.4	63.9	1.2	184	6.3		
IBBN	e P	Z	17:27:49.3	96.5	60.7					
TNS	e P	Z	17:27:52.5	97.1	61.4	1.3	98	6.0		
BUG	e P	Z	17:27:52.3	97.2	60.3					
STU	e P	Z	17:27:53.3	97.4	62.2					
BFO	e P	Z	17:27:56.4	98.1	61.6	0.5	39	6.1		
WLF	e P	Z	17:27:59.8	98.7	59.6					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/18	17:11:30.0			N				SZGRF

Philippine Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e (P)	Z	17:31:00.2							
	e		17:31:40.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/18	18:32:16.4	38.410N	22.000E	13			4.1	ATH

Greece

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	18:35:41.2	13.7	141.6					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/18	18:36:19.4	36.650N	26.840E	146	4.5			ATH

Dodecanese Islands, Greece

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	18:40:12.0	17.3	133.2					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/18	20:28:40.0	36.690N	26.840E	135	4.3			ATH

Dodecanese Islands, Greece

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	20:32:32.1	17.2	133.1					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/18	23:21:26.7	32.170N	50.553E	33.0N	5.2			SZGRF
2003/11/18	23:21:14.3	30.962N	51.199E	33N	5.1			NEIC

Northern and central Iran

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WET	e P	Z	23:27:56.5	34.0	108.0	1.2	26	5.0		
RUE	e P	Z	23:28:02.1	34.6	113.5	0.9	26	5.2		
FUR	e P	Z	23:28:03.5	34.7	104.9	0.8	100	5.8		
GRA1	e P	Z	23:28:07.3	35.2	107.0	1.4	102	5.6		
CLZ	e P	Z	23:28:17.7	36.3	108.9	0.7	26	5.3		
BFO	e P	Z	23:28:20.8	36.7	102.3	1.3	16	4.7		
NRDL	e P	Z	23:28:21.6	36.7	109.5	1.0	16	4.8		
TNS	e P	Z	23:28:23.5	37.0	104.9	1.2	54	5.3		
WLF	e P	Z	23:28:34.1	38.3	102.0	0.9	41	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/19								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	23:24:15.5			1.4	30			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/20	02:01:25.3	24.367S	179.793W	481D	5.4			NEIC

South of Fiji Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPdf	Z	02:20:18.1	151.4	24.9					
	i PKPbc	- Z	02:20:24.7			0.9	187			
	i PKPab	Z	02:20:35.2			1.0	75			

	e pPKPbc	Z	02:22:23.2			
BSEG	e PKPbc	Z	02:20:20.0	149.5	18.4	
	e PKPab	Z	02:20:26.8			
RUE	e PKPbc	Z	02:20:21.7	150.1	25.4	
NRDL	e PKPbc	Z	02:20:23.7	150.9	18.8	
	e PKPab	Z	02:20:33.0			
MOX	e PKPbc	Z	02:20:26.5	152.3	22.8	
	e PKPab	Z	02:20:39.0			
GUNZ	e PKPbc	Z	02:20:27.1	152.4	24.4	
	e PKPab	Z	02:20:39.6			
UBBA	e PKPbc	Z	02:20:26.6	152.5	19.6	
	e PKPab	Z	02:20:39.5			
GRA1	e PKP	Z	02:20:20.5	153.3	22.8	
	e PKPbc	Z	02:20:28.1			
	e PKPab	Z	02:20:43.7			
WET	e PKP	Z	02:20:20.7	153.3	26.4	
	e PKPbc	Z	02:20:28.7			
	e PKPab	Z	02:20:43.9			
GEC2	e PKP	Z	02:20:20.3	153.3	28.3	
	e PKPbc	Z	02:20:28.7			
	e PKPab	Z	02:20:43.7			
TNS	e PKP	Z	02:20:20.6	153.4	16.9	
	e PKPbc	Z	02:20:29.3			
	e PKPab	Z	02:20:43.5			
WLF	e PKPbc	Z	02:20:31.5	154.3	12.6	
	e PKPab	Z	02:20:47.7			
STU	e PKP	Z	02:20:22.4	154.6	19.4	
	e PKPbc	Z	02:20:31.7			
	e PKPab	Z	02:20:48.7			
FUR	e PKP	Z	02:20:22.1	154.6	24.1	
	e PKPbc	Z	02:20:31.9			
	e PKPab	Z	02:20:49.7			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/20	03:17:11.8	43.712N	147.318E	33.0N	5.0			SZGRF
2003/11/20	03:17:04.0	41.606N	144.076E	33N	4.9	4.9		NEIC

Kuril Islands, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	03:28:54.9	76.6	33.7	1.0	17	5.1		
CLL	i P	Z	03:29:00.8	78.1	35.3	0.8	23	5.3		
	e L	Z	04:06:57.2			20.0	596		4.9	
NRDL	e P	Z	03:29:01.8	77.8	33.4					
GUNZ	e P	Z	03:29:07.5	78.8	34.7					
MOX	e P	Z	03:29:07.6	78.9	34.2	1.3	14	4.9		
WET	e P	Z	03:29:12.5	79.6	34.9	1.0	13	4.9		
GRA1	e P	Z	03:29:13.1	79.8	33.8	0.9	26	5.3		

TNS	e P	Z	03:29:15.2	80.3	32.0	1.2	11	4.6
FUR	e P	Z	03:29:19.5	81.0	33.7	0.9	29	5.3
STU	e P	Z	03:29:20.8	81.3	32.4	0.9	22	5.2

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/20	12:24:32.3	10.015S	111.082E	10G	5.2	5.6		NEIC

South of Java, Indonesia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e Pdiff	Z	12:38:39.4	102.8	90.0	21.9	160			
	e PP	Z	12:42:48.9							
	e PPP	R	12:45:02.1							
	e SKSac	R	12:49:18.6							
	e Sdiff	T	12:50:23.3							
	e PS	R	12:51:49.5							
	e SS	T	12:57:27.0							
	e LR	Z	13:15:28.3							
	e L	Z	13:36:33.6			18.0	2079		5.7	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/20	14:05: 6.7	13.238N	92.987E	33.0N	5.6			SZGRF
2003/11/20	14:05:02.2	13.111N	93.268E	33N	5.3	5.2		NEIC

Andaman Islands, India, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i P	+ Z	14:16:35.5	73.8	89.2	1.8	72	5.4		
	e pP	Z	14:16:46.3							
	e L	Z	14:54:04.9			20.0	1270		5.2	
GRA1	e P	Z	14:16:43.2	74.9	87.4	1.5	92	5.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/21	01:01:25.3	46.216N	27.184W	13.3	4.7			SZGRF
2003/11/21	01:01:12.9	45.399N	28.089W	10G	4.6			NEIC

Northern Mid-Atlantic Ridge

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	01:06:52.6	26.6	275.9	1.3	27	4.7		
	e		01:06:58.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/21	01:12:48.4	45.909N	28.429W	33.0N	4.7			SZGRF
2003/11/21	01:12:44.0	45.351N	28.107W	10G	4.8			NEIC

Northern Mid-Atlantic Ridge

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	01:18:24.0	26.6	275.9	1.5	24	4.7		
CLL	e P	Z	01:18:34.4	27.6	273.9	1.8	22	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/21	04:09:19.7	45.480N	27.130W	20.5	5.2	5.3		SZGRF
2003/11/21	04:09:09.9	45.412N	28.053W	10G	4.9	5.3		NEIC

Northern Mid-Atlantic Ridge

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WLF	e P	Z	04:14:19.3	23.3	272.7	1.9	158	5.2		
BUG	e P	Z	04:14:25.8	23.9	269.4	2.2	312	5.5		
IBBN	e P	Z	04:14:30.6	24.3	267.9	1.5	157	5.3		
TNS	e P	Z	04:14:33.3	24.7	273.0	1.6	54	4.8		
BFO	e P	Z	04:14:34.0	24.8	277.0	1.7	141	5.2		
STU	e P	Z	04:14:39.1	25.3	276.6	1.4	122	5.4		
UBBA	e P	Z	04:14:42.2	25.7	272.8	2.1	104	5.2		
NRDL	e P	Z	04:14:42.8	25.7	269.4	1.9	143	5.4		
CLZ	e P	Z	04:14:44.4	25.9	271.0	1.4	148	5.5		
BSEG	e P	Z	04:14:44.6	25.9	266.6	2.3	563	5.9		
GRA1	e P	Z	04:14:50.2	26.5	275.9	1.8	171	5.4		
	e		04:14:55.4							
	e		04:15:00.0							
	e S	E	04:19:22.6							
	e L	Z	04:24:32.4			18.0	8920		5.3	
MOX	e P	Z	04:14:52.0	26.7	274.3	1.6	62	5.0		
FUR	e P	Z	04:14:52.8	26.8	279.0	1.5	146	5.4		
GUNZ	e P	Z	04:14:56.0	27.2	275.3	1.6	37	4.9		
CLL	e P	Z	04:14:58.9	27.5	274.0	1.4	42	5.0		
WET	e P	Z	04:15:00.1	27.7	278.0	1.5	53	5.0		
BRG	e P	Z	04:15:04.4	28.2	275.4	1.7	76	5.2		
GEC2	e P	Z	04:15:05.7	28.3	279.0	1.6	61	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/21	06:26: 7.6	45.803N	28.625W	33.0N	4.8	4.2		SZGRF
2003/11/21	06:26:05.1	45.379N	28.057W	10G	4.8			NEIC

Northern Mid-Atlantic Ridge

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	06:31:44.6	26.6	275.9	1.1	22	4.8		
	e L	Z	06:41:34.4			18.5	616		4.2	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/21	08:45:53.5	22.045S	177.639W	33.0G				SZGRF
2003/11/21	08:46:56.0	21.060S	178.798W	579D	4.5			NEIC

South of Fiji Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPbc	Z	09:05:34.0	146.4	15.5					
RUE	e PKPbc	Z	09:05:35.9	147.1	22.0					
	e PKPab	Z	09:05:39.6							
NRDL	e PKPbc	Z	09:05:38.0	147.8	15.7					
	e PKPab	Z	09:05:42.1							
IBBN	e PKPbc	Z	09:05:39.3	148.3	11.7					
	e PKPab	Z	09:05:45.0							
CLL	e PKPbc	Z	09:05:39.2	148.4	21.3					
	e PKPab	Z	09:05:44.6							
	e pPKPbc	Z	09:07:59.6							
CLZ	e PKPbc	Z	09:05:39.5	148.4	16.5					
	e PKPab	Z	09:05:44.8							
BRG	e PKPbc	Z	09:05:39.8	148.6	23.2					
	e PKPab	Z	09:05:45.5							
BUG	e PKPbc	Z	09:05:41.1	149.3	11.1					
	e PKPab	Z	09:05:48.3							
MOX	e PKPbc	Z	09:05:41.3	149.3	19.3					
	e PKPab	Z	09:05:48.7							
GUNZ	e PKPbc	Z	09:05:42.0	149.4	20.7					
	e PKPab	Z	09:05:49.3							
UBBA	e PKPbc	Z	09:05:41.5	149.4	16.3					
	e PKPab	Z	09:05:49.5							
TNS	e PKPbc	Z	09:05:43.7	150.3	13.7					
	e PKPab	Z	09:05:52.7							
GRA1	e PKPbc	Z	09:05:44.2	150.3	19.1					
	e PKPab	Z	09:05:53.1							
WET	e PKPbc	Z	09:05:44.1	150.4	22.5					
	e PKPab	Z	09:05:53.6							
GEC2	e PKPbc	Z	09:05:44.2	150.5	24.2					
	e PKPab	Z	09:05:53.1							
WLF	e PKPbc	Z	09:05:46.2	151.1	9.6					
	e PKPab	Z	09:05:56.7							
STU	e PKPbc	Z	09:05:46.7	151.6	15.8					
	e PKPab	Z	09:05:58.1							
FUR	e PKPbc	Z	09:05:46.9	151.7	20.1					
	e PKPab	Z	09:05:59.1							
BFO	e PKPbc	Z	09:05:48.1	152.1	14.3					
	e PKPab	Z	09:06:00.0							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/21	10:34:41.9	30.830N	58.120E	33.0N	5.0			SZGRF
2003/11/21	10:34:36.3	31.316N	59.444E	33N	5.0			NEIC

Northern and central Iran

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z	10:41:56.7	38.4	99.9	1.7	37	4.8		
BRG	e P	Z	10:41:59.3	38.6	102.6	2.6	129	5.2		
WET	e P	Z	10:42:01.4	39.0	99.5	2.2	48	4.7		
CLL	e P	Z	10:42:04.8	39.3	102.3	2.3	140	5.2		
MOX	e P	Z	10:42:10.6	40.0	100.2	2.4	61	4.8		
GRA1	e P	Z	10:42:10.5	40.1	98.7	2.7	192	5.2		
CLZ	e P	Z	10:42:19.3	41.0	100.4	2.2	97	5.1		
UBBA	e P	Z	10:42:19.8	41.1	98.9	2.2	84	5.1		
NRDL	e P	Z	10:42:22.1	41.3	100.9	2.3	70	5.0		
BSEG	e P	Z	10:42:22.8	41.5	102.7	1.9	49	4.9		
TNS	e P	Z	10:42:27.0	42.0	96.9	2.1	86	5.1		
IBBN	e P	Z	10:42:32.8	42.7	98.6	2.3	174	5.4		
BUG	e P	Z	10:42:33.9	42.9	97.2	1.5	37	4.9		
WLF	e P	Z	10:42:37.8	43.4	94.4	1.7	39	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/21	10:59: 9.1	19.259N	122.568E	33.0N	5.0			SZGRF
2003/11/21	10:59:22.1	22.070N	120.388E	33N	4.8			NEIC

Philippine Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	11:11:57.8	84.9	61.5	1.1	12	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/21								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z	12:47:45.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/21	21:35:58.1	62.830N	153.200W	33.0N	5.0			SZGRF
2003/11/21	21:36:14.0	63.167N	151.000W	130	4.8			NEIC

Central Alaska, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	21:46:21.2	62.0	350.6	1.2	12	4.9		

NRDL	e P	Z	21:46:29.5	63.4	350.6	1.3	11	4.9
RUE	e P	Z	21:46:32.1	63.7	352.4	1.3	38	5.4
CLZ	e P	Z	21:46:34.9	64.1	350.8	1.4	19	5.1
CLL	e P	Z	21:46:38.8	64.8	352.1	0.9	6	4.9
BRG	e P	Z	21:46:42.0	65.3	352.6	1.1	10	5.0
MOX	e P	Z	21:46:43.0	65.4	351.5	1.6	14	5.0
GUNZ	e P	Z	21:46:44.8	65.7	351.8	1.2	8	4.8
GRA1	e P	Z	21:46:48.0	66.3	351.3	1.8	30	5.2
WET	e P	Z	21:46:53.4	67.0	352.2	1.9	18	5.0
GEC2	e P	Z	21:46:55.7	67.3	352.6	1.1	6	4.7

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/22								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z	01:11:46.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/22	02:29: 7.3	19.010N	77.450W	10.0G	5.1			SZGRF
2003/11/22	02:29:06.5	19.730N	78.125W	10G	5.0	4.4		NEIC

Cuba region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WLF	e P	Z	02:40:30.0	71.5	278.9	1.0	21	5.2		
BUG	e P	Z	02:40:32.7	71.9	279.2	1.8	68	5.5		
IBBN	e P	Z	02:40:33.7	72.0	279.3	1.0	55	5.6		
TNS	e P	Z	02:40:38.6	72.8	280.4	1.2	21	5.1		
BFO	e P	Z	02:40:39.0	73.1	280.9	0.7	6	4.8		
BSEG	e P	Z	02:40:40.8	73.3	280.7	0.9	14	5.0		
NRDL	e P	Z	02:40:41.9	73.4	281.0	0.8	14	5.0		
CLZ	e P	Z	02:40:43.8	73.7	281.4	1.1	31	5.2		
GRA1	e P	Z	02:40:49.1	74.7	282.6	1.2	23	5.1		
MOX	e P	Z	02:40:49.1	74.7	282.6	1.3	19	5.0		
GUNZ	e P	Z	02:40:52.3	75.2	283.2	1.3	22	5.0		
CLL	e P	Z	02:40:53.0	75.4	283.5	1.2	15	5.0		
RUE	e P	Z	02:40:55.0	75.6	283.8	1.2	23	5.2		
WET	e P	Z	02:40:56.0	75.8	283.9	1.0	24	5.3		
BRG	e P	Z	02:40:57.2	76.1	284.3	1.2	15	5.0		
GEC2	e P	Z	02:40:59.1	76.4	284.6	1.2	17	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/22	09:30: 7.6	13.885N	58.299E	33.0N	4.5			SZGRF
2003/11/22	09:30:03.3	13.268N	57.395E	10G	5.1	3.8		NEIC

Arabian Sea

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	09:39:16.7	52.3	117.5	1.0	7	4.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/22	11:24:44.5	12.551N	55.724E	33.0N	4.8			SZGRF
2003/11/22	11:24:33.2	13.348N	57.278E	10G	5.2			NEIC

Socotra region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e P	Z	11:33:44.6	52.0	120.4	1.4	25	4.9		
	e S	Z	11:41:15.4							
	e LR	Z	11:50:19.6							
	e L	Z	11:59:07.1			18.0	363		4.5	
GRA1	e P	Z	11:33:50.8	52.2	117.6	1.2	14	4.8		
	e		11:33:56.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/22	22:00:27.1	36.184N	140.640E	33.0N	5.3	4.9		SZGRF
2003/11/22	22:00:22.5	35.474N	140.863E	52*	4.9	4.8		NEIC

Near east coast of eastern Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i P	Z	22:12:39.2	82.2	40.6	0.8	20	5.4		
	e S	Z	22:22:57.1							
	e SS	Z	22:28:12.3							
	e SSS	Z	22:32:26.3							
	e LR	Z	22:45:40.7							
	e L	Z	22:54:29.5			20.0	409		4.8	
GRA1	e P	Z	22:12:50.3	83.9	39.1	0.8	16	5.3		
	e L	Z	22:53:51.2			18.8	443		4.9	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/23	00:16:48.7	45.330N	76.210E	33.0N	4.5			SZGRF
2003/11/23	00:16:01.6	42.089N	82.122E	17D	4.6	4.0		NEIC

Eastern Kazakhstan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	00:24:28.0	46.0	73.1	0.9	7	4.4		
CLL	e P	Z	00:24:31.2	46.5	73.0	0.9	13	4.7		
GEC2	e P	Z	00:24:34.2	46.8	71.1	0.8	3	4.1		
GUNZ	e P	Z	00:24:37.3	47.2	71.7					

WET	e P	Z	00:24:37.6	47.2	71.0	1.2	10	4.4
MOX	e P	Z	00:24:39.5	47.5	71.5	1.1	7	4.3
NRDL	e P	Z	00:24:42.4	47.8	72.2	1.0	18	4.7
GRA1	e P	Z	00:24:44.5	48.1	70.5	0.7	12	4.7
FUR	e P	Z	00:24:48.5	48.6	69.2	0.8	14	4.7

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/23	08:56:59.2	37.505N	143.556E	33.0N	5.1			SZGRF
2003/11/23	08:56:56.8	37.650N	143.208E	33N	5.1			NEIC

Off east coast of Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	09:09:22.5	82.9	36.4	1.0	13	5.1		
	e		09:09:28.7							
	e		09:09:48.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z	09:18:17.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/23	11:38: 2.1	17.267N	94.961W	33.0N	4.4			SZGRF
2003/11/23	11:38:01.2	16.889N	94.250W	33N	4.2			NEIC

Chiapas, Mexico

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	11:50:44.0	86.8	292.5	0.9	3	4.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/23	15:08: 9.9	20.879N	102.929E	33.0N	4.8			SZGRF

Chiapas, Mexico

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	15:19:50.2	75.3	74.9	1.6	15	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/23	18:06:04.8	15.766S	173.906W	97D	5.1			NEIC

Tonga Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
IBBN	e PKPdf	Z	18:25:28.7	143.4	2.7					
	e pPKPdf	Z	18:25:59.9							
CLZ	e PKPdf	Z	18:25:29.1	143.8	7.0					
	e pPKPdf	Z	18:26:00.8							
CLL	e PKPdf	Z	18:25:29.1	144.0	11.4					
	e PKPbc	Z	18:25:30.2			0.9	20			
	e PP	Z	18:28:43.1							
	e PKSdf	Z	18:29:05.0							
	e SKSP	Z	18:38:53.5							
	e SPP	Z	18:41:11.3							
	e SS	E	18:47:12.5							
	e sSS	Z	18:48:04.1							
	e SSS	E	18:53:00.5							
	e LR	Z	19:13:52.6							
	e L	Z	19:26:03.3			22.0	147		4.7	
BUG	e PKPdf	Z	18:25:30.4	144.3	1.9					
	e pPKPdf	Z	18:26:00.7							
BRG	e PKPdf	Z	18:25:30.0	144.3	13.0					
	e pPKPdf	Z	18:26:01.7							
UBBA	e PKPdf	Z	18:25:31.7	144.8	6.5					
MOX	e PKPdf	Z	18:25:31.8	144.8	9.3					
	e pPKPdf	Z	18:26:00.7							
GUNZ	e PKPdf	Z	18:25:32.8	145.0	10.5					
	e pPKPdf	Z	18:25:59.8							
TNS	e PKPdf	Z	18:25:34.6	145.5	4.0					
	e pPKPdf	Z	18:25:59.8							
GRA1	e PKP	Z	18:25:35.7	145.8	8.8					
	e pPKP	Z	18:26:00.4							
WLF	e PKP	Z	18:25:37.1	146.1	0.1					
	e pPKP	Z	18:26:01.9							
WET	e PKP	Z	18:25:36.5	146.2	11.8					
GEC2	e PKP	Z	18:25:37.0	146.3	13.3					
	e pPKP	Z	18:26:02.0							
STU	e PKP	Z	18:25:38.8	146.9	5.5					
	e pPKPdf	Z	18:26:03.5							
FUR	e PKP	Z	18:25:40.2	147.3	9.3					
	e pPKP	Z	18:26:05.6							
BFO	e PKP	Z	18:25:40.3	147.4	4.0					
	e pPKP	Z	18:26:04.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/23								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML

		GRA1	e P		Z	23:47:05.6							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/23	23:50:12.3	34.802N	24.862E	10G	4.0	3.6		NEIC

Crete, Greece

	Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	GRA1	e P	Z	23:54:25.2	17.9	140.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/24	00:20:40.0	20.920S	176.510W	33.0N				SZGRF
2003/11/24	00:21:45.5	19.659S	177.673W	600G	4.7			NEIC

Fiji Islands region

	Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	BSEG	e PKPbc	Z	00:40:17.7	145.2	13.3					
	RUE	e PKPbc	Z	00:40:20.6	146.0	19.5					
	NRDL	e PKPbc	Z	00:40:22.2	146.6	13.4					
	IBBN	e PKPab	Z	00:40:26.5	147.1	9.4					
	CLZ	e PKPbc	Z	00:40:23.7	147.2	14.1					
	CLL	e PKPdf	Z	00:40:20.4	147.3	18.8					
		i PKPbc	- Z	00:40:23.6			1.0	55			
		e PKPab	Z	00:40:27.2			0.7	19			
		e pPKPbc	Z	00:42:43.4							
	BRG	e PKPbc	Z	00:40:24.3	147.5	20.6					
	BUG	e PKPbc	Z	00:40:25.2	148.0	8.8					
	MOX	e PKPbc	Z	00:40:26.0	148.2	16.7					
	UBBA	e PKPbc	Z	00:40:26.1	148.3	13.8					
	GUNZ	e PKPbc	Z	00:40:26.7	148.3	18.1					
		e PKPab	Z	00:40:32.0							
	TNS	e PKPbc	Z	00:40:28.3	149.1	11.3					
		e PKPab	Z	00:40:34.6							
	GRA1	e PKPbc	Z	00:40:28.9	149.1	16.5					
		e PKPab	Z	00:40:35.5							
	WET	e PKPbc	Z	00:40:28.9	149.3	19.8					
	GEC2	e PKPbc	Z	00:40:29.2	149.4	21.4					
	WLF	e PKPbc	Z	00:40:30.2	149.8	7.2					
	STU	e PKPbc	Z	00:40:31.5	150.4	13.2					
	FUR	e PKPbc	Z	00:40:31.9	150.6	17.4					
		e PKPab	Z	00:40:41.6							
	BFO	e PKPbc	Z	00:40:32.5	150.9	11.7					
		e PKPab	Z	00:40:42.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/24	00:45:30.4	51.498N	176.550W	33.0N	4.7			SZGRF
2003/11/24	00:45:58.8	52.831N	176.178W	254	4.3			NEIC

Andreanof Islands, Aleutian Islands, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	00:57:29.2	77.3	4.6	0.9	7	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/24	09:05:47.0	50.906N	176.263E	33.0N	4.9			SZGRF
2003/11/24	09:05:44.9	51.312N	176.942E	33N	5.0	4.6		NEIC

Rat Islands, Aleutian Islands, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	09:17:45.8	78.3	9.1	1.5	17	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/24	09:48: 3.9	41.700N	144.379E	33.0N	5.2			SZGRF
2003/11/24	09:48:12.2	42.290N	142.843E	79*	4.6			NEIC

Hokkaido, Japan, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	10:00:09.3	78.7	34.3	1.8	30	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/24	12:18:15.2	42.247N	143.215E	33.0N	5.4	4.8		SZGRF
2003/11/24	12:18:15.2	42.314N	142.903E	60*	5.0			NEIC

Hokkaido, Japan, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i P	Z	12:30:03.7	77.1	35.7	0.9	28	5.4		
	e pP	Z	12:30:20.6							
	e		12:30:38.8							
	e PP	Z	12:33:10.4							
	e S	Z	12:39:53.9							
	e (SS)	Z	12:45:05.8							
	e LR	Z	12:55:31.3							
	e L	Z	13:07:01.5			20.0	547		4.9	
GRA1	e P	Z	12:30:15.7	78.7	34.3	0.9	33	5.4		
	e		12:30:22.7							
	e L	Z	13:07:04.2			21.2	476		4.8	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/24	14:54:17.2	4.242S	152.704E	33N	5.8	5.6		NEIC

New Britain, Papua New Guinea, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e Pdiff	Z	15:09:40.9	122.3	49.8					
	e PKPdf	Z	15:13:10.4			0.9	24			
	e pPKPdf	Z	15:13:18.4							
	e PP	Z	15:14:46.6							
	e PPP	Z	15:17:26.4							
	e PKKPbc	Z	15:23:08.2							
	e pPKKPbc	Z	15:23:15.5							
	e PS	E	15:24:46.5							
	e PPS	Z	15:26:03.4							
	e SKKP	Z	15:27:05.9							
	e SS	E	15:31:35.9							
	e LR	Z	15:53:59.4							
	e L	Z	16:09:08.6			18.0	2261		5.9	
GRA1	e PKPdf	Z	15:13:15.2	124.1	48.6					
	e pPKPdf	Z	15:13:21.9							
	e PP	Z	15:14:54.9							
	e PKKPab	Z	15:23:00.4							
	e PS	R	15:24:57.8							
	e L	Z	16:02:19.4			22.0	1618		5.6	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/24	15:50:48.5	33.499N	26.721E	10.0G	4.8			SZGRF

Eastern Mediterranean Sea

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z	15:54:59.2	18.2	142.9	1.0	44	4.5		
GRA1	e P	Z	15:55:17.8	19.8	138.9	1.6	454	5.4		
GUNZ	e P	Z	15:55:18.9	19.9	142.5	1.3	31	4.4		
BFO	e P	Z	15:55:22.4	20.2	130.4	1.1	40	4.6		
MOX	e P	Z	15:55:24.8	20.4	141.4	1.3	22	4.2		
TNS	e P	Z	15:55:37.6	21.4	134.3	1.0	59	4.9		
CLZ	e P	Z	15:55:39.7	21.8	140.8	1.7	68	4.8		
WLF	e P	Z	15:55:43.9	22.2	129.1	1.5	146	5.2		
NRDL	e P	Z	15:55:48.1	22.4	141.3	1.3	62	4.9		
BSEG	e P	Z	15:55:55.9	23.5	143.8	1.2	62	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/24	23:53:57.3	7.541S	106.256E	33N	5.2	5.0		NEIC

Java, Indonesia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PP	Z	00:11:47.0	99.0	91.1					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/25	01:48:53.8	34.773N	27.112E	33.0G	4.3			SZGRF

Eastern Mediterranean Sea

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z	01:52:51.3	17.2	139.9	0.8	8	3.9		
WET	e P	Z	01:52:56.5	17.8	138.6	1.4	24	4.1		
GRA1	e P	Z	01:53:09.4	18.9	136.1	1.6	91	4.7		
BFO	e P	Z	01:53:17.1	19.4	127.3	1.5	24	4.2		
MOX	e P	Z	01:53:17.2	19.4	138.8	1.5	11	3.9		
UBBA	e P	Z	01:53:27.9	20.3	135.8	1.8	36	4.3		
TNS	e P	Z	01:53:28.4	20.6	131.6	0.6	7	4.1		
WLF	e P	Z	01:53:38.7	21.4	126.3	1.6	43	4.5		
BSEG	e P	Z	01:53:49.3	22.5	141.6	1.0	21	4.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/25	04:44: 4.0	20.390S	61.830W	165.0	5.4			SZGRF
2003/11/25	04:43:38.1	23.096S	67.458W	161D	5.4			NEIC

Paraguay

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WLF	e P	Z	04:56:53.8	97.5	242.9	1.2	45	5.7		
	e pP	Z	04:57:34.7							
BFO	e P	Z	04:56:56.8	98.2	244.3	1.2	12	5.2		
	e PP	Z	05:00:54.3							
STU	e P	Z	04:56:59.9	98.9	245.0	1.0	22	5.5		
BUG	e P	Z	04:57:00.1	99.0	243.9	1.2	25	5.5		
TNS	e P	Z	04:57:01.2	99.1	244.6	0.8	12	5.3		
IBBN	e P	Z	04:57:03.4	99.6	244.4	1.0	46	5.8		
	e pP	Z	04:57:45.3							
FUR	e P	Z	04:57:05.0	99.9	246.3	1.3	43	5.6		
	e PP	Z	05:01:07.1							
GRA1	e P	Z	04:57:07.8	100.5	246.5	0.8	12	5.4		
CLZ	e P	Z	04:57:08.9	100.9	246.3	1.1	11	5.2		
NRDL	e P	Z	04:57:09.8	101.0	246.2	1.1	15	5.4		
MOX	e P	Z	04:57:10.5	101.1	247.0	1.2	8	5.1		
	e PP	Z	05:01:15.9							
WET	e P	Z	04:57:10.9	101.3	247.6	1.0	10	5.3		
GEC2	e P	Z	04:57:12.6	101.7	248.1	1.0	8	5.2		
BSEG	e P	Z	04:57:12.8	101.7	246.6	0.8	10	5.4		
	e PP	Z	05:01:19.4							

	CLL	e P	Z	04:57:15.5	102.2	248.1	1.1	8	5.2
	BRG	e P	Z	04:57:15.8	102.6	248.7	1.9	17	5.4

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/25	05:39:59.7	5.387N	68.795E	33.0N	5.3			SZGRF

North Indian Ocean

	Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	GRA1	e P	Z	05:50:39.2	65.4	112.4	1.2	26	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/25	19:49:17.8	31.470N	70.468E	33.0N	5.2			SZGRF
2003/11/25	19:49:15.6	31.360N	70.209E	33N	4.9			NEIC

Pakistan

	Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	GRA1	e P	Z	19:57:47.2	47.0	89.9	1.1	24	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/25	20:19:52.1	4.060S	148.590E	33.0N		6.6		SZGRF
2003/11/25	20:19:46.2	5.539S	150.838E	33N	6.1	6.4		NEIC

Bismarck Sea

	Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	RUE	e PKPdf	Z	20:38:37.8	121.4	52.6					
	BSEG	e PKPdf	Z	20:38:39.2	122.0	48.3					
	BRG	e PKPdf	Z	20:38:39.3	122.2	53.5					
	CLL	e Pdiff	Z	20:35:09.5	122.4	52.3					
		i PKPdf	+ Z	20:38:39.6			0.9	65			
		e PP	Z	20:40:25.5							
		e PPP	Z	20:43:02.8							
		e SKS	R	20:45:43.0							
		e Sdiff	T	20:48:12.0							
		e PKKPbc	Z	20:48:32.9							
		e PS	R	20:50:12.7							
		e PPS	Z	20:51:45.2							
		e SS	T	20:56:59.0							
		e PSPS	T	20:57:32.0							
		e SSS	T	21:01:35.1							
		e L	Z	21:31:36.1			22.0	18845		6.7	
	GUNZ	e PKPdf	Z	20:38:41.6	123.4	52.1					
	CLZ	e PKPdf	Z	20:38:42.1	123.4	49.4					

MOX	e	PKPdf	Z	20:38:41.7	123.5	51.3			
GEC2	e	PKPdf	Z	20:38:41.7	123.6	54.3			
WET	e	PKPdf	Z	20:38:42.5	123.8	53.3			
UBBA	e	PKPdf	Z	20:38:42.9	124.2	49.5			
IBBN	e	PKPdf	Z	20:38:43.6	124.3	46.3			
GRA1	e	Pdiff	Z	20:35:19.2	124.3	51.4			
	e	PKPdf	Z	20:38:43.7					
	e	PP	Z	20:40:31.2					
	e	PS	N	20:50:34.9					
	e	SS	N	20:57:13.8					
	e	L	Z	21:32:59.9			21.8	16134	6.6
BUG	e	PKPdf	Z	20:38:44.6	125.1	46.2			
FUR	e	PKPdf	Z	20:38:45.3	125.3	52.2			
TNS	e	PKPdf	Z	20:38:45.6	125.4	48.1			
STU	e	PKPdf	Z	20:38:46.6	125.9	49.7			
BFO	e	PKPdf	Z	20:38:47.6	126.7	49.0			
WLF	e	PKPdf	Z	20:38:48.5	126.8	45.9			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/26	03:04:16.8	37.410N	67.520E	33.0N	4.9			SZGRF
2003/11/26	03:04:08.4	36.879N	68.489E	33N	4.9			NEIC

Afghanistan-Tajikistan border region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	03:11:48.5	40.7	88.4	0.9	37	5.0		
RUE	e P	Z	03:11:48.9	40.8	90.1	0.9	36	5.0		
GEC2	e P	Z	03:11:50.4	40.9	85.8	0.9	7	4.3		
RGN	e P	Z	03:11:52.0	41.1	92.1	1.0	156	5.6		
CLL	i P	- Z	03:11:53.1	41.3	88.1	0.9	26	4.9		
	e PcP	Z	03:13:49.0							
	e L	Z	03:27:03.1			22.0	135	3.8		
GUNZ	e P	Z	03:11:57.0	41.7	86.6	0.9	13	4.7		
MOX	e P	Z	03:12:00.7	42.2	86.4	1.0	14	4.7		
GRA1	e P	Z	03:12:03.9	42.5	85.0	1.1	46	5.1		
FUR	e P	Z	03:12:04.5	42.6	83.4	0.9	30	5.0		
BSEG	e P	Z	03:12:05.9	42.8	89.0	1.0	35	5.0		
CLZ	e P	Z	03:12:06.5	42.9	86.8	1.1	28	4.9		
UBBA	e P	Z	03:12:08.8	43.2	85.4	1.3	15	4.6		
TNS	e P	Z	03:12:17.5	44.2	83.7	1.2	16	4.6		
IBBN	e P	Z	03:12:19.0	44.4	85.3					
BFO	e P	Z	03:12:19.2	44.5	81.7	1.1	21	4.8		
BUG	e P	Z	03:12:22.5	44.8	84.1	1.3	35	4.9		
WLF	e P	Z	03:12:30.2	45.7	81.5	1.1	46	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/26	07:26:44.7	39.457N	26.720E	33.0N				SZGRF

Turkey

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	07:30:19.9	15.0	127.1	0.8	32			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/26	07:42:40.5	1.910S	73.310W	183.4	5.9			SZGRF
2003/11/26	07:42:31.0	1.954S	75.761W	184D	5.3			NEIC

Northern Peru

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WLF	e P	Z	07:54:53.2	86.3	262.6	0.9	314	6.5		
BUG	e P	Z	07:54:57.6	87.2	263.3	0.9	214	6.3		
BFO	e P	Z	07:54:58.2	87.5	264.3	1.2	33	5.3		
IBBN	e P	Z	07:54:59.6	87.6	263.7	0.9	256	6.3		
TNS	e P	Z	07:55:00.4	87.8	264.3	1.0	113	6.0		
HLG	e P	Z	07:55:01.7	87.9	263.7	0.9	364	6.5		
STU	e P	Z	07:55:01.8	88.1	264.9	1.1	95	5.8		
UBBA	e P	Z	07:55:04.6	88.8	265.5	1.4	34	5.3		
CLZ	e P	Z	07:55:07.2	89.2	265.8	1.1	110	6.1		
BSEG	e P	Z	07:55:07.7	89.3	265.7	0.9	82	6.1		
FUR	e P	Z	07:55:08.5	89.5	266.5	0.9	97	6.1		
GRA1	e P	Z	07:55:08.9	89.5	266.4	1.0	58	5.9		
MOX	e P	Z	07:55:10.2	89.8	266.7	1.2	48	5.7		
GUNZ	e P	Z	07:55:12.4	90.3	267.3	1.2	45	5.6		
WET	e P	Z	07:55:13.6	90.6	267.7	1.1	66	5.8		
	e pP	Z	07:55:57.4							
CLL	e P	Z	07:55:14.5	90.8	267.8	1.0	51	5.7		
	e pP	Z	07:56:01.6							
GEC2	e P	Z	07:55:15.6	91.1	268.3	1.2	26	5.3		
RUE	e P	Z	07:55:17.0	91.3	268.4	1.0	61	5.8		
BRG	e P	Z	07:55:17.2	91.3	268.5	0.9	65	5.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/26	12:16:48.7	19.262N	45.285W	33.0N	4.9			SZGRF
2003/11/26	12:16:46.0	21.237N	45.805W	10G	4.8			NEIC

Northern Mid-Atlantic Ridge

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	12:26:09.5	52.8	259.0	1.2	14	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/26	19:25: 6.7	27.670N	43.890W	14.7	5.5	5.3		SZGRF
2003/11/26	19:25:07.0	28.437N	43.725W	10G	5.4	5.4		NEIC

Northern Mid-Atlantic Ridge

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WLF	e P	Z	19:33:09.9	43.1	259.6	1.4	74	5.2		
BUG	e P	Z	19:33:18.3	44.2	258.7	1.3	38	5.2		
BFO	e P	Z	19:33:19.7	44.3	262.8	1.2	66	5.4		
IBBN	e P	Z	19:33:22.0	44.6	258.3	1.8	207	5.8		
TNS	e P	Z	19:33:22.7	44.7	261.0	1.2	47	5.3		
STU	e P	Z	19:33:24.4	45.0	263.1	1.3	81	5.6		
UBBA	e P	Z	19:33:30.8	45.7	261.8	1.5	59	5.4		
NRDL	e P	Z	19:33:34.0	46.1	260.3	1.2	79	5.7		
CLZ	e P	Z	19:33:34.1	46.1	261.1	1.2	37	5.4		
FUR	e P	Z	19:33:35.0	46.3	265.4	1.6	118	5.8		
GRA1	e P	Z	19:33:35.5	46.4	263.9	1.5	80	5.6		
	e		19:33:41.4							
	e		19:33:45.6							
	e PcP	N	19:35:01.8							
	e S	E	19:40:30.0							
	e SS	N	19:44:01.2							
	e L	Z	19:49:45.8			20.2	3133		5.3	
BSEG	e P	Z	19:33:36.7	46.5	259.1	1.2	153	6.0		
MOX	e P	Z	19:33:38.5	46.7	263.3	1.8	70	5.5		
WET	e P	Z	19:33:43.6	47.4	265.7	1.5	49	5.4		
CLL	e P	Z	19:33:45.8	47.7	263.9	2.5	213	5.8		
GEC2	e P	Z	19:33:47.9	47.9	266.7	1.4	74	5.5		
BRG	e P	Z	19:33:50.2	48.2	265.1	2.6	175	5.6		
RUE	e P	Z	19:33:50.8	48.3	263.5	1.4	98	5.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/26	20:34:15.6	49.107N	155.405E	33.0N	4.9			SZGRF
2003/11/26	20:34:16.1	49.207N	155.441E	54*	4.7			NEIC

Kuril Islands, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	20:46:02.9	76.4	23.1	0.9	10	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/27	06:07: 8.9	54.160N	163.720W	33.0N	5.7	5.5		SZGRF
2003/11/27	06:07:04.4	53.684N	163.247W	33N	5.5	5.3		NEIC

Unimak Island, Alaska, United States, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e P	Z	06:18:27.2	71.7	357.9	1.0	166	6.1		

BSEG	e P	Z	06:18:30.9	72.2	356.0	1.0	62	5.7	
NRDL	e P	Z	06:18:39.2	73.7	355.9	1.0	74	5.7	
IBBN	e P	Z	06:18:39.9	73.7	354.5	1.2	138	5.9	
RUE	e P	Z	06:18:40.1	73.8	358.2	1.0	123	5.9	
CLZ	e P	Z	06:18:43.0	74.3	356.1	0.9	96	5.8	
BUG	e P	Z	06:18:44.4	74.6	354.2	1.0	101	5.8	
CLL	e P	Z	06:18:46.3	75.0	357.7	1.0	62	5.6	
UBBA	e P	Z	06:18:48.6	75.3	355.9	0.9	13	4.9	
BRG	e P	Z	06:18:49.0	75.4	358.3	0.9	48	5.5	
MOX	e P	Z	06:18:50.3	75.6	356.9	1.0	84	5.7	
TNS	e P	Z	06:18:51.9	75.9	354.9	0.9	48	5.7	
GUNZ	e P	Z	06:18:52.1	75.9	357.3	1.1	45	5.5	
WLF	e P	Z	06:18:54.5	76.3	353.6	1.3	112	5.8	
GRA1	e P	Z	06:18:56.1	76.5	356.6	0.9	80	5.8	
	e PP	Z	06:21:48.9						
	e S	T	06:28:54.8						
	e SS	R	06:34:13.3						
	e L	Z	07:02:29.4			18.0	2244		5.5
WET	e P	Z	06:18:59.3	77.1	357.6	1.1	41	5.5	
STU	e P	Z	06:19:00.3	77.3	355.4	1.1	64	5.7	
GEC2	e P	Z	06:19:00.8	77.4	358.1	0.8	32	5.5	
BFO	e P	Z	06:19:01.7	77.7	354.9	1.1	34	5.4	
FUR	e P	Z	06:19:04.3	78.0	356.7	1.4	105	5.8	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/27	10:45: 9.7	52.788N	163.422W	0.0G	4.9			SZGRF
2003/11/27	10:45:16.3	53.737N	163.414W	33N	4.4			NEIC

South of Alaska

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	10:57:06.8	76.5	356.7	1.1	10	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/27	14:48:55.3	33.590N	27.130E	33.0N	4.4			SZGRF
2003/11/27	14:49:12.7	34.688N	25.137E	33N	4.5			NEIC

Eastern Mediterranean Sea

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z	14:53:05.2	16.5	144.9	0.7	21	4.4		
WET	e P	Z	14:53:11.9	17.0	143.4	1.2	24	4.3		
GRA1	e P	Z	14:53:24.2	18.1	140.6					
MOX	e P	Z	14:53:30.3	18.7	143.2	0.9	10	4.0		
TNS	e P	Z	14:53:41.8	19.7	135.6					
CLZ	e P	Z	14:53:46.2	20.2	142.5					
BUG	e P	Z	14:53:56.7	21.1	135.6	1.3	37	4.8		

	BSEG	e P		Z	14:54:02.6	21.9	145.6	1.1	22	4.6	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/28	00:17:56.7	50.907N	178.087E	33.0N	4.6			SZGRF
2003/11/28	00:17:53.7	51.008N	178.076E	33N	4.6			NEIC

Rat Islands, Aleutian Islands, United States

	Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	GRA1	e P	Z	00:29:56.6	78.7	8.4	1.2	8	4.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/28	06:25:17.8	38.674N	66.361E	33.0N	4.6			SZGRF
2003/11/28	06:24:54.7	37.011N	68.543E	33N	4.8	4.2		NEIC

Southeastern Uzbekistan

	Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	GRA1	e P	Z	06:32:50.3	42.4	84.8	1.4	24	4.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/28	19:00:02.6	19.791S	178.232W	567D	4.8			NEIC

Fiji Islands region

	Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	RUE	e PKPbc	Z	19:18:40.3	146.0	20.5					
	IBBN	e PKPab	Z	19:18:47.5	147.2	10.4					
	CLL	e PKPdf	Z	19:18:40.1	147.3	19.8	1.4	21			
		i PKPbc	- Z	19:18:43.5			1.0	103			
		e PKPab	Z	19:18:48.3			1.0	49			
		e pPKPbc	Z	19:20:59.5							
	BRG	e PKPbc	Z	19:18:44.2	147.5	21.7					
	MOX	e PKPdf	Z	19:18:41.8	148.2	17.8					
	WERD	e PKPbc	Z	19:18:46.1	148.2	19.1					
		e PKPab	Z	19:18:52.0							
	GUNZ	e PKPbc	Z	19:18:46.5	148.3	19.2					
		e PKPab	Z	19:18:52.5							
	GRA1	e PKP	Z	19:18:43.1	149.2	17.5					
		e PKPbc	Z	19:18:48.4							
		e PKPab	Z	19:18:56.0							
		e		19:21:09.3							
	GEC2	e PKPbc	Z	19:18:48.8	149.4	22.5					
	WLF	e PKPab	Z	19:18:59.2	149.9	8.3					
	FUR	e PKPab	Z	19:19:01.8	150.6	18.5					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/28	23:20:12.3	29.440N	51.200E	33.0N	5.2	3.8		SZGRF
2003/11/28	23:19:46.3	28.394N	54.066E	10G	5.1			NEIC

Southern Iran

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z	23:26:58.0	37.0	108.6	0.9	10	4.8		
BRG	e P	Z	23:27:02.6	37.5	111.4	0.9	20	5.1		
WET	e P	Z	23:27:02.7	37.6	108.1	0.7	14	5.0		
RUE	e P	Z	23:27:08.9	38.2	113.1	0.9	41	5.3		
CLL	i P	+ Z	23:27:08.6	38.2	110.9	0.9	42	5.2		
	e		23:27:32.0							
	e PcP	Z	23:29:22.8							
	e S	E	23:33:01.7							
	e L	Z	23:44:52.5			18.0	372		4.2	
GUNZ	e P	Z	23:27:09.3	38.3	109.0					
FUR	e P	Z	23:27:08.7	38.3	105.3	0.9	60	5.4		
GRA1	e P	Z	23:27:13.2	38.8	107.1	1.0	54	5.3		
	e L	Z	23:45:09.9			20.0	151		3.8	
UBBA	e P	Z	23:27:22.4	39.8	107.2	0.9	12	4.6		
CLZ	e P	Z	23:27:23.9	39.9	108.8	0.7	100	5.6		
NRDL	e P	Z	23:27:27.2	40.3	109.2	0.9	90	5.5		
TNS	e P	Z	23:27:29.2	40.6	105.0	1.4	35	4.9		
IBBN	e P	Z	23:27:37.8	41.6	106.6	0.6	64	5.4		
BUG	e P	Z	23:27:37.8	41.6	105.2	1.0	47	5.1		
WLF	e P	Z	23:27:39.3	41.9	102.2	1.0	33	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/29	09:59:35.6	45.763N	16.263E	10.0G			3.1	SZGRF
2003/11/29	09:59:37.5	46.000N	16.148E	10G				NEIC

Northwestern Balkan Peninsula

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
ARSA	e Pn	Z	10:00:02.9	1.3	160.8					2.8
	e Sg	E	10:00:23.8							
MOA	e Pn	Z	10:00:16.7	2.3	144.5					2.9
	e Sn	E	10:00:46.1							
GEC2	e Pn	Z	10:00:30.9	3.3	148.9					3.2
	e Sn	N	10:01:12.5							
WET	e Pn	Z	10:00:37.8	3.8	143.7					3.2
	e Sg	N	10:01:47.6							
GRA1	e Pn	Z	10:00:52.2	5.0	136.3					3.6
	e Sn	N	10:01:52.5							
GUNZ	e Pn	Z	10:00:55.0	5.0	148.3					

BRG	e Pn	Z	10:00:54.9	5.1	162.5		
WERD	e Pn	Z	10:00:55.8	5.1	148.6		3.3
	e Sg	N	10:02:26.9				
MOX	e Pn	Z	10:01:01.2	5.5	145.3		
CLL	e Pn	Z	10:01:03.4	5.7	157.4		
BFO	e Pn	Z	10:01:03.4	5.8	110.8		
	e Sn	N	10:02:10.3				

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/29	15:31:45.1	18.020S	178.397W	634D	4.4			NEIC

Fiji region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	- Z	15:50:15.5			0.9	36			
GRA1	e PKP	Z	15:50:20.9	147.4	17.2					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/29	20:22:50.3	8.967S	123.667E	33N	5.7	4.8		NEIC

Seram, Indonesia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e PP	Z	20:41:51.3	109.3	80.2					
GEC2	e PP	Z	20:41:57.1	109.8	80.7					
CLL	e PKiKP	Z	20:41:18.4	109.9	79.3	1.1	7			
	e PP	Z	20:41:52.5							
	e PS	Z	20:51:36.7							
	e LR	Z	21:18:00.7							
	e L	Z	21:30:02.4			22.0	126		4.4	
WET	e PP	Z	20:42:00.0	110.3	80.0					
MOX	e PP	Z	20:42:04.1	110.8	78.4					
GRA1	e PP	Z	20:42:06.0	111.3	78.4					
	e L	Z	21:20:58.8			21.5	197		4.7	
GRC2	e P	Z	20:41:57.9	111.3	78.9					
NRDL	e PP	Z	20:42:03.5	111.3	76.4					
IBBN	e PP	Z	20:42:17.3	112.8	74.5					
BUG	e PP	Z	20:42:17.8	113.3	74.4					
BFO	e PP	Z	20:42:21.1	113.4	76.6					
WLF	e PP	Z	20:42:27.8	114.5	74.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/30	00:10:11.1	51.727N	178.206E	33.0N	4.7	4.7		SZGRF
2003/11/30	00:10:04.0	51.251N	178.699E	33N	4.9			NEIC

Rat Islands, Aleutian Islands, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	00:22:06.5	78.5	8.0	1.1	7	4.7		
	e L	Z	00:58:43.7			20.2	328		4.7	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/30	08:10:04.8	24.380S	179.842E	502?	4.7			NEIC

South of the Fiji Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	- Z	08:29:01.5	151.3	25.6					
	e PKPab	Z	08:29:11.5							
	e pPKPbc	Z	08:31:03.0							
	e pPKPab	Z	08:31:06.3							
GRA1	e PKP	Z	08:31:20.9	153.2	23.5					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/30	12:12:48.7	17.684S	167.797E	33N	4.9	4.9		NEIC

Vanuatu Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
TNS	e PKP	Z	12:32:20.0	143.5	34.4					
FUR	e PKP	Z	12:32:22.0	144.0	40.2					
	e pPKP	Z	12:33:16.9							
STU	e PKP	Z	12:32:23.2	144.4	36.7					
	e pPKP	Z	12:33:17.8							
WLF	e PKP	Z	12:32:23.9	144.8	31.3					
	e pPKP	Z	12:33:19.6							
BFO	e PKP	Z	12:32:24.9	145.1	35.7					
	e pPKP	Z	12:33:20.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/11/30	19:55:58.1	18.004S	178.429W	540?	4.4			NEIC

Fiji region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	Z	20:14:36.4	145.6	19.5	0.8	26			
GRA1	e PKP	Z	20:14:41.9	147.4	17.2					

Format description
==========
(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-analysis).
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