

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)

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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				
2002/07/01												
	Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML		
	GRA1	e P	Z 05:23:14.7									
Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source				
2002/07/01	13:41:44.8	13.310N	91.480W	33.0N	5.1			SZGRF				
2002/07/01	13:41:52.1	13.382N	90.059W	69*	4.8			NEIC				
Near coast of Guatemala												
	Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML		
	GRA1	e P	Z 13:54:31.3	86.9	287.2			5.1				
Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source				
2002/07/02	10:15:58.9	29.890S	112.400W	10G	5.2	5.4		NEIC				
Juan Fernandez Islands, Chile, region												
	Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML		
	GRA1	e PKP	Z 10:35:19.1	133.7	273.5							
Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source				
2002/07/02	16:24:51.4	5.670N	73.160W	33.0N	5.2			SZGRF				
2002/07/02	16:24:32.5	4.985N	77.531W	33N	5.5			NEIC				
Colombia												

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BUG	e P	Z	16:36:55.3	82.9	269.1	0.9	19	5.0		
TNS	e P	Z	16:36:58.9	83.6	270.1	1.2	20	4.9		
BSEG	e P	Z	16:37:05.1	84.7	271.2	0.8	18	5.2		
CLZ	e P	Z	16:37:06.1	84.8	271.4	1.4	33	5.3		
GRA1	e P	Z	16:37:08.7	85.4	272.3			4.9		
MOX	e P	Z	16:37:10.1	85.6	272.5	1.7	31	5.2		
CLL	e P	Z	16:37:13.9	86.4	273.5	1.2	23	5.3		
WET	e P	Z	16:37:14.5	86.5	273.6	1.3	29	5.4		
RUE	e P	Z	16:37:16.6	86.8	274.1					
BRG	e P	Z	16:37:16.9	87.1	274.3	1.4	24	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/02	23:26:35.9	25.970N	128.930E	33.0N	4.9			SZGRF
2002/07/02	23:26:30.5	25.972N	128.378E	33N	5.0			NEIC

Ryukyu Islands, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	23:39:15.1	86.1	53.3			4.9		
	e		23:39:22.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/02	23:35:23.0	45.344N	121.681W	6.0				NEIC

Washington-Oregon Border Region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	23:46:06.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/03	23:00:38.7	2.980S	146.770E	33.0N		6.3		SZGRF
2002/07/03	23:00:18.0	5.027S	147.228E	33N	5.6	6.2		NEIC

Admiralty Islands, Papua New Guinea, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e PP	Z	23:20:30.5	119.1	55.9					
BRG	e PKPdf	Z	23:19:09.1	119.9	56.8					
	e PP	Z	23:20:36.2							
BSEG	e PP	Z	23:20:36.6	119.9	51.7					
CLL	e PKPdf	Z	23:19:09.5			0.8	14			
	e PP	Z	23:20:36.7							
	e		23:22:20.1							
	e		23:25:33.5							

	e SKSac	E	23:26:04.1								
	e SKKSac	E	23:27:31.3								
	e PS	R	23:30:27.0								
	e PPS	Z	23:31:31.7								
	e SS	R	23:37:11.1								
	e SSS	E	23:41:10.8								
	e LQ	T	23:48:54.5								
	e LR	Z	23:59:02.1								
	e L	Z	00:13:38.0			20.0	8732		6.4		
CLZ	e PKPdf	Z	23:19:11.9	121.2	52.8						
	e PP	Z	23:20:45.3								
MOX	e PKPdf	Z	23:19:11.7	121.3	54.6						
	e PP	Z	23:20:45.8								
WET	e PKPdf	Z	23:19:12.7	121.5	56.6						
	e PP	Z	23:20:47.2								
GRA1	e PKPdf	Z	23:19:13.1	122.0	54.7						
	e PP	Z	23:20:51.1								
	e PS	E	23:30:41.3								
	e SS	N	23:37:22.6								
IBBN	e PKPdf	Z	23:19:14.3	122.2	49.9						
	e PP	Z	23:20:51.7								
FUR	e PP	Z	23:20:56.7	122.9	55.6						
BUG	e PP	Z	23:20:57.1	122.9	49.8						
TNS	e PP	Z	23:20:59.0	123.1	51.6						
STU	e PKPdf	Z	23:19:16.2	123.6	53.1						
	e PP	Z	23:21:01.9								
BFO	e PP	Z	23:21:06.2	124.4	52.5						
WLF	e PKPdf	Z	23:19:19.4	124.6	49.5						
	e PP	Z	23:21:09.2								
GRA1	e L	Z	00:14:45.0	122.0	54.7	19.8	7436		6.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/03	08:37:12.9	20.134S	176.006W	202D	4.6			NEIC

Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	- Z 08:56:36.1			0.7	24			
	e PKPab	Z 08:56:39.4			0.8	26			
	e pPKPdf	Z 08:57:28.7							
	e pPKPbc	Z 08:57:30.9							
GRA1	e PKP	Z 08:56:41.1	149.9	13.6					
	e	08:56:47.4							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/04	06:32:10.4	4.552S	152.942E	61D	4.9			NEIC

New Britain, Papua New Guinea, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 06:51:22.6	124.5	48.6					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/04								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 21:49:10.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/05	06:15:29.2	20.480S	177.237W	280D	5.2			NEIC

Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPdf	Z 06:34:39.3			0.9	10			
	i PKPbc	- Z 06:34:43.1			1.0	98			
	e PKPab	Z 06:34:46.7			0.8	39			
	e pPKP	Z 06:35:59.9							
GRA1	e PKP	Z 06:34:48.1	150.0	16.0					
	e	06:34:54.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/05	09:45:38.0	44.640N	10.670E	10.0G			3.9	SZGRF
2002/07/05	09:45:34.4	44.465N	10.958E	2				NEIC

Northern Italy

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
DAVA	e Pn	Z 09:46:23.4	2.9	164.7					
KBA	e Pn	Z 09:46:27.2	3.1	213.4					
FUR	e Sn	E 09:47:15.9	3.7	183.5					4.2
MOA	e Pn	Z 09:46:40.0	4.1	215.3					
	e Sn	E 09:47:27.6							
BFO	e Pn	Z 09:46:39.4	4.3	153.9					3.8
	e Sn	N 09:47:24.2							
WET	e Pn	Z 09:46:48.6	4.9	196.4					3.7
	e Sn	N 09:47:41.9							
GRA1	e Sn	E 09:47:50.0	5.2	182.1					3.7
TNS	e Pn	Z 09:47:03.7	6.0	162.6					3.8
	e Sn	N 09:48:07.5							
MOX	e Sn	N 09:48:12.3	6.2	184.4					4.0
CLZ	e Sn	N 09:48:42.8	7.4	176.7					4.2

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/05	16:42:11.5	66.910N	144.330W	33.0N	4.9			SZGRF
2002/07/05	16:41:41.1	63.662N	147.672W	26	4.9			NEIC

Northern Alaska, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLZ	e P	Z 16:52:10.5	63.2	349.3	0.8	17	5.1		
CLL	e P	Z 16:52:15.2	64.0	350.6	0.9	8	4.6		
MOX	e P	Z 16:52:18.9	64.5	350.0	0.9	12	4.7		
BRG	e P	Z 16:52:19.0	64.6	351.1	1.1	11	4.6		
TNS	e P	Z 16:52:19.3	64.6	348.5					
GRA1	e P	Z 16:52:28.3	65.4	349.9	1.6	26	5.2		
WET	e P	Z 16:52:29.9	66.2	350.7	1.8	37	5.2		
BFO	e P	Z 16:52:31.0	66.4	348.6	1.5	22	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/06	00:07:08.0	17.628S	173.234W	33N	4.9	5.0		NEIC

Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	+ Z 00:26:47.2			1.1	105			
	e L	Z 01:36:25.2			18.0	337		5.2	
GRA1	e PKP	Z 00:26:52.4	147.7	8.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/06	05:42:29.4	22.880N	43.260W	33.0N	5.0	4.5		SZGRF
2002/07/06	05:42:28.6	25.542N	45.269W	10G	5.0	4.9		NEIC

Northern Mid-Atlantic Ridge

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BUG	e P	Z 05:51:04.2	47.2	257.4					
BFO	e P	Z 05:51:04.7	47.3	261.1	1.2	24	5.2		
TNS	e P	Z 05:51:08.3	47.7	259.5	1.0	17	5.1		
STU	e P	Z 05:51:09.3	47.9	261.5	1.1	23	5.1		
CLZ	e P	Z 05:51:19.5	49.2	259.8	1.2	16	4.9		
FUR	e P	Z 05:52:07.1	49.2	263.7					
GRA1	e P	Z 05:51:20.9	49.4	262.4	0.9	12	4.8		
	e pP	Z 05:51:28.1							
	e L	Z 06:10:13.1			18.1	442		4.5	
BSEG	e P	Z 05:51:22.3	49.6	258.0	1.0	47	5.4		
MOX	e P	Z 05:51:23.7	49.8	261.9	1.3	17	4.8		
WET	e P	Z 05:51:28.4	50.4	264.2	1.4	16	4.8		

CLL	i P	- Z	05:51:31.0				1.2	19	4.9		
	e		05:51:38.3								
	e S	E	05:58:48.3								
	e SS	E	06:02:30.2								
	e LR	Z	06:06:16.7								
	e L	Z	06:08:11.7				22.0	1067		4.8	
BRG	e P	Z	05:51:35.0	51.3	263.7		1.4	20	4.8		
RUE	e P	Z	05:51:35.6	51.3	262.2		0.8	24	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/06								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 13:36:29.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/06	15:00:34.0	33.980N	80.690E	33.0N	4.7			SZGRF
2002/07/06	15:01:37.8	38.531N	73.224E	120*	4.3			NEIC

Xizang

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 15:09:41.2	44.6	79.9	1.2	12	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/06								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 17:28:33.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/07								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 06:46:15.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/07	10:12:27.0	40.490N	72.060E	33.0N	4.6			SZGRF
2002/07/07	10:12:32.5	41.145N	71.195E	49*	4.4	3.7		NEIC

Kyrgyzstan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	10:20:21.1	41.8	78.0	0.8	8	4.6		
	e		10:20:31.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/08	11:09:09.3	5.028S	147.340E	33N	5.2	5.4		NEIC

Eastern New Guinea, Papua New Guinea, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e (PKPdf)	Z	11:28:03.8							
	e LR	Z	12:07:21.0							
	e L	Z	12:22:27.3			20.0	1343		5.6	
GRB1	e PKP	Z	11:28:07.5	122.0	55.2					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/09	03:59:3.5	44.690N	10.640E	10.0G			3.9	SZGRF
2002/07/09	03:59:00.0	44.516N	10.642E	10G				NEIC

Northern Italy

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
FUR	e Sn	N	04:00:39.5	3.7	187.1					4.1
BFO	e Pn	Z	04:00:04.5	4.1	156.5					3.8
	e Sn	N	04:00:49.0							
STU	e Sn	N	04:00:56.1	4.4	166.3					3.9
WET	e Pn	Z	04:00:13.9	4.9	199.1					3.6
	e Sn	N	04:01:07.1							
GRA1	e Sn	E	04:01:15.4	5.2	184.6					4.0
TNS	e Pn	Z	04:00:28.6	5.9	164.6					
MOX	e Sn	N	04:01:37.4	6.2	186.5					3.9

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/09	18:40:48.1	44.110N	125.970W	33.0N	5.0	5.4		SZGRF
2002/07/09	18:40:34.9	43.560N	127.227W	10G	5.6	5.5		NEIC

Off coast of Oregon, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BUG	e P	Z	18:52:33.2	77.2	328.0	1.2	12	4.9		
CLZ	e P	Z	18:52:37.7	77.8	330.0	1.4	41	5.4		
RUE	e P	Z	18:52:39.6	78.3	332.2	1.1	22	5.2		
TNS	e P	Z	18:52:41.6	78.6	328.9	1.3	19	5.1		
CLL	i P	+ Z	18:52:43.8			1.1	22	5.0		
	e		18:52:50.7							

	e S	T	19:02:44.5							
	e SS	T	19:07:51.4							
	e LQ	T	19:12:02.8							
	e L	Z	19:27:40.1			20.0	2399		5.5	
MOX	e P	Z	18:52:44.9	79.2	331.0	1.2	18	5.0		
BRG	e P	Z	18:52:47.8	79.7	332.5	1.0	24	5.2		
GRA1	e P	Z	18:52:49.4	79.9	330.8	1.1	20	5.1		
	e		18:52:56.1							
	e L	Z	19:32:37.0			18.1	1645		5.4	
GRFO	e P	Z	18:52:49.3	79.9	330.8	1.3	22	5.0		
STU	e P	Z	18:52:49.8	80.1	329.5	1.0	10	4.7		
BFO	e P	Z	18:52:50.2	80.2	329.0	1.3	23	5.0		
WET	e P	Z	18:52:54.1	80.9	331.9	1.1	8	4.6		
FUR	e P	Z	18:52:56.4	81.3	330.9	2.1	67	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/09	23:16:28.6	30.820N	101.670E	33.0N	5.0			SZGRF
2002/07/09	23:16:37.0	31.662N	99.264E	33N	4.7	4.0		NEIC

Sichuan, China

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 23:27:20.3	65.2	69.5	0.9	9	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/09	23:46:47.6	53.210N	164.870W	33.0N	4.8			SZGRF
2002/07/09	23:46:43.1	53.541N	163.481W	11	4.6			NEIC

Unimak Island, Alaska, United States, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 23:58:37.8	76.7	356.8	1.0	9	4.8		
	e	23:58:49.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/10	03:23:18.7	18.518S	177.955W	450G	4.4			NEIC

Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	Z 03:42:08.4			0.8	15			
	e PKPab	Z 03:42:11.2			0.9	30			
GRA1	e PKP	Z 03:42:14.6	148.0	16.6					
	e	03:42:20.0							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/10	14:13:16.0	73.210N	8.730E	33.0N	5.1			SZGRF
2002/07/10	14:13:10.8	73.074N	5.091E	10G	4.9	4.5		NEIC

Greenland Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e P	Z 14:18:08.5			1.4	57	4.8		
	e S	E 14:22:09.6							
	e LR	Z 14:23:20.0							
	e L	Z 14:27:00.1			18.0	848		4.2	
GRA1	e P	Z 14:18:23.8	23.5	355.5	1.5	106	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/10	14:48:40.5	41.890N	144.840E	33.0N	4.9			SZGRF
2002/07/10	14:48:44.2	41.796N	142.066E	57D	4.8			NEIC

Hokkaido, Japan, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 15:00:45.9	78.9	35.1	1.0	18	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/11	02:56:25.9	21.577N	142.971E	286.0	5.4			NEIC

Mariana Island Region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i P	+ Z 03:09:16.8			1.1	21			
	e PP	Z 03:13:12.1							
GRA1	e PP	Z 03:13:27.8	54.2	44.1	1.2	23	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/11	07:36:31.6	26.110N	123.600E	33.0N	5.7			SZGRF
2002/07/11	07:36:26.6	24.075N	122.261E	49	5.5	5.6		NEIC

Northeast of Taiwan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z 07:48:44.8	82.2	61.0	1.3	40	5.4		
CLL	i P	+ Z 07:48:46.1			1.2	56	5.7		
	e PP	Z 07:52:00.8							
	e PPP	Z 07:53:53.5							
	e PPPP	Z 07:55:21.1							
	e S	T 07:59:07.0							
	e PS	Z 07:59:57.7							

	e SS	Z	08:04:20.9								
	e LR	R	08:16:35.5								
	e L	Z	08:30:32.3			18.0	11259		6.3		
MOX	e P	Z	07:48:52.0	83.6	59.3	1.4	53		5.6		
CLZ	e P	Z	07:48:52.7	83.7	58.5	1.5	119		5.9		
WET	e P	Z	07:48:52.6	83.7	60.1	1.4	63		5.6		
GRA1	e P	Z	07:48:56.1	84.3	58.9	1.4	110		5.9		
FUR	e P	Z	07:48:59.7	85.1	58.8	1.7	378		6.3		
BUG	e P	Z	07:49:01.4	85.5	56.1	1.5	144		6.0		
TNS	e P	Z	07:49:02.0	85.5	56.9	1.5	66		5.6		
BFO	e P	Z	07:49:06.9	86.6	56.7	1.4	48		5.4		

Date Origin Time Lat Long Depth mb Ms ML Source
 2002/07/11 12:44:09.7 1.691S 12.918W 10G 4.6 NEIC
 North of Ascension Island

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 12:51:53.1	55.4	209.8					

Date Origin Time Lat Long Depth mb Ms ML Source
 2002/07/12 07:09:32.1 14.890N 120.012E 33N 4.6 NEIC
 Luzon, Philippines

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 07:22:32.8							

Date Origin Time Lat Long Depth mb Ms ML Source
 2002/07/13 06:50:35.5 15.600S 12.200W 33.0N 5.1 SZGRF
 Southern Mid-Atlantic Ridge

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 07:01:34.9	68.5	204.3	2.2	29	5.1		
	e	07:01:41.0							

Date Origin Time Lat Long Depth mb Ms ML Source
 2002/07/13 07:05:25.5 12.490S 15.490W 33.0N 5.1 SZGRF
 Southern Mid-Atlantic Ridge

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 07:16:12.1	66.5	208.6	0.8	10	5.1		
	e	07:16:18.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/13	12:07:10.3	24.590N	123.490E	33.0N	5.2			SZGRF
2002/07/13	12:07:07.2	23.925N	122.736E	33N	4.9			NEIC

Southwestern Ryukyu Islands, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	12:19:40.7	84.7	58.7	1.8	28	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/13	12:45:52.8	38.060N	140.850E	33.0N	4.8			SZGRF
2002/07/13	12:45:46.2	35.890N	140.086E	71	4.8			NEIC

Eastern Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	12:57:56.9	81.2	41.5	0.9	8	4.6		
CLL	e P	Z	12:57:56.9	81.2	40.8	1.0	15	4.9		
CLZ	e P	Z	12:58:00.8	81.9	39.0	1.1	12	4.8		
MOX	e P	Z	12:58:02.9	82.3	39.8	1.3	8	4.6		
WET	e P	Z	12:58:06.4	82.9	40.6	1.1	6	4.6		
GRA1	e P	Z	12:58:08.1	83.2	39.4	1.0	19	5.2		
GRFO	e P	Z	12:58:08.0	83.2	39.4	1.0	16	5.1		
TNS	e P	Z	12:58:11.1	83.9	37.5	1.0	4	4.6		
BFO	e P	Z	12:58:18.7	85.5	37.3	0.9	10	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/13	20:06:29.7	30.020N	69.410E	33.0N	5.6	5.5		SZGRF
2002/07/13	20:06:26.8	30.693N	69.840E	33N	5.4	5.8		NEIC

Pakistan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	20:14:47.5	45.6	94.2	1.0	51	5.5		
RUE	e P	Z	20:14:48.6	45.8	95.6	0.9	99	5.8		
CLL	i P	+ Z	20:14:51.9			1.0	33	5.3		
	e PP	Z	20:16:27.8							
	e S	R	20:21:39.2							
	e SS	T	20:25:03.7							
	e		20:26:57.7							
	e L	Z	20:36:38.0			22.0	4467		5.4	
MOX	e P	Z	20:14:59.1	47.0	92.1	1.1	52	5.6		
FUR	e P	Z	20:14:59.5	47.2	89.5	1.0	49	5.6		
GRA1	e P	Z	20:15:01.2	47.2	90.9	0.9	87	5.9		
	e L	Z	20:38:29.1			20.2	5471		5.5	

GRFO	e P	Z	20:15:01.2	47.2	90.9	0.9	76	5.8
CLZ	e P	Z	20:15:05.3	47.8	92.2	1.1	81	5.8
STU	e P	Z	20:15:10.5	48.6	88.5	1.1	58	5.5
TNS	e P	Z	20:15:14.7	49.0	89.2	1.1	22	5.1
BFO	e P	Z	20:15:14.2	49.2	87.5	1.0	29	5.3
IBBN	e P	Z	20:15:17.6	49.5	90.5	0.9	142	5.9
BUG	e P	Z	20:15:19.8	49.8	89.4	1.0	65	5.5
WLF	e P	Z	20:15:26.3	50.5	87.0	1.0	44	5.4

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/14	01:14:57.5	23.020N	96.620E	33.0N	4.9			SZGRF
2002/07/14	01:15:12.8	23.923N	94.228E	80*	4.7			NEIC

Myanmar

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 01:26:04.8	67.6	78.9	1.0	9	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/14								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 01:45:44.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/14	16:35:17.1	8.145S	156.918E	33N	5.5	5.6		NEIC

Bougainville - Solomon Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPdf	Z 16:54:20.5			1.2	13			
	e PP	Z 16:56:24.5							
	e	16:57:45.5							
	e PPP	Z 16:59:04.5							
	e Sdiff	T 17:04:13.2							
	e SKSP	Z 17:06:21.3							
	e PPS	Z 17:07:55.8							
	e SS	T 17:13:32.3							
	e SSS	E 17:18:23.0							
	e LR	Z 17:37:50.0							
	e L	Z 17:50:43.6			20.0	1302		5.6	
GRA1	e PKP	Z 16:54:29.8	129.6	46.4					

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Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/14	19:10:59.2	32.640N	140.900E	33.0N	5.2	5.3		SZGRF
2002/07/14	19:10:40.4	29.664N	142.264E	33N	5.1	5.2		NEIC

Southeast of Honshu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i P	Z 19:23:27.9			0.9	9	5.1		
	e PP	Z 19:26:54.5							
	e PPPP	Z 19:30:12.3							
	e S	T 19:34:10.4							
	e PS	Z 19:35:03.4							
	e SS	T 19:39:54.3							
	e LR	Z 20:00:44.2							
	e L	Z 20:13:20.9			18.0	1104		5.3	
GRA1	e P	Z 19:23:38.4	89.5	41.0	1.2	23	5.2		
	e L	Z 20:15:01.0			20.9	1152		5.3	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/15	00:44:41.8	15.195S	173.494W	33N	4.6	4.4		NEIC

Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 01:04:18.9	145.3	8.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/15	06:53:26.4	34.830N	34.530E	33.0N	4.5			SZGRF
2002/07/15	06:53:48.3	35.401N	31.256E	33N	4.3			NEIC

Cyprus region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRB1	e P	Z 06:58:20.6	20.0	127.0	1.1	23	4.5		
GRA1	e P	Z 06:58:24.6	20.4	126.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/15	08:24:18.5	28.109N	129.493E	54D	5.1			NEIC

Ryukyu Islands, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i P	+ Z 08:36:41.2			0.8	53	5.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
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2002/07/16	03:40: 4.3	32.150N	137.950E	33.0N	5.1				SZGRF
2002/07/16	03:39:49.4	30.950N	141.316E	33N	4.7	4.5			NEIC

Southeast of Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i P	+ Z	03:52:29.4			1.3	23	5.1		
	e pP	Z	03:52:42.6							
	e PP	R	03:55:47.8							
	e S	T	04:03:08.2							
	e PS	Z	04:04:14.4							
	e SS	T	04:08:39.8							
	e L	Z	04:34:45.2			18.0	210			
GRA1	e P	Z	03:52:39.3	88.0	41.0	2.0	30	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/16	06:56:35.4	33.270N	21.380E	33.0N	4.4			SZGRF
2002/07/16	06:56:24.8	33.748N	24.099E	10G	4.7			NEIC

Central Mediterranean Sea

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	07:00:44.5	18.6	144.4	0.8	26	4.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/16	11:57:25.9	31.170N	134.930E	33.0N	5.7	5.5		SZGRF
2002/07/16	11:57:26.4	30.883N	132.301E	33N	5.3	4.7		NEIC

Southeast of Shikoku, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z	12:09:42.1	80.9	49.8	1.3	67	5.6		
BRG	e P	Z	12:09:47.2	81.9	49.7	2.1	124	5.8		
CLL	i P	Z	12:09:46.6			1.2	57	5.7		
	e pP	Z	12:09:57.4							
	e PP	Z	12:12:58.1							
	e S	R	12:19:56.7							
	e SS	Z	12:25:34.7							
	e LQ	T	12:35:21.6							
	e LR	Z	12:37:31.5							
	e L	Z	12:50:48.8			18.0	3143		5.7	
CLZ	e P	Z	12:09:52.5	82.9	47.2	1.2	78	5.8		
MOX	e P	Z	12:09:53.5	83.2	48.0	1.4	59	5.6		
IBBN	e P	Z	12:09:56.0	83.8	45.3	1.1	70	5.8		
GRA1	e P	Z	12:09:58.2	84.0	47.7	1.2	125	6.0		
	e		12:10:08.7							
	e L	Z	12:51:48.4			21.5	1915		5.5	
BUG	e P	Z	12:10:00.1	84.6	44.9	1.0	38	5.5		

TNS	e P	Z	12:10:02.3	84.9	45.7	1.3	44	5.4
FUR	e P	Z	12:10:03.0	85.0	47.6	0.8	67	5.8
STU	e P	Z	12:10:05.4	85.6	46.1	1.1	52	5.6
BFO	e P	Z	12:10:08.8	86.3	45.5	1.4	57	5.7
WLF	e P	Z	12:10:09.5	86.4	44.0	1.3	61	5.8

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/16	14:47:18.1	69.840N	12.180W	33.0N	4.4			SZGRF
2002/07/16	14:47:02.2	70.878N	14.209W	10G	4.3			NEIC

Jan Mayen Island region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 14:52:20.6	24.2	340.0	1.0	12	4.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/16	14:50:40.6			33.0N	5.2			SZGRF
2002/07/16	14:50:14.2	11.688S	41.098E	10G	5.2	4.4		NEIC

Northwest of Madagascar

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 15:01:06.0	66.7	147.9	0.9	17	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/17	02:20:29.8	49.360N	152.150E	33.0N	5.8	4.4		SZGRF
2002/07/17	02:20:33.6	48.587N	153.174E	148D	5.3			NEIC

Northwest of Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z 02:31:51.7	73.2	26.7	1.7	161	5.9		
CLL	i P	Z 02:31:58.9			1.9	220	5.9		
	e pP	Z 02:32:37.8							
	e pPP	Z 02:35:18.9							
	e pPPP	Z 02:37:14.1							
	e S	T 02:41:22.4							
	e SKSac	N 02:41:51.0							
	e sS	T 02:42:31.4							
	e SS	Z 02:46:11.7							
	e	02:51:10.0							
	e LR	Z 02:56:28.4							
	e L	Z 03:06:23.6			22.0	303			
BRG	e P	Z 02:31:59.6	74.6	26.6	1.7	75	5.5		
CLZ	e P	Z 02:32:00.8	74.7	24.5	1.7	192	5.9		
IBBN	e P	Z 02:32:01.7	74.9	22.9	1.9	217	5.9		

MOX	e P	Z	02:32:04.8	75.4	25.1	1.8	137	5.7
BUG	e P	Z	02:32:06.8	75.8	22.5	1.8	144	5.7
GRA1	e P	Z	02:32:10.8	76.4	24.8	1.9	363	6.2
TNS	e P	Z	02:32:11.8	76.7	23.1	1.9	188	5.9
WLF	e P	Z	02:32:18.3	77.7	21.6	2.0	136	5.7
FUR	e P	Z	02:32:18.2	77.8	24.7	1.7	225	6.0
STU	e P	Z	02:32:18.0	77.8	23.5	1.8	181	5.9
BFO	e P	Z	02:32:21.4	78.4	22.9	1.8	134	5.8
	e S	E	02:42:02.4					
	e L	Z	03:09:11.9			21.4	176	4.4

Date Origin Time Lat Long Depth mb Ms ML Source
 2002/07/17 07:10:34.5 17.034S 179.004W 500G 4.9
 Fiji Islands Region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
IBBN	e PKPbc	Z	07:29:14.7	144.3	11.1					
CLZ	e PKPbc	Z	07:29:15.2	144.4	15.5					
CLL	e PKPbc	Z	07:29:14.9	144.4	20.0					
BRG	e PKPbc	Z	07:29:15.7	144.6	21.7					
BUG	e PKPbc	Z	07:29:16.5	145.2	10.6					
MOX	e PKPbc	Z	07:29:16.8	145.3	18.0					
TNS	e PKPbc	Z	07:29:20.5	146.3	12.9					
	e PKPab	Z	07:29:22.4							
GRA1	e PKPbc	Z	07:29:20.8	146.3	17.8					
	e PKPab	Z	07:29:23.0							
WLF	e PKPbc	Z	07:29:23.4	147.1	9.1					
STU	e PKPbc	Z	07:29:24.2	147.6	14.7					
FUR	e PKPbc	Z	07:29:24.7	147.8	18.6					
	e PKPab	Z	07:29:29.1							
BFO	e PKPbc	Z	07:29:25.5	148.1	13.4					
	e PKPab	Z	07:29:29.9							

Date Origin Time Lat Long Depth mb Ms ML Source
 2002/07/17 16:57:20.8 24.810N 124.540E 33.0N 5.1 5.1
 2002/07/17 16:57:19.9 24.020N 122.606E 33N 4.8 4.3
 Southwestern Ryukyu Islands, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	17:09:53.2	84.6	58.7	1.4	17	5.1		
BFO	e P	Z	17:08:34.9	86.9	56.5					
	e S	E	17:20:29.9							
	e L	Z	17:54:05.4			18.8	633		5.1	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/17	19:14:52.1	23.410N	120.190E	33.0N	4.8	4.6		SZGRF
2002/07/17	19:14:42.9	23.337N	122.180E	33N	4.9			NEIC

Taiwan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 19:27:17.9	84.9	59.4	1.6	11	4.8		
BFO	e P	Z 19:27:29.2	87.2	57.2					
	e L	Z 20:12:08.8			19.2	226		4.6	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/18	10:13:21.0	27.374N	126.834E	33N	4.9	4.9		NEIC

Northwest of Ryukyu Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e P	Z 10:25:45.8			26.3	25			
	e S	E 10:36:09.2							
	e (PS)	Z 10:36:40.5							
	e SS	E 10:41:14.6							
	e	10:46:00.0							
	e LR	Z 10:53:21.7							
	e L	Z 11:06:37.8			18.0	3050		5.7	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/18	21:53:13.0	44.709S	79.761W	10G	5.2	4.5		NEIC

Off coast of southern Chile

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 22:12:09.6	123.0	237.9					
	e	22:12:18.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/19	01:40:19.4	17.670S	178.912W	600G	4.7			NEIC

Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 01:58:58.1	147.0	17.9					
	e	01:59:01.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
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2002/07/19 02:38:28.7 1.290N 122.757E 33N 5.4 5.1 NEIC
Minahassa Peninsula, Sulawesi

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e Pdiff	Z 02:52:16.5							
	e PP	Z 02:56:33.9							
	e PPP	Z 02:58:35.3							
	e SKSac	R 03:02:49.8							
	e Sdiff	T 03:03:51.9							
	e PS	Z 03:05:22.7							
	e PPS	Z 03:06:24.6							
	e SS	R 03:10:59.1							
	e SSS	E 03:14:41.3							
	e L	Z 03:44:59.0			20.0	764		5.2	

Date Origin Time Lat Long Depth mb Ms ML Source
2002/07/19 06:43:55.5 56.329S 140.695W 10G 4.8 5.5 NEIC
Pacific-Antarctic Ridge

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPdf	Z 07:04:02.5							
	e PKPab	Z 07:04:50.9							
	e PP	Z 07:08:47.7							
	e PPP	Z 07:16:00.4							
	e	07:19:19.0							
	e SS	T 07:29:13.4							
	e SSS	E 07:35:25.6							
	e SSSS	E 07:40:21.6							
	e SSSr	N 07:42:40.4							
	e	07:52:11.0							
	e L	Z 08:26:32.8			22.0	1466		5.8	
GRA1	e PKP	Z 07:04:31.0	162.0	237.6					

Date Origin Time Lat Long Depth mb Ms ML Source
2002/07/19 07:08:14.0 20.237S 178.712W 600G 4.1 NEIC
Fiji Islands Region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPdf	Z 07:26:49.1							
	i PKPbc	- Z 07:26:52.6			0.8	21			
	i PKPab	Z 07:26:57.1			0.7	8			

Date Origin Time Lat Long Depth mb Ms ML Source

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2002/07/19	10:47: 1.3	2.330N	68.090E	33.0N	5.4				SZGRF
2002/07/19	10:46:57.4	1.464N	66.860E	10G	5.2	4.7			NEIC

North Indian Ocean

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	10:57:47.8	66.4	119.5	1.5	22	5.2		
CLL	e P	Z	10:57:52.7			1.5	39	5.4		
	e		10:57:58.8							
	e L	Z	11:28:52.2			22.0	82		3.9	
GRA1	e P	Z	10:57:53.9	67.4	116.6	1.6	58	5.6		
	e		10:57:59.8							
MOX	e P	Z	10:57:55.7	67.6	117.3	2.2	52	5.4		
BFO	e P	Z	10:58:01.4	68.5	113.6	1.7	74	5.6		
CLZ	e P	Z	10:58:03.7	68.8	116.6	1.7	53	5.5		
TNS	e P	Z	10:58:06.1	69.2	114.4	1.7	60	5.6		
BSEG	e P	Z	10:58:09.5	69.8	117.3	1.8	38	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/19	15:07:27.6	41.290N	141.670E	33.0N	4.9			SZGRF
2002/07/19	15:08:00.9	43.157N	138.682E	232	4.5			NEIC

Hokkaido, Japan, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	15:19:29.5	76.4	36.6	0.7	9	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/19								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	17:11:57.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/20								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z	00:14:41.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/20								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
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GRA1 e PKP Z 01:39:50.5

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/20	06:53:3.5	31.490N	25.580E	33.0N	4.7			SZGRF
2002/07/20	06:53:40.7	34.866N	23.161E	10G	4.7			NEIC

Egypt

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
FUR	e P	Z 06:57:31.7	16.0	142.1	0.9	56	4.8		
WET	e P	Z 06:57:34.2	16.2	148.2	1.1	39	4.5		
GRA1	e P	Z 06:57:46.2	17.2	145.0	1.0	67	4.9		
	e L	Z 07:02:23.0							
BRG	e P	Z 06:57:46.8	17.3	153.8	1.5	34	4.4		
BFO	e P	Z 06:57:46.1	17.4	135.3	1.7	26	4.3		
MOX	e P	Z 06:57:52.6	17.9	147.6	0.8	9	4.3		
CLL	e P	Z 06:57:53.8	18.0	152.1	0.8	19	4.6		
TNS	e P	Z 06:58:03.8	18.7	139.5	1.7	37	4.6		
RUE	e P	Z 06:58:02.3	18.8	155.5	2.0	118	5.1		
CLZ	e P	Z 06:58:08.5	19.3	146.6	0.8	14	4.5		
BUG	e P	Z 06:58:17.6	20.1	139.3					
BSEG	e P	Z 06:58:26.7	21.1	149.5	0.9	74	5.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/21								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 04:11:41.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/22	02:02:36.4	14.954S	176.734W	33N	5.2	4.8		NEIC

Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPdf	Z 02:22:10.9	144.7	13.4					
	e L	Z 03:24:07.6			21.7	414		5.2	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/23	08:00:33.2	44.760N	150.260E	33.0N	5.1	4.4		SZGRF
2002/07/23	08:00:36.4	45.245N	149.997E	56D	5.0			NEIC

East of Kuril Islands, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	08:12:34.5	78.5	28.3	0.8	17	5.1		
	e L	Z	08:36:50.5			20.4	181		4.4	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/23	20:05:38.3	38.230N	142.900E	33.0N	6.1	5.7		SZGRF
2002/07/23	20:05:31.7	37.357N	142.165E	30D	5.5	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	20:17:32.1	78.2	39.2	1.3	499	6.5		
RUE	e P	Z	20:17:39.7	79.6	39.3	1.2	293	6.2		
BRG	e P	Z	20:17:45.8	80.8	39.2	1.1	156	6.0		
CLL	i P	+ Z	20:17:45.8			1.1	312	6.2		
	e pP	Z	20:17:55.5							
	e sP	Z	20:17:58.5							
	e PP	Z	20:20:53.8							
	e PPP	Z	20:22:48.9							
	e S	T	20:27:53.6							
	e SKSac	R	20:28:01.0							
	e PS	Z	20:28:48.1							
	e SS	T	20:33:08.4							
	e LR	Z	20:44:20.3							
	e L	Z	20:58:49.9			20.0	3128		5.7	
CLZ	e P	Z	20:17:49.4	81.4	36.8	1.1	278	6.2		
MOX	e P	Z	20:17:51.6	81.9	37.6	1.0	90	5.9		
IBBN	e P	Z	20:17:51.9	81.9	35.0	1.2	244	6.2		
GEC2	e P	Z	20:17:54.5	82.4	38.9	1.2	21	5.2		
WET	e P	Z	20:17:55.5	82.5	38.3	1.2	128	5.9		
GRA1	e P	Z	20:17:57.0	82.8	37.2	1.2	334	6.4		
	e		20:18:09.4							
	e PP	Z	20:21:10.3							
	e S	E	20:28:16.3							
	e L	Z	20:57:53.4			18.4	2852		5.7	
GRFO	e P	Z	20:17:57.0	82.8	37.2	1.2	282	6.4		
BUG	e P	Z	20:17:56.3	82.8	34.6	1.0	86	5.9		
TNS	e P	Z	20:17:59.6	83.4	35.3	1.0	72	5.8		
FUR	e P	Z	20:18:02.7	84.0	37.2	1.0	308	6.5		
STU	e P	Z	20:18:04.1	84.3	35.8	1.1	261	6.4		
WLF	e P	Z	20:18:06.6	84.7	33.7	1.5	215	6.2		
BFO	e P	Z	20:18:07.5	85.0	35.1	1.1	257	6.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/24	03:05:05.7	9.291S	118.622E	33N	5.8	5.4		NEIC

Sumbawa, Indonesia, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML	
CLL	e Pdiff	Z 03:19:08.3								
	e PKiKP	Z 03:23:29.5			1.1	7				
	e PP	Z 03:23:46.7								
	e SKSac	R 03:29:54.8								
	e Sdiff	T 03:31:20.8								
	e SP	Z 03:33:00.8								
	e PS	E 03:33:06.4								
	e PPS	E 03:34:07.6								
	e SS	R 03:38:44.5								
	e L	Z 04:17:14.5			20.0	1012		5.4		
	GRA1	e PP	Z 03:23:50.5	108.3	82.7					
		e SKSac	E 03:30:04.3							
		e SP	Z 03:33:07.2							
e PS		E 03:33:14.7								
e L		Z 04:14:53.6			21.9	950		5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/24	04:13:39.4	39.104N	11.700W	10G	4.6			NEIC

North Atlantic Ocean

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 04:18:13.0	19.4	245.6					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/24	06:26:47.3	16.394S	173.254W	33N	4.7			NEIC

Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 06:46:28.1	146.5	7.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/24	21:58:43.0	21.710S	175.220E	33.0N				SZGRF
2002/07/24	21:59:41.9	17.527S	178.735W	500G	4.9			NEIC

South of Fiji Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e PKPbc	Z 22:18:18.4	143.7	20.4					
CLZ	e PKPbc	Z 22:18:22.7	144.9	15.2					
	e PKPab	Z 22:18:26.0							
	e PKPdf	Z 22:18:21.5			0.9	2			
CLL	i PKPbc	Z 22:18:22.9			0.9	113			

	e	pPKPbc	Z	22:20:30.4				
BRG	e	PKPbc	Z	22:18:23.3	145.2	21.5		
MOX	e	PKPdf	Z	22:18:23.3	145.9	17.8		
	e	PKPbc	Z	22:18:25.2				
TNS	e	PKPbc	Z	22:18:27.7	146.8	12.6		
GRA1	e	PKPdf	Z	22:18:25.0	146.8	17.5		
	e	PKPbc	Z	22:18:28.0				
	e	PKPab	Z	22:18:32.2				
WET	e	PKPdf	Z	22:18:24.8	147.0	20.6		
	e	PKPbc	Z	22:18:28.5				
	e	PKPab	Z	22:18:32.3				
GEC2	e	PKPdf	Z	22:18:24.9	147.1	22.2		
	e	PKPbc	Z	22:18:28.3				
	e	PKPab	Z	22:18:32.7				
STU	e	PKPdf	Z	22:18:27.3	148.1	14.4		
	e	PKPbc	Z	22:18:31.2				
	e	PKPab	Z	22:18:36.3				
FUR	e	PKPbc	Z	22:18:31.8	148.3	18.4		
	e	PKPab	Z	22:18:37.8				
BFO	e	PKPbc	Z	22:18:32.6	148.7	13.0		
	e	PKPab	Z	22:18:38.3				

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/25	01:41:11.0	1.280S	67.570E	33.0N	5.6			SZGRF
2002/07/25	01:40:46.5	4.988S	68.465E	10G	5.0	4.1		NEIC

Carlsberg Ridge

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 01:52:20.0	73.6	119.2	2.0	93	5.6		
	e	01:52:26.2							
CLL	e P	Z 01:52:20.1			2.1	51	5.3		
	e	01:52:25.6							
	e	01:52:30.2							
	e LR	Z 02:17:09.6							
	e L	Z 02:28:56.7			20.0	145		4.3	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/25	02:16:56.9	20.212S	177.590W	500G	4.2			NEIC

Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 02:35:50.4	149.7	16.6					

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Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/25	03:55:47.0	21.550S	178.877W	500G	4.1			NEIC

Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 04:14:41.2	150.7	19.5					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/25	12:31:11.2	44.790N	147.000E	33.0N	6.1	5.7		SZGRF
2002/07/25	12:31:01.3	43.737N	147.482E	33N	5.4	5.3		NEIC

Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e P	Z 12:42:39.1	74.3	32.6	1.1	492	6.5		
RUE	e P	Z 12:42:48.1	75.9	32.6	1.2	528	6.4		
CLL	i P	+ Z 12:42:54.8			1.0	421	6.5		
	e pP	Z 12:43:05.3							
	e sP	Z 12:43:10.1							
	e PP	Z 12:45:49.6							
	e S	T 12:52:37.5							
	e SKSac	R 12:52:56.9							
	e PS	T 12:53:24.6							
	e SS	R 12:57:48.0							
	e SSS	R 13:01:28.1							
	e LQ	T 13:06:46.0							
	e LR	Z 13:08:30.9							
	e L	Z 13:21:18.0			22.0	3270		5.6	
BRG	e P	Z 12:42:55.2	77.2	32.5	1.1	142	6.0		
CLZ	e P	Z 12:42:57.7	77.5	30.2	1.3	574	6.6		
IBBN	e P	Z 12:42:59.4	77.9	28.5	1.1	409	6.5		
MOX	e P	Z 12:43:00.9	78.1	30.9	1.4	245	6.2		
BUG	e P	Z 12:43:04.2	78.8	28.1	1.2	288	6.3		
GEC2	e P	Z 12:43:05.2	79.0	32.1	1.3	17	5.0		
WET	e P	Z 12:43:05.8	79.0	31.6	1.2	172	6.1		
GRA1	e P	Z 12:43:06.6	79.1	30.6	1.6	572	6.5		
	e	12:43:17.1							
	e L	Z 13:22:26.4			18.0	3531		5.7	
GRFO	e P	Z 12:43:06.6	79.1	30.6	1.6	476	6.4		
TNS	e P	Z 12:43:08.5	79.5	28.8	1.4	199	6.0		
FUR	e P	Z 12:43:13.1	80.4	30.5	1.1	185	5.9		
STU	e P	Z 12:43:13.8	80.5	29.2	1.0	128	5.8		
WLF	e P	Z 12:43:15.4	80.7	27.2	1.7	217	5.8		
BFO	e P	Z 12:43:17.2	81.2	28.6	1.1	87	5.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
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2002/07/25	15:59: 0.6	14.150N	124.600E	33.0N	5.4	4.6		SZGRF
2002/07/25	15:58:48.5	9.919N	125.626E	102D	5.4			NEIC

Luzon, Philippine Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	16:12:03.8	95.5	66.9	1.1	17	5.3		
CLL	e P	Z	16:12:04.7			1.5	27	5.5		
	e pP	Z	16:12:30.5							
	e LR	Z	16:32:20.7							
	e L	Z	16:42:07.3			20.0	252		4.7	
GEC2	e P	Z	16:12:07.5	96.5	66.9	0.9	3	4.7		
WET	e P	Z	16:12:10.1	96.8	66.2	1.6	19	5.3		
MOX	e P	Z	16:12:10.0	96.9	65.0	1.4	15	5.2		
CLZ	e P	Z	16:12:10.9	97.1	63.9	0.9	20	5.5		
GRA1	e P	Z	16:12:13.7	97.6	64.8	0.9	12	5.2		
	e L	Z	16:40:50.2			21.8	218		4.6	
IBBN	e P	Z	16:12:16.8	98.4	61.7	1.2	43	5.7		
BUG	e P	Z	16:12:19.5	99.0	61.4	1.4	34	5.6		
WLF	e P	Z	16:12:26.7	100.5	60.7	0.9	20	5.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/26	18:15:40.7	21.811S	175.707W	33N	4.9			NEIC

Tonga Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	- Z	18:35:29.4			0.7	38			
	e PKPab	Z	18:35:34.8							
	e		18:35:39.4							
GRA1	e PKP	Z	18:35:34.2	151.6	13.6					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/28	02:29:28.4	52.100N	178.840W	33.0N	5.4	4.4		SZGRF

Andreanof Islands, Aleutian Islands, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e P	Z	02:40:54.7	72.9	7.8	1.0	95	5.9		
RUE	e P	Z	02:41:05.9	74.9	8.0	0.9	48	5.5		
IBBN	e P	Z	02:41:09.4	75.4	4.2	0.9	108	6.0		
CLZ	e P	Z	02:41:11.4	75.8	5.8	0.9	72	5.8		
CLL	i P	- Z	02:41:12.1			1.1	33	5.4		
	e S	Z	02:50:58.3							
	e PS	Z	02:51:42.3							
	e SS	Z	02:56:03.1							
	e LR	Z	03:06:49.3							
	e L	Z	03:19:32.5			22.0	267		4.5	

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BUG	e P	Z	02:41:13.9	76.3	3.9	1.1	48	5.5		
BRG	e P	Z	02:41:14.5	76.5	8.0	1.1	32	5.4		
MOX	e P	Z	02:41:17.1	76.9	6.6	1.1	34	5.4		
TNS	e P	Z	02:41:20.6	77.5	4.6	0.9	42	5.6		
GRA1	e P	Z	02:41:23.1	77.9	6.3	1.1	71	5.7		
	e L	Z	03:19:32.8			21.9	207		4.4	
WLF	e P	Z	02:41:24.5	78.1	3.1	1.0	44	5.4		
WET	e P	Z	02:41:25.0	78.3	7.3	1.2	24	5.1		
GEC2	e P	Z	02:41:26.0	78.5	7.8	1.2	4	4.4		
STU	e P	Z	02:41:28.1	78.9	5.0	1.2	40	5.3		
BFO	e P	Z	02:41:30.7	79.4	4.5	1.1	27	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/28	11:31:34.0	43.580N	143.110E	33.0N	5.3			SZGRF
2002/07/28	11:31:30.1	42.244N	142.974E	83D	5.1			NEIC

Hokkaido, Japan, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e P	Z	11:43:00.9	74.1	36.3	0.6	44	5.7		
RUE	e P	Z	11:43:09.4	75.6	36.3	0.6	43	5.6		
CLL	i P	+ Z	11:43:15.8			0.9	47	5.6		
	e pP	Z	11:43:32.5							
	e sP	Z	11:43:37.8							
	e S	Z	11:53:02.0							
	e SS	Z	11:58:09.2							
	e LR	Z	12:08:43.5							
	e L	Z	12:19:36.2			22.0	211		4.4	
BRG	e P	Z	11:43:16.2	76.9	36.2	0.9	14	5.1		
CLZ	e P	Z	11:43:19.4	77.3	34.0	0.6	39	5.7		
IBBN	e P	Z	11:43:21.6	77.8	32.2	0.7	40	5.7		
MOX	e P	Z	11:43:22.1	77.9	34.6	0.7	15	5.2		
GEC2	e P	Z	11:43:25.9	78.6	35.8	0.7	2	4.4		
WET	e P	Z	11:43:26.8	78.7	35.3	0.8	19	5.3		
BUG	e P	Z	11:43:26.4	78.7	31.8	0.8	27	5.5		
GRA1	e P	Z	11:43:27.9	78.8	34.3	0.7	44	5.7		
TNS	e P	Z	11:43:30.2	79.4	32.5	0.8	12	5.0		
FUR	e P	Z	11:43:34.3	80.1	34.1	0.8	42	5.5		
STU	e P	Z	11:43:35.4	80.3	32.8	0.8	28	5.3		
WLF	e P	Z	11:43:37.6	80.6	30.9	1.3	22	4.9		
BFO	e P	Z	11:43:39.0	81.0	32.2	0.8	13	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/28	11:31:34.0	36.650N	21.480E	33.0N				SZGRF

Southern Greece

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Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 14:37:14.3	15.0	146.5	1.2	15			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/28	17:16:30.0	36.560N	21.250E	33.0N		4.2		SZGRF
2002/07/28	17:16:29.9	38.007N	20.654E	10G	4.8	4.8		NEIC

Southern Greece

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 17:19:40.6	13.5	146.4					
	e L	Z 17:25:46.5			21.2	1791		4.2	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/28	19:01:19.5	17.864S	178.425W	581D	4.9			NEIC

Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPdf	Z 19:19:52.5							
	i PKPbc	- Z 19:19:53.9			0.9	155			
GRA1	e PKP	Z 19:20:00.1	147.2	17.1					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/28	20:29: 8.6	56.090N	105.690E	33.0N	4.8			SZGRF
2002/07/28	20:28:31.4	52.979N	107.784E	10G	4.6			NEIC

Lake Baykal, Russia, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 20:38:20.9	55.6	46.4	1.4	17	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/28	23:33: 4.7	51.950N	163.050W	33.0N	4.4			SZGRF
2002/07/28	23:33:15.1	54.079N	162.534W	5	4.5			NEIC

South of Alaska

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 23:45:01.1	76.1	356.2	1.3	6	4.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/29	07:13:59.9	10.650N	124.840E	33.0N	5.9	5.0		SZGRF

Leyte, Philippine Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML	
CLL	e Pdiff	Z 07:27:17.1			1.3	34				
	e	07:27:32.7								
	e PP	Z 07:31:23.5								
	e SKSac	R 07:37:53.9								
	e Sdiff	T 07:38:44.7								
	e PS	Z 07:40:15.0								
	e SS	R 07:45:34.0								
	e L	Z 08:16:44.3			20.0	789		5.2		
	GRA1	e P	Z 07:27:26.4	96.5	65.0	1.8	52	5.9		
		e L	Z 08:16:13.5			20.7	584		5.0	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/29	23:40:16.5	3.210S	77.700W	33.0N	5.4			SZGRF
2002/07/29	23:40:04.4	6.939S	76.766W	30*	5.2	4.3		NEIC

Peru-Ecuador border region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 23:53:21.2	94.0	264.0	1.8	35	5.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/30	06:55:26.1	55.440S	19.570W	33.0N		5.8		SZGRF
2002/07/30	06:55:08.4	57.939S	23.291W	33N	5.7	5.8		NEIC

Southwestern Atlantic Ocean

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML	
BFO	e Pdiff	Z 07:09:26.2	109.4	197.2						
WET	e Pdiff	Z 07:09:38.0	111.1	199.6						
TNS	e Pdiff	Z 07:09:38.6	111.3	197.4						
GRA1	e Pdiff	Z 07:09:35.9	111.3	198.8						
	e PP	Z 07:14:14.7								
	e SP	Z 07:23:48.0								
BUG	e L	Z 07:57:33.8			18.5	2707		5.8		
	e Pdiff	Z 07:09:41.3	112.2	196.9						
	CLZ	e Pdiff	Z 07:09:45.7	113.2	198.7					
	CLL	e Pdiff	Z 07:09:50.2							
		e PKiKP	Z 07:13:41.2			0.6	5			
		e PP	Z 07:14:28.9							
		e PPP	Z 07:16:38.3							
		e Sdiff	T 07:22:04.0							
		e PS	R 07:24:09.0							
		e PKKPbc	Z 07:24:30.0							
e PKKPab		Z 07:24:39.9								

e SS	R	07:30:21.9							
e PSPS	N	07:30:36.5							
e SSS	E	07:34:21.6							
e L	Z	07:59:01.8			18.0		2436		5.8

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/30	12:19:54.7	35.060N	29.990E	33.0G		4.5		SZGRF
2002/07/30	12:20:23.6	37.698N	29.184E	9	4.5	3.4		NEIC

Eastern Mediterranean Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 12:24:11.9	15.8	129.1					
WET	e Pn	Z 12:24:19.3	16.4	128.1					
	e Sn	Z 12:27:33.3							
	e L	Z 12:31:22.8			11.5	1614			
BRG	e Pn	Z 12:24:24.9	17.0	134.8					
	e Sn	Z 12:27:49.9							
	e L	Z 12:32:00.8			10.3	1081			
GRA1	e Pn	Z 12:24:31.2	17.6	126.2					
	e Sn	Z 12:27:58.6							
	e L	Z 12:32:11.2			12.0	1426		4.5	
CLL	e Pn	Z 12:24:31.6	17.8	133.7					
	e L	Z 12:32:23.4			9.6	1188			
MOX	e Pn	Z 12:24:36.4	18.0	129.3					
	e Sn	Z 12:28:10.1							
	e L	Z 12:32:28.1			11.4	993			
BFO	e Pn	Z 12:24:42.0	18.5	117.4					
	e Sn	Z 12:28:16.7							
	e L	Z 12:32:47.6			8.9	658			
CLZ	e Pn	Z 12:24:50.4	19.3	129.6					
	e L	Z 12:33:27.7			11.3	758			
TNS	e Pn	Z 12:24:50.7	19.4	122.4					
	e L	Z 12:33:23.2			9.3	1186			
BUG	e L	Z 12:34:12.9	20.7	123.1	12.2	1148			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/30	19:31:41.3	19.938S	177.773W	500G	4.5			NEIC

Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPdf	Z 19:50:26.6							
	i PKPbc	- Z 19:50:29.4			0.9	35			
GRA1	e PKPdf	Z 19:50:34.4	149.4	16.8					
	e	19:50:41.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/30	20:02:06.2	6.502S	130.329E	102D	5.5			NEIC

Banda Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 20:20:34.3	113.5	71.2					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/31	00:16:59.1	8.470N	79.960W	33.0N	6.2	6.7		SZGRF
2002/07/31	00:16:44.9	7.985N	82.784W	10G	5.9	6.4		NEIC

Panama

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BUG	e P	Z 00:29:13.8	83.8	275.0	1.3	186	6.1		
BFO	e P	Z 00:29:18.6	84.8	276.2	1.3	116	5.9		
STU	e P	Z 00:29:21.6	85.3	276.8	1.4	249	6.2		
CLZ	e P	Z 00:29:23.9	85.7	277.4	1.5	315	6.3		
GRA1	e P	Z 00:29:28.1	86.5	278.2	1.8	396	6.3		
	e L	Z 01:02:19.6			21.6	31928		6.7	
MOX	e P	Z 00:29:28.3	86.6	278.5	1.7	238	6.2		
FUR	e P	Z 00:29:29.2	86.7	278.3	1.8	411	6.4		
CLL	i P	Z 00:29:32.4			1.6	357	6.3		
	e	00:30:45.9							
	e PP	Z 00:33:00.0							
	e	00:36:15.3							
	e SKSac	R 00:40:01.1							
	e S	T 00:40:12.8							
	e PS	R 00:41:15.9							
	e SS	R 00:46:03.0							
	e SSS	Z 00:49:49.6							
	e LR	Z 00:57:08.9							
	e L	Z 01:03:47.6			22.0	18094		6.4	
RUE	e P	Z 00:29:33.0	87.6	280.1	1.6	323	6.2		
WET	e P	Z 00:29:33.8	87.6	279.5	1.5	419	6.3		
BRG	e P	Z 00:29:35.3	88.0	280.2	1.6	270	6.1		
GEC2	e P	Z 00:29:36.4	88.2	280.1					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/31	01:54:34.6	8.260N	80.540W	33.0N	5.3	5.6		SZGRF
2002/07/31	01:54:22.1	8.157N	82.747W	10G	5.3	5.2		NEIC

Panama

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
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BUG	e P	Z	02:06:52.0	83.6	275.1	1.5	23	5.1
BFO	e P	Z	02:06:56.9	84.6	276.2			
STU	e P	Z	02:06:59.8	85.1	276.8	1.2	24	5.3
CLZ	e P	Z	02:07:02.1	85.5	277.5	1.4	27	5.3
GRA1	e P	Z	02:07:06.3	86.3	278.3	1.3	23	5.3
	e L	Z	02:39:30.6			21.8	3022	5.6
MOX	e P	Z	02:07:06.6	86.4	278.5	1.4	18	5.1
FUR	e P	Z	02:07:07.3	86.6	278.4	3.4	272	5.9
CLL	e P	Z	02:07:10.2	87.2	279.6	2.9	164	5.7
RUE	e P	Z	02:07:11.3	87.5	280.1	1.0	17	5.1
WET	e P	Z	02:07:12.0	87.5	279.6	1.3	24	5.2
BRG	e P	Z	02:07:13.6	87.9	280.3	1.7	44	5.3
GEC2	e P	Z	02:07:14.5	88.1	280.2			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/31	04:45:35.8	9.850N	79.830W	33.0N	5.0			SZGRF
2002/07/31	04:45:14.0	7.783N	82.862W	10G	5.3			NEIC

Panama

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WLF	e P	Z 04:57:41.6	83.4	274.3	0.9	12	4.8		
BUG	e P	Z 04:57:44.8	84.0	275.0	1.0	12	4.9		
BFO	e P	Z 04:57:49.6	85.0	276.1	0.9	6	4.7		
CLZ	e P	Z 04:57:54.9	85.9	277.4	1.0	15	5.1		
GRA1	e P	Z 04:57:59.0	86.7	278.1	0.9	12	5.2		
MOX	e P	Z 04:57:59.3	86.8	278.4	1.0	8	4.9		
CLL	e P	Z 04:58:03.0	87.6	279.4	1.0	17	5.2		
WET	e P	Z 04:58:04.8	87.8	279.4	1.1	17	5.2		
BRG	e P	Z 04:58:06.4	88.2	280.2	1.2	13	5.0		
GEC2	e P	Z 04:58:07.3	88.4	280.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/31	09:12:36.0	5.450N	36.580W	33.0N	5.7	4.7		SZGRF
2002/07/31	09:12:44.7	7.523N	36.338W	10G	5.1	4.7		NEIC

Central Mid-Atlantic Ridge

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 09:22:37.5	57.8	239.8	1.0	91	5.7		
	e S	E 09:30:46.5							
	e L	Z 09:43:59.0			19.9	505		4.7	
CLL	i P	- Z 09:22:50.2			1.7	33	5.1		
	e	09:23:03.5							
	e S	R 09:31:03.7							
	e SS	R 09:34:52.9							
	e SSS	T 09:37:32.0							

e LR	Z	09:40:08.0			
e L	Z	09:42:50.7	22.0	683	4.7

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/07/31	16:51:28.8	37.500N	153.900E	33.0N	5.5			SZGRF
2002/07/31	16:53:16.6	48.144N	145.908E	481	4.5			NEIC

North Pacific Ocean

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i P	- Z 17:03:58.2			0.9	31	5.4		
	e pP	Z 17:05:41.5							
GRA1	e P	Z 17:04:10.1	74.7	29.5	0.8	35	5.5		

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-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