

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

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

FEBRUARY 2001      UPDATED 05.Apr.2001

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
2001/02/01	10:57:31.1	73.160N	9.020E	33.0N	4.9			SZGRF
2001/02/01	10:57:21.2	73.435N	7.260E	10G	4.7			NEIC

Greenland Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 11:02:38.4	23.8	357.2	2.0	81	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/01								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 12:51:23.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/01	16:43: 1.6	44.570N	17.120E	10.0G				SZGRF
2001/02/01	16:42:56.8	44.646N	17.803E	10G				NEIC

Northwestern Balkan Peninsula

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 16:44:13.9	5.1	144.7					
	e Sn	N 16:45:09.9							
WET	e Pn	Z 16:44:22.9	5.6	141.4					
	e Sn	E 16:45:21.5							
GRA1	e Pn	Z 16:44:35.3	6.7	136.0					
	e Sn	N 16:45:48.2							
MOX	e Pn	Z 16:44:45.7	7.3	142.9					
	e Sn	N 16:46:03.9							
BFO	e Pn	Z 16:44:45.7	7.5	116.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/01	18:19:39.5	52.480N	179.230W	33.0N	5.8	5.5		SZGRF
2001/02/01	18:19:29.8	51.401N	177.857W	33N	5.6	5.6		NEIC

Andreanof Islands, Aleutian Islands, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	i P	Z	18:31:08.3	74.4	5.3	2.1	322	6.0		
RUE	e P	Z	18:31:15.1	75.7	7.5					
IBBN	i P	Z	18:31:18.6	76.2	3.6	1.8	528	6.3		
CLZ	i P	Z	18:31:20.5	76.5	5.3	1.8	193	5.9		
CLL	i P	+ Z	18:31:21.5			2.0	181	5.9		
	e PcP	Z	18:31:32.6							
	e PP	Z	18:34:19.3							
	e PPP	Z	18:36:07.8							
	e S	E	18:41:07.7							
	e PS	Z	18:42:00.8							
	e SS	Z	18:46:12.6							
	e SSS	Z	18:49:49.5							
	e SSSS	Z	18:51:51.9							
	e L	Z	19:08:16.7			20.0	4142		5.7	
BUG	e P	Z	18:31:22.9	77.1	3.3					
BRG	i P	Z	18:31:23.8	77.2	7.5	1.7	76	5.6		
MOX	e P	Z	18:31:26.1	77.6	6.0	1.3	52	5.5		
TNS	e P	Z	18:31:30.1	78.2	4.0	1.0	40	5.5		
GRA1	e P	Z	18:31:32.0	78.6	5.8	1.8	377	6.2		
	e L	Z	19:06:42.6			21.6	2444		5.5	
WET	i P	Z	18:31:34.2	79.0	6.8	1.8	95	5.6		
GEC2	i P	Z	18:31:35.2	79.3	7.3	1.7	46	5.3		
STU	e P	Z	18:31:37.4	79.6	4.5					
BFO	e P	Z	18:31:40.2	80.1	3.9	1.8	148	5.7		
FUR	e P	Z	18:31:40.0	80.1	5.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/01	21:57:45.6	44.450N	9.950E	10.0G				SZGRF
2001/02/01	21:57:46.2	44.499N	9.973E	10G				NEIC

Northern Italy

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z	21:58:47.7	4.0	162.9					
GEC2	e Pn	Z	21:59:01.9	5.0	211.9					
	e Sn	N	21:59:59.2							
WET	e Pn	Z	21:59:01.9	5.1	204.2					
	e Sn	E	21:59:58.2							

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MOX	e Pn	Z	21:59:16.6	6.2	190.8
	e Sn	E	22:00:27.6		
BRG	e Pn	Z	21:59:27.0	6.9	204.2
CLL	e Pn	Z	21:59:29.0	7.1	197.7

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/02								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e (P)	Z 04:30:05.0							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/02	08:10:41.2	13.080N	89.850W	55.2	5.4			SZGRF
2001/02/02	08:10:40.9	12.793N	89.037W	55D	5.3			NEIC

El Salvador

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 08:23:20.7	86.8	286.0	1.7	35	5.4		
	e pP	Z 08:23:35.6							
	e sP	Z 08:23:44.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/02								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 17:11:53.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/03	03:04:11.4	20.530N	73.050E	33.0N	5.8			SZGRF
2001/02/03	03:04:32.3	23.553N	70.443E	10G	5.2	5.0		NEIC

Southern India

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	i P	Z 03:13:49.9	52.5	97.2	0.9	99	5.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/03								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
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GRA1 e (P) Z 05:18:49.6 1.2 12

Date Origin Time Lat Long Depth mb Ms ML Source  
 2001/02/03 10:06:24.3 20.430N 70.970E 33.0N 4.7  
 Southern India

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML  
 GRA1 e P Z 10:15:53.7 55.1 99.4 0.7 5 4.7

Date Origin Time Lat Long Depth mb Ms ML Source  
 2001/02/03

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML  
 GRA1 i PKP Z 14:44:57.5

Date Origin Time Lat Long Depth mb Ms ML Source  
 2001/02/04

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML  
 GRA1 e (P) Z 04:18:45.7

Date Origin Time Lat Long Depth mb Ms ML Source  
 2001/02/04

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML  
 GRA1 e P Z 07:01:43.0 1.1 16

Date Origin Time Lat Long Depth mb Ms ML Source  
 2001/02/04

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML  
 GRA1 e P Z 09:28:22.7

Date Origin Time Lat Long Depth mb Ms ML Source  
 2001/02/04 10:12:52.1 46.260N 155.080E 33.0N 5.2  
 2001/02/04 10:12:53.5 46.968N 154.377E 33N 4.7  
 NEIC

East of Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 10:24:53.5	78.2	24.7	0.8	22	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/04								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 16:25:07.0							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/04	17:23:13.6	23.347N	70.297E	10G	4.4			NEIC
Southern India								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 17:32:31.2	52.6	97.5					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/04	19:17:12.6	38.090N	142.990E	33.0N	5.2			SZGRF
2001/02/04	19:17:15.2	37.437N	140.814E	75D	4.3			NEIC
Near east coast of eastern Honshu, Japan								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 19:29:32.1	82.2	38.1	1.0	15	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/04								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e (P)	Z 22:27:51.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/05								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 02:35:20.5							

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Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/05	02:59:36.0	23.501N	70.055E	10G	4.7			NEIC

Southern India

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 03:08:51.0	52.3	97.5	1.0	15			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/05	03:48:55.6	61.000N	130.120W	33.0N	5.3			SZGRF
2001/02/05	03:49:06.9	64.442N	131.147W	10G	5.3	4.7		NEIC

Southern Yukon Territory, Canada

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 03:59:33.0	62.2	342.7	1.3	24	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/05								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 05:06:02.1							
	e	05:07:41.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/06	22:28:44.5	43.990N	8.830E	10.0G				SZGRF
2001/02/06	22:28:44.9	44.179N	8.709E	10G	4.1			NEIC

Corsica, France

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z 22:29:50.0	4.2	176.2					
	e Sn	N 22:30:41.6							
FUR	e Pn	Z 22:29:53.3	4.4	205.0					
	e Sn	N 22:30:44.3							
STU	e Pn	Z 22:29:56.3	4.6	184.3					
	e Sn	E 22:30:49.7							
WET	e Pn	Z 22:30:11.3	5.7	211.5					
	e Sn	E 22:31:16.1							
GRA1	e Pn	Z 22:30:11.7	5.8	198.2					
	e Sn	E 22:31:17.7							
GEC2	e Sn	E 22:31:17.4	5.8	218.2					
TNS	e Pn	Z 22:30:16.4	6.0	178.2					
	e Sn	E 22:31:25.0							
MOX	e Pn	Z 22:30:24.5	6.8	198.0					
	e Sn	E 22:31:39.4							

BRG	e Pn	Z	22:30:36.2	7.6	209.8
CLL	e Pn	Z	22:30:37.0	7.7	203.7

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/07	03:16:26.2	49.920N	156.470E	33.0N	5.2			SZGRF
2001/02/07	03:16:19.4	49.209N	155.796E	33N	4.9			NEIC

Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	i P	Z 03:28:10.7	76.5	22.9	0.8	16	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/07								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 05:13:57.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/07								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 06:21:59.3							
GRB5	e P	Z 06:21:59.0							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/07								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 10:35:46.1			1.2	30			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/07	15:16: 4.5	50.300N	154.780E	441.4				SZGRF
2001/02/07	15:16:15.3	52.741N	153.889E	427D	5.7			NEIC

Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	i P	Z 15:26:39.8	69.1	22.6	0.9	143			
	e pP	Z 15:28:15.4							

	e PP	Z	15:29:19.6						
RUE	i P	Z	15:26:42.8	69.6	24.5	1.6	656		
CLL	i P	- Z	15:26:49.7			0.8	226	6.4	
	e pP	Z	15:28:24.0						
	e PP	Z	15:29:06.7						
	e S	N	15:35:25.0						
	e sS	E	15:38:26.3						
	e SS	N	15:40:22.8						
	e SSS	N	15:43:38.4						
CLZ	i P	Z	15:26:51.7	71.0	22.4	1.4	472		
BRG	i P	Z	15:26:50.9	71.0	24.3	1.2	124		
IBBN	i P	Z	15:26:52.1	71.2	20.9	1.1	205		
MOX	i P	Z	15:26:55.8	71.8	22.9	0.9	115		
BUG	i P	Z	15:26:57.3	72.1	20.5	1.8	413		
GRA1	i P	Z	15:27:02.1	72.8	22.6	1.6	765		
WET	i P	Z	15:27:02.7	72.9	23.5	0.9	177		
GEC2	i P	Z	15:27:02.5	72.9	23.9	0.8	65		
TNS	i P	Z	15:27:02.6	73.0	21.0	0.9	127		
WLF	i P	Z	15:27:10.5	74.0	19.6	1.6	140		
STU	i P	Z	15:27:09.3	74.2	21.3	0.9	138		
FUR	i P	Z	15:27:09.9	74.2	22.5	1.1	275		
BFO	i P	Z	15:27:12.8	74.8	20.8	0.8	123		

Date Origin Time Lat Long Depth mb Ms ML Source

2001/02/08

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

GRA1 e PKP Z 05:49:16.9

Date Origin Time Lat Long Depth mb Ms ML Source

2001/02/08 05:41:50.2 24.410N 123.230E 33.9 5.6 6.2

2001/02/08 05:41:42.4 24.330N 125.100E 33N 5.6 5.5

Southwestern Ryukyu Islands, Japan

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

CLL i P + Z 05:54:11.1 0.9 23 5.4

e pP Z 05:54:21.6

e PP Z 05:57:13.3

e S Z 06:04:32.0

e PS Z 06:05:44.0

e SS Z 06:10:18.3

e L Z 06:36:16.3

18.0 12980 6.4

BSEG e P Z 05:54:11.8 83.8 56.3 1.8 86 5.7

GEC2 e P Z 05:54:16.0 84.8 58.4 1.1 18 5.2

MOX e P Z 05:54:17.0 84.9 57.0 1.9 66 5.5



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GRA1	e P	Z	05:54:20.5	85.7	56.7	1.7	93	5.7		
	e pP	Z	05:54:30.2							
	e sP	Z	05:54:34.6							
	e PP	Z	05:57:43.1							
	e S	E	06:04:52.1							
	e L	Z	06:37:09.5			18.1	8940		6.2	
FUR	e P	Z	05:54:25.3	86.5	56.6	1.6	127	5.8		
TNS	e P	Z	05:54:28.4	86.8	54.6	1.7	52	5.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/08	06:54:59.3	43.210N	153.360E	33.0N	5.3			SZGRF
2001/02/08	06:55:02.0	43.891N	151.342E	32D	4.8			NEIC

North Pacific Ocean

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 07:07:13.1	80.2	28.0	1.5	37	5.3		
	e	07:07:22.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/08	16:54:39.8	22.070N	70.320E	18.7	5.1			SZGRF
2001/02/08	16:54:40.3	23.631N	70.282E	10G	4.9			NEIC

Southern India

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 17:03:57.6	52.4	97.2	1.5	27	5.1		
	e pP	Z 17:04:02.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/08								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 22:32:42.4							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/09	10:26:15.6	19.057S	176.088W	33N	5.0	5.4		NEIC

Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 10:46:02.5	148.8	13.4					
	e L	Z 11:55:31.4			21.6	1014			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/09								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 13:26:36.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/10	04:08:59.0	53.500N	159.500E	33.0N				SZGRF
2001/02/10	04:08:45.1	53.690N	160.373E	63*	4.6			NEIC

Near east coast of Kamchatka Peninsula, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	i P	Z 04:19:52.0	69.6	18.4					
RUE	i P	Z 04:19:56.0	70.2	20.3					
CLL	i P	Z 04:20:03.0	71.5	19.7					
CLZ	i P	Z 04:20:03.8	71.5	18.2					
IBBN	i P	Z 04:20:04.0	71.6	16.7					
BRG	e P	Z 04:20:04.1	71.7	20.2					
MOX	i P	Z 04:20:08.6	72.4	18.8					
BUG	i P	Z 04:20:09.2	72.5	16.3					
GRA1	i P	Z 04:20:15.3	73.4	18.5					
TNS	i P	Z 04:20:15.0	73.4	16.9					
WET	i P	Z 04:20:16.0	73.6	19.4					
GEC2	i P	Z 04:20:16.2	73.7	19.8					
FUR	e P	Z 04:20:23.1	74.8	18.4					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/10								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 04:55:20.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/10	16:57:40.1	32.500N	23.000E	33.0N	4.1			SZGRF
2001/02/10	16:58:57.1	37.542N	20.972E	41*	4.4			NEIC

Near coast of Libya

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WET	e P	Z 17:02:13.3	13.0	150.2	1.0	6	3.7		
GRA1	e P	Z 17:02:24.2	14.0	146.4	0.8	18	4.3		
BRG	e P	Z 17:02:27.0	14.2	156.8	0.9	6	3.8		

MOX	e P	Z	17:02:31.6	14.7	149.5	0.9	7	3.9
CLL	e P	Z	17:02:33.1	14.9	154.6	1.2	17	4.1
RUE	e P	Z	17:02:42.8	15.8	158.6	1.1	32	4.5
BSEG	e P	Z	17:03:07.8	18.0	151.6			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/10	20:40:50.0			N	4.7			SZGRF

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 20:47:52.1			1.9	29	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/11	02:32:42.9			N	4.8			SZGRF
2001/02/11	02:33:17.6	23.222N	70.523E	10G	4.6			NEIC

Southern India

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 02:42:37.0	52.8	97.4	1.0	10	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/11	21:50:39.6	57.500N	154.000W	33.0N	5.5			SZGRF
2001/02/11	21:50:31.1	57.123N	153.556W	26D	5.2	4.5		NEIC

Kodiak Island, Alaska, United States, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	i P	Z 22:01:33.0	68.2	350.7	1.1	54	5.7		
IBBN	e P	Z 22:01:41.2	69.5	349.3	1.3	64	5.6		
RUE	i P	Z 22:01:43.4	69.9	352.7	1.1	85	5.8		
CLZ	i P	Z 22:01:46.0	70.2	350.8	1.0	66	5.7		
BUG	i P	Z 22:01:45.6	70.3	349.1	1.2	67	5.7		
CLL	i P	Z 22:01:49.9	71.0	352.3	1.1	35	5.4		
BRG	i P	Z 22:01:53.3	71.5	352.9	1.1	38	5.5		
MOX	i P	Z 22:01:53.5	71.5	351.6	1.1	68	5.7		
TNS	i P	Z 22:01:54.2	71.6	349.8	1.1	39	5.4		
GRA1	i P	Z 22:01:59.2	72.4	351.4	1.0	48	5.6		
	e	22:02:03.1							
WET	i P	Z 22:02:03.0	73.1	352.4	1.2	30	5.3		
STU	i P	Z 22:02:03.0	73.1	350.3	1.1	38	5.4		
BFO	i P	Z 22:02:05.0	73.5	349.9	1.3	38	5.3		
GEC2	i P	Z 22:02:05.3	73.5	352.8	0.8	20	5.2		
FUR	i P	Z 22:02:08.0	74.0	351.5	1.0	56	5.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/11	22:04:52.4	52.060N	160.490E	33.0N	4.8			SZGRF
2001/02/11	22:04:53.7	52.627N	159.735E	44*	4.5			NEIC

Off east coast of Kamchatka Peninsula, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 22:16:30.7	74.3	19.2	0.8	8	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/13	03:42:26.9	26.920N	57.770E	33.0N	4.7			SZGRF
2001/02/13	03:42:40.4	28.384N	56.331E	33N	4.6			NEIC

Southern Iran

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 03:50:16.1	40.2	104.9	1.0	15	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/13	14:22: 6.7	13.010N	90.110W	33.0N	5.7	6.7		SZGRF
2001/02/13	14:22:06.0	13.613N	89.069W	13G	5.6	6.5		NEIC

Near coast of Guatemala

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e P	Z 14:34:50.1			1.1	35	5.4		
	e PP	Z 14:38:18.7							
	e S	E 14:45:27.8							
	e PS	E 14:46:30.3							
	e	14:47:51.4							
	e SS	Z 14:51:13.1							
	e SSS	E 14:54:47.2							
	e SSSS	N 14:58:08.3							
	e LV	Z 15:02:45.6							
	e L	Z 15:10:38.2				18.0	25656	6.7	
GRA1	e P	Z 14:34:50.3	86.1	286.6	1.6	103	5.7		
	e PP	Z 14:38:15.8							
	e S	E 14:45:21.9							
	e SS	E 14:51:09.3							
	e L	Z 15:09:59.5			20.7	34522		6.7	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/13	18:28:16.6	28.410N	127.850E	33.0N	5.0			SZGRF
2001/02/13	18:28:09.3	28.687N	129.950E	33N	4.9	4.9		NEIC

Northwest of Ryukyu Islands, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 18:40:43.0	84.6	50.6	1.1	12	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/13	19:28:30.6	5.480S	101.680E	33.0N	6.5	6.9		SZGRF
2001/02/13	19:28:31.8	4.618S	102.937E	36G	6.2	7.2		NEIC

Southwest of Sumatera, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e P	Z 19:41:44.7			3.0	849	6.4		
	e PP	Z 19:45:23.1							
	e PPP	Z 19:47:41.5							
	e SKKSac	E 19:52:34.7							
	e S	N 19:52:50.7							
	e PS	Z 19:54:17.7							
	e SS	N 19:59:07.2							
	e SSSS	N 20:05:49.5							
	e LV	Z 20:15:27.5							
	e L	Z 20:31:11.3			20.0	66726		7.1	
GRA1	e P	Z 19:41:48.4	94.6	91.7	2.3	613	6.5		
	e PP	Z 19:45:36.3							
	e S	N 19:53:03.9							
	e SS	N 19:59:31.2							
	e L	Z 20:32:30.1			20.3	44022		6.9	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/14								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 01:52:52.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/14								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e (P)	Z 03:51:39.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/14	04:45:39.9	5.440S	101.340E	33.0N	5.1			SZGRF
2001/02/14	04:45:35.3	5.105S	102.472E	33N	5.6	5.3		NEIC

Southwest of Sumatera, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 04:58:55.8	94.7	92.4	0.8	8	5.1		
	e	04:59:06.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/14	07:27:19.0			N	5.2			SZGRF

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 07:38:33.6			0.9	16	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/14	13:36:46.3	49.500N	152.000E	33.0N	6.2			SZGRF
2001/02/14	13:36:39.4	48.585N	153.263E	146D	5.8			NEIC

Northwest of Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	i P	Z 13:47:55.2	72.8	24.7	1.0	157	6.1		
RUE	i P	Z 13:47:57.1	73.2	26.7	1.2	378	6.4		
CLL	i P	+ Z 13:48:04.3			1.0	324	6.3		
	e PcP	Z 13:48:19.9							
	e pP	Z 13:48:44.7							
	e sP	Z 13:49:01.1							
BRG	i P	Z 13:48:05.0	74.6	26.6	1.1	130	5.9		
CLZ	i P	Z 13:48:06.4	74.7	24.4	1.1	328	6.3		
IBBN	i P	Z 13:48:07.1	74.9	22.8	0.8	254	6.3		
MOX	i P	Z 13:48:10.4	75.5	25.1	1.2	215	6.1		
BUG	i P	Z 13:48:12.5	75.8	22.4	1.1	273	6.2		
GRA1	i P	Z 13:48:16.4	76.4	24.7	0.8	386	6.6		
WET	i P	Z 13:48:16.7	76.5	25.7	1.2	266	6.3		
GEC2	i P	Z 13:48:16.2	76.5	26.2	1.1	79	5.8		
TNS	i P	Z 13:48:17.3	76.7	23.1	0.9	224	6.3		
FUR	i P	Z 13:48:24.2	77.8	24.6	1.0	376	6.5		
STU	i P	Z 13:48:23.9	77.8	23.4	0.9	203	6.2		
BFO	i P	Z 13:48:27.3	78.4	22.8	1.0	211	6.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/14								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 14:24:11.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source			
2001/02/14											
		Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
		GRA1	e PKP	Z 14:36:46.2							
			e L	Z 15:45:43.1			20.0	2243			
Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source			
2001/02/14	18:09:27.0	30.170N	140.000E	33.0N	5.6			SZGRF			
2001/02/14	18:10:01.3	29.174N	139.438E	386D	4.9			NEIC			
Southeast of Honshu, Japan											
		Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
		GRA1	e P	Z 18:22:14.7	88.7	43.3	1.3	43	5.6		
Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source			
2001/02/15	06:37:48.0	44.440N	150.170E	33.0N	4.9			SZGRF			
2001/02/15	06:37:36.2	45.220N	149.710E	33N	4.7			NEIC			
East of Kuril Islands, Russia											
		Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
		GRA1	e P	Z 06:49:50.7	78.5	28.5	1.1	17	4.9		
Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source			
2001/02/15											
		Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
		GRA1	e PKP	Z 13:05:37.1							
Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source			
2001/02/16											
		Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
		GRA1	e PKP	Z 04:41:17.1							
Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source			
2001/02/16	05:59:09.2	7.108S	117.578E	519D	5.9			NEIC			

Bali Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML	
CLL	e Pdiff	Z 06:12:15.2								
	e pPdiff	Z 06:14:16.5								
	e sPdiff	Z 06:15:06.3								
	e	06:15:31.4								
	e PKP	Z 06:16:31.3								
	e PP	Z 06:16:40.9								
	e pPP	Z 06:18:30.6								
	e PPP	Z 06:19:00.7								
	e sPP	Z 06:19:28.5								
	e sPPP	Z 06:21:38.2								
	e Sdiff	N 06:23:26.0								
	e SP	Z 06:25:04.0								
	e PS	Z 06:26:08.3								
	e PKKPbc	Z 06:28:03.0								
	e sSP	Z 06:28:40.6								
	e SS	Z 06:31:03.2								
	e sSS	Z 06:34:03.6								
	e L	Z 07:03:23.1			22.0	504	5.0			
	GRA1	e PKP	Z 06:16:34.7	106.0	82.0					
		e PP	Z 06:16:55.3							
e SKSac		E 06:22:17.0								
e Sdiff		N 06:23:39.0								
e SP		Z 06:25:19.1								
e SS		E 06:31:18.8								

Date Origin Time Lat Long Depth mb Ms ML Source  
2001/02/16

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e (P)	Z 06:28:00.7							

Date Origin Time Lat Long Depth mb Ms ML Source  
2001/02/16

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 09:34:49.2							

Date Origin Time Lat Long Depth mb Ms ML Source  
2001/02/16



Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 12:28:43.0							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/16								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e P	Z 13:32:58.5							
	e pP	Z 13:33:51.4							
	e PP	Z 13:36:57.0							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/16	13:20:19.7			N				SZGRF
2001/02/16	13:19:46.8	14.931S	70.240W	208D	5.3			NEIC

Central Peru

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 13:33:44.4	96.0	253.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/16								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 16:49:08.7							
	e	16:49:16.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/16								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 18:04:27.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/16								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 18:10:59.6							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/16	23:12:57.8	24.320N	123.870E	33.0N	5.3			SZGRF
2001/02/16	23:13:08.8	24.653N	122.557E	106D	5.3			NEIC

Southwestern Ryukyu Islands, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 23:25:30.3	84.0	58.3	1.0	21	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/17	01:17:29.4	13.720N	89.920W	39.4	5.3	5.2		SZGRF
2001/02/17	01:17:31.3	13.029N	88.919W	33N	5.1	4.8		NEIC

El Salvador

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 01:30:09.8	86.5	286.1	1.7	41	5.3		
	e	01:30:26.2							
	e L	Z 02:04:04.4			21.7	958		5.2	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/17								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 08:36:43.8			1.3	17			
	e	08:36:46.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/17								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 13:29:40.4							
	e	13:29:44.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/17	20:11:42.1	54.810N	132.710W	33.0N	6.0	5.9		SZGRF
2001/02/17	20:11:29.3	54.074N	133.704W	10G	5.5	5.9		NEIC

Queen Charlotte Islands, Canada, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z 20:22:32.8	68.0	338.2	2.1	405	6.3		
IBBN	e P	Z 20:22:38.4	68.9	336.9	2.5	892	6.6		

BUG	e P	Z	20:22:42.2	69.6	336.8	2.0	220	6.0		
CLZ	e P	Z	20:22:44.9	69.9	338.5	2.1	451	6.3		
RUE	e P	Z	20:22:45.8	70.1	340.4	2.1	452	6.2		
WLF	e P	Z	20:22:51.1	70.9	336.4	2.0	130	5.7		
TNS	e P	Z	20:22:51.1	71.0	337.6	2.0	205	5.9		
CLL	e P	Z	20:22:50.9			2.1	244	6.0		
	e S	N	20:32:12.8							
	e PS	Z	20:32:24.6							
	e SS	N	20:36:52.9							
	e SSS	N	20:40:14.6							
	e LV	Z	20:45:15.4							
	e L	Z	20:51:45.8			20.0	5585		5.8	
MOX	e P	Z	20:22:53.0	71.3	339.4	1.9	146	5.8		
BRG	e P	Z	20:22:55.0	71.6	340.7	2.0	261	6.0		
GRA1	e P	Z	20:22:58.4	72.1	339.3	1.9	219	6.0		
	e S	N	20:32:20.6							
	e SS	N	20:37:11.8							
	e L	Z	20:54:45.9			19.3	6491		5.9	
STU	e P	Z	20:23:00.5	72.5	338.2	1.9	112	5.7		
BFO	e P	Z	20:23:01.3	72.7	337.8	2.3	367	6.1		
WET	e P	Z	20:23:03.1	73.0	340.3	2.0	192	5.9		
GEC2	e P	Z	20:23:06.0	73.5	340.8	2.0	170	5.8		
FUR	e P	Z	20:23:06.6	73.6	339.4	2.0	440	6.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/17	20:55:32.1	11.950N	62.340W	33.0N	5.1			SZGRF
2001/02/17	20:55:28.3	10.783N	61.486W	33N	4.9			NEIC

Windward Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 21:06:42.8	70.6	263.8	1.2	20	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/17								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e (P)	Z 21:30:34.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/18								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 01:26:07.6			1.2	11			

e 01:26:13.0

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/18	13:04:53.2	47.439S	32.472E	10G	5.5	5.7		NEIC

Prince Edward Islands, South Africa, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 13:18:32.4	98.9	165.6	0.8	7	5.5		
	e pP	Z 13:18:37.9							
	e sP	Z 13:18:41.6							
CLL	e PP	Z 13:22:32.3							
	e L	Z 14:00:39.8							
	e Pdiff	Z 13:18:39.8							
	e PP	Z 13:22:44.8							
	e Sdiff	E 13:30:20.2							
	e PS	N 13:31:49.7							
	e PPS	Z 13:32:22.4							
	e SS	Z 13:37:03.8							
	e LV	Z 13:52:23.1							
	e L	Z 14:06:04.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/18								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 15:35:58.3							
	e	15:36:00.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/18	16:45:33.8	17.930N	74.140E	33.0N	4.7			SZGRF

Southern India

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 16:55:30.6	59.0	98.8	1.2	10	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/19	02:10:46.6			G	4.9			SZGRF

Southern India

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z 02:20:14.0							

CLZ	e P	Z	02:20:31.5						
GRA1	e P	Z	02:20:25.6	1.1	15	4.9			
MOX	e P	Z	02:20:24.2						

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/19	08:24: 6.0	20.830N	71.430E	33.0N	5.8	5.2		SZGRF
2001/02/19	08:24:19.9	23.519N	70.056E	10G	5.2	5.0		NEIC

Southern India

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 08:33:35.5	52.3	97.5	1.5	152	5.8		
	e S	E 08:41:04.0							
	e L	Z 09:03:19.8			16.4	1760		5.2	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/20								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 21:47:29.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/21	15:20:50.2	7.250S	70.080W	33.0N				SZGRF
2001/02/21	15:20:21.6	11.127S	74.408W	33*	5.5	5.2		NEIC

Western Brazil

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 15:33:46.5	95.7	259.5					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/21								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 15:35:39.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/21	16:59:15.4			N				SZGRF
2001/02/21	16:59:56.0	33.462N	137.316E	356*	4.9			NEIC

Southeast of Honshu, Japan

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Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z 17:11:39.8	82.1	44.7					
CLL	e P	Z 17:11:40.2	82.2	44.1					
CLZ	e P	Z 17:11:44.3	82.9	42.2					
IBBN	e P	Z 17:11:47.4	83.6	40.3					
GEC2	e P	Z 17:11:47.3	83.6	44.4					
BFO	e P	Z 17:12:01.1	86.4	40.5					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/21	17:20:10.5			G				SZGRF
2001/02/21	17:20:08.0	44.171N	20.352E	10G	4.9			NEIC

Northwestern Balkan Peninsula

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 17:21:45.9	6.5	133.1					
WET	e Pn	Z 17:21:53.8	7.1	131.3					
GRA1	e Pn	Z 17:22:11.8	8.3	128.1					
MOX	e Pn	Z 17:22:17.3	8.8	134.3					
BFO	e Pn	Z 17:22:23.6	9.3	112.1					
TNS	e Pn	Z 17:22:34.4	10.1	122.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/21								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 20:55:40.4			0.9	21			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/21								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 23:04:13.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/22								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 02:22:18.2							

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Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/22	03:20:23.8	32.010N	50.370E	33.0N	4.9			SZGRF
2001/02/22	03:19:57.3	29.245N	51.937E	33N	4.8			NEIC

Northern and central Iran

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 03:27:04.4	36.8	108.3	1.0	16	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/22	05:49:28.4	44.810N	8.430E	10.0G			3.0	SZGRF

Northern Italy

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z 05:50:22.9	3.5	178.8					3.0
	e Sn	N 05:51:04.1							
WET	e Pn	Z 05:50:46.8	5.3	216.7					
GEC2	e Pn	Z 05:50:49.0	5.4	223.7					
TNS	e Pn	Z 05:50:48.9	5.4	180.1					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/22	08:02:39.6	17.090N	89.600W	33.0	4.8			SZGRF
2001/02/22	08:02:58.0	17.464N	83.531W	33N	5.3	4.7		NEIC

Mexico-Guatemala border region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 08:15:06.0	79.8	285.0	1.0	10	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/22	15:41:59.1	16.140S	174.154W	158D	4.6			NEIC

Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 16:01:23.1	146.2	9.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/22	22:23:46.2	33.510N	140.990E	33.0N	5.5			SZGRF

Southeast of Honshu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z 22:36:05.3	82.5	42.1					
BSEG	e P	Z 22:36:06.7	82.7	39.6					

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BRG	e P	Z	22:36:10.8	83.6	42.0	1.1	13	5.1
CLL	e P	Z	22:36:10.8	83.7	41.4	0.9	32	5.5
CLZ	e P	Z	22:36:15.1	84.3	39.5	1.2	41	5.5
MOX	e P	Z	22:36:17.1	84.8	40.3			
GEC2	e P	Z	22:36:19.2	85.2	41.7			
WET	e P	Z	22:36:20.2	85.4	41.2			
GRA1	e P	Z	22:36:21.9	85.6	40.0	1.3	74	5.7
BUG	e P	Z	22:36:22.5	85.8	37.2			
TNS	e P	Z	22:36:24.8	86.4	38.0	1.6	36	5.3
WLF	e P	Z	22:36:31.8	87.7	36.3	1.6	46	5.6
BFO	e P	Z	22:36:32.8	87.9	37.8	1.0	24	5.5

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/23	00:09:14.8	28.600N	102.000E	10.7	5.6	5.0		SZGRF
2001/02/23	00:09:23.3	29.521N	101.141E	33N	5.7	5.4		NEIC

Sichuan, China

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z	00:20:06.6	65.5	72.8	1.0	46	5.6		
BRG	e P	Z	00:20:08.8	65.9	72.3	0.9	30	5.5		
CLL	e P	Z	00:20:11.5	66.3	71.8	1.0	33	5.5		
	i pP	Z	00:20:14.2							
	e PPP	Z	00:24:20.6							
	e S	Z	00:29:00.4							
	e SS	Z	00:33:21.5							
	e SSS	Z	00:36:31.3							
	e LV	Z	00:41:26.4							
	e L	Z	00:50:07.0			18.0	2443		5.4	
GEC2	e P	Z	00:20:14.3	66.6	71.3	1.0	18	5.3		
BSEG	e P	Z	00:20:16.9	67.0	71.0	0.9	69	5.9		
WET	e P	Z	00:20:16.9	67.0	70.8	1.0	26	5.4		
MOX	e P	Z	00:20:18.4	67.3	70.6	1.0	19	5.3		
CLZ	e P	Z	00:20:20.9	67.7	70.2	0.9	52	5.7		
GRA1	e P	Z	00:20:22.5	67.9	69.9	0.9	48	5.7		
	e pP	Z	00:20:25.5							
	e S	N	00:29:29.6							
	e L	Z	00:50:57.3			21.7	1096		5.0	
FUR	e P	Z	00:20:25.7	68.4	69.4	0.9	100	6.1		
IBBN	e P	Z	00:20:29.0	69.0	68.5	1.0	39	5.5		
TNS	e P	Z	00:20:31.3	69.4	68.3	0.9	26	5.3		
BUG	e P	Z	00:20:32.8	69.6	67.9	1.1	39	5.5		
BFO	e P	Z	00:20:35.6	70.1	67.5	1.0	32	5.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/23	23:53:43.3	55.750N	168.760E	33.0G	5.3			SZGRF



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2001/02/23 23:53:28.2 53.706N 168.995E 33N 5.2 4.9 NEIC  
Komandorsky Islands, Russia, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z 00:04:45.5	70.9	13.2	0.9	28	5.5		
RUE	e P	Z 00:04:50.9	71.8	15.1	1.0	35	5.4		
IBBN	e P	Z 00:04:56.9	72.8	11.5	0.9	40	5.6		
CLZ	e P	Z 00:04:57.8	73.0	13.0	1.1	35	5.4		
CLL	e P	Z 00:04:57.8	73.1	14.6	1.0	29	5.3		
BRG	e P	Z 00:04:59.7	73.3	15.1	1.0	24	5.3		
MOX	e P	Z 00:05:03.0	73.9	13.7	1.0	28	5.3		
TNS	e P	Z 00:05:08.7	74.8	11.8	1.0	9	4.9		
GRA1	e P	Z 00:05:09.6	74.9	13.4	0.9	31	5.4		
WET	e P	Z 00:05:11.1	75.2	14.4	0.9	32	5.3		
GEC2	e P	Z 00:05:11.8	75.3	14.8	0.9	22	5.2		
BFO	e P	Z 00:05:18.7	76.7	11.6	1.0	15	5.0		

Date Origin Time Lat Long Depth mb Ms ML Source  
2001/02/24

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 00:12:55.9							

Date Origin Time Lat Long Depth mb Ms ML Source  
2001/02/24

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 01:38:00.3			1.2	26			

Date Origin Time Lat Long Depth mb Ms ML Source  
2001/02/24 07:23:50.8 1.150N 125.680E 33.0N 7.3 SZGRF  
2001/02/24 07:23:49.0 1.463N 126.268E 35G 6.6 7.0 NEIC  
Northern Molucca Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e Pdiff	Z 07:37:42.3	102.3	71.0					
BRG	e Pdiff	Z 07:37:44.2	102.7	71.4					
	e PP	Z 07:41:58.7							
CLL	i Pdiff	+ Z 07:37:46.0			1.1	24			
	i	07:37:49.8			1.5	156			
	e PP	Z 07:42:03.5							
	e PPP	Z 07:44:21.0							
	e SKSac	E 07:48:20.3							

	e Sdiff	N	07:49:30.0								
	e PS	Z	07:50:53.9								
	e PPS	E	07:52:04.8								
	e PKKPbc	Z	07:53:54.3								
	e SS	E	07:56:42.2								
	e L	Z	08:29:18.0			22.0	92816		7.3		
GEC2	e Pdiff	Z	07:37:47.8	103.5	71.7						
	e PP	Z	07:42:04.9								
BSEG	e Pdiff	Z	07:37:48.9	103.7	67.7						
WET	e Pdiff	Z	07:37:49.7	103.9	70.9						
MOX	e Pdiff	Z	07:37:51.0	104.2	69.6						
	e PP	Z	07:42:10.1								
CLZ	e Pdiff	Z	07:37:52.1	104.5	68.2						
GRA1	e Pdiff	Z	07:37:53.4	104.7	69.5						
	e PP	Z	07:42:10.1								
	e PKKP	Z	07:53:55.9								
	e SS	N	07:57:44.6								
	e L	Z	08:27:30.3			21.9	88756		7.3		
FUR	e Pdiff	Z	07:37:55.8	105.2	69.9						
	e PP	Z	07:42:16.4								
IBBN	e Pdiff	Z	07:37:58.5	105.8	65.9						
TNS	e Pdiff	Z	07:38:00.2	106.2	67.0						
	e PP	Z	07:42:24.7								
BUG	e Pdiff	Z	07:38:01.2	106.4	65.7						
BFO	e Pdiff	Z	07:38:03.5	107.0	67.4						

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/24	09:21:23.8	43.130N	17.440E	10.0G			3.8	SZGRF
2001/02/24	09:21:25.6	43.895N	17.041E	10G				NEIC

Northwestern Balkan Peninsula

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z	09:22:48.2	5.5	153.8					3.8
	e Sn	N	09:23:49.6							
FUR	e Pn	Z	09:22:53.7	5.8	134.7					
WET	e Pn	Z	09:22:56.8	6.0	149.8					
BFO	e Pn	Z	09:23:15.0	7.5	123.1					
	e Sn	N	09:24:36.0							
MOX	e Pn	Z	09:23:19.5	7.7	149.4					
TNS	e Pn	Z	09:23:30.8	8.6	134.0					
	e Sn	N	09:25:05.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/24	16:33:44.2	1.594N	126.335E	33N	5.8	5.7		NEIC

Luzon, Philippine Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e Pdiff	Z	16:47:39.1	102.2	70.8					
CLL	e Pdiff	Z	16:47:40.4			1.1	10			
	e		16:49:17.9							
	e PP	Z	16:51:48.4							
	e Sdiff	N	16:59:27.8							
	e PS	Z	17:01:10.9							
	e L	Z	17:39:33.2			18.0	4079		6.0	
BRG	e Pdiff	Z	16:47:41.5	102.6	71.3					
BSEG	e Pdiff	Z	16:47:45.6	103.6	67.6					
MOX	e Pdiff	Z	16:47:48.1	104.1	69.4					
CLZ	e Pdiff	Z	16:47:49.8	104.4	68.1					
GRA1	e L	Z	17:37:53.1	104.7	69.3	21.9	4102		5.9	
IBBN	e Pdiff	Z	16:47:55.3	105.7	65.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/24	17:58:44.9	19.030S	68.050W	121.3	5.7			SZGRF
2001/02/24	17:58:36.9	20.049S	68.495W	114D	5.3			NEIC

Chile-Bolivia border region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BUG	e P	Z	18:11:57.0	97.1	246.6	1.3	35	5.7		
	e pP	Z	18:12:28.4							
TNS	e P	Z	18:11:58.6	97.3	247.3	1.2	27	5.7		
IBBN	e P	Z	18:11:59.8	97.7	247.1	1.4	50	6.0		
	e PP	Z	18:15:57.6							
GRA1	e P	Z	18:12:05.4	98.8	249.3	1.0	13	5.6		
	e PP	Z	18:16:04.9							
CLZ	e P	Z	18:12:06.3	99.1	249.0	1.1	16	5.7		
	e pP	Z	18:12:37.7							
	e PP	Z	18:16:04.9							
MOX	e P	Z	18:12:08.0	99.4	249.7	1.7	21	5.6		
BSEG	e P	Z	18:12:09.4	99.8	249.2	0.9	10	5.6		
CLL	e P	Z	18:12:12.8	100.4	250.8	1.1	12	5.5		
	e pP	Z	18:12:43.5							
	e PP	Z	18:16:14.9							
RUE	e P	Z	18:12:16.4	101.2	251.6	1.1	15	5.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/24	20:05:19.0	35.110N	90.710E	33.0N	4.8			SZGRF
2001/02/24	20:05:29.8	35.418N	87.673E	33N	4.6			NEIC

Qinghai, China

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
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GRA1	e P	Z	20:15:06.3	55.6	73.9	1.2	12	4.8
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Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/24	21:53:51.0	37.510N	144.790E	33.0N	5.5	5.8		SZGRF
2001/02/24	21:53:54.2	37.325N	142.044E	33N	5.3	5.5		NEIC

Off east coast of Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z	22:06:02.0	79.6	39.4	1.4	57	5.4		
BSEG	e P	Z	22:06:02.0	79.7	37.1					
BRG	e P	Z	22:06:08.0	80.8	39.3	1.6	48	5.4		
CLL	i P	- Z	22:06:07.8			1.0	49	5.4		
	e PP	Z	22:09:04.3							
	e PPP	Z	22:10:58.4							
	e S	N	22:16:08.4							
	e ScS	Z	22:16:38.4							
	e SS	E	22:21:13.4							
	e L	Z	22:47:07.2			18.0	5677		6.0	
CLZ	e P	Z	22:06:11.2	81.4	36.9	1.5	82	5.7		
MOX	e P	Z	22:06:13.2	81.8	37.7	1.0	15	5.2		
IBBN	e P	Z	22:06:13.2	81.9	35.1	1.3	51	5.6		
WET	e P	Z	22:06:17.5	82.5	38.4	1.5	41	5.4		
GRA1	e P	Z	22:06:19.1	82.8	37.3	1.5	112	5.9		
	e PP	Z	22:09:36.8							
	e S	N	22:16:25.8							
	e ScS	E	22:16:39.2							
	e SS	N	22:21:40.5							
	e L	Z	22:48:42.7			18.0	3711		5.8	
TNS	e P	Z	22:06:21.6	83.4	35.4	1.7	34	5.3		
FUR	e P	Z	22:06:24.3	84.0	37.3	0.8	36	5.6		
BFO	e P	Z	22:06:29.4	85.0	35.2	1.5	63	5.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/25	02:21:39.6	36.400N	72.100E	194.0N	6.5			SZGRF
2001/02/25	02:21:59.9	36.477N	70.904E	202D	5.9			NEIC

Afghanistan-Tajikistan border region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	02:29:37.7	42.5	87.0	0.8	594	6.4		
	e ScP	Z	02:34:55.6							
	e S	N	02:35:49.9							
RUE	e P	Z	02:29:37.4	42.5	88.6	1.3	1126	6.4		
	e ScP	Z	02:34:54.8							
	e S	N	02:35:49.9							
GEC2	e P	Z	02:29:39.8	42.8	84.7	1.7	448	5.9		

	e ScP	Z	02:34:55.1									
	e S	N	02:35:57.8									
CLL	i P	+ Z	02:29:41.5			1.0		424	6.1			
	e pP	Z	02:30:24.8									
	e sP	Z	02:30:49.1									
	e PP	Z	02:31:25.6									
	e PcP	Z	02:31:30.6									
	e pPP	Z	02:32:00.8									
	e PPP	Z	02:32:26.0									
	e ScP	Z	02:34:56.0									
	e S	E	02:35:54.9									
	e sS	E	02:37:10.4									
	e SS	Z	02:39:23.2									
WET	e P	Z	02:29:43.6	43.3	84.4	1.8		569	6.0			
	e ScP	Z	02:34:59.4									
	e S	N	02:36:03.7									
MOX	e P	Z	02:29:49.5	43.9	85.1	1.6		1059	6.5			
	e ScP	Z	02:35:00.5									
	e S	N	02:36:12.8									
GRA1	e P	Z	02:29:52.9	44.3	83.8	1.7		2563	6.9			
	e pP	Z	02:30:36.1									
	e sP	Z	02:30:57.3									
	e S	N	02:36:18.4									
FUR	e P	Z	02:29:53.5	44.4	82.3	1.6		2172	6.8			
	e S	N	02:36:18.2									
BSEG	e P	Z	02:29:54.3	44.5	87.5	1.2		1289	6.7			
	e S	N	02:36:18.4									
CLZ	e P	Z	02:29:54.9	44.6	85.4	1.0		788	6.7			
	e ScP	Z	02:35:06.4									
	e S	N	02:36:20.0									
TNS	e P	Z	02:30:05.5	46.0	82.4	1.8		692	6.5			
	e ScP	Z	02:35:09.8									
	e S	N	02:36:43.6									
BFO	e P	Z	02:30:07.6	46.3	80.6	1.0		194	6.2			
	e ScP	Z	02:35:10.1									
	e S	N	02:36:46.4									
BUG	e P	Z	02:30:10.0	46.6	82.8	1.7		1262	6.8			
	e ScP	Z	02:35:12.0									
	e S	N	02:36:51.5									

Date  
2001/02/25

Origin Time

Lat

Long

Depth

mb

Ms

ML

Source

Sta  
GRA1

Phase  
e PKP

Time  
Z 09:40:02.5

Dist

BAz

T[s]

A[nm]

mb

MS

ML

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/25	18:34:40.1	43.270N	7.930E	10.0G			4.9	SZGRF
2001/02/25	18:34:42.1	43.455N	7.466E	9	4.8			NEIC

Near south coast of France

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z	18:35:54.7	4.9	187.3					4.8
	e Sn	N	18:36:50.6							
WLF	e Pn	Z	18:36:15.0	6.3	171.2					4.9
	e Sg	N	18:38:08.2							
GRA1	e Pn	Z	18:36:18.6	6.7	203.9					5.1
TNS	e Pn	Z	18:36:20.6	6.8	186.0					
WET	e Pn	Z	18:36:20.5	6.8	215.3					
MOX	e Pn	Z	18:36:31.5	7.7	203.0					
BUG	e Pn	Z	18:36:38.8	8.0	179.0					
BRG	e Pn	Z	18:36:45.0	8.6	213.1					
CLL	e Pn	Z	18:36:45.8	8.7	207.6					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/26								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e PKP	Z	00:24:38.8							
BRG	e PKP	Z	00:24:29.7							
BSEG	e PKP	Z	00:24:22.4							
CLL	e PKP	Z	00:24:29.1							
CLZ	e PKP	Z	00:24:29.2							
FUR	e PKP	Z	00:24:38.1							
GRA1	e PKP	Z	00:24:34.7							
IBBN	e PKP	Z	00:24:28.4							
MOX	e PKP	Z	00:24:31.7							
TNS	e PKP	Z	00:24:34.3							
WLF	e PKP	Z	00:24:37.0							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/26	02:22:51.3	25.048N	127.106E	33N	4.9			NEIC

Southeast of Ryukyu Islands, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	02:35:21.2	84.1	56.9					
BSEG	e P	Z	02:35:23.2	84.2	54.4					
CLL	e P	Z	02:35:22.9	84.3	56.2					
CLZ	e P	Z	02:35:29.3	85.3	54.3					
MOX	e P	Z	02:35:29.1	85.4	55.1					

GRA1	e P	Z	02:35:33.0	86.2	54.8
FUR	e P	Z	02:35:37.2	87.0	54.7

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/26	05:57:44.1	46.900N	146.200E	387.3	6.2			SZGRF
2001/02/26	05:58:22.2	46.831N	144.517E	390D	5.8			NEIC

Northwest of Kuril Islands, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	06:09:07.8	72.0	31.0	1.0	164	6.1		
	e S	N	06:17:57.3							
RUE	e P	Z	06:09:08.5	72.2	33.0	1.0	227	6.2		
	e S	N	06:17:57.3							
CLL	i P	+ Z	06:09:15.4	73.4	32.8	0.9	265	6.4		
	e pP	Z	06:10:43.8							
	e sP	Z	06:11:18.5							
	e PP	Z	06:12:06.3							
	e sPP	Z	06:14:01.1							
	e S	E	06:18:03.1							
	e sS	E	06:20:41.0							
	e SS	E	06:22:59.7							
	e sSSS	N	06:28:38.9							
	e L	Z	06:43:23.6							
BRG	e P	Z	06:09:15.8	73.4	32.8	1.1	1020	5.8		5.1
	e S	N	06:18:12.5							
CLZ	e P	Z	06:09:18.4	73.8	30.7	1.4	418	6.3		
	e S	N	06:18:17.9							
IBBN	e P	Z	06:09:20.3	74.2	29.2	1.0	256	6.2		
	e S	N	06:18:25.5							
MOX	e P	Z	06:09:21.6	74.4	31.4	1.4	218	6.0		
	e S	N	06:18:25.5							
BUG	e P	Z	06:09:25.4	75.1	28.7	1.5	442	6.4		
	e S	N	06:18:29.8							
WET	e P	Z	06:09:26.9	75.3	31.9	1.0	219	6.2		
	e S	N	06:18:35.2							
GRA1	e P	Z	06:09:27.5	75.4	31.0	0.9	313	6.4		
	e pP	Z	06:10:55.6							
	e sP	Z	06:11:32.6							
	e PPP	Z	06:14:16.6							
	e S	N	06:18:36.3							
TNS	e P	Z	06:09:29.5	75.8	29.3	1.1	187	6.1		
	e S	N	06:18:40.6							
FUR	e P	Z	06:09:34.7	76.7	30.8	1.0	344	6.4		
	e S	N	06:18:50.4							
WLF	e P	Z	06:09:36.0	77.0	27.8					
	e S	N	06:18:56.9							
BFO	e P	Z	06:09:38.8	77.5	29.0	1.1	215	6.2		
	e S	N	06:19:00.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/26	06:08:40.5	38.560N	142.810E	31.9		5.4		GRSN

Near east coast of eastern Honshu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i P	Z 06:20:46.6	80.0	37.6					
	e pP	Z 06:20:55.5							
	e sP	Z 06:20:59.5							
	e PP	Z 06:23:53.4							
	e L	Z 07:01:54.4			18.0	1424		5.4	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/26	12:46:55.7	23.704S	176.751W	78D	4.7			NEIC

South of Fiji Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKP	Z 13:06:36.5	149.3	12.8					
IBBN	e PKP	Z 13:06:41.8	151.2	8.6					
CLZ	e PKP	Z 13:06:41.6	151.3	13.7					
CLL	i PKPbc	+ Z 13:06:41.6	149.0	23.3	0.8	29			
	e pPKPbc	Z 13:07:05.6							
BRG	e PKP	Z 13:06:42.3	151.6	20.9					
MOX	e PKP	Z 13:06:43.5	152.3	16.6					
TNS	e PKP	Z 13:06:45.8	153.2	10.6					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/26	14:43:26.9	36.860N	70.160E	33.0N	4.8			SZGRF
2001/02/26	14:43:37.1	36.582N	71.083E	240D	4.5			NEIC

Hindu Kush, Afghanistan, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 14:51:28.1	44.3	83.6	1.3	26	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/26	23:29:32.6			N				SZGRF
2001/02/26	23:29:13.1	24.369N	125.214E	33N	5.0			NEIC

Southwestern Ryukyu Islands, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 23:42:02.3	85.7	56.6					



Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/27	01:46:1.8			N	4.9			SZGRF
2001/02/27	01:46:05.9	26.553N	90.548E	22D	4.9			NEIC

Bangladesh

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 01:56:37.6	63.4	79.5			4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/27								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 03:36:21.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/27								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 04:47:05.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/27								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e (PKPdf)	Z 12:30:18.8							
	i PKPbc	+ Z 12:30:22.8			1.1	43			
	e PKPab	Z 12:30:27.6			1.0	47			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/28								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e Pdiff	Z 09:48:51.9			1.3	23			
	e PP	Z 09:53:27.0							
	e Sdiff	N 10:00:26.4							
	e PS	Z 10:01:50.7							
	e SS	N 10:07:30.5							
	e L	Z 10:37:25.4			20.0	2950	5.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/28	10:31:05.9	6.942S	155.843E	44D	5.4	5.4		NEIC

Bougainville - Solomon Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e PKP	Z	10:50:03.3	124.9	48.1					
	e		10:50:16.6							
BSEG	e PKP	Z	10:50:04.3	125.4	43.6					
	e		10:50:17.7							
BRG	e PKP	Z	10:50:04.9	125.9	49.1					
	e		10:50:18.4							
CLL	i PKPpdf	+ Z	10:50:05.2			0.8	51			
	e pPKPpdf	Z	10:50:18.8							
CLZ	e PKP	Z	10:50:07.2	126.9	44.7					
	e		10:50:20.6							
MOX	e PKP	Z	10:50:07.3	127.2	46.7					
	e		10:50:20.9							
WET	e PKP	Z	10:50:08.5	127.6	49.0					
	e		10:50:21.8							
IBBN	e PKP	Z	10:50:08.1	127.7	41.5					
GRA1	e PKP	Z	10:50:08.8	128.0	46.8					
	e		10:50:22.5							
BUG	e PKP	Z	10:50:10.2	128.5	41.4					
	e		10:50:23.8							
TNS	e PKP	Z	10:50:10.7	128.9	43.4					
	e		10:50:24.6							
FUR	e PKP	Z	10:50:11.0	129.0	47.8					
	e		10:50:25.2							
BFO	e PKP	Z	10:50:13.4	130.3	44.4					
	e		10:50:27.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/28	12:30:17.3	22.008S	170.204E	33N	5.9	6.5		NEIC

Southeast of Loyalty Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e PKP	Z	12:49:51.3	144.6	39.8					
BSEG	e PKP	Z	12:49:51.1	144.6	33.4					
BRG	e PKP	Z	12:49:54.6	145.7	41.5					
CLL	e PKPbc	Z	12:49:54.6			1.1	967			
	e pPKPbc	Z	12:50:10.8							
	e PP	Z	12:53:16.8							
	e		13:04:20.3							
	e PPS	Z	13:05:57.0							

	e	SS	E	13:12:16.2							
	e	PSPS	E	13:13:27.3							
	e	SSS	E	13:17:30.2							
	e	L	Z	14:02:34.8			18.0	12443		6.7	
CLZ	e	PKP	Z	12:49:57.1	146.3	35.2					
IBBN	e	PKP	Z	12:49:57.8	146.8	30.7					
MOX	e	PKP	Z	12:49:58.2	146.8	38.2					
WET	e	PKP	Z	12:50:00.0	147.5	41.6					
BUG	e	PKP	Z	12:50:00.8	147.7	30.6					
GRA1	e	PKP	Z	12:50:00.8	147.7	38.5					
TNS	e	PKP	Z	12:50:02.6	148.4	33.6					
FUR	e	PKP	Z	12:50:04.1	148.9	40.2					
BFO	e	PKP	Z	12:50:06.4	150.0	35.2					

Date Origin Time Lat Long Depth mb Ms ML Source  
 2001/02/28 13:00:51.8 22.018S 170.264E 33N 5.4  
 Southeast of Loyalty Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e PKP	Z 13:20:25.2	144.6	39.7					
BSEG	e PKP	Z 13:20:25.3	144.7	33.3					
BRG	e PKP	Z 13:20:28.9	145.8	41.4					
CLL	e PKP	Z 13:20:28.9	145.8	39.6					
CLZ	e PKP	Z 13:20:30.8	146.4	35.1					
IBBN	e PKP	Z 13:20:31.8	146.9	30.6					
MOX	e PKP	Z 13:20:31.9	146.9	38.1					
WET	e PKP	Z 13:20:34.1	147.5	41.6					
BUG	e PKP	Z 13:20:34.8	147.8	30.5					
GRA1	e PKP	Z 13:20:34.7	147.8	38.4					
TNS	e PKP	Z 13:20:36.5	148.4	33.5					

Date Origin Time Lat Long Depth mb Ms ML Source  
 2001/02/28 13:05:35.0 21.996S 170.139E 33N 5.8  
 Southeast of Loyalty Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e PKP	Z 13:25:09.1	144.5	39.8					
BSEG	e PKP	Z 13:25:08.6	144.6	33.5					
BRG	e PKP	Z 13:25:12.3	145.7	41.6					
CLL	e PKP	Z 13:25:12.3	145.7	39.8					
CLZ	e PKP	Z 13:25:14.5	146.3	35.3					
IBBN	e PKP	Z 13:25:15.4	146.8	30.8					
MOX	e PKP	Z 13:25:15.4	146.8	38.3					
WET	e PKP	Z 13:25:17.7	147.4	41.7					
BUG	e PKP	Z 13:25:18.2	147.7	30.7					

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GRA1	e PKP	Z	13:25:18.2	147.7	38.6
TNS	e PKP	Z	13:25:19.8	148.3	33.7
FUR	e PKP	Z	13:25:21.9	148.9	40.3
BFO	e PKP	Z	13:25:24.4	149.9	35.3

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/28								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 13:35:08.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/28								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e PKP	Z 13:41:21.3							
BRG	e PKP	Z 13:41:08.6							
BSEG	e PKP	Z 13:41:04.5							
BUG	e PKP	Z 13:41:15.2							
CLL	e PKP	Z 13:41:08.4							
CLZ	e PKP	Z 13:41:10.4							
FUR	e PKP	Z 13:41:18.3							
GRA1	e PKP	Z 13:41:15.0							
IBBN	e PKP	Z 13:41:11.3							
MOX	e PKP	Z 13:41:10.5							
RUE	e PKP	Z 13:41:05.2							
TNS	e PKP	Z 13:41:16.1							
WET	e PKP	Z 13:41:13.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/02/28	17:07:25.4	32.400N	126.000E	33.0N	5.3			SZGRF
2001/02/28	17:07:05.0	27.160N	127.445E	100G	4.5			NEIC

Northwest of Ryukyu Islands, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z 17:19:19.8	82.5	55.4	1.2	14	5.0		
CLL	e P	Z 17:19:20.8	82.8	54.7	0.7	12	5.2		
CLZ	e P	Z 17:19:26.7	83.8	52.8	0.9	43	5.5		
GRA1	e P	Z 17:19:31.3	84.6	53.3	1.0	36	5.3		
IBBN	e P	Z 17:19:31.2	84.7	50.9	0.6	33	5.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source			
2001/02/28											
		Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
		GRA1	e PKP	Z 17:38:34.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source			
2001/02/28	18:31:56.8	22.314S	170.463E	33N	5.0			NEIC			
Southeast of Loyalty Islands											
		Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
		GRA1	e PKP	Z 18:51:41.1	148.1	38.4					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source			
2001/02/28	18:50: 8.1	13.540N	89.830W	33.0N	5.7			SZGRF			
2001/02/28	18:50:12.9	13.172N	88.937W	65D	5.6			NEIC			
El Salvador											
		Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
		GRA1	e P	Z 19:02:48.6	86.4	286.2	1.6	100	5.7		
		CLL	i P	+ Z 19:02:50.8			1.8	73	5.5		
			e pP	Z 19:03:08.4							
			e sP	Z 19:03:12.8							
			e S	E 19:13:16.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source			
2001/02/28	18:54:32.5	47.330N	122.050W	33.0N	6.8	6.6		SZGRF			
2001/02/28	18:54:32.8	47.149N	122.727W	52	6.4			NEIC			
Washington, United States											
		Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
		BSEG	e P	Z 19:05:49.5	71.4	328.4	1.1	1701	7.1		
			e S	E 19:15:09.6							
		RGN	e P	Z 19:05:52.2	71.7	330.2	1.4	2659	7.2		
		IBBN	e P	Z 19:05:53.0	71.9	327.0	1.2	3039	7.3		
		BUG	e P	Z 19:05:55.7	72.5	326.9	1.2	1302	6.9		
		CLZ	e P	Z 19:06:00.4	73.2	328.7	1.5	2126	7.1		
			e S	E 19:15:28.3							
			e SS	E 19:20:03.7							
		WLF	e P	Z 19:06:02.8	73.6	326.5	1.3	623	6.6		
		RUE	e P	Z 19:06:02.8	73.7	330.8	1.2	901	6.7		
		TNS	e P	Z 19:06:04.1	73.9	327.8	1.2	688	6.5		
			e S	E 19:15:35.0							

CLL	i P	Z	19:06:07.1				1.0	939	6.9		
	e pP	Z	19:06:24.6								
	e sP	Z	19:06:31.4								
	e PP	Z	19:08:54.1								
	e PPP	Z	19:10:34.5								
	e S	E	19:15:39.9								
	e ScS	N	19:16:08.2								
	e SS	Z	19:20:53.2								
	e LV	Z	19:30:05.3								
	e L	Z	19:38:56.2				22.0	53977		6.8	
MOX	e P	Z	19:06:08.2	74.6	329.7		1.2	753		6.6	
BRG	e P	Z	19:06:11.3	75.1	331.1		1.0	868		6.7	
GRA1	e P	Z	19:06:12.8	75.3	329.6		1.1	852		6.7	
	e S	N	19:15:52.2								
	e SS	E	19:20:42.0								
	e L	Z	19:34:18.1				18.5	27498		6.6	
BFO	e P	Z	19:06:13.3	75.5	328.0		1.1	990		6.7	
	e S	E	19:15:53.4								
	e SS	E	19:20:41.6								
WET	e P	Z	19:06:17.9	76.3	330.7		1.3	458		6.4	
FUR	e P	Z	19:06:20.2	76.6	329.8		1.2	643		6.6	

Date Origin Time Lat Long Depth mb Ms ML Source  
2001/02/28

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML  
GRA1 e PKP Z 19:33:13.7

Format description

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

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

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

EPICENTER LINES:

The epicenter locations of several authorities can be reported. The epicenter location with the highest priority

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

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

## COMMENT LINE:

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

## REGION LINE:

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

## PHASE LINE:

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