

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)

JANUARY 2002 UPDATED 15.February.2002

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				
2002/01/01												
	Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML		
	GRA1	e (P)	Z 09:21:55.6									
2002/01/01	10:39:07.0	55.138S	128.859W	10G	5.3	5.5		NEIC				
	Pacific-Antarctic Ridge											
	Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML		
	GRA1	e PKPdf	Z 10:59:01.1	155.4	241.8							
		e PKPbc	Z 10:59:10.6									
		e PKPab	Z 10:59:26.7									
		e PP	Z 11:03:04.0									
	CLL	e PKPdf	Z 10:59:03.6									
		e	10:59:12.9									
		e PKPab	Z 10:59:34.3									
		e PP	Z 11:03:09.6									
		e SS	T 11:23:09.2									
		e SSS	Z 11:29:06.2									
		e LQ	T 11:45:56.3									
		e LR	Z 11:53:46.6									
		e L	Z 12:01:19.9			22.0	1432		5.8			
2002/01/01	11:29:22.0	6.272N	125.585E	137D	5.9			NEIC				

East of Philippine Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML	
CLL	e P	Z 11:42:47.7			1.6	76	6.2			
	e sP	Z 11:43:35.3								
	e PP	Z 11:46:49.5								
	e sPP	Z 11:47:26.9								
	e sS	T 11:55:04.8								
	e SS	T 12:01:01.2								
	e LQ	T 12:13:15.2								
	e LR	Z 12:18:02.3								
	e L	Z 12:29:15.3			22.0	2679		5.7		
	GRA1	e Pdiff	Z 11:42:56.9	100.5	67.1					
		e	11:43:31.2							
		e pPdiff	Z 11:43:43.4							
		e sPdiff	Z 11:43:56.4							
e		11:46:03.2								
e		11:46:44.7								
e PP		Z 11:47:12.6			21.2	3046		5.8		
e L	Z 12:29:20.0									

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/01								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPab	Z 19:45:30.9							
	e L	Z 20:51:56.4			21.8	114			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/01								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPdf	Z 21:21:07.6							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/01	22:15:29.4			N		3.7		SZGRF
2002/01/01	22:15:57.7	37.290N	21.830E	5G	4.2			NEIC

Central Mediterranean Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 22:19:27.4	14.6	144.4					
	e	22:19:36.2							
	e L	Z 22:26:08.5			16.1	372		3.7	

Date Origin Time
2002/01/02 01:28:44.6
Guerrero, Mexico

Lat Long Depth mb Ms ML Source
18.721N 101.237W 83D 4.7

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 01:41:35.6	89.4	298.9			4.8		
	e L	Z 02:17:38.8			21.5	61		4.0	

Date Origin Time
2002/01/02 05:15:41.7
Fiji Islands region

Lat Long Depth mb Ms ML Source
18.185S 178.538W 629D 4.7

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPdf	+ Z 05:34:10.7			1.4	26			
	i PKPbc	Z 05:34:12.5			1.0	192			
	i PKPab	Z 05:34:14.4							
	e pPKPbc	Z 05:36:41.8							
GRA1	e PKPdf	Z 05:34:14.1	147.5	17.5					
	i PKPbc	- Z 05:34:18.2							
	e (PKPab)	Z 05:34:22.8							
	e pPKPbc	Z 05:36:43.1							

Date Origin Time
2002/01/02 05:23:02.1
Fiji Islands region

Lat Long Depth mb Ms ML Source
17.905S 178.613W 632D 5.0

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPdf	Z 05:41:33.4	147.2	17.5					
	i PKPbc	+ Z 05:41:37.9							
	e PKPab	Z 05:41:42.1							

Date Origin Time
2002/01/02 10:24:07.7
Fiji Islands

Lat Long Depth mb Ms ML Source
16.336S 177.955E 33N 5.4 5.1

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	i PKPbc	- Z 10:43:43.0	145.0	22.6					
	e PKPab	Z 10:43:50.1							
	e L	Z 11:50:48.2			19.4	258		5.0	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/02	14:50:33.0	17.941S	178.607E	664D	5.1			NEIC

Fiji Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPdf	Z	15:08:58.8			0.6	48			
	i PKPbc	+ Z	15:08:59.7			0.6	130			
	i PKPab	Z	15:09:02.0			0.8	105			
	e SKPbc	Z	15:11:38.3							
	e SKKP	Z	15:19:39.5							
	e		15:19:54.1							
GRA1	e (PKPbc)	Z	15:09:04.5	146.7	22.2					
	e PKPab	Z	15:09:08.8							
	e (pPKPab)	Z	15:11:32.5							
	e PP	Z	15:12:30.1							
	e (SKKP)	Z	15:19:31.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/02	15:22:24.4	17.300S	179.990W	650.0G				GRSN

Fiji Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	+ Z	15:40:47.8	144.5	21.7	0.6	125			
	e PKPab	Z	15:40:51.1							
	e SKP	Z	15:43:27.0							
GRA1	e PKPdf	Z	15:40:50.7							
	i PKPbc	+ Z	15:40:53.7							
	e PKPab	Z	15:40:57.6							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/02	17:22:49.0	17.590S	167.829E	21G	6.3	7.5		NEIC

Vanuatu Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPdf	Z	17:42:13.4	142.9	18.4					
	e L	Z	18:43:59.8			21.9	164357		7.7	
RUE	e PKPdf	Z	17:42:10.6	143.5	24.5					
	e L	Z	18:46:04.6			21.9	157787		7.7	
CLL	e Pdiff	Z	17:39:36.7							
	e		17:39:52.5							
	e PKPdf	Z	17:42:14.3			1.2	35			
	e		17:42:23.2							
	e PP	Z	17:45:26.1							

	e SKKSac	Z	17:52:21.4									
	e Sdiff	T	17:54:04.0									
	e PPS	N	17:57:47.3									
	e SS	T	18:03:50.4									
	e SS	E	18:04:01.7									
	e LQ	T	18:25:43.4									
	e LR	Z	18:29:09.5									
	e L	Z	18:45:29.4				22.0	213594			7.9	
IBBN	e PKPdf	Z	17:42:16.2	144.9	15.0							
	e L	Z	18:46:00.5				21.8	149764			7.7	
BRG	e PKPdf	Z	17:42:18.6	144.9	25.7							
	e L	Z	18:46:27.6				21.0	72049			7.4	
MOX	e PKPdf	Z	17:42:15.1	145.7	22.1							
	e L	Z	18:49:42.7				21.7	61396			7.3	
BUG	e PKPdf	Z	17:42:10.1	145.8	14.5							
	e L	Z	18:46:38.2				21.6	129553			7.7	
GRA1	e PKPdf	Z	17:42:14.3	146.6	22.0							
	e L	Z	18:46:11.9				22.0	85978			7.5	
WET	e PKPdf	Z	17:42:17.2	146.7	25.0							
	e L	Z	18:47:15.2				21.8	134465			7.7	
TNS	e PKPdf	Z	17:42:19.5	146.7	17.0							
	e L	Z	18:54:08.7				21.8	88598			7.5	
GEC2	e PKPdf	Z	17:42:16.7	146.8	26.6							
	e L	Z	18:50:03.4				21.8	125731			7.6	
WLF	e PKPdf	Z	17:42:24.7	147.7	13.3							
	e L	Z	18:47:13.9				21.8	91858			7.5	
STU	e PKPdf	Z	17:42:23.4	148.0	19.0							
	e L	Z	18:47:11.4				21.3	78392			7.5	
FUR	e PKPdf	Z	17:42:21.9	148.0	23.0							
	e L	Z	18:49:24.9				21.8	143338			7.7	
BFO	e PKPdf	Z	17:42:25.8	148.6	17.7							
	e L	Z	18:54:09.8				21.2	86509			7.5	

Date
2002/01/02

Origin Time

Lat

Long

Depth

mb

Ms

ML

Source

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e PKPdf	Z 17:51:11.4							
GRA1	e PKPdf	Z 17:51:11.0							
STU	e PKPdf	Z 17:51:09.3							
TNS	e PKPdf	Z 17:51:07.4							
WLF	e PKPdf	Z 17:51:10.6							

Date
2002/01/02

Origin Time

Lat

Long

Depth

mb

Ms

ML

Source

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 18:12:13.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/02								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPdf	Z 18:13:16.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/02								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e PKPdf	Z 18:24:07.7							
WLF	e PKPdf	Z 18:24:06.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/02								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e PKPdf	Z 18:50:43.0							
WLF	e PKPdf	Z 18:50:42.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/02								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPbc	Z 19:04:58.6							
	e PKPab	Z 19:05:09.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/02								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e PKPdf	Z 19:34:47.5							
WLF	e PKPdf	Z 19:34:47.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/02								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPdf	Z 21:06:09.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/02								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e PKPdf	Z 21:30:39.6							
WLF	e PKPdf	Z 21:30:39.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/02								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e PKPdf	Z 21:51:22.0							
WLF	e PKPdf	Z 21:51:21.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/02								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e PKPdf	Z 22:30:52.8							
WLF	e PKPdf	Z 22:30:52.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/02								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPdf	Z 23:03:09.0							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/02								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e PKPdf	Z 23:52:14.4							

WLF e PKPdf Z 23:52:13.8

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/03	03:45:29.5	43.850N	12.120E	10.0G			4.2	SZGRF
2002/01/03	03:45:28.3	43.896N	12.111E	10G	5.1			NEIC

Central Italy

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
FUR	e Pn	Z 03:46:36.1	4.3	172.0					4.3
GRC2	e Pn	Z 03:46:44.1	5.0	173.9					
GEC2	e Sn	N 03:47:44.4	5.1	193.1					3.9
BFO	e Pn	Z 03:46:47.4	5.1	148.0					4.1
	e Sn	N 03:47:44.7							
STU	e Pn	Z 03:46:48.1	5.3	156.5					4.3
	e Sn	E 03:47:48.3							
WET	e Pn	Z 03:46:48.3	5.3	186.0					4.0
	e Sn	E 03:47:47.3							
GRA1	e Pn	Z 03:46:55.3	5.8	173.7					4.4
MOX	e Pn	Z 03:47:07.9	6.8	177.0					
	e Sn	N 03:48:23.0							
TNS	e Pn	Z 03:47:10.5	6.8	157.1					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/03	04:24:39.2	54.380N	174.650E	33.0N	5.2			SZGRF
2002/01/03	04:24:26.1	52.410N	173.285E	33N	5.2	4.4		NEIC

Near Islands, Aleutian Islands, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z 04:35:54.3	72.7	10.8	1.0	50	5.6		
RUE	e P	Z 04:35:59.8	73.7	12.9	1.1	33	5.4		
CLL	i P	+ Z 04:36:06.4			1.7	55	5.4		
	e pP	Z 04:36:17.8							
	e sP	Z 04:36:22.1							
BRG	e P	Z 04:36:08.6	75.3	12.9	0.9	19	5.1		
BUG	e P	Z 04:36:09.5	75.5	8.8	1.0	28	5.2		
MOX	e P	Z 04:36:11.7	75.8	11.4	1.8	39	5.1		
TNS	e P	Z 04:36:15.9	76.6	9.4	0.9	17	5.0		
GRA1	e P	Z 04:36:17.8	76.8	11.1	1.5	40	5.2		
WET	e P	Z 04:36:19.5	77.1	12.1	1.3	26	5.2		
GEC2	e P	Z 04:36:20.4	77.3	12.6	1.2	18	5.1		
STU	e P	Z 04:36:23.6	77.9	9.8	1.1	21	5.2		
FUR	e P	Z 04:36:25.9	78.3	11.1	1.3	43	5.4		
BFO	e P	Z 04:36:26.8	78.4	9.3	1.6	33	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/03	07:05:34.0	36.930N	70.920E	126.6	6.1			SZGRF
2002/01/03	07:05:27.8	36.095N	70.759E	130D	5.9			NEIC

Hindu Kush, Afghanistan, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML	
BRG	i P	Z	07:13:13.5	42.6	87.6	1.5	391	5.9			
	e pP	Z	07:13:41.9								
RUE	i P	Z	07:13:13.5	42.7	89.2	1.1	254	5.8			
	e pP	Z	07:13:43.5								
	e sP	Z	07:13:53.9								
GEC2	i P	Z	07:13:15.6	42.9	85.2	2.6	575	5.8			
CLL	i P	+ Z	07:13:17.4			2.1	629	6.0			
	e pP	Z	07:13:46.4								
	e sP	Z	07:13:59.2								
	e PP	Z	07:14:59.0								
	e PPP	Z	07:15:38.9								
	e S	E	07:19:35.1								
	e sS	E	07:20:21.3								
	e SS	E	07:22:56.3								
	e LR	Z	07:26:05.7								
	e L	Z	07:35:56.8			18.0	4365				
	WET	i P	Z	07:13:19.6	43.4	85.0					
	MOX	i P	Z	07:13:25.4	44.1	85.6	2.5	1204	6.2		
		e sP	Z	07:14:08.0							
GRA1	i P	Z	07:13:28.8	44.4	84.4	2.6	2083	6.4			
	e pP	Z	07:13:58.4								
	e sP	Z	07:14:10.6								
FUR	i P	Z	07:13:29.2	44.6	82.9	2.5	2235	6.5			
	e pP	Z	07:13:58.1								
BSEG	i P	Z	07:13:30.3	44.7	88.0	2.8	2642	6.5			
	e pP	Z	07:14:01.1								
	e sP	Z	07:14:12.8								
STU	i P	Z	07:13:39.1	45.8	82.1						
TNS	i P	Z	07:13:41.6	46.1	83.0	1.8	248	5.9			
BFO	i P	Z	07:13:43.7	46.5	81.1	2.4	545	6.2			
BUG	i P	Z	07:13:46.0	46.7	83.3	2.5	1239	6.5			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/03	07:58:42.5	46.360N	149.310E	33.0N	5.6			SZGRF
2002/01/03	07:58:28.5	44.375N	149.539E	33N	5.3			NEIC

Kuril Islands, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	08:10:14.4	75.7	28.8	1.1	78	5.7		
RUE	e P	Z	08:10:15.7	76.0	30.9	1.4	172	5.9		

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Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 11:54:42.6	143.2	38.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/03	15:06:37.7	11.530N	88.020W	33.0N	5.2			SZGRF
2002/01/03	15:06:43.2	12.656N	87.035W	33N	5.0			NEIC

Off coast of central America

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 15:19:20.5	85.6	284.4	1.3	27	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/03	17:43:28.4			G				SZGRF

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WET	e Pn	Z 17:45:22.4							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/04	08:31:31.4	21.289S	174.607W	33N	4.9			NEIC

Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 08:51:23.2	151.2	11.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/04		25.870S	179.780W	33.0N				SZGRF
2002/01/04	08:44:20.8	26.442S	178.378E	616D	5.0			NEIC

South of Fiji Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPdf	Z 09:03:00.1	151.1	22.6					
	e PKPbc	Z 09:03:05.7							
	e PKPab	Z 09:03:16.0							
CLL	e PKPdf	Z 09:03:00.7			1.4	17			
	i PKPbc	Z 09:03:09.5			0.8	55			
	i PKPab	Z 09:03:23.6			0.7	50			
	e pPKPdf	Z 09:05:27.5							
	e pPKPbc	Z 09:05:33.7							
GRA1	e PKPdf	Z 09:03:03.4	154.7	27.8					
	e PKPab	Z 09:03:32.4							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/04								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 15:22:39.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/05	01:20: 9.3	53.320N	173.350W	33.0N	4.7			SZGRF
2002/01/05	01:19:57.8	52.049N	171.490W	33N	4.6			NEIC

Andreanof Islands, Aleutian Islands, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 01:31:58.7	78.2	1.7			4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/05	18:22:40.7	17.854S	178.853E	638D	4.7			NEIC

Fiji Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 18:41:14.0	146.6	21.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/05								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 22:31:30.4							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/05	23:50:39.8	49.180N	146.490E	33.0N	5.0			SZGRF
2002/01/05	23:50:16.7	44.347N	148.003E	96*	4.8			NEIC

Sea of Okhotsk

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z 00:01:52.4	75.3	29.8	1.0	22	5.2		
RUE	e P	Z 00:01:53.5	75.5	32.0					
CLL	e P	Z 00:02:00.1	76.7	31.3					
BRG	e P	Z 00:02:00.7	76.8	31.9					
IBBN	e P	Z 00:02:04.6	77.5	27.9					
MOX	e P	Z 00:02:06.3	77.8	30.3					

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BUG	e P	Z	00:02:09.5	78.4	27.5				
GEC2	e P	Z	00:02:11.3	78.6	31.5	0.9	7	4.7	
WET	e P	Z	00:02:11.6	78.6	31.0				
GRA1	e P	Z	00:02:12.2	78.7	30.0	0.9	27	5.3	
TNS	e P	Z	00:02:13.9	79.1	28.2	1.2	14	4.9	
FUR	e P	Z	00:02:19.8	80.0	29.9				
STU	e P	Z	00:02:20.1	80.2	28.6				

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/06	01:33:49.7	50.280N	154.790E	33.0N	5.3			SZGRF

Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z 01:45:08.3	71.6	23.0	0.8	15	5.2		
RUE	e P	Z 01:45:10.8	72.1	25.0					
CLL	e P	Z 01:45:17.8	73.4	24.4	0.7	16	5.2		
BRG	e P	Z 01:45:18.8	73.5	24.9					
IBBN	e P	Z 01:45:20.2	73.7	21.2					
MOX	e P	Z 01:45:23.7	74.3	23.4	1.3	28	5.1		
BUG	e P	Z 01:45:25.4	74.6	20.9					
GRA1	e P	Z 01:45:29.9	75.3	23.1	1.8	123	5.7		
WET	e P	Z 01:45:30.2	75.4	24.0					
GEC2	e P	Z 01:45:29.9	75.4	24.5	0.7	10	5.0		
TNS	e P	Z 01:45:30.4	75.5	21.5	0.7	34	5.6		
WLF	e P	Z 01:45:36.4	76.5	20.0					
STU	e P	Z 01:45:36.8	76.6	21.8					
FUR	e P	Z 01:45:37.3	76.7	23.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/06	18:49:37.3	12.420N	87.680W	33.0G	5.1			SZGRF
2002/01/06	18:49:22.2	12.615N	87.634W	55D	5.2	5.0		NEIC

Near coast of Nicaragua

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e P	Z 19:02:00.6			1.1	5	4.6		
	e pP	Z 19:02:18.9							
	e (sP)	Z 19:02:23.6							
	e S	E 19:12:34.8							
	e SS	Z 19:18:35.3							
	e SSSS	Z 19:24:47.3							
	e LR	Z 19:30:14.0							
	e L	Z 19:38:45.8			22.0	804		5.1	
GRA1	e P	Z 19:02:15.8	86.0	284.9	1.4	22	5.1		
	e	19:02:19.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/06	22:00:10.1	52.570N	171.670W	33.0N	5.3			SZGRF
2002/01/06	22:00:03.5	52.169N	171.098W	33N	5.1			NEIC

Fox Islands, Aleutian Islands, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 22:12:04.0	78.1	1.5	1.0	22	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/06	22:07:16.6	54.170N	170.600W	33.0N	5.3			SZGRF
2002/01/06	22:07:01.5	52.092N	171.071W	33N	5.5	5.2		NEIC

Fox Islands, Aleutian Islands, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	i P	+ Z 22:18:37.1	74.0	0.9	0.8	23	5.4		
RUE	i P	+ Z 22:18:44.9	75.4	3.1					
IBBN	i P	+ Z 22:18:46.2	75.6	359.3					
BUG	i P	+ Z 22:18:50.8	76.5	359.0					
CLL	i P	+ Z 22:18:51.2	76.5	2.6					
BRG	i P	+ Z 22:18:53.7	76.9	3.2					
MOX	i P	+ Z 22:18:55.8	77.2	1.7					
TNS	i P	+ Z 22:18:58.1	77.7	359.7	0.7	21	5.3		
GRA1	i P	+ Z 22:19:01.7	78.2	1.4	0.8	28	5.5		
GRFO	i P	+ Z 22:19:01.7	78.2	1.4					
WLF	i P	+ Z 22:19:01.4	78.2	358.3					
WET	i P	+ Z 22:19:03.7	78.7	2.5					
GEC2	i P	+ Z 22:19:05.3	79.0	3.0	0.7	13	5.1		
STU	i P	+ Z 22:19:06.1	79.1	0.2					
FUR	i P	+ Z 22:19:09.6	79.7	1.5					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/07								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 02:23:15.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/07	02:53: 2.0	52.860N	170.070W	33.0N	5.6			SZGRF
2002/01/07	02:52:54.4	52.071N	171.179W	33N	5.4	4.8		NEIC

Fox Islands, Aleutian Islands, United States

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Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	03:04:54.4	78.2	1.5	1.5	81	5.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/07	13:26:26.7	18.948N	144.985E	599D	5.7			NEIC

Mariana Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i P	- Z	13:39:01.3			1.1	58	6.2		
	e pP	Z	13:41:15.6							
	e sP	Z	13:42:10.7							
	e PP	Z	13:43:10.0							
	e pPP	Z	13:45:09.9							
	i PKKPbc	Z	13:55:29.4			0.9	12			
GRA1	e P	Z	13:39:10.8	100.1	43.9	1.5	62	6.0		
	e PP	Z	13:43:24.9							
	e PKKPdf	Z	13:55:25.0							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/07	19:14:28.1	3.740N	97.250E	33.0N	5.5			SZGRF
2002/01/07	19:13:45.3	3.899S	101.527E	33N	5.3	5.0		NEIC

Northern Sumatera, Indonesia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	19:26:58.4	93.2	92.3	2.2	74	5.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/09		26.430S	179.720E	33.0N				SZGRF
2002/01/09	01:03:38.8	24.347S	179.765W	489D	5.2			NEIC

South of Fiji Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPdf	Z	01:22:30.1			1.7	38			
	i PKPbc	- Z	01:22:37.0			0.8	167			
	i PKPab	Z	01:22:47.4			0.9	56			
	e pPKPbc	Z	01:24:33.9							
	e pPKPab	Z	01:24:37.5							
GRA1	e PKPdf	Z	01:22:32.7	153.2	22.7					
	e PKPbc	Z	01:22:41.2							
	e PKPab	Z	01:22:56.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/09	06:45:53.5	36.370N	69.260E	33.0N	5.1	5.2		SZGRF
2002/01/09	06:45:57.2	38.621N	69.907E	33N	5.1	5.3		NEIC

Hindu Kush, Afghanistan, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z	06:53:39.2	40.9	82.7	1.2	31	4.9		
CLL	i P	- Z	06:53:40.3			1.7	87	5.2		
	e		06:53:49.5							
	e		06:54:02.6							
	e PP	Z	06:55:20.6							
	e (PPP)	Z	06:55:50.1							
	e S	R	06:59:51.1							
	e SS	R	07:02:56.3							
	e LR	Z	07:05:52.2							
	e L	Z	07:13:12.5			20.0	3792		5.3	
GRA1	e P	Z	06:53:52.3	42.4	82.0	1.5	96	5.3		
	e L	Z	07:15:05.0			16.5	2241		5.2	
BSEG	e P	Z	06:53:52.4	42.5	85.9	1.4	45	5.0		
CLZ	e P	Z	06:53:54.1	42.6	83.7	1.4	55	5.1		
STU	e P	Z	06:54:03.4	43.8	79.7					
TNS	e P	Z	06:54:05.1	44.1	80.7	1.5	33	5.0		
BFO	e P	Z	06:54:07.9	44.5	78.7	1.3	33	5.1		
BUG	e P	Z	06:54:09.5	44.6	81.1	1.7	76	5.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/09								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e PKP	Z	09:06:03.5							
TNS	e PKP	Z	09:05:58.6							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/09	14:11:1.4	35.030N	22.780E	33.0N	4.4			SZGRF
2002/01/09	14:11:08.0	35.990N	22.910E	5G				NEIC

Central Mediterranean Sea

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	14:14:58.0	16.1	143.8	1.6	47	4.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/09	15:40:56.2	34.870N	139.870E	33.0N	4.9			SZGRF
2002/01/09	15:41:02.1	34.124N	139.514E	130*	5.0			NEIC

Near south coast of eastern Honshu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 15:53:23.7	84.5	40.7	0.8	6	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/09	23:53:2.2	24.010N	68.110E	33.0N	4.9			SZGRF

India-Pakistan border region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 00:01:59.1	50.7	98.7	1.2	20	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/10	01:04:38.9	19.389S	173.277W	33N	4.8			NEIC

Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	Z 01:24:22.4			1.0	22			
	e pPKPbc	Z 01:24:35.1							
	e	01:24:48.0							
GRA1	e PKP	Z 01:24:27.6	149.5	8.4					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/10	05:56:06.8	17.666S	167.917E	33N	5.4	5.7		NEIC

Vanuatu Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e (PKPbc)	Z 06:15:26.6							
	i PKPdf	Z 06:15:33.0			1.6	37			
	e PP	Z 06:18:40.2							
	e L	Z 07:19:19.5			22.0	1318		5.6	
GRA1	e PKP	Z 06:15:34.9	142.9	38.7					
TNS	e PKP	Z 06:15:37.9	143.5	34.2					
FUR	e PKP	Z 06:15:39.6	144.1	40.1					
STU	e PKP	Z 06:15:40.6	144.4	36.5					
BFO	e PKP	Z 06:15:42.9	145.1	35.5					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/10	08:36:45.2	17.768S	172.386W	33N	5.2	5.3		NEIC

Tonga Islands region

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Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 08:56:29.9	147.9	6.5					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/10								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 09:06:26.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/10	11:14:57.5	3.123S	142.294E	11G	6.0	6.6		NEIC
Near north coast of New Guinea, Papua New Guinea								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e Pdiff	Z 11:29:57.0							
	e PKPdf	Z 11:33:42.5			1.3	45			
	e PP	Z 11:34:45.7							
	e PPP	Z 11:37:15.0							
	e SKSac	R 11:40:32.6							
	e SKKSac	R 11:41:50.9							
	e Sdiff	T 11:42:30.3							
	e PKKP	Z 11:44:17.8							
	e PS	R 11:44:28.6							
	e PPS	Z 11:45:38.7							
	e SS	T 11:50:52.9							
	e LQ	T 12:05:04.0							
	e LR	Z 12:11:26.0							
	e L	Z 12:26:39.3				20.0	43157		7.1
GRA1	e PKPdf	Z 11:33:43.4	117.8	58.3					
	e PP	Z 11:34:59.8							
	e SKSac	E 11:40:38.4							
	e SKKSac	E 11:42:00.2							
	e Sdiff	N 11:42:52.7							
	e PS	E 11:44:49.2							
	e SS	E 11:51:17.6							
	e L	Z 12:28:56.8				19.7	14929		6.6

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/11	14:26:16.2	20.000S	168.740E	33N	4.8			NEIC
Loyalty Islands								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 14:45:52.2	145.3	39.2					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/11	21:57: 0.2	32.660N	138.960E	33.0N	5.2			SZGRF
2002/01/11	21:57:41.3	33.831N	137.106E	349*	4.8			NEIC

Southeast of Honshu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 22:09:35.2	83.7	42.6	1.3	25	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/12	00:18:28.8	26.480N	126.140E	21.9	5.3	5.4		SZGRF
2002/01/12	00:18:24.7	25.632N	125.346E	33N	5.2	5.1		NEIC

Ryukyu Islands, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 00:30:58.7	84.7	55.7	1.5	34	5.3		
	e pP	Z 00:31:05.1							
	e L	Z 01:13:45.3			18.5	1516		5.4	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/12	08:27: 0.1	25.240N	66.060W	31.9	5.8			SZGRF
2002/01/12	08:26:52.8	28.293N	69.538W	10G	5.7			NEIC

North Atlantic Ocean

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WLF	e P	Z 08:37:02.3	59.9	279.4					
BUG	e P	Z 08:37:04.9	60.3	279.2	1.1	145	5.9		
IBBN	e P	Z 08:37:06.0	60.4	279.0					
TNS	e P	Z 08:37:11.8	61.2	280.7	1.3	152	5.7		
BFO	e P	Z 08:37:13.0	61.5	281.6	1.2	72	5.4		
BSEG	e P	Z 08:37:14.6	61.7	280.1	1.1	83	5.9		
STU	e P	Z 08:37:16.4	62.0	282.0					
CLZ	e P	Z 08:37:17.6	62.1	281.2	1.2	96	5.9		
GRA1	e P	Z 08:37:24.1	63.1	282.9	1.3	65	5.6		
	e	08:37:32.9							
MOX	e P	Z 08:37:24.0	63.1	282.7	1.2	56	5.6		
RGN	e P	Z 08:37:25.7	63.3	282.0					
FUR	e P	Z 08:37:26.6	63.5	283.7	1.2	189	6.1		
CLL	i P	+ Z 08:37:28.6			1.1	84	5.9		
	e pP	Z 08:37:38.2							
	e S	Z 08:46:02.2							
	e SS	Z 08:50:15.8							
	e LR	Z 08:56:38.9							

	e L	Z	09:00:20.2				22.0	547	4.7
RUE	e P	Z	08:37:29.9	64.0	283.3	1.3		85	5.8
WET	e P	Z	08:37:31.9	64.2	284.3	1.2		106	5.9
BRG	e P	Z	08:37:33.2	64.5	284.2				
GEC2	e P	Z	08:37:35.7	64.8	285.0	1.2		104	5.9

Date Origin Time Lat Long Depth mb Ms ML Source

2002/01/12

	Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	GRA1	e P	Z 09:34:32.3	79.0	30.7	1.0	7			

Date Origin Time Lat Long Depth mb Ms ML Source

2002/01/12

14:00:36.5

46.080N

146.830E

33.0N

5.1

SZGRF

2002/01/12

14:00:25.2

43.770N

147.278E

73

4.9

NEIC

Kuril Islands

	Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	BSEG	e P	Z 14:12:05.8	73.4	29.9	0.9	39	5.4		
	CLZ	e P	Z 14:12:16.2	75.2	29.6	0.8	31	5.5		
	GEC2	e P	Z 14:12:23.7	76.7	31.3	0.7	5	4.8		
	GRA1	e P	Z 14:12:25.2	76.8	29.9	0.9	19	5.2		
	TNS	e P	Z 14:12:26.8	77.2	28.2	0.9	12	5.0		
	BFO	e P	Z 14:12:35.8	78.9	27.9	0.8	8	4.8		

Date Origin Time Lat Long Depth mb Ms ML Source

2002/01/13

02:21:53.4

17.569S

174.450W

154D

4.7

NEIC

Tonga Islands

	Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	CLL	i PKPbc	+ Z 02:41:16.0			1.0	78			
		e	02:41:21.5							
		e pPKPbc	Z 02:41:56.7							
	GRA1	e PKP	Z 02:41:21.7	147.6	10.1					

Date Origin Time Lat Long Depth mb Ms ML Source

2002/01/13

06:01:51.9

16.262S

173.073W

33N

4.3

NEIC

Tonga Islands

	Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	GRA1	e PKP	Z 06:21:32.5	146.4	7.5					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/13	11:04:19.5	20.433S	173.979W	33N	5.5	5.7		NEIC

Tonga Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPdf	Z	11:24:01.5			1.4	13			
	i PKPbc	+ Z	11:24:05.8			1.1	72			
	e PKPab	Z	11:24:07.8							
	e		11:24:16.7							
	e (SS)	Z	11:47:30.7							
	e L	Z	12:40:54.9			18.0	1348		5.8	
GRA1	e PKPdf	Z	11:24:04.6	150.4	9.9					
	e		11:24:10.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/13	12:09: 4.3	36.690N	69.950E	33.0N	4.7			SZGRF
2002/01/13	12:09:08.0	36.657N	71.338E	184D	4.6			NEIC

Hindu Kush, Afghanistan, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	12:17:05.2	44.5	83.3	1.1	17	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/13	13:40: 6.5	36.750N	70.930E	33.0N	4.9			SZGRF
2002/01/13	13:40:19.3	36.447N	71.185E	228D	4.5			NEIC

Hindu Kush, Afghanistan, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i P	+ Z	13:48:00.6			1.1	22	4.8		
	e pP	Z	13:48:49.5							
	e PP	Z	13:49:49.5							
GRA1	e P	Z	13:48:12.2	44.5	83.7	1.5	38	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/13	14:10:54.7	5.539S	150.849E	33N	5.9	6.4		NEIC

New Britain, Papua New Guinea, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e Pdiff	Z	14:26:19.5							
	i PKPdf	Z	14:29:48.8			1.0	29			

e			14:30:00.2									
e PP	Z		14:31:24.7									
i SKP	Z		14:33:23.5			1.2		19				
e PPP	Z		14:34:03.1									
e PKKP	Z		14:39:42.9									
e pPKKP	Z		14:39:54.3									
e PS	R		14:41:19.4									
e PPS	Z		14:42:52.7									
e pSKKP	Z		14:43:43.0									
e SS	T		14:48:14.5									
e			14:49:19.2									
e SSS	R		14:53:17.7									
e LQ	T		15:04:06.5									
e LR	Z		15:09:51.8									
e L	Z		15:22:38.7			22.0		9243		6.4		
GRA1 e Pdiff	Z		14:26:27.4	124.3	51.3							
e PKPdf	Z		14:29:52.1									
e PP	Z		14:31:42.3									
e PS	E		14:41:48.6									
e SS	N		14:48:40.6									
e L	Z		15:24:25.8			21.7		5329		6.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/13	16:32:57.7	17.462S	167.781E	33N	5.3	5.8		NEIC

Vanuatu Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 16:52:27.1	142.7	38.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/14	02:38:32.6	20.590S	169.840E	33N	5.1	5.0		NEIC

Vanuatu Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 02:58:13.8	146.3	38.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/14	03:49:11.2	45.360N	14.650E	10.0G			3.5	SZGRF
2002/01/14	03:49:16.2	45.720N	14.300E	10G				NEIC

Northwestern Balkan Peninsula

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 03:50:06.8	3.2	172.4					

	e Sn	N	03:50:47.9								
	e Sg	N	03:51:02.2								
WET	e Pn	Z	03:50:11.9	3.6	163.8						
	e Sn	N	03:50:58.6								
GRA1	e Sg	E	03:51:48.5	4.5	151.3					3.5	
BFO	e Pn	Z	03:50:28.8	4.8	120.5						
	e Sn	E	03:51:26.8								
	e Sg	E	03:51:58.4								
MOX	e Pn	Z	03:50:33.8	5.2	159.0						
	e Sn	N	03:51:37.5								
CLL	e Pn	Z	03:50:40.7	5.7	170.8						
TNS	e Pn	Z	03:50:45.5	6.0	136.8						
	e Sn	N	03:51:56.3								

Date Origin Time Lat Long Depth mb Ms ML Source
 2002/01/14 15:06:57.1 31.463S 179.835W 354D 4.6 NEIC
 Kermadec Islands region

	Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	GRA1	e PKP	Z 15:26:56.2	160.0	28.5					

Date Origin Time Lat Long Depth mb Ms ML Source
 2002/01/15 04:48:03.2 17.340S 167.722E 33N 5.5 6.1 NEIC
 Vanuatu Islands

	Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	CLL	e (PKPbc)	Z 05:07:21.9							
		e PKPdf	Z 05:07:30.4			1.0	10			
		e PP	Z 05:10:28.5							
		e LR	Z 05:54:28.6							
		e L	Z 06:09:59.0			22.0	3663		6.1	
	GRA1	e PKPdf	Z 05:07:32.0	142.5	38.7					
		e L	Z 06:10:45.7			21.7	2241		5.9	

Date Origin Time Lat Long Depth mb Ms ML Source
 2002/01/15 04:56:30.7 17.394S 167.818E 33N 5.3 NEIC
 Vanuatu Islands

	Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	GRA1	e PKPdf	Z 05:15:58.6	142.6	38.6					

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Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPdf	Z 13:23:39.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/15	18:53:52.0	19.232S	169.259E	300G	5.0			NEIC

Vanuatu Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 19:12:55.2	144.9	37.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/15	21:13:00.0	20.8S	178.6W	557	4.4			NEIC

Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	- Z 21:31:44.2			0.9	20			
	i PKPab	Z 21:31:49.0							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/16	13:33:18.6	24.890N	124.890E	43.2		5.3		SZGRF
2002/01/16	13:33:10.1	23.954N	125.370E	33N	5.2	5.0		NEIC

Southwestern Ryukyu Islands, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i P	+ Z 13:45:41.5			1.3	30	5.4		
	e pP	Z 13:45:54.5							
	e S	R 13:56:03.8							
	e SS	R 14:01:35.7							
	e	14:06:35.7							
	e LQ	T 14:12:56.3							
	e LR	Z 14:15:57.3							
	e L	Z 14:28:13.0			18.0	2158		5.6	
GRA1	e P	Z 13:45:51.6	86.1	56.7	1.3	28			
	e pP	Z 13:46:04.2							
	e L	Z 14:30:04.5			18.0	1173		5.3	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/16								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 17:24:28.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/16	23:10: 7.8	14.270N	90.540W	165.8	6.2	6.0		SZGRF
2002/01/16	23:09:52.6	15.611N	93.111W	76D	6.1			NEIC

Guatemala

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BUG	e P	Z 23:22:16.9	84.1	287.8	2.0	360	6.3		
BSEG	e P	Z 23:22:22.1	85.1	289.9	1.7	521	6.5		
TNS	e P	Z 23:22:22.5	85.2	288.8	2.0	486	6.4		
BFO	e P	Z 23:22:24.6	85.8	288.8	2.2	240	5.9		
CLZ	e P	Z 23:22:26.1	85.8	290.1	1.8	359	6.2		
STU	e P	Z 23:22:26.9	86.2	289.4	2.0	389	6.2		
MOX	e P	Z 23:22:31.1	87.0	291.1	1.8	212	6.0		
GRA1	e P	Z 23:22:32.1	87.1	290.9	2.0	394	6.2		
	e pP	Z 23:23:13.6							
	e sP	Z 23:23:31.0							
	e PP	Z 23:25:59.3							
	e S	E 23:32:57.9							
	e L	Z 23:58:49.0			21.4	6078		6.0	
RUE	e P	Z 23:22:33.6	87.5	292.7	1.9	233	6.2		
CLL	i P	Z 23:22:33.8			2.2	347	6.3		
	e pP	Z 23:22:58.3							
	e sP	Z 23:23:14.4							
	e PP	Z 23:25:55.4							
	e pPP	Z 23:26:17.7							
	e SKSac	R 23:32:57.5							
	e S	T 23:33:17.1							
	e PS	Z 23:34:21.9							
	e SS	T 23:38:53.6							
	e LQ	T 23:45:41.1							
	e LR	Z 23:50:39.0							
	e L	Z 23:57:30.9			22.0	11747		6.3	
FUR	e P	Z 23:22:34.3	87.7	291.0	1.8	176	6.1		
BRG	e P	Z 23:22:37.1	88.3	292.9	1.9	163	6.0		
WET	e P	Z 23:22:37.6	88.3	292.1	1.7	197	6.2		
GEC2	e P	Z 23:22:40.3	88.9	292.8	1.7	83	5.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/17	14:49:28.4	17.420S	167.830E	33N	5.3	5.2		NEIC

Vanuatu Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e PKP	Z 15:09:03.5	144.9	35.5					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/19	03:16:55.4	23.236S	177.739W	300G	4.3			NEIC

South of Fiji Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPdf	Z 03:36:18.8	152.6	18.1					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/19	09:06:18.2	44.330N	147.790E	33.0N	5.9			SZGRF
2002/01/19	09:06:16.5	43.905N	147.283E	55D	5.8			NEIC

Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z 09:17:57.9	75.5	30.5	1.0	164	6.1		
RUE	e P	Z 09:17:58.7	75.6	32.6	1.0	187	6.2		
CLL	e P	Z 09:18:05.3	76.9	32.0	0.9	228	6.3		
BRG	e P	Z 09:18:05.8	76.9	32.5	0.9	66	5.8		
CLZ	e P	Z 09:18:08.3	77.3	30.3	0.9	215	6.3		
IBBN	e P	Z 09:18:10.0	77.7	28.6	1.0	236	6.3		
MOX	e P	Z 09:18:11.4	77.9	31.0	1.0	82	5.8		
BUG	e P	Z 09:18:14.9	78.6	28.2	1.0	160	6.0		
GEC2	e P	Z 09:18:15.9	78.7	32.2	1.2	38	5.3		
WET	e P	Z 09:18:16.6	78.8	31.7	0.9	101	5.8		
GRA1	e P	Z 09:18:17.3	78.9	30.6	1.0	124	5.9		
TNS	e P	Z 09:18:19.1	79.3	28.9	1.0	86	5.7		
FUR	e P	Z 09:18:23.9	80.2	30.5	1.0	143	5.9		
STU	e P	Z 09:18:24.5	80.3	29.2	0.9	110	5.8		
WLF	e P	Z 09:18:25.5	80.5	27.3	1.5	56	5.4		
BFO	e P	Z 09:18:27.9	81.0	28.6	0.9	51	5.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/19	19:52:43.9	53.110N	167.780W	124.5	5.3			SZGRF
2002/01/19	19:52:56.5	54.050N	167.258W	124D	5.1			NEIC

Fox Islands, Aleutian Islands, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 20:04:34.9	76.3	359.1	1.5	42	5.3		
	e pP	Z 20:05:06.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/19	23:58:34.0			N				SZGRF

Fox Islands, Aleutian Islands, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 00:09:47.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/20	00:14:45.9	1.880S	28.560E	25.9	5.1			SZGRF
2002/01/20	00:14:44.2	1.696S	28.971E	10G	4.9	4.6		NEIC

Zaire

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 00:24:05.7	53.6	157.8	1.6	36	5.1		
	e pP	Z 00:24:12.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/20	01:56:11.4	23.620S	177.820W					GRSN

South of Fiji Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	- Z 02:16:01.2	151.1	20.8	0.8	32			
	e PKPab	Z 02:16:08.6			0.7	9			
GRA1	e PKPbc	Z 02:16:03.7							
	e PKPab	02:16:16.6							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/20								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 19:59:05.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/20	23:55:48.9	44.460N	146.520E	33.0N	4.7			SZGRF
2002/01/20	23:55:42.0	42.541N	144.622E	50G	4.7			NEIC

Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 00:07:45.0	79.2	33.0	1.0	7	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
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2002/01/21 04:39: 3.9 5.280S 27.070E 33.0N 5.6 SZGRF
2002/01/21 04:39:21.7 1.739S 28.996E 10G 4.9 4.5 NEIC
Zaire

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 04:48:44.3	53.7	157.7	2.4	139	5.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/21	14:34:24.0	40.240N	27.780E	33.0N				SZGRF
2002/01/21	14:34:23.8	38.682N	27.822E	10	4.7	4.0		NEIC

Turkey

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 14:38:16.8	16.1	126.7	1.9	100			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/21	15:42:24.9	15.217S	166.876E	33N	5.2	5.2		NEIC

Vanuatu Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPdf e	Z 16:01:47.8 16:05:19.1	140.3	38.5					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/21								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPdf	Z 17:09:23.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/21	17:41:10.3	49.990N	19.010E	1.0G			3.0	SZGRF
2002/01/21	17:41:07.7	50.227N	19.066E	5G				NEIC

Poland

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e Pg	Z 17:42:11.0	3.3	99.2					
	e Sg	N 17:42:55.6							
GEC2	e Pn	Z 17:42:07.8	3.7	66.3					3.0
	e Sg	N 17:43:06.3							
CLL	e Pg	Z 17:42:24.1	4.0	103.4					
	e Sg	N 17:43:18.2							

WET	e Pn	Z	17:42:12.2	4.1	72.5
	e Sg	N	17:43:18.4		
GRB1	e Sg	N	17:43:43.4	4.9	77.3
GRA1	e Sg	E	17:43:53.5	5.1	81.0

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/22	04:53:48.9	36.230N	27.450E	G		5.1		SZGRF
2002/01/22	04:53:52.2	35.677N	26.682E	88G	6.1			NEIC

Dodecanese Islands, Greece

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WET	e P	Z	04:57:43.9	16.8	138.0					
	e S	Z	05:00:52.5							
	e L	Z	05:04:48.8			24.9	14000		5.1	
FUR	e P	Z	04:57:44.6	16.9	132.0					
	e S	E	05:00:53.0							
GRC3	e P	Z	04:57:48.2	17.2	134.4					
GRC2	e P	Z	04:57:49.3	17.3	133.9					
GRC1	e P	Z	04:57:49.6	17.3	134.5					
GRB5	e P	Z	04:57:49.9	17.3	135.1					
GRC4	e P	Z	04:57:50.3	17.4	134.8					
GRB3	e P	Z	04:57:51.5	17.5	136.0					
GRB4	e P	Z	04:57:53.8	17.7	135.7					
GRA4	e P	Z	04:57:55.4	17.8	135.6					
GRFO	e P	Z	04:57:57.6	18.0	135.4					
	e S	E	05:01:13.3							
	e L	Z	05:05:44.9			26.0	10023		5.0	
GRA1	e P	Z	04:57:57.6	18.0	135.4					
	e ScP	Z	05:05:54.0							
GRA3	e P	Z	04:57:57.5	18.0	135.8					
STU	e P	Z	04:58:01.6	18.3	129.1					
CLL	i P	+ Z	04:58:02.0			0.9	3161	6.5		
	e (pP)	Z	04:58:19.7							
	e S	T	05:01:24.5							
	e sS	T	05:01:54.4							
	e LR	Z	05:03:17.7							
	i ScP	Z	05:05:56.8			1.0	137			
	e L	Z	05:06:39.3			20.0	14472		5.3	
	e ScS	R	05:09:34.9							
	e sScS	R	05:10:24.5							
MOX	e P	Z	04:58:03.8	18.5	138.3					
	e S	N	05:01:25.6							
	e L	Z	05:06:47.8			19.8	11925		5.2	
RUE	e P	Z	04:58:08.8	19.1	146.4					
TNS	e P	Z	04:58:15.6	19.6	130.9					
	e S	E	05:01:51.3							
	e L	Z	05:06:58.1			19.2	13579		5.3	

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WLF	e P	Z	04:58:24.7	20.5	125.4						
	e S	N	05:02:08.1								
	e L	Z	05:07:23.7			21.3	9917	5.1			
RGN	e P	Z	04:58:28.1	21.0	148.4						
	e L	Z	05:07:23.6			19.9	8502	5.1			
IBBN	e P	Z	04:58:33.1	21.4	133.7						
	e S	E	05:02:26.2								

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/22								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 15:41:26.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/22	20:15:33.5	7.930N	93.780E	38.2				SZGRF
2002/01/22	20:15:06.2	3.505N	95.672E	33N	5.4	5.0		NEIC

Nicobar Islands, India, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	i P	Z 20:27:25.3	82.1	93.7					
GRA1	i P	Z 20:27:34.5	83.7	92.0					
	e pP	Z 20:27:45.6							
BSEG	i P	Z 20:27:38.1	84.4	91.7					
TNS	i P	Z 20:27:43.0	85.5	89.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/22	23:03:40.2			N				SZGRF

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z 23:16:56.0							
GRA1	e P	Z 23:17:03.8							
GRB1	e P	Z 23:17:02.4							
RUE	e P	Z 23:16:57.0							
WET	e P	Z 23:16:58.4							
	e pP	Z 23:17:12.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/24	15:24:22.1	4.930N	92.840E	33.0N	5.6			SZGRF
2002/01/24	15:24:04.8	3.521N	95.633E	33N	5.2	5.3		NEIC

Off west coast of northern Sumatera, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	i P	Z 15:36:33.0	83.7	92.0	2.1	144	5.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/24	17:52:39.6	5.690N	94.540E	33.0N	5.6	4.9		SZGRF
2002/01/24	17:52:24.8	3.531N	95.616E	33N	5.6	5.2		NEIC

Northern Sumatera, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 18:04:53.3	83.7	92.0	1.4	84	5.6		
	e	18:05:00.1							
	e L	Z 18:49:08.3			19.6	492		4.9	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/24	17:56:16.5	2.690N	96.840E	33.0N	5.4			SZGRF
2002/01/24	17:56:21.3	3.557N	95.702E	33N	5.2			NEIC

Northern Sumatera, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 18:08:49.5	83.7	91.9	1.3	30	5.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/24								

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

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/24	18:12: 4.9	4.240N	97.220E	42.6	5.9			SZGRF
2002/01/24	18:12:04.6	3.513N	95.608E	33N	5.5	5.6		NEIC

Northern Sumatera, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z 18:24:24.1	82.0	94.3					
GEC2	i P	+ Z 18:24:24.2	82.0	93.8	2.5	448	6.3		
RUE	e P	Z 18:24:24.9	82.2	94.4	2.3	578	6.4		
WET	e P	Z 18:24:27.1	82.6	93.2					
CLL	i P	+ Z 18:24:26.9			1.1	33	5.5		
	e pP	Z 18:24:39.1							
	e L	Z 19:08:03.2			18.0	1234		5.3	
MOX	e P	Z 18:24:31.5	83.5	92.4					

FUR	e P	Z	18:24:31.7	83.6	91.9				
GRA1	e P	Z	18:24:33.2	83.7	92.0	2.5	377	6.2	
	e pP	Z	18:24:45.6						
CLZ	e P	Z	18:24:35.7	84.3	91.6	2.7	498	6.3	
BSEG	e P	Z	18:24:36.3	84.4	91.7	1.0	68	5.8	
STU	e P	Z	18:24:39.2	85.0	90.4	0.9	34	5.5	
TNS	e P	Z	18:24:41.8	85.5	89.9	1.0	35	5.4	
BFO	e P	Z	18:24:41.5	85.6	89.7	1.0	27	5.3	
BUG	e P	Z	18:24:45.3	86.2	89.1	0.9	41	5.6	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/25	03:27: 2.0	23.090S	179.310E	33.0N				SZGRF
2002/01/25	03:28:11.9	20.805S	178.800W	575D	5.4			NEIC

South of Fiji Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e PKPdf	Z	03:46:47.8	146.9	21.9					
	e PKPbc	Z	03:46:51.0							
CLL	e PKPdf	Z	03:46:49.2			1.2	50			
	e PKPbc	Z	03:46:54.4			0.9	346			
	e PKPab	Z	03:46:59.7			0.8	243			
	e pPKPbc	Z	03:49:10.5							
	i SKPbc	Z	03:49:38.8			0.9	38			
	e PP	Z	03:50:25.2							
IBBN	e PKPdf	Z	03:46:50.1	148.1	11.7					
	e PKPbc	Z	03:46:54.5							
	e PKPab	Z	03:46:58.9							
MOX	e PKPdf	Z	03:46:51.2	149.1	19.2					
	e PKPbc	Z	03:46:56.7							
	e PKPab	Z	03:47:03.2							
TNS	e PKPdf	Z	03:46:52.9	150.0	13.7					
	e PKPbc	Z	03:46:59.0							
	e PKPab	Z	03:47:07.2							
GRA1	e PKPdf	Z	03:46:53.0	150.0	19.0					
	e PKPbc	Z	03:46:59.2							
	e PKPab	Z	03:47:07.5							
WET	e PKPdf	Z	03:46:52.7	150.2	22.4					
	e PKPbc	Z	03:46:59.3							
	e PKPab	Z	03:47:08.0							
WLF	e PKPdf	Z	03:46:55.1	150.9	9.5					
	e PKPbc	Z	03:47:01.3							
STU	e PKPdf	Z	03:46:55.2	151.3	15.7					
	e PKPbc	Z	03:47:01.8							
	e PKPab	Z	03:47:12.8							
FUR	e PKPdf	Z	03:46:54.9	151.5	20.0					
	e PKPbc	Z	03:47:02.5							
	e PKPab	Z	03:47:13.6							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/25	14:06:10.3	5.520N	95.210E	33.0N	5.2			SZGRF
2002/01/25	14:05:58.3	3.479N	95.674E	33N	4.9			NEIC

Northern Sumatera, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 14:18:27.0	83.8	92.0	1.5	32	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/25	14:22:35.7	50.110N	18.110E	1.0G			3.5	SZGRF

Poland

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e Pn	Z 14:23:18.7	2.8	104.4					3.2
	e Sg	N 14:24:02.5							
GEC2	e Pn	Z 14:23:27.0	3.1	64.5					3.5
	e Sg	N 14:24:14.6							
CLL	e Pn	Z 14:23:32.4	3.4	108.3					3.6
	e Sg	N 14:24:24.8							
WET	e Sg	N 14:24:27.0	3.5	72.1					3.6
MOX	e Sg	N 14:24:51.0	4.2	94.8					
GRA1	e Sg	N 14:24:58.6	4.5	82.0					3.8

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/26	20:04:40.3			N				SZGRF

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 20:09:06.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/26								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 20:28:30.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/27	03:04:14.5	21.701S	174.566W	33N	5.2	5.3		NEIC

Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPdf	Z 03:24:00.0							
	i PKPbc	Z 03:24:02.9			1.2	35			
	e PKPab	Z 03:24:08.5							
GRA1	e PKP	Z 03:24:08.8	151.6	11.4					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/27	07:09:26.3	41.670N	142.900E	33.0N	5.4			SZGRF
2002/01/27	07:09:14.6	39.330N	142.265E	49D	5.4	4.9		NEIC

Hokkaido, Japan, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	i P	Z 07:21:11.1	77.9	38.3	1.2	55	5.5		
BSEG	i P	Z 07:21:11.6	78.0	36.0	1.1	39	5.4		
BRG	i P	Z 07:21:17.4	79.1	38.2	0.9	19	5.2		
CLL	i P	+ Z 07:21:17.2			0.9	40	5.4		
	e	07:21:20.0							
	e pP	Z 07:21:31.5							
	e L	Z 07:59:31.5			20.0	662		5.0	
CLZ	i P	Z 07:21:20.7	79.7	35.8	1.1	63	5.7		
MOX	i P	Z 07:21:23.3	80.2	36.6	1.1	29	5.2		
IBBN	i P	Z 07:21:23.4	80.2	34.0	1.7	147	5.7		
GEC2	i P	Z 07:21:26.5	80.8	37.8	0.9	11	4.9		
WET	i P	Z 07:21:27.4	80.9	37.3	1.1	22	5.1		
GRA1	i P	Z 07:21:28.9	81.1	36.2	1.9	169	5.7		
BUG	i P	Z 07:21:27.5	81.1	33.6	1.1	30	5.1		
TNS	i P	Z 07:21:31.2	81.7	34.3					
FUR	i P	Z 07:21:34.9	82.3	36.1	0.9	41	5.5		
STU	i P	Z 07:21:36.1	82.6	34.7	0.8	34	5.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/27	22:33:16.9	29.540N	78.540E	33.0N	4.7			SZGRF
2002/01/27	22:33:42.8	33.117N	75.897E	33N	4.9			NEIC

Northern India

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 22:42:35.4	49.6	84.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/28	02:49:26.6	9.870N	82.870W	33.0N	5.7			SZGRF
2002/01/28	02:49:16.4	10.779N	84.998W	4	5.3			NEIC

Panama-Costa Rica border region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 03:01:59.7	85.8	281.7	1.8	82	5.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/28								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 05:49:34.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/28	13:50:47.3	52.060N	154.900E	33.0N	6.1			SZGRF
2002/01/28	13:50:29.7	49.401N	155.502E	45	5.9	5.7		NEIC

Northwest of Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z 14:01:56.2	72.6	22.9	1.1	98	5.8		
RUE	e P	Z 14:01:58.8	73.1	24.9	1.1	178	6.1		
CLL	i P	+ Z 14:02:05.9			1.1	209	6.1		
	e	14:02:27.5							
	e PP	Z 14:05:03.0							
	e S	Z 14:11:36.2							
	e SS	R 14:16:32.1							
	e LQ	T 14:24:39.1							
	e LR	Z 14:25:58.9							
	e L	Z 14:38:36.2			18.0	10968		6.2	
BRG	e P	Z 14:02:06.9	74.5	24.8	1.2	96	5.8		
CLZ	e P	Z 14:02:07.7	74.5	22.7	1.2	275	6.3		
MOX	e P	Z 14:02:11.9	75.3	23.4	1.4	184	6.0		
BUG	e P	Z 14:02:13.4	75.6	20.7	1.3	295	6.3		
GRA1	e P	Z 14:02:18.2	76.3	23.0	1.3	343	6.2		
WET	e P	Z 14:02:18.4	76.3	24.0	1.2	277	6.2		
GEC2	e P	Z 14:02:18.3	76.4	24.5	1.5	146	5.8		
TNS	e P	Z 14:02:18.6	76.5	21.3	1.1	186	6.0		
STU	e P	Z 14:02:25.2	77.6	21.7	1.2	321	6.2		
FUR	e P	Z 14:02:25.7	77.7	22.9	1.2	366	6.3		
BFO	e P	Z 14:02:28.5	78.3	21.1	1.2	246	6.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/28	15:09:55.9	15.236S	173.273W	33N	5.5	6.0		NEIC

Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
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CLL	i PKP	+ Z	15:29:28.5				1.5	46			
	e pPKP	Z	15:29:38.0								
	e PP	Z	15:32:52.6								
	e L	Z	16:37:13.7				20.0	3821	6.2		
CLZ	e PKP	Z	15:29:29.3	143.3	5.9						
TNS	e PKP	Z	15:29:31.9	145.0	2.9						
GRA1	e PKP	Z	15:29:33.2	145.4	7.6						
WET	e PKP	Z	15:29:34.5	145.7	10.6						
GEC2	e PKP	Z	15:29:34.3	145.9	12.1						
STU	e PKP	Z	15:29:36.4	146.4	4.3						
BFO	e PKP	Z	15:29:37.7	146.9	2.8						

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/28	15:49:32.1	15.176S	173.467W	33N	4.8			NEIC

Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 16:09:09.2	145.3	8.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/28	23:45:21.7	39.190N	140.300E	33.0N	5.5			SZGRF
2002/01/28	23:45:09.9	37.784N	141.855E	41D	4.9			NEIC

Eastern Honshu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 23:57:30.6	82.3	37.2	2.2	100	5.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/29	00:45:10.7	15.402S	173.470W	33N	4.8			NEIC

Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 01:04:45.3	145.5	8.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/29	03:50:28.8	32.485S	179.838E	267	4.8			NEIC

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPab	Z 04:10:31.6			1.3	42			
GRA1	e PKP	Z 04:10:41.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/29	20:52:54.6	18.574S	169.420E	200	4.7			NEIC

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 21:12:06.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/30	08:42:16.3	18.600N	93.440W	113.2	5.8	5.0		SZGRF
2002/01/30	08:42:02.4	18.199N	95.691W	106D	5.6			NEIC

Bay of Campeche

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
IBBN	e P	Z 08:54:22.8	83.6	291.6	0.8	140	6.1		
WLF	e P	Z 08:54:23.0	83.6	290.7	0.9	61	5.7		
BUG	e P	Z 08:54:23.1	83.6	291.3	1.2	73	5.7		
BSEG	e P	Z 08:54:27.1	84.4	293.4	1.1	208	6.3		
TNS	e P	Z 08:54:28.8	84.7	292.3	0.8	173	6.3		
CLZ	e P	Z 08:54:31.6	85.2	293.6	1.0	126	6.1		
BFO	e P	Z 08:54:31.6	85.4	292.4	1.0	43	5.6		
STU	e P	Z 08:54:33.5	85.8	293.0	0.8	74	6.0		
MOX	e P	Z 08:54:37.3	86.4	294.7	0.9	47	5.7		
GRA1	e P	Z 08:54:38.8	86.6	294.4	1.2	63	5.7		
	e pP	Z 08:55:07.9							
	e S	E 09:04:53.3							
	e SS	E 09:10:41.5							
	e L	Z 09:31:29.2			22.0	708		5.0	
RUE	e P	Z 08:54:40.4	86.9	296.2	2.1	192	5.9		
CLL	i P	+ Z 08:54:39.1			1.0	45	5.6		
	e pP	Z 08:55:04.4							
	e pPPP	R 09:00:25.2							
	e S	T 09:05:09.2							
	e SS	R 09:10:53.0							
	e LQ	T 09:18:33.9							
	e LR	Z 09:23:07.3							
	e L	Z 09:33:25.0			22.0	1148		5.2	
BRG	e P	Z 08:54:42.6	87.7	296.4	0.8	37	5.6		
WET	e P	Z 08:54:44.0	87.8	295.7	1.1	53	5.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/30	12:58:19.0	6.246S	150.837E	33	5.9	6.0		NEIC

New Britain region, P.N.G.

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPdf	Z 13:17:14.2			1.0	74			
	e pPKPdf	Z 13:17:21.6							
	e PP	Z 13:18:57.7							
	e PPP	Z 13:21:35.9							
	e PS	R 13:28:50.2							
	e PPS	Z 13:30:10.8							
	e (SS)	Z 13:35:38.9							
	e SSS	T 13:39:50.1							
	e LR	Z 13:57:56.0							
	e L	Z 14:10:19.0			22.0	2045		5.7	
GRA1	e PKP	Z 13:17:18.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/30	20:19:14.3	21.390S	169.640E	33N	4.6			NEIC

Southeast of Loyalty Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 20:38:53.6	147.0	38.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/31								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 00:32:06.6							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/31								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 02:41:42.4			1.5	39			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2002/01/31								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 16:45:33.4							
	e	16:48:10.4							

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