

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

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

OCTOBER 2001 UPDATED 30.November.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	
2001/10/01	00:35: 5.7	45.380N	147.660E	50.0	5.9	4.6		SZGRF	
2001/10/01	00:34:54.6	43.710N	147.572E	57D	5.4			NEIC	
Kuril Islands, Russia									
Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i P	+ Z 00:46:45.1			0.7	74	5.9		
	e	00:46:50.5							
	e pP	Z 00:46:59.3							
	e sP	Z 00:47:05.5							
	e PP	Z 00:49:33.1							
	e LR	Z 01:12:06.1							
	e L	Z 01:25:02.0			22.0	280	4.5		
GRA1	i P	+ Z 00:46:56.9	79.1	30.5	1.0	89	5.9		
	e pP	Z 00:47:10.9							
	e sP	Z 00:47:17.6							
	e L	Z 01:26:50.1			19.2	277	4.6		
Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source	
2001/10/01	02:11:47.1	48.550N	159.250E	33.0N	4.8			SZGRF	
2001/10/01	02:12:30.7	49.033N	150.733E	318D	4.5			NEIC	
East of Kuril Islands, Russia									
Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 02:23:42.5	75.3	26.1	0.7	6	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
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2001/10/01 04:18:14.9 58.231S 25.552W 33N 5.1 5.3 NEIC
South Sandwich Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e Pdiff	Z 04:32:58.2	112.1	199.9					
	e PP	Z 04:37:32.2							
	e SP	Z 04:47:04.4							
	e SS	N 04:53:27.1							
	e L	Z 05:18:12.7			21.9	684		5.2	

Date Origin Time Lat Long Depth mb Ms ML Source
2001/10/01 09:09:37.0 19.350S 174.004W 33N 4.4 NEIC
Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 09:29:25.4	149.4	9.7					

Date Origin Time Lat Long Depth mb Ms ML Source
2001/10/01

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPbc	Z 09:35:26.1							

Date Origin Time Lat Long Depth mb Ms ML Source
2001/10/01

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPbc	Z 09:35:21.1							

Date Origin Time Lat Long Depth mb Ms ML Source
2001/10/02 00:39:14.2 35.820N 72.450E 33.0N 4.8 SZGRF
2001/10/02 00:39:22.5 35.463N 70.955E 98D 4.7 NEIC
Pakistan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 00:47:32.1	44.9	84.9			4.8		

Date Origin Time Lat Long Depth mb Ms ML Source
2001/10/02 00:48:18.6 16.190S 173.795W 107D 5.8 NEIC

Tonga Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML	
CLL	i PKP	- Z	01:07:41.5			1.2	114				
	e pPKP	Z	01:08:12.1								
	e PP	Z	01:10:56.5								
	e PPP	Z	01:14:10.1								
	e SS	T	01:29:39.6								
	e SSS	T	01:35:11.5								
	e L	Z	01:59:04.9			20.0	1026		5.6		
	GRA1	e PKPbc	Z	01:07:47.7	146.3	8.7					
		e pPKPbc	Z	01:08:15.6							
		e PP	Z	01:11:07.8							
e			01:19:09.7								
e SS		E	01:29:50.0								
e SSS		E	01:35:35.2								
e L		Z	02:19:12.4			19.3	1058				

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/02	01:01:39.8	35.440N	142.160E	33.0N	4.9			SZGRF
2001/10/02	01:01:34.9	34.735N	141.414E	33N	4.9			NEIC

Off east coast of Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	01:14:09.5	84.8	39.1			4.9		
	e		01:14:18.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/02	08:19:54.1	37.830N	141.600E	45.3	5.9	5.3		SZGRF
2001/10/02	08:19:49.3	37.710N	141.738E	43D	5.2	5.0		NEIC

Near east coast of eastern Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML	
CLL	i P	+ Z	08:31:58.8			0.8	52	5.6			
	e pP	Z	08:32:12.1								
	e sP	Z	08:32:16.8								
	e PP	Z	08:35:06.0								
	e S	Z	08:42:30.2								
	e SS	Z	08:47:58.7								
	e LR	Z	08:58:54.4								
	e L	Z	09:10:45.6			18.0	1864		5.5		
	GRA1	i P	+ Z	08:32:10.1	82.3	37.4	1.5	141	5.9		
		e pP	Z	08:32:23.0							
e sP		Z	08:32:28.9								
e PP		Z	08:35:17.1								

e (PPP)	Z	08:37:26.3									
e S	N	08:42:23.5									
e SS	E	08:47:43.2									
e L	Z	09:12:10.5			18.2		1170			5.3	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/03								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPab	Z 02:51:56.4							
	e	02:52:03.7							
	e PP	Z 02:55:37.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/03	03:27:24.9	25.286S	179.729E	450?	4.4			NEIC
South of Fiji Islands								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLZ	e PKPbc	Z 03:46:27.9	152.2	21.0					
GRA1	e PKPab	Z 03:46:48.6	154.0	24.3					
	e pPKPab	Z 03:48:46.6							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/03								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPab	Z 08:06:16.4							
	e	08:06:31.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/03	17:25:33.2	49.910N	148.080E	306.2	6.1			SZGRF
2001/10/03	17:25:12.3	47.041N	148.594E	285D	5.6			NEIC
Northwest of Kuril Islands, Russia								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	i P	- Z 17:36:06.2	71.6	30.4	0.8	226	6.4		
BSEG	i P	- Z 17:36:14.2	73.0	28.3	0.9	93	5.9		
RUE	i P	- Z 17:36:15.6	73.3	30.3	0.8	176	6.2		
CLL	i P	- Z 17:36:22.5			0.6	294	6.5		
	i PcP	Z 17:36:36.0							
	e pP	Z 17:37:29.6							

	e sP	Z	17:37:56.9							
	e PP	Z	17:39:16.3							
	e pPP	Z	17:40:18.1							
	e PPP	Z	17:40:41.1							
	e PPPP	Z	17:42:31.8							
	e S	T	17:45:34.4							
	e SKSac	R	17:46:03.4							
	e sS	T	17:47:31.7							
	e sSKSac	R	17:48:05.8							
	e SS	E	17:50:38.8							
	e sSS	E	17:52:08.3							
	e LR	Z	17:55:59.9							
BRG	i P	- Z	17:36:23.1	74.6	30.2	0.9		74		5.8
CLZ	i P	- Z	17:36:24.8	74.8	28.1	0.8		138		6.1
IBBN	i P	- Z	17:36:26.4	75.2	26.4	0.7		169		6.3
MOX	i P	- Z	17:36:28.6	75.5	28.7	0.8		83		5.9
BUG	i P	- Z	17:36:31.4	76.1	26.0	0.8		92		5.8
GEC2	i P	- Z	17:36:33.8	76.4	29.8	0.7		75		5.9
WET	i P	- Z	17:36:34.2	76.4	29.3	0.8		143		6.1
GRA1	i P	- Z	17:36:34.4	76.5	28.3	0.7		314		6.4
	e pP	Z	17:37:44.9							
	e sP	Z	17:38:15.9							
	e PP	Z	17:39:33.6							
	e PPP	Z	17:41:01.6							
	e		17:42:50.3							
	e S	E	17:45:55.5							
	e sS	E	17:47:50.0							
	e SS	E	17:50:55.9							
	e (sSS)	E	17:52:45.3							
TNS	i P	- Z	17:36:36.0	76.8	26.6	0.7		98		5.9
FUR	i P	- Z	17:36:41.6	77.8	28.2	0.8		195		6.2
STU	i P	- Z	17:36:41.9	77.9	27.0	0.8		87		5.9
WLF	e P	Z	17:36:42.4	78.0	25.1					

Date Origin Time Lat Long Depth mb Ms ML Source
 2001/10/04 08:34:54.9 21.1S 178.6W 575 4.2 NEIC
 Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	- Z 08:53:37.7			1.1	28			
	i PKPab	Z 08:53:42.9			0.7	20			
GRA1	e PKPbc	Z 08:53:42.5							
	e PKPab	Z 08:53:51.6							

Date Origin Time Lat Long Depth mb Ms ML Source

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 03:04:33.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/06	03:18:57.9	55.470N	163.330W	33.0N	4.9	4.1		SZGRF
2001/10/06	03:19:00.3	55.897N	154.425W	33N	4.6			NEIC

Unimak Island, Alaska, United States, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 03:30:34.9	73.7	351.7	1.5	19	4.9		
	e PP	Z 03:33:22.0							
	e S	Z 03:40:12.0							
	e SS	Z 03:45:14.8							
	e SSS	Z 03:48:55.2							
	e L	Z 04:05:51.9			20.2	92		4.1	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/06	07:27:36.7			G				SZGRF
2001/10/06	07:25:55.1	40.811N	20.716E	10G	4.4			NEIC

Greece-Albania border region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 07:28:13.5	9.4	145.7					
WET	e Pn	Z 07:28:17.5	10.0	143.5					
BFO	e Pn	Z 07:28:33.5	11.6	125.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/06	09:14:38.6	23.130S	177.200W					GRSN

South of Fiji Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPdf	Z 09:34:31.7	150.7	19.5					
	i PKPbc	- Z 09:34:35.7			0.7	22			
	e PKPab	Z 09:34:41.2							
GRA1	e PKPbc	Z 09:34:40.7							
	e PKPab	Z 09:34:50.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/06	10:08:30.8	47.460N	148.660E	33.0N	5.5			SZGRF
2001/10/06	10:08:35.5	45.200N	147.268E	175*	4.6			NEIC

Northwest of Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 10:20:15.8	77.7	30.0	0.8	33	5.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/07	02:21:10.2	3.212S	142.983E	10G	5.7	6.1		NEIC

Near north coast of New Guinea, Papua New Guinea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPdf	Z 02:39:55.5			1.1	16			
	e PP	Z 02:41:06.7							
	e PPP	Z 02:43:30.6							
	e Sdiff	T 02:48:50.8							
	e PS	R 02:50:45.1							
	e PPS	Z 02:51:58.5							
	e SS	T 02:57:10.9							
	e SSS	T 03:00:56.8							
	e LQ	T 03:08:31.1							
	e LR	Z 03:17:07.6							
	e L	Z 03:31:07.0			22.0	5064		6.1	
GRA1	e PKPdf	Z 02:39:59.9	118.2	57.7					
	e PP	Z 02:41:15.9							
	e PPP	Z 02:43:47.1							
	e Sdiff	N 02:49:12.5							
	e PS	E 02:50:59.4							
	e SS	N 02:57:39.5							
	e L	Z 03:32:33.2			21.4	3257		5.9	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/07	06:13:17.7	45.710N	10.780E	10.0G			2.7	SZGRF
2001/10/07	06:13:17.4	45.704N	10.725E	10G				NEIC

Northern Italy

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
FUR	e Sg	N 06:14:36.1	2.5	188.9					2.9
BFO	e Pn	Z 06:14:06.3	3.1	147.2					2.6
	e Sn	N 06:14:44.0							
GEC2	e Pn	Z 06:14:14.8	3.7	213.8					2.6
	e Sn	N 06:14:58.0							
WET	e Pn	Z 06:14:15.4	3.7	203.8					2.8
	e Sn	N 06:14:58.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/07	22:46:20.4	52.650N	163.480E	33.0N	5.2	4.7		SZGRF
2001/10/07	22:46:18.8	52.650N	160.441E	22D	5.0	4.8		NEIC

Off east coast of Kamchatka Peninsula, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 22:57:58.9	74.4	18.8	1.8	46	5.2		
	e PP	Z 23:00:48.7							
	e S	E 23:07:36.9							
	e SS	E 23:13:05.2							
	e L	Z 23:32:45.5			21.7	397		4.7	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/07	23:36:14.1	20.9S	178.9W	600	3.9			NEIC

Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPbc	Z 23:54:59.5							
	e PKPab	Z 23:55:08.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/08	01:17:14.7	32.390N	60.680E	33.0N	4.9	4.1		SZGRF
2001/10/08	01:17:16.7	32.898N	60.236E	33N	4.8	4.1		NEIC

Northern and central Iran

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	+ Z 01:24:48.5	39.6	96.2	1.5	43	4.9		
	e S	E 01:31:04.1							
	e L	Z 01:43:24.6			20.8	275		4.1	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/08	03:39:28.0	17.230N	98.580W	33.0N	5.4	5.5		SZGRF
2001/10/08	03:39:22.2	17.207N	99.857W	33N	5.5	5.4		NEIC

Guerrero, Mexico

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i P	- Z 03:52:19.8			1.2	18	5.2		
	e PP	Z 03:55:58.5							
	e SKSac	R 04:02:49.6							
	e S	T 04:03:12.8							
	e PS	T 04:04:20.4							
	e SS	T 04:09:11.8							
	e LQ	T 04:17:45.9							

	e LR	Z	04:22:48.2							
	e L	Z	04:35:28.0			22.0	1810		5.5	
GRA1	e P	Z	03:52:20.1	89.8	297.0				5.4	
	e		03:52:58.8							
	e PP	Z	03:55:53.0							
	e PPP	Z	03:57:51.5							
	e S	N	04:03:14.0							
	e SS	N	04:09:03.8							
	e L	Z	04:31:43.7			21.6	2133		5.5	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/08	06:18:53.3	53.090N	162.900E	33.0N	5.1	4.7		SZGRF
2001/10/08	06:18:50.4	52.640N	160.402E	33N	5.0	4.8		NEIC

Off east coast of Kamchatka Peninsula, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 06:30:28.8	74.4	18.8			5.1		
	e S	E 06:40:16.7							
	e SS	N 06:45:45.3							
	e L	Z 07:05:26.3			21.0	399		4.7	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/08								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 11:42:17.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/08	18:14:37.5	54.350N	160.260E	33.0N	6.4	6.6		SZGRF
2001/10/08	18:14:26.3	52.603N	160.300E	49D	5.9	6.4		NEIC

Near east coast of Kamchatka Peninsula, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	i P	+ Z 18:25:33.3	69.4	20.7	1.1	727	6.8		
BSEG	i P	+ Z 18:25:40.1	70.6	18.8	2.2	1174	6.7		
RUE	i P	+ Z 18:25:44.0	71.2	20.7	1.1	385	6.5		
CLL	i P	+ Z 18:25:51.2	72.5	20.1	1.1	397	6.4		
	e pP	Z 18:26:05.5							
	e PP	Z 18:28:35.9							
	e PPP	Z 18:30:20.9							
	e S	T 18:35:14.6							
	e SKSac	R 18:35:58.5							
	e PPS	N 18:36:03.3							

	e	SS	T	18:39:56.7						
	e	LR	Z	18:49:39.5						
	e	L	Z	19:02:38.5			18.0	35113		6.7
CLZ	i	P	+ Z	18:25:52.4	72.5	18.6	1.1	374		6.4
IBBN	i	P	+ Z	18:25:52.1	72.6	17.1	0.9	349		6.5
BRG	i	P	+ Z	18:25:52.5	72.7	20.6	1.6	327		6.2
MOX	i	P	+ Z	18:25:57.0	73.4	19.2	1.5	334		6.3
BUG	i	P	+ Z	18:25:57.3	73.5	16.7	1.0	344		6.4
GRA1	i	P	+ Z	18:26:03.0	74.4	18.9	1.2	405		6.4
	e	PP	Z	18:28:55.0						
	e	PPP	Z	18:30:41.3						
	e	S	E	18:35:38.3						
	e	SS	N	18:40:47.2						
	e	L	Z	19:03:52.6			19.3	30381		6.6
TNS	i	P	+ Z	18:26:03.3	74.5	17.3	1.2	237		6.2
WET	i	P	+ Z	18:26:04.2	74.6	19.8	2.2	1251		6.7
GEC2	i	P	+ Z	18:26:04.5	74.7	20.3	2.2	647		6.4
WLF	i	P	+ Z	18:26:08.9	75.4	15.9	1.9	259		5.9
STU	i	P	+ Z	18:26:10.4	75.7	17.6	1.4	293		6.1
FUR	i	P	+ Z	18:26:11.1	75.8	18.8	2.5	1726		6.6
BFO	i	P	+ Z	18:26:13.8	76.3	17.1	1.6	353		6.1

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/08	18:20:52.0	54.620N	160.090E	33.0N	6.3			SZGRF
2001/10/08	18:20:41.5	52.638N	160.232E	61D	5.9			NEIC

Near east coast of Kamchatka Peninsula, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	i	P	+ Z 18:31:46.1	69.4	20.7	1.2	850	6.8		
BSEG	i	P	+ Z 18:31:53.3	70.5	18.8	1.1	384	6.5		
RUE	i	P	+ Z 18:31:57.5	71.2	20.7	1.4	652	6.6		
CLL	i	P	+ Z 18:32:04.3	72.5	20.2	1.3	427	6.4		
CLZ	i	P	+ Z 18:32:05.4	72.5	18.6	1.3	473	6.5		
IBBN	e	P	+ Z 18:32:05.2	72.5	17.1	1.2	308	6.3		
BRG	i	P	+ Z 18:32:05.5	72.7	20.7	1.6	285	6.2		
MOX	i	P	+ Z 18:32:10.0	73.4	19.3	1.5	264	6.1		
BUG	e	P	+ Z 18:32:10.3	73.5	16.7	1.3	290	6.2		
GRA1	i	P	+ Z 18:32:15.8	74.4	18.9	1.6	620	6.5		
TNS	i	P	+ Z 18:32:16.1	74.4	17.3	1.5	261	6.1		
WET	i	P	+ Z 18:32:17.1	74.5	19.9	1.6	452	6.4		
GEC2	i	P	+ Z 18:32:17.0	74.6	20.3	1.6	221	6.0		
WLF	i	P	+ Z 18:32:21.8	75.4	15.9	2.3	644	6.2		
STU	i	P	+ Z 18:32:23.3	75.7	17.7	1.6	268	6.0		
FUR	i	P	+ Z 18:32:24.3	75.8	18.8	1.6	392	6.2		
BFO	i	P	+ Z 18:32:26.7	76.2	17.1	2.5	944	6.4		

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2001/10/09 18:48:20.4 18.610N 97.050W 32.7 4.9 SZGRF
2001/10/09 18:48:20.4 18.179N 95.281W 33N 4.6 4.0 NEIC
Central Mexico

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 19:01:03.2	86.4	294.1			4.9		
	e pP	Z 19:01:12.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/09	20:08:13.3	23.138S	175.403W	33N	4.8			NEIC

Tonga Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e (PKPab)	Z 20:28:19.5	152.9	13.5					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/09	20:12:02.8	23.180S	175.567W	33N	5.1	5.2		NEIC

Tonga Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPdf	Z 20:31:51.1	153.0	13.8					
	e PKPbc	Z 20:31:58.4							
	e	20:32:10.1							
	e	20:32:22.0							
	e PP	Z 20:35:40.4							
	e L	Z 21:48:52.8			18.6	471		5.3	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/09								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e (PKPab)	Z 20:40:02.2							
	e	20:40:45.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/09								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPdf	Z 21:02:03.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/09	23:53:53.6	50.030N	154.460E	33.0G	6.9			SZGRF
2001/10/09	23:53:37.0	47.743N	155.142E	33N	6.5	5.7		NEIC

Kuril Islands, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	i P	+ Z	00:05:05.9	72.8	25.8	1.0	1460	7.1		
BSEG	i P	+ Z	00:05:13.1	74.1	23.8	1.2	708	6.7		
RUE	i P	+ Z	00:05:15.9	74.5	25.8	1.4	1784	7.0		
CLL	i P	+ Z	00:05:22.5			0.9	1333	7.1		
	i pP	Z	00:05:37.8							
	e PP	Z	00:08:15.0							
	e PPP	Z	00:10:00.6							
	e S	T	00:15:02.2							
	e SS	R	00:19:55.5							
	e LR	Z	00:30:03.1							
	e L	Z	00:42:05.1			20.0	6816		6.0	
BRG	i P	+ Z	00:05:23.5	75.9	25.7	1.1	604	6.5		
CLZ	i P	+ Z	00:05:24.6	76.0	23.6	1.1	1484	6.9		
IBBN	i P	+ Z	00:05:25.3	76.2	21.9	1.1	1185	6.8		
MOX	i P	+ Z	00:05:28.4	76.7	24.2	1.2	845	6.7		
BUG	i P	+ Z	00:05:30.2	77.1	21.5	1.2	1125	6.8		
GRA1	i P	+ Z	00:05:34.6	77.7	23.9	0.9	1592	7.2		
	e PP	Z	00:08:29.1							
	e PPP	Z	00:10:21.6							
	e S	N	00:15:24.0							
	e SS	N	00:21:03.0							
	e L	Z	00:43:29.3			20.2	8270			
WET	i P	+ Z	00:05:34.8	77.8	24.9	1.1	1413	7.0		
GEC2	i P	+ Z	00:05:34.4	77.8	25.4	1.1	439	6.5		
TNS	i P	+ Z	00:05:35.3	77.9	22.2	1.0	955	6.9		
STU	i P	+ Z	00:05:41.6	79.1	22.5	1.1	1059	6.9		
FUR	i P	+ Z	00:05:41.9	79.1	23.8	1.0	1869	7.2		
BFO	i P	+ Z	00:05:44.9	79.7	22.0	1.1	1010	6.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/10	00:30:1.8	44.540N	10.770E	10.0G			3.1	SZGRF

Northern Italy

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
FUR	e Sg	N	00:31:58.4	3.6	185.7					3.4
BFO	e Pn	Z	00:31:05.9	4.1	155.2					3.0
	e Sn	N	00:31:51.6							
GEC2	e Pn	Z	00:31:13.2	4.8	206.1					2.8
	e Sn	N	00:32:06.8							
WET	e Pn	Z	00:31:14.2	4.8	198.2					

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2001/10/10 15:49: 4.1 52.500N 162.060E 33.0N 5.1 SZGRF
2001/10/10 15:49:06.6 52.756N 160.403E 68* 4.7 NEIC
Off east coast of Kamchatka Peninsula, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 16:00:41.8	74.3	18.8	0.8	14	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/10	16:18:48.1	23.826S	179.833W	500G	4.8			NEIC

South of Fiji Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	Z 16:37:43.0			0.9	26			
	i PKPab	Z 16:37:52.2			0.9	17			
	e	16:38:59.0							
	e pPKPab	Z 16:39:46.2							
GRA1	e PKPbc	Z 16:37:47.9	152.7	22.5					
	e PKPab	Z 16:37:59.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/11								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPdf	Z 01:52:16.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/11	12:26:10.9	19.431S	175.583E	33N	5.2	4.4		NEIC

South of Fiji Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPbc	Z 12:45:52.0	147.3	28.0					
	e L	Z 13:41:02.3			18.6	218		5.0	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/11	14:45:22.7	26.090N	143.280E	33.0N	5.2			SZGRF
2001/10/11	14:45:29.5	27.538N	141.613E	33N	4.5			NEIC

Bonin Islands, Japan, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 14:58:33.5	91.1	42.5			5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/11	19:41: 8.7	17.750N	94.690W	33.0N	4.7	4.5		SZGRF
2001/10/11	19:40:53.0	15.651N	95.000W	33N	4.3			NEIC

Chiapas, Mexico

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 19:53:47.9	88.2	292.3			4.7		
	e L	Z 20:37:33.0			18.7	182		4.5	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/11								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPdf	Z 23:28:00.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/12	05:02:50.5	54.170N	130.880W	33.0N	5.8	5.8		SZGRF
2001/10/12	05:02:33.6	52.814N	132.132W	10G	5.5	5.7		NEIC

Southeastern Alaska, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	i P	+ Z 05:13:42.6	68.8	336.7	1.2	105	5.9		
RGN	e P	+ Z 05:13:43.7	68.9	338.4	1.3	245	6.3		
IBBN	i P	+ Z 05:13:47.9	69.6	335.5	1.2	127	6.0		
BUG	i P	+ Z 05:13:51.6	70.3	335.3	1.3	85	5.8		
CLZ	i P	+ Z 05:13:54.7	70.7	337.1	1.2	154	6.0		
RUE	i P	+ Z 05:13:55.5	70.9	339.0	1.1	181	6.1		
WLF	e P	+ Z 05:14:00.0	71.6	334.9	1.5	41	5.3		
TNS	i P	+ Z 05:14:00.3	71.7	336.2	1.2	71	5.7		
CLL	i P	+ Z 05:14:00.6			1.3	79	5.7		
	e PP	Z 05:16:45.8							
	e PPP	Z 05:18:22.5							
	e S	T 05:23:29.2							
	e SKSac	R 05:23:54.4							
	e SS	R 05:28:11.1							
	e SSS	N 05:32:09.1							
	e LR	Z 05:36:34.1							
	e PKPPKP	Z 05:41:45.1							
	e L	Z 05:47:10.8			18.0	7082		6.0	
MOX	i P	+ Z 05:14:02.6	72.1	337.9	1.0	71	5.8		
BRG	i P	+ Z 05:14:04.7	72.4	339.3	1.2	116	5.9		
GRA1	i P	+ Z 05:14:07.6	72.9	337.8	1.2	85	5.8		
	e	05:14:47.6							

	e	PP	Z	05:16:52.8								
	e	PPP	Z	05:18:38.3								
	e	S	N	05:23:29.2								
	e	SS	N	05:28:12.3								
	e	SSS	N	05:32:18.3								
	e	L	Z	05:47:08.8			19.0	5080		5.8		
STU	i	P	+ Z	05:14:09.6	73.3	336.8	1.2	75		5.7		
BFO	i	P	+ Z	05:14:10.4	73.4	336.3	1.1	111		5.9		
WET	i	P	+ Z	05:14:12.7	73.8	338.8	1.2	61		5.6		
GEC2	i	P	+ Z	05:14:15.4	74.3	339.4	1.1	52		5.6		
FUR	i	P	+ Z	05:14:15.9	74.3	338.0	1.2	122		5.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/12	15:02:47.7	18.350N	141.450E	33.0G	6.5	7.3		SZGRF
2001/10/12	15:02:16.3	12.662N	144.917E	37G	6.7	7.3		NEIC

Mariana Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	+ Z	15:16:11.3	102.5	48.8	1.5	378	6.7		
BSEG	e P	+ Z	15:16:13.6	103.1	45.5	1.2	144	6.5		
BRG	e P	+ Z	15:16:15.4	103.5	49.3	1.4	197	6.6		
CLL	e Pdiff	Z	15:16:16.0			1.3	226			
	e PP	Z	15:20:37.5							
	e PPP	Z	15:23:00.9							
	e SKSac	R	15:26:56.4							
	e SKKSac	R	15:27:14.3							
	e Sdiff	T	15:27:56.7							
	e PS	R	15:29:48.9							
	e PPS	Z	15:30:40.9							
	e SS	T	15:35:13.4							
	e		15:45:04.4							
	e LR	Z	15:52:21.0							
	e L	Z	16:04:53.1			22.0	152951		7.5	
CLZ	e P	+ Z	15:16:20.2	104.5	45.9	1.4	194	6.7		
MOX	e P	+ Z	15:16:21.5	104.8	47.2	1.5	173	6.6		
GEC2	e P	+ Z	15:16:22.1	105.0	49.4	1.3	74	6.3		
WET	e P	+ Z	15:16:23.3	105.2	48.7	1.5	114	6.4		
IBBN	e P	+ Z	15:16:23.9	105.3	43.5	1.2	237	6.8		
GRA1	i P	+ Z	15:16:25.2	105.6	47.1	1.3	237	6.7		
	e		15:19:41.1							
	e PP	Z	15:20:49.1							
	e PPP	Z	15:23:11.4							
	e S	N	15:27:06.7							
	e PS	Z	15:29:30.9							
	e (PKKP)	Z	15:32:12.1							
	e SS	N	15:35:44.9							
	e (SKKPdf)	Z	15:36:28.9							

	e	SKKSdf	Z	15:40:18.8							
	e	L	Z	16:08:18.9			19.1	92124		7.3	
BUG	e	P	+ Z	15:16:27.5	106.1	43.2	1.3	109		6.3	
TNS	e	P	+ Z	15:16:29.4	106.5	44.5	2.3	365		6.6	
FUR	e	P	+ Z	15:16:30.0	106.6	47.5	1.3	307		6.8	
STU	e	P	+ Z	15:16:32.2	107.2	45.5	1.1	137		6.4	
BFO	e	P	+ Z	15:16:35.3	107.9	44.8	1.5	112		6.3	
WLF	e	P	+ Z	15:16:35.9	107.9	42.5	1.3	84		6.2	

Date Origin Time Lat Long Depth mb Ms ML Source
 2001/10/12 22:19:18.0 20.626S 169.550E 33N 4.7 NEIC
 Vanuatu Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKP	Z 22:38:49.5			0.8	48			
	e pPKP	Z 22:39:01.3							
GRA1	e PKPbc	Z 22:38:55.8	146.2	38.4					
	e PKPab	Z 22:38:57.3							
	e	Z 22:39:07.3							
	e PP	Z 22:42:20.3							

Date Origin Time Lat Long Depth mb Ms ML Source
 2001/10/12 23:51: 5.8 56.530N 33.340W 33.0N 4.7 SZGRF
 North Atlantic Ocean

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 23:56:45.9	27.1	301.8	1.7	24	4.7		

Date Origin Time Lat Long Depth mb Ms ML Source
 2001/10/13

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 00:06:52.7							

Date Origin Time Lat Long Depth mb Ms ML Source
 2001/10/13

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 04:38:35.4							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/13	07:27:51.1	21.165S	178.605W	500G	4.3			NEIC

Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPbc	Z 07:46:45.6	150.4	18.8					
	e PKPab	Z 07:46:54.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/13	16:15: 9.2	14.570N	62.780W	33.0N	4.7			SZGRF
2001/10/13	16:15:29.0	17.096N	60.306W	33N	4.6			NEIC

Windward Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 16:26:09.5	65.2	267.4	1.1	6	4.7		
	e	16:26:23.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/13	16:26:59.4	0.777N	125.861E	33N	5.6	5.8		NEIC

Northern Molucca Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e Pdiff	Z 16:40:59.2			1.4	12			
	e PP	Z 16:45:12.9							
	e PPP	Z 16:47:30.2							
	e SKSac	R 16:51:34.2							
	e Sdiff	T 16:52:44.5							
	e PS	Z 16:54:24.5							
	e PPS	Z 16:55:01.7							
	e SS	E 16:59:50.8							
	e PSPS	E 17:00:31.5							
	e SSS	E 17:04:40.3							
	e L	Z 17:29:49.5			20.0	2731		5.8	
GRA1	e Pdiff	Z 16:41:04.3	105.0	70.2					
	e PP	Z 16:45:24.4							
	e Sdiff	N 16:52:56.2							
	e SP	Z 16:54:29.9							
	e SS	E 17:00:33.0							
	e SSS	E 17:05:00.8							
	e L	Z 17:31:27.9			21.1	2863		5.8	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
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2001/10/13	20:54:49.3	18.420N	93.090E	24.3	5.0	4.5		SZGRF
2001/10/13	20:54:48.1	18.728N	92.379E	10G	4.9			NEIC

Myanmar

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 21:06:04.6	70.2	84.1	1.5	20	5.0		
	e pP	Z 21:06:11.2							
	e sP	Z 21:06:14.7							
	e S	E 21:15:18.7							
	e (SS)	E 21:21:02.3							
	e L	Z 21:41:41.2			19.9	260		4.5	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/14	01:10:44.9	8.585S	110.590E	65D	5.7			NEIC

Jawa, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e Pdiff	Z 01:24:30.8			1.2	8			
	e PP	Z 01:28:43.6							
	e Sdiff	N 01:36:02.0							
	e PPS	Z 01:38:33.6							
	e PKKP	Z 01:40:41.0							
	e SS	E 01:43:02.5							
	e LR	Z 02:00:35.4							
	e L	Z 02:13:23.1			22.0	466		5.0	
GRA1	e Pdiff	Z 01:24:35.9	102.6	88.5					
	e	01:27:44.6							
	e PP	Z 01:28:44.0							
	e PPP	Z 01:31:29.4							
	e Sdiff	N 01:36:13.1							
	e SP	Z 01:37:48.1							
	e (PPS)	Z 01:38:52.0							
	e SS	N 01:43:14.8							
	e L	Z 02:18:36.2			21.6	302			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/14								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 02:31:23.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/14	03:53:47.6	32.916S	179.908E	309D	4.6			NEIC

South of Kermadec Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPab	Z 04:13:55.3	161.2	30.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/14								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPbc	Z 14:14:46.6							
	e PKPab	Z 14:14:52.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/14	16:51:18.5	44.940N	16.960E	10.0G			3.7	SZGRF
2001/10/14	16:51:16.5	45.010N	17.150E	10G				NEIC

Northwestern Balkan Peninsula

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 16:52:26.1	4.5	147.2					3.5
	e Sn	N 16:53:17.6							
	e Sg	N 16:53:42.1							
WET	e Pn	Z 16:52:33.8	5.1	143.3					3.6
	e Sn	N 16:53:29.3							
BRG	e Pn	Z 16:52:50.0	6.2	158.7					
MOX	e Pn	Z 16:52:57.3	6.7	144.5					
	e Sn	N 16:54:10.1							
BFO	e Pn	Z 16:52:57.8	6.9	115.5					
	e Sn	E 16:54:12.9							
TNS	e Pn	Z 16:53:11.8	7.8	128.3					4.1

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/14	17:25:12.2	17.910S	70.190E	33.0N	4.7	4.2		SZGRF
2001/10/14	17:24:48.8	22.892S	69.470E	10G	4.7			NEIC

South Indian Ocean

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 17:37:46.0	89.0	128.4			4.7		
	e L	Z 18:11:41.7			21.8	107		4.2	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/14	21:14:23.8	30.430N	78.380E	33.0N	4.4			SZGRF

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2001/10/14 21:14:41.2
Northern India

32.561N 76.046E 33N 4.8 NEIC

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 21:23:37.1	50.0	84.4			4.4		

Date Origin Time Lat Long Depth mb Ms ML Source
2001/10/14

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e (PKPab)	Z 22:07:27.6							

Date Origin Time Lat Long Depth mb Ms ML Source
2001/10/15 00:32:16.7
Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPbc	Z 00:51:58.1	145.9	10.7					
	e L	Z 01:56:46.0			21.3	279		5.0	

Date Origin Time Lat Long Depth mb Ms ML Source
2001/10/15 03:49:38.1
North Island, New Zealand

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPdf	Z 04:09:35.3							
	e PKPab	Z 04:10:28.1			1.1	16			
	e	04:10:36.7							
	e PP	Z 04:14:15.5							
	e PPP	Z 04:18:06.5							
	e PPPr	Z 04:21:50.8							
	e SKSP	Z 04:24:48.5							
	e PPS	Z 04:27:52.6							
	e SS	E 04:34:48.8							
	e L	Z 05:25:37.5			22.0	451		5.3	
GRA1	e PKPdf	Z 04:09:37.4	165.6	51.7					
	e	04:09:45.7							
	e PKPab	Z 04:10:36.0							
	e	04:10:44.3							
	e PP	Z 04:14:20.8							
	e PPP	Z 04:18:17.8							
	e SKKSac	N 04:21:16.3							
	e SKSP	Z 04:24:50.6							

e (PPS)	Z	04:28:04.4							
e SS	N	04:34:59.4							
e L	Z	05:27:39.8			21.4		455		5.3

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/15	08:50:55.5	34.920N	22.630E	10.0G		3.9		SZGRF
2001/10/15	08:51:09.9	35.996N	22.178E	33N	4.6			NEIC

Central Mediterranean Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e L	Z 09:02:20.6	15.8	145.7	19.7	639		3.9	
STU	e Pn	Z 08:54:52.5	15.9	138.5					
BFO	e Pn	Z 08:54:53.4	16.0	135.4					
BRG	e Pn	Z 08:54:54.8	16.0	155.2					
MOX	e Pn	Z 08:55:01.5	16.5	148.5					
CLL	e Pn	Z 08:55:02.1	16.7	153.3					
TNS	e Pn	Z 08:55:11.1	17.3	139.9					
RUE	e Sn	E 08:58:30.4	17.5	156.9					
CLZ	e Pn	Z 08:55:22.0	17.9	147.5					
	e Sn	E 08:58:39.8							
WLF	e Pn	Z 08:55:21.5	17.9	133.6					
	e Sn	E 08:58:39.8							
BUG	e Pn	Z 08:55:29.9	18.8	139.6					
	e Sn	E 08:59:01.1							
IBBN	e Pn	Z 08:55:36.8	19.2	142.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/15	11:57:51.7	52.690N	165.390W	33.0N	5.3			SZGRF
2001/10/15	11:58:00.3	54.255N	162.258W	33N	3.9			NEIC

South of Aleutian Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 12:09:44.8	75.9	356.1	0.6	13	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/15	12:14:40.0	22.475S	113.613W	10G	5.3	4.9		NEIC

Easter Island region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPdf	Z 12:33:51.1	129.3	281.6					
GRC1	e SS	E 12:53:32.5	129.6	281.3					
	e SSS	E 12:58:31.6							
	e L	Z 13:20:28.2			20.2	262		4.9	

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GRA1	e P	Z	06:29:43.5	76.2	354.6	1.1	18	5.1
	e		06:29:54.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/16	15:27:29.0	16.630N	62.010W	33.0N	5.3	5.1		SZGRF
2001/10/16	15:27:28.2	19.299N	64.877W	41	5.4	5.2		NEIC

Leeward Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 15:38:16.5	66.5	272.6	1.3	26	5.3		
	e S	E 15:47:09.5							
	e L	Z 16:01:01.8			22.0	1390		5.1	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/16	15:49: 6.2	41.890N	143.780E	33.0N	4.9			SZGRF
2001/10/16	15:49:17.9	43.146N	139.085E	33N	4.6			NEIC

Hokkaido, Japan, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 16:01:09.6	76.6	36.3	1.0	18	4.9		
	e (PcP)	Z 16:01:15.9							
	e	16:01:26.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/16	16:37:11.9	48.800N	156.880E	33.0N	4.9	4.7		SZGRF
2001/10/16	16:37:06.9	48.344N	155.262E	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 16:49:02.9	77.2	23.6	1.1	10	4.9		
	e (PcP)	Z 16:49:14.2							
	e L	Z 17:26:55.9			18.5	360		4.7	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/16	19:52:38.2	4.228N	126.519E	33N	5.2			NEIC

Talau Islands, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e Pdiff	Z 20:06:34.6	102.7	67.5					
	e L	Z 20:56:40.5			19.2	209		4.7	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/16	22:29:30.5	18.940S	177.550W	500G	3.7			NEIC

Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPbc	Z 22:48:19.6	148.5	16.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/17	02:34:37.6	28.298S	68.713W	82*	5.3			NEIC

La Rioja Province, Argentina

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e Pdiff	Z 02:48:38.2	105.2	243.9					
	e PP	Z 02:52:56.0							
	e (SP)	Z 03:02:05.4							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/17	11:29:14.9	16.840N	61.420W	33.0N	5.5	5.7		SZGRF
2001/10/17	11:29:09.5	19.313N	64.912W	33N	5.4	5.6		NEIC

Leeward Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 11:39:58.9	66.5	272.6	1.6	54	5.5		
	e	11:40:03.6							
	e (PcP)	Z 11:40:29.1							
	e	11:40:47.5							
	e PPP	Z 11:44:16.2							
	e S	E 11:48:47.1							
	e SS	E 11:53:18.8							
	e L	Z 12:09:17.3			18.2	3889		5.7	
CLL	i P	- Z 11:40:05.7			1.1	16	5.1		
	e	11:40:10.1							
	e	Z 11:40:19.3							
	e PP	Z 11:42:32.8							
	e PPP	Z 11:44:44.3							
	e S	E 11:49:03.8							
	e PS	E 11:49:31.4							
	e SS	E 11:53:35.9							
	e LR	Z 12:00:33.6							
	e L	Z 12:15:58.5			18.0	4755		5.8	

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Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/17	13:00:14.0			G				SZGRF
2001/10/17	13:01:25.7	45.548N	26.896E	33N	4.9			NEIC

Romania

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z	13:03:44.1	9.5	105.3					
BRG	e Pn	Z	13:03:50.5	10.1	116.7					
WET	e Pn	Z	13:03:52.2	10.1	105.5					
CLL	e Pn	Z	13:04:00.8	10.8	116.6					
FUR	e Pn	Z	13:04:04.8	11.0	98.0					
GRA1	e P	Z	13:04:08.0	11.3	105.5					
MOX	e Pn	Z	13:04:10.8	11.4	110.7					
STU	e Pn	Z	13:04:23.5	12.4	98.4					
BFO	e Pn	Z	13:04:29.4	12.9	95.5					
TNS	e Pn	Z	13:04:33.1	13.2	103.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/17	20:18:32.3	16.517S	177.719W	500G	4.1			NEIC

Fiji Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPbc	Z	20:37:18.5	146.0	15.5					
	e pPKPbc	Z	20:38:58.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/17	20:25:15.0	20.712S	179.353W	649D	4.8			NEIC

Fiji Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPdf	Z	20:43:45.2							
	i PKPbc	+ Z	20:43:50.1			0.8	89			
	i PKPab	Z	20:43:54.5			0.7	27			
	e pPKPbc	Z	20:46:15.0							
GRA1	e PKPdf	Z	20:43:48.8	149.8	20.0					
	e PKPbc	Z	20:43:54.7							
	e PKPab	Z	20:44:03.5							
	e pPKPbc	Z	20:46:22.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/17	21:13:40.9	17.031S	174.849W	228D	4.6			NEIC

Tonga Islands

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Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPbc	Z 21:32:58.0	147.0	10.7					
	e pPKPbc	Z 21:33:56.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/18								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 13:15:59.0							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/18	15:50:21.3	36.320N	35.970E	10.0G	4.7			SZGRF
2001/10/18	15:50:30.9	36.896N	35.042E	33N	4.9			NEIC

Turkey

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z 15:54:59.6	19.6	119.7	1.8	58	4.6		
WET	e P	Z 15:55:05.4	20.2	119.0	1.2	35	4.7		
BRG	e P	Z 15:55:08.9	20.5	124.8	1.1	21	4.5		
CLL	e P	Z 15:55:16.9	21.3	124.1	1.7	36	4.6		
GRA1	e P	Z 15:55:18.2	21.4	117.7					
	e S	Z 15:59:21.8							
	e L	Z 16:04:16.8			18.7	198			
MOX	e P	Z 15:55:21.5	21.6	120.4	2.0	50	4.7		
BFO	e P	Z 15:55:30.5	22.6	110.5	1.2	32	4.7		
CLZ	e P	Z 15:55:33.4	22.9	121.0	1.5	47	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/18	18:08:12.0	37.420N	15.410E	10.0G				SZGRF
2001/10/18	18:08:33.9	38.703N	14.813E	270*	4.5			NEIC

Sicily, Italy

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
FUR	e Pn	Z 18:10:51.7	9.8	163.6					
GEC2	e Pn	Z 18:10:55.1	10.2	175.1					
WET	e Pn	Z 18:11:00.2	10.5	171.7					
BFO	e Pn	Z 18:11:02.3	10.7	151.7					
STU	e Pn	Z 18:11:04.4	10.8	156.0					
GRA1	e Pn	Z 18:11:09.6	11.3	165.5					
MOX	e Pn	Z 18:11:20.4	12.2	168.1					
BRG	e Pn	Z 18:11:21.4	12.2	176.8					
TNS	e Pn	Z 18:11:25.0	12.4	156.2					
WLF	e Pn	Z 18:11:27.5	12.6	147.3					

CLL	e Pn	Z	18:11:28.2	12.7	173.5
CLZ	e Pn	Z	18:11:38.8	13.5	165.0
BUG	e Pn	Z	18:11:43.2	13.8	154.5
RUE	e Pn	Z	18:11:41.8	13.8	176.6
IBBN	e Pn	Z	18:11:51.6	14.5	157.4

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/19	03:28:40.9	4.043S	123.933E	10G	6.4	7.3		NEIC

Banda Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e Pdiff	Z 03:42:55.3			2.2	84			
	e	03:43:20.4							
	e PP	Z 03:47:27.4							
	e SKSac	R 03:53:40.4							
	e Sdiff	T 03:54:54.1							
	e PS	Z 03:56:38.6							
	e PPS	Z 03:57:42.4							
	e SS	R 04:02:45.6							
	e SSS	E 04:06:46.5							
	e LQ	T 04:15:31.0							
	e LR	Z 04:20:30.5							
	e L	Z 04:43:21.4			20.0	92385		7.3	
GRA1	e Pdiff	Z 03:43:04.1	107.6	74.9					
	e	03:43:45.4							
	e PP	Z 03:47:35.1							
	e SP	Z 03:57:01.7							
	e PPS	Z 03:58:08.0							
	e PKKPdf	Z 03:58:40.4							
	e SS	E 04:03:01.6							
	e	04:06:26.3							
	e SSS	E 04:07:10.3							
	e L	Z 04:44:04.5			21.2	92738		7.3	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/19	07:04:36.8	20.860N	93.670E	42.7	5.4			SZGRF
2001/10/19	07:04:34.1	21.080N	93.594E	41D	5.0			NEIC

Myanmar

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 07:15:40.8	69.2	81.5	1.5	53	5.4		
	e pP	Z 07:15:52.9							

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Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/19	10:49:58.0	54.950N	157.560E	33.0N	5.6			SZGRF
2001/10/19	10:50:13.0	54.445N	158.026E	237D	5.0			NEIC

Kamchatka Peninsula, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	i P	- Z 11:01:16.7	72.2	19.5	1.0	50	5.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/19	13:01:31.9	7.160S	14.600E	33.0N	5.7	4.7		SZGRF
2001/10/19	13:01:23.3	7.943S	12.001E	10G	5.3	4.7		NEIC

Angola

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	i P	+ Z 13:11:14.2	57.6	179.1	1.1	84	5.7		
	e S	E 13:19:11.2							
	e L	Z 13:39:45.6			18.7	561		4.7	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/19	14:56:53.0			N	5.0	4.0		SZGRF
2001/10/19	14:56:52.3	42.000N	79.030E	85?	4.6			NEIC

Kyrgyzstan-Xinjiang border region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 15:05:19.3	46.2	72.4	1.3	18	5.0		
	e L	Z 15:25:49.3			19.6	183		4.0	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/20								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPab	Z 02:10:45.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/20	08:13:13.9	34.570N	30.080W	33.0N	5.2	3.8		SZGRF
2001/10/20	08:12:48.1	35.662N	34.549W	10G	4.7			NEIC

Azores Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 08:19:51.5	35.8	264.6	1.2	35	5.2		
	e L	Z 08:31:05.8			21.2	182		3.8	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/20								
	Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb MS ML
	GRA1	e PKP	Z 12:59:45.5					
		e	12:59:54.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/20								
	Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb MS ML
	GRA1	e P	Z 14:51:42.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/20	23:09:27.2	53.500N	162.840E	33.0G	5.0	4.1		SZGRF
2001/10/20	23:09:21.5	52.629N	160.421E	33N	4.8	4.1		NEIC
Off east coast of Kamchatka Peninsula, Russia								
	Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb MS ML
	GRA1	e P	Z 23:21:00.4	74.4	18.8	1.1	18	5.0
		e L	Z 23:56:06.8			21.6	99	4.1

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/21	00:29:23.9	36.992S	179.030E	33N	5.9	6.8		NEIC
Off east coast of North Island, New Zealand								
	Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb MS ML
	CLL	e PKPdf	Z 00:49:23.3					
		e PKPab	Z 00:50:09.9			1.3	124	
		e	00:50:22.0					
		e PP	Z 00:53:56.4					
		e PPr	Z 00:56:45.6					
		e SKKSac	R 01:00:49.0					
		e PSKS	R 01:04:19.9					
		e PPS	R 01:07:28.8					
		e SS	T 01:14:16.5					
		e PSPS	Z 01:15:42.9					
		e SSS	R 01:21:17.4					
		e LQ	T 01:39:46.1					
		e LR	Z 01:46:59.4					

	e L	Z	02:05:25.5				22.0	22793	7.0
GRA1	e PKPdf	Z	00:49:24.1	164.6	39.3				
	e PKPab	Z	00:50:18.5						
	e		00:50:31.2						
	e PP	Z	00:54:11.1						
	e PP2	Z	00:56:36.3						
	e PPP	Z	00:58:01.0						
	e PcPPKP2	Z	00:59:09.2						
	e		01:01:29.7						
	e (SKSP)	Z	01:04:37.1						
	e PPS	E	01:07:30.3						
	e SS	E	01:14:32.7						
	e L	Z	02:06:34.2				21.5	19035	6.9

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source			
2001/10/21											
	Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML	
	GRA1	e P	Z 03:13:12.5								

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source			
2001/10/21	03:40:18.0	1.838N	126.470E	33N	5.7	5.3		NEIC			
Northern Molucca Sea											
	Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML	
	GRA1	e Pdiff	Z 03:54:22.6	104.6	69.1						
		e (SSS)	Z 04:18:17.2								
		e	04:21:59.1								
		e L	Z 04:43:48.5			20.9	883		5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source			
2001/10/21	05:27:14.5	4.635S	139.488E	33N	5.3	5.0		NEIC			
Irian Jaya, Indonesia											
	Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML	
	GRA1	e (PKPdf)	Z 05:45:56.8	117.4	61.9						
		e PP	Z 05:47:08.5								
		e L	Z 06:41:20.3			18.8	306		4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/21	12:36:52.2	3.921N	128.600E	45D	5.4			NEIC

North of Halmahera, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e Pdiff	Z 12:51:05.8	104.2	66.0					
	e PP	Z 12:55:25.2							
	e L	Z 13:41:52.3			19.2	247		4.8	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/21	13:35:47.7	33.860N	112.290E	33.0N	5.0			SZGRF
2001/10/21	13:36:24.3	36.424N	103.212E	3G	4.3			NEIC

Southeastern China

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 13:47:03.9	64.2	63.2	1.4	18	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/21	14:40:20.9	53.510N	165.670W	38.3	5.2	4.2		SZGRF
2001/10/21	14:40:10.5	52.695N	166.890W	33N	4.6	4.4		NEIC

Fox Islands, Aleutian Islands, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 14:52:08.8	77.6	358.8	1.0	21	5.2		
	e pP	Z 14:52:19.8							
	e sP	Z 14:52:24.2							
	e SS	N 15:07:15.7							
	e (SSS)	Z 15:10:54.6							
	e L	Z 15:24:13.9			21.5	124		4.2	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/21	16:56:56.0	52.300N	165.900W	33.0N	4.8			SZGRF
2001/10/21	16:56:54.6	52.706N	166.836W	33N	4.6			NEIC

South of Aleutian Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 17:08:51.4	77.6	358.8	0.8	7	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/21	18:37:32.1	29.820N	129.870E	33.0N	5.5			SZGRF
2001/10/21	18:37:45.4	29.776N	129.470E	171*	4.6			NEIC

Ryukyu Islands, Japan

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Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	i P	+ Z 18:49:57.9	83.5	50.3	1.1	35	5.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/21	19:02:46.3	4.936S	123.951E	10G	5.4	5.2		NEIC

Banda Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PP	Z 19:21:41.2	108.3	75.5					
	e SP	Z 19:31:05.4							
	e PPS	E 19:32:06.3							
	e SS	N 19:36:56.0							
	e SSS	Z 19:42:04.9							
	e L	Z 20:14:37.7			20.9	651		5.2	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/22								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 01:48:57.4							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/22								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e (PKPab)	Z 01:49:53.3							
	e	01:50:02.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/22								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e (PKPab)	Z 03:07:31.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/22	06:46:48.4	20.820S	179.153W	622D	5.3			NEIC

Fiji Islands region

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

CLL	i	PKPdf	- Z	07:05:21.5			1.2	48
	i	PKPbc	Z	07:05:26.4			1.0	406
	i	PKPab	Z	07:05:32.0			0.7	167
	e	pPKPbc	Z	07:07:50.4				
	e	SKP	Z	07:08:05.9				
	e	PP	Z	07:08:46.1				
	e	PPP	Z	07:12:08.1				
GRA1	e	PKPdf	Z	07:05:24.4	150.0	19.7		
	e	PKPbc	Z	07:05:30.9				
	e	PKPab	Z	07:05:40.1				
	e	PP	Z	07:09:02.0				
	e	PPP	Z	07:12:23.0				

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/22	20:54:44.0	51.800N	177.550E	33.0N				SZGRF
2001/10/22	20:54:56.0	53.703N	168.374E	33N	4.5			NEIC

Rat Islands, Aleutian Islands, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 21:06:38.7	74.8	13.8					
	e	21:06:47.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/22	22:10:37.9	15.902S	173.844W	33N	4.6			NEIC

Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPbc	Z 22:30:15.8	146.0	8.7					
	e pPKPbc	Z 22:30:40.5							
	e sPKPbc	Z 22:30:57.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/23	00:06:39.8	46.080N	12.030E	10.0G			2.8	SZGRF
2001/10/23	00:06:36.9	45.984N	12.021E	5G				NEIC

Northern Italy

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 00:07:26.8	3.1	202.3					2.3
	e Pg	Z 00:07:34.2							
	e Sn	N 00:08:03.5							
WET	e Pn	Z 00:07:28.5	3.2	190.7					2.7
	e Pg	Z 00:07:36.5							
	e Sn	N 00:08:06.2							

GRA1	e P	Z	11:45:42.9	74.1	19.1	0.8	38	5.5	
	e L	Z	12:17:37.8			20.4	69	4.0	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/23								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e (P)	Z 23:04:43.9							
	e	23:04:51.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/23								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPab	Z 23:24:10.8							
	e	23:24:19.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/23								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e (P)	Z 23:35:59.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/24	03:20:19.3	16.970S	175.690W	33N	4.4			NEIC
Tonga Islands								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPbc	Z 03:39:58.7	146.8	12.1					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/24	03:45:19.4	17.169S	174.436W	33N	4.5			NEIC
Tonga Islands								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPbc	Z 04:05:00.5	147.2	10.0					

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Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/24	09:51:27.0	16.630N	67.930W	33.0G	5.2	4.5		SZGRF
2001/10/24	09:51:50.7	19.323N	64.999W	49D	5.1	4.6		NEIC

Caribbean Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 10:02:38.4	66.6	272.7	1.5	31	5.2		
	e	10:02:51.4							
	e S	E 10:11:34.5							
	e L	Z 10:27:01.6			21.2	257		4.5	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/24	21:09:19.9	23.700S	11.540W	33.0N	5.0			SZGRF
2001/10/24	21:09:25.3	22.421S	10.705W	10G	4.4			NEIC

Southern Mid-Atlantic Ridge

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 21:21:04.9	74.7	201.0	0.9	13	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/24	23:49:48.8	72.780N	10.300E	33.0N	4.3			SZGRF
2001/10/24	23:49:35.5	73.675N	9.208E	10G	4.2			NEIC

Norwegian Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 23:54:52.2	24.0	358.6	1.1	11	4.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/25	06:53:56.5	37.012S	179.445E	33N	5.0			NEIC

Off east coast of North Island, New Zealand

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPab	Z 07:14:53.1	164.7	38.3					
	e PP	Z 07:18:42.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/25	17:06:25.8	23.174S	170.099E	33N	4.7			NEIC

Southeast of Loyalty Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPbc	Z 17:26:11.3	148.7	39.7					

GRA1 e (P) Z 10:55:12.9

Date Origin Time Lat Long Depth mb Ms ML Source
 2001/10/26 13:32: 4.9 34.360N 24.850E 10.0G SZGRF
 Crete, Greece

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 13:35:52.8	16.7	146.2					
WET	e Pn	Z 13:36:07.4	17.2	144.7					
GRA1	e Pn	Z 13:36:23.5	18.3	141.7					
	e L	Z 13:41:55.9			19.7	520			
STU	e Pn	Z 13:36:25.5	18.5	135.4					
BFO	e Pn	Z 13:36:22.4	18.6	132.6					
MOX	e Pn	Z 13:36:27.6	18.9	144.3					
CLL	e Pn	Z 13:36:29.8	19.0	148.6					
TNS	e Pn	Z 13:36:40.4	19.9	136.7					
CLZ	e Pn	Z 13:36:45.4	20.3	143.6					
WLF	e Pn	Z 13:36:49.2	20.6	131.1					
BUG	e Pn	Z 13:36:56.4	21.3	136.6					

Date Origin Time Lat Long Depth mb Ms ML Source
 2001/10/26 14:10: 9.2 21.640S 72.110E 33.0N 5.2 4.8 SZGRF
 2001/10/26 14:09:51.3 26.135S 70.884E 10G 5.5 5.4 NEIC
 South Indian Ocean

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 14:23:02.7					5.2		
	e	14:23:25.5							
	e S	E 14:34:03.1							
	e SS	E 14:40:27.0							
	e L	Z 15:16:40.8			18.9	361		4.8	

Date Origin Time Lat Long Depth mb Ms ML Source
 2001/10/26 15:48:20.4 45.240N 154.840E 33.0N 5.0 4.3 SZGRF
 2001/10/26 15:48:26.3 46.731N 153.509E 33N 4.9 NEIC
 East of Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 16:00:26.5	78.2	25.4	0.6	11	5.0		
	e L	Z 16:36:42.3			20.4	131		4.3	

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Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/26	18:59:56.7	14.788S	70.504W	212D	5.4			NEIC

Central Peru

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 19:12:59.8	96.0	254.2					
	e pP	Z 19:13:52.8							
	e	19:16:18.3							
	e PP	Z 19:16:53.8							
	e pPP	Z 19:17:56.0							
	e S	E 19:23:18.4							
	e PS	E 19:25:14.3							
	e	19:26:40.5							
	e SS	E 19:30:26.4							
	CLL	i P	- Z 19:13:06.8			1.6	27	5.6	
e pP		Z 19:13:59.7							
e PP		Z 19:16:52.0							
e sPP		Z 19:18:08.6							
e sPPP		Z 19:20:20.1							
e SKSac		R 19:23:23.3							
e SP		Z 19:25:38.2							
e PPS		Z 19:26:41.7							
e SS		R 19:30:49.9							
e sSS		N 19:32:10.9							
e SSS	N 19:34:51.1								

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/26	23:27: 6.7	36.520N	70.290E	33.0N	4.4			SZGRF
2001/10/26	23:27:16.9	35.800N	69.960E	200G	4.1			NEIC

Hindu Kush, Afghanistan, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 23:35:10.2	44.1	85.3			4.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/27	05:35:37.3	25.210N	101.740E	33.0N	5.8	5.7		SZGRF
2001/10/27	05:35:39.3	26.251N	100.711E	10G	5.4	5.5		NEIC

Yunnan, China

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	i P	- Z 05:46:54.4	70.0	72.7	1.5	112	5.8		
	e PP	Z 05:49:29.3							
	e (PPP)	Z 05:51:52.2							
	e S	N 05:56:10.9							
	e SS	N 06:00:36.3							

e L Z 06:18:30.9 21.7 4072 5.7

Date Origin Time Lat Long Depth mb Ms ML Source
 2001/10/27 06:13: 7.5 51.140N 160.670E 33.0N 4.8
 Off east coast of Kamchatka Peninsula, Russia

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML
 GRA1 e P Z 06:24:50.9 75.9 19.2 0.9 7 4.8

Date Origin Time Lat Long Depth mb Ms ML Source
 2001/10/27

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML
 GRA1 e (PKPab) Z 09:03:19.6
 e L Z 10:00:24.6 19.7 170

Date Origin Time Lat Long Depth mb Ms ML Source
 2001/10/27 10:43:34.4 42.490N 147.120E 33.0N 4.7
 Off southeast coast of Hokkaido, Japan

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML
 GRA1 e P Z 10:55:41.2 80.1 31.4 1.1 11 4.7

Date Origin Time Lat Long Depth mb Ms ML Source
 2001/10/27 10:44:18.3 42.760N 146.320E 33.0N 4.8 4.6
 Off southeast coast of Hokkaido, Japan

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML
 GRA1 e P Z 10:56:22.4 79.6 31.8 0.9 12 4.8
 e L Z 11:34:36.4 18.8 244 4.6

Date Origin Time Lat Long Depth mb Ms ML Source
 2001/10/27 11:07: 4.1 56.970N 156.620E 33.0N 5.2
 2001/10/27 11:06:59.4 56.579N 155.883E 33N 4.9
 Kamchatka Peninsula, Russia

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML
 GRA1 e P + Z 11:18:10.2 69.8 19.8 1.0 22 5.2
 e 11:18:13.4

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/27	19:30: 8.3	35.150N	72.940E	33.0N	5.2	3.8		SZGRF
2001/10/27	19:30:26.9	36.132N	70.569E	77*	5.1			NEIC

Pakistan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 19:38:32.0	44.3	84.5	1.5	28	5.2		
	e	19:39:10.1							
	e S	N 19:45:08.9							
	e SS	N 19:48:29.4							
	e L	Z 20:01:05.4			18.0	97		3.8	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/27	21:43: 7.4	51.670N	177.330W	33.0G	5.2	4.7		SZGRF
2001/10/27	21:43:02.0	51.473N	174.861W	33N	5.0	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 21:55:05.1	78.7	3.9	0.8	22	5.2		
	e	21:55:29.1							
	e S	E 22:05:10.9							
	e	22:06:14.0							
	e SS	N 22:10:24.1							
	e L	Z 22:38:40.5			18.4	308		4.7	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/27	21:45: 3.4	51.650N	175.260W	33.0N	5.2			SZGRF
2001/10/27	21:45:00.6	51.747N	175.088W	33N	4.7			NEIC

Andreanof Islands, Aleutian Islands, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 21:57:01.8	78.4	4.0	1.8	41	5.2		
	e (S)	E 22:06:55.2							
	e	22:07:47.7							
	e SS	N 22:12:18.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/27	22:10:52.7	52.840N	175.410W	33.0N	5.0			SZGRF
2001/10/27	22:10:41.2	51.303N	174.743W	33N	4.8			NEIC

Andreanof Islands, Aleutian Islands, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 22:22:44.4	78.9	3.8	1.0	12	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/28	00:09:31.2	45.780N	10.640E	10.0G			2.9	SZGRF
2001/10/28	00:09:30.4	45.816N	10.474E	10G				NEIC

Northern Italy

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
FUR	e Pn	Z 00:10:12.1	2.4	193.4					3.3
	e Sn	N 00:10:40.6							
BFO	e Pn	Z 00:10:19.3	2.9	149.1					2.8
	e Sn	N 00:10:54.2							
WET	e Pn	Z 00:10:28.1	3.7	206.9					2.9
	e Sn	N 00:11:10.6							
GEC2	e Pn	Z 00:10:28.0	3.7	217.0					2.8
	e Sn	N 00:11:12.0							
TNS	e Pn	Z 00:10:41.9	4.6	162.1					
MOX	e Pn	Z 00:10:43.4	4.9	189.4					
	e Sn	N 00:11:40.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/28								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 02:15:37.6							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/28	08:20:40.7	8.320S	15.310W	33.0G	5.2	4.0		SZGRF
2001/10/28	08:20:47.6	7.323S	13.439W	10G	4.9			NEIC

Ascension Island region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	+ Z 08:31:01.1	60.9	208.3	1.4	21	5.2		
	e	08:31:10.6							
	e L	Z 08:57:22.1			21.7	121		4.0	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/28	16:25:29.8	52.810N	0.280W	10.0G			4.4	SZGRF
2001/10/28	16:25:21.5	52.722N	0.927W	10G				NEIC

United Kingdom

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BUG	e Pn	Z	16:26:41.4	5.2	287.5					4.7
	e Sn	N	16:27:36.3							
IBBN	e Pn	Z	16:26:42.8	5.3	277.9					4.5
	e Sn	N	16:27:39.7							
WLF	e Pn	Z	16:26:45.4	5.4	307.3					4.2
	e Sn	N	16:27:44.2							
TNS	e Pn	Z	16:26:57.7	6.3	296.8					4.4
	e Sn	N	16:28:05.9							
BSEG	e Pn	Z	16:27:02.4	6.8	264.3					4.3
	e Sn	N	16:28:14.6							
CLZ	e Pn	Z	16:27:06.0	7.0	281.7					4.8
	e Sn	N	16:28:18.1							
BFO	e Pn	Z	16:27:11.4	7.3	310.2					4.1
	e Sn	N	16:28:29.0							
MOX	e Pn	Z	16:27:21.4	8.0	289.8					4.1
	e Sn	N	16:28:45.1							
GRA1	e Pn	Z	16:27:23.9	8.2	296.4					4.4
CLL	e Pn	Z	16:27:31.0	8.7	284.8					4.2
BRG	e Pn	Z	16:27:39.1	9.4	287.2					
WET	e Pn	Z	16:27:41.1	9.4	297.6					
GEC2	e Pn	Z	16:27:49.5	10.0	298.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/28	17:58:42.1	53.600N	176.160W	33.0G	5.5	4.8		SZGRF
2001/10/28	17:58:27.5	51.424N	174.939W	33N	5.4	5.1		NEIC

Andreanof Islands, Aleutian Islands, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML					
GRA1	e P	Z	18:10:29.4	78.7	3.9	1.3	51	5.5							
	e PcP	Z	18:10:40.5												
	e		18:10:56.1												
	e		18:11:12.6												
	e		18:11:32.9												
	e		18:12:03.0												
	e PP	Z	18:13:38.8												
	e PPP	Z	18:15:25.9												
	e S	N	18:20:26.4												
	e SS	N	18:25:18.8												
	e L	Z	18:51:15.4												
											19.9		513		4.8

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/28	18:12:44.0	52.850N	175.250W	33.0N	5.0			SZGRF

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2001/10/28 18:12:31.5 51.225N 174.843W 33N 4.7 NEIC
Andreanof Islands, Aleutian Islands, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 18:24:35.7	79.0	3.9	0.7	9	5.0		
	e	18:25:01.4							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/28	19:17:2.5	51.040N	176.600W	33.0N	4.9			SZGRF
2001/10/28	19:17:00.6	51.401N	174.815W	33N	4.5			NEIC

Andreanof Islands, Aleutian Islands, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 19:29:03.7	78.8	3.8	0.9	12	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/28	20:24:05.4	21.797S	176.761W	190D	5.5			NEIC

Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPdf	Z 20:43:32.0	151.4	15.6					
	e PKPbc	Z 20:43:38.4							
	e PKPab	Z 20:43:46.3							
	e pPKPdf	Z 20:44:20.5							
	e pPKPbc	Z 20:44:27.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/28	21:49:32.0	5.404N	126.630E	33N	5.0	4.3		NEIC

Mindanao, Philippine Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e Pdiff	Z 22:03:24.5	101.8	66.7					
	e L	Z 22:53:38.6			20.3	72		4.2	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/28	22:16:40.5	52.490N	174.400W	33.0N	5.0			SZGRF
2001/10/28	22:16:30.4	51.244N	174.850W	33N	4.5			NEIC

Andreanof Islands, Aleutian Islands, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 22:28:34.4	78.9	3.9	0.9	10	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/29	02:37:30.7	48.930N	174.650W	33.0N	4.8			SZGRF
2001/10/29	02:37:41.5	51.488N	174.900W	33N	4.5			NEIC

South of Aleutian Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 02:49:43.8	78.7	3.9	0.9	7	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/29	05:22:58.0	13.110N	101.550W	33.0N	5.0	4.4		SZGRF
2001/10/29	05:23:15.3	17.342N	99.912W	33N	4.9	4.5		NEIC

Off coast of Guerrero, Mexico

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 05:36:13.3	89.7	297.1	0.8	6	5.0		
	e S	N 05:47:21.7							
	e SS	N 05:52:55.6							
	e L	Z 06:19:23.5			18.6	132		4.4	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/29	17:41:48.0	50.470N	177.720E	33.0N	5.4	4.7		SZGRF
2001/10/29	17:41:48.7	51.402N	178.590W	33N	5.4	4.7		NEIC

Rat Islands, Aleutian Islands, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 17:53:50.0	78.6	6.2	1.2	62	5.4		
	e PP	Z 17:56:59.4							
	e S	N 18:03:48.1							
	e SS	N 18:09:01.7							
	e L	Z 18:32:52.0			21.6	401		4.7	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/29	20:22:27.2	40.640N	21.370E	10.0G				SZGRF
2001/10/29	20:21:45.7	38.945N	24.247E	10G	4.8	4.6		NEIC

Greece

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 20:24:46.7	12.5	138.7					
WET	e Pn	Z 20:24:53.5	13.0	137.2					
GRA1	e Pn	Z 20:25:09.7	14.2	134.3					

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2001/10/30 21:00:05.9 35.937N 29.775E 10G 4.6 NEIC
Turkey

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	i P	+ Z 21:04:32.0	19.2	128.6			4.2		
	e S	Z 21:08:06.8							
	e L	Z 21:12:45.5			20.4	999		4.1	

Date Origin Time Lat Long Depth mb Ms ML Source
2001/10/30 21:04:24.4 28.600N 128.217E 133* 5.4 NEIC
Ryukyu Islands, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i P	Z 21:16:31.5			1.6	128	5.9		
	e pP	Z 21:17:06.7							
	e LR	Z 21:43:51.8							
	e L	Z 21:58:02.3			20.0	374		4.8	
GRA1	e P	+ Z 21:16:42.7	83.8	51.9			5.9		
	e L	Z 21:56:23.9			19.0	215		4.6	

Date Origin Time Lat Long Depth mb Ms ML Source
2001/10/31 04:31:04.2 24.491S 177.427W 131D 5.0 NEIC
South of Fiji Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPdf	Z 04:50:37.3			1.6	22			
	i PKPbc	- Z 04:50:44.4			0.9	140			
	i PKPab	Z 04:50:51.6			0.8	125			
	e pPKPbc	Z 04:51:20.1							
	e PP	Z 04:54:23.5							
GRA1	e PKPdf	Z 04:50:40.3	153.9	18.1					
	e PKPbc	Z 04:50:48.6							
	e	04:50:56.1							
	i PKPab	- Z 04:51:02.8							
	e (PP)	Z 04:54:39.4							
	e L	Z 05:44:39.2			19.9	126		4.7	

Date Origin Time Lat Long Depth mb Ms ML Source
2001/10/31 07:56:16.0 33.503N 116.520W 14 5.1 NEIC
Southern California, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	i P	- Z 08:08:59.3	84.8	318.5			5.2		

e L Z 08:46:31.1 18.5 421 4.9

Date Origin Time Lat Long Depth mb Ms ML Source
 2001/10/31 09:10:20.1 5.965S 149.941E 33N 5.8 6.9
 New Britain, Papua New Guinea, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e PKPdf	Z 09:29:13.1	122.1	54.7					
	e L	Z 10:23:17.1			21.3	41470		7.1	
CLL	e Pdiff	Z 09:25:41.1							
	e PKPdf	Z 09:29:11.9							
	e PP	Z 09:30:54.2							
	e PPP	Z 09:33:32.9							
	e SKSdf	R 09:36:20.4							
	e PKKP	Z 09:39:09.9							
	e PS	R 09:40:47.2							
	e PPS	Z 09:42:07.5							
	e SKKSdf	Z 09:46:45.2							
	e SS	N 09:48:05.7							
	e SSS	E 09:52:33.6							
	e LQ	N 10:03:06.1							
	e LR	Z 10:09:43.1							
	e L	Z 10:22:46.1			22.0	59856		7.2	
CLZ	e PKPdf	Z 09:29:15.8	123.3	50.5					
	e L	Z 10:24:46.2			21.9	45455		7.1	
GEC2	e PKPdf	Z 09:29:15.7	123.4	55.5					
	e L	Z 10:23:52.9			21.2	25426		6.9	
MOX	e PKPdf	Z 09:29:15.8	123.5	52.4					
	e L	Z 10:24:30.0			21.7	28628		6.9	
WET	e PKPdf	Z 09:29:16.4	123.7	54.5					
	e L	Z 10:28:47.4			21.2	22415		6.8	
GRA1	e PKPdf	Z 09:29:17.5	124.2	52.5					
	e PP	Z 09:31:04.8							
	e	09:32:58.1							
	e L	Z 10:24:30.8			21.7	41735		7.1	
BUG	e PKPdf	Z 09:29:17.9	125.0	47.4					
	e L	Z 10:25:31.4			21.4	45099		7.1	
FUR	e PKPdf	Z 09:29:19.6	125.1	53.4					
	e L	Z 10:24:01.7			21.6	24305		6.8	
STU	e PKPdf	Z 09:29:21.1	125.9	50.9					
	e L	Z 10:25:17.0			21.9	39417		7.0	
BFO	e PKPdf	Z 09:29:21.3	126.6	50.3					
	e L	Z 10:25:59.3			21.6	36777		7.0	
WLF	e PKPdf	Z 09:29:23.8	126.8	47.2					
	e L	Z 10:30:44.5			20.9	19146		6.8	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/31	10:35:51.6	6.081S	150.259E	33N	5.3			NEIC

New Britain, Papua New Guinea, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPdf	Z 10:54:49.9	124.5	52.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/31	12:33:56.4	37.264N	36.045E	33N	5.1			NEIC

Turkey

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	- Z 12:38:47.7	21.7	115.5			4.8		
	e PcP	Z 12:42:46.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/31	17:57:41.3	45.980N	148.640E	33.0N	4.8			SZGRF
2001/10/31	17:57:33.2	46.042N	151.592E	33N	4.6			NEIC

Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 18:09:33.7	78.3	26.9			4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2001/10/31	22:04:24.5	4.100N	95.900E	33.0N	5.9	5.3		SZGRF
2001/10/31	22:04:32.0	5.380N	94.330E	33N	5.7	5.3		NEIC

Northern Sumatera, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i P	Z 22:16:42.0			0.9	55	5.5		
	e PP	Z 22:19:50.3							
	e PPP	Z 22:21:31.2							
	e S	E 22:26:44.7							
	e SS	E 22:31:54.5							
	e L	Z 22:57:57.4			18.0	1452		5.4	
GRA1	e P	- Z 22:16:49.0	81.4	91.8			5.9		
	e L	Z 22:58:43.7			18.7	1116		5.3	

Format description

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

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

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

EPICENTER LINES:

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

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

COMMENT LINE:

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

REGION LINE:

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

PHASE LINE:

Sta	Station code of the reported phase
Phase	Preceded flag for the sharpness of the onset of the phase
	e - emergent
	i - impulsive
	w - weak
	ISC phase code
	Flag for the direction of the first motion
	'+' - compression
	'-' - dilatation

Component where the phase was picked

Time	Arrival time of the reported phase
Dist	Distance from the epicenter location with the highest priority to the station in kilometer
BAz	Backazimuth from the epicenter location with the highest priority to the station in degree
T[s]	Phase Period
A[nm]	Phase Amplitude
mb	Body wave magnitude
MS	Surface wave magnitude
ML	Local Richter magnitude