

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 2003 UPDATED 18.NOVEMBER.2003

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
2003/01/01	00:55:54.7	35.840N	3.320E	33.0N		3.8		SZGRF
2003/01/01	00:55:55.5	36.061N	2.912E	10G	4.7			NEIC

Northern Algeria

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e P	Z 00:58:59.1	12.9	200.0					
STU	e P	Z 00:59:11.4	13.5	202.2					
FUR	e P	Z 00:59:10.7	13.6	210.0					
TNS	e P	Z 00:59:23.8	14.7	197.9					
GRA1	e P	Z 00:59:29.9	14.9	207.0	1.0	24			
	e L	Z 01:04:55.3			19.1	618		3.8	
WET	e P	Z 00:59:27.5	15.0	212.8					
GEC2	e P	Z 00:59:28.4	15.0	215.7					
BUG	e P	Z 00:59:36.8	15.7	193.1					
MOX	e P	Z 00:59:43.8	15.9	206.6					
TANN	e P	Z 00:59:42.8	15.9	209.3					
IBBN	e P	Z 00:59:51.1	16.6	193.8					
CLL	e P	Z 00:59:54.9	16.9	209.2					
RUE	e P	Z 01:00:10.7	18.1	209.3	1.0	28			
BSEG	e P	Z 01:00:14.9	18.6	199.1					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/01	01:33:37.1	54.910N	158.650E	33.0N	5.2			SZGRF
2003/01/01	01:33:23.8	52.980N	159.848E	70	4.6			NEIC

Kamchatka Peninsula, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z 01:44:34.3	70.1	18.9	1.0	25	5.4		

RUE	i P	Z	01:44:38.0	70.8	20.8	0.8	25	5.5
CLL	e P	Z	01:44:45.2	72.1	20.3	0.9	26	5.4
CLZ	e P	Z	01:44:46.3	72.1	18.7	0.9	33	5.5
IBBN	e P	Z	01:44:46.2	72.2	17.2	0.8	34	5.5
BRG	e P	Z	01:44:46.2	72.3	20.8	0.9	8	4.8
MOX	e P	Z	01:44:50.8	73.0	19.4	1.0	14	5.1
BUG	e P	Z	01:44:51.4	73.1	16.8	0.8	23	5.4
GRA1	e P	Z	01:44:57.5	74.0	19.0	0.8	25	5.4
TNS	e P	Z	01:44:57.2	74.0	17.4	0.7	16	5.2
WET	e P	Z	01:44:58.2	74.1	20.0	0.9	14	5.1
GEC2	e P	Z	01:44:58.3	74.2	20.4	0.9	9	4.9
WLF	e P	Z	01:43:49.0	75.0	16.0			
STU	e P	Z	01:45:04.1	75.3	17.8	1.2	17	5.0
FUR	e P	Z	01:43:49.0	75.4	18.9			
BFO	e P	Z	01:43:48.2	75.8	17.2			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/01	07:50:35.6	54.170N	167.780W	33.0N	5.4			SZGRF
2003/01/01	07:50:20.4	52.445N	168.795W	33N	5.1	4.8		NEIC

Fox Islands, Aleutian Islands, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	08:01:55.8	73.6	359.4	1.1	45	5.5		
RUE	e P	Z	08:02:04.1	75.1	1.6	1.0	51	5.5		
IBBN	e P	Z	08:02:05.0	75.2	357.8	1.1	70	5.6		
CLZ	e P	Z	08:02:08.2	75.7	359.5	1.1	58	5.5		
BUG	e P	Z	08:02:09.5	76.1	357.5	1.1	38	5.3		
CLL	i P	+ Z	08:02:11.6	76.2	1.1	1.1	29	5.3		
	e S	Z	08:12:10.9							
	e SS	Z	08:17:04.9							
	e LR	Z	08:27:37.7							
	e L	Z	08:45:31.7			22.0	422		4.7	
BRG	e P	Z	08:02:13.1	76.7	1.7	1.2	32	5.2		
MOX	e P	Z	08:02:14.7	76.9	0.3	1.0	40	5.5		
TNS	e P	Z	08:02:16.9	77.3	358.3	1.0	28	5.3		
WLF	e P	Z	08:02:20.0	77.8	356.9	1.2	37	5.4		
GRA1	e P	Z	08:02:20.6	77.9	0.0	1.2	76	5.7		
WET	e P	Z	08:02:23.4	78.4	1.0	1.3	29	5.3		
GEC2	e P	Z	08:02:24.7	78.7	1.6	1.2	32	5.3		
STU	e P	Z	08:02:24.9	78.8	358.8	1.2	51	5.5		
BFO	e P	Z	08:02:27.3	79.2	358.2	1.2	38	5.4		
FUR	e P	Z	08:02:28.7	79.4	0.0	1.2	73	5.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/01	12:14:18.1	51.800N	169.100W	33.0N	5.1			SZGRF

Fox Islands, Aleutian Islands, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 12:26:16.5	78.5	0.2	1.6	42	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/01	17:26:50.0	51.180N	168.150W	83.2				SZGRF
2003/01/01	17:26:45.3	52.190N	168.592W	33N	4.6			NEIC

Fox Islands, Aleutian Islands, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 17:38:45.6	78.1	359.9					
	e pP	Z 17:39:07.4							
	e sP	Z 17:39:17.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/02	00:20:12.1	17.309S	72.332W	33N	5.0	4.9		NEIC

Near the Coast of Peru

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PP	Z 00:38:03.7	100.5	255.5					
	e L	Z 01:16:29.3			20.0	807		5.2	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/02	00:33:37.9	70.270N	14.190W	33.0N	4.3	4.1		SZGRF

Jan Mayen Island region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e P	Z 00:38:37.9	22.8	336.4	0.9	9	4.3		
	e LR	Z 00:44:25.9							
	e L	Z 00:46:06.4			22.0	215		3.5	
GRA1	e P	Z 00:38:48.2	23.8	338.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/04	03:01:41.6	46.150N	153.670E	33.0N	5.2			SZGRF
2003/01/04	03:01:41.2	46.853N	153.637E	33N	4.6			NEIC

Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 03:13:41.4	78.1	25.2	1.5	41	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/04	05:15:04.2	20.516S	177.757W	377D	6.0			NEIC
Fiji Islands region								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e PKP	Z	05:33:57.5	144.9	18.3					
BSEG	e PKPdf	Z	05:33:59.0	146.0	13.6					
	e PKPbc	Z	05:34:01.0							
	e pPKPbc	Z	05:35:39.3							
RUE	e PKPdf	Z	05:34:00.8	146.8	20.0					
	e PKPbc	Z	05:34:03.0							
	e pPKPbc	Z	05:35:41.6							
IBBN	e PKPdf	Z	05:34:02.5	147.9	9.8					
	e PKPbc	Z	05:34:06.2							
	e pPKPbc	Z	05:35:44.9							
CLZ	e PKPdf	Z	05:34:02.4	148.0	14.5					
	e PKPbc	Z	05:34:06.6							
	e pPKPbc	Z	05:35:45.6							
CLL	e PKPdf	Z	05:34:02.3	148.1	19.3	1.5	59			
	e PKPbc	Z	05:34:05.7			0.6	305			
	e PKPab	Z	05:34:10.7			1.0	292			
	e pPKPbc	Z	05:35:39.7							
	e PP	Z	05:37:36.9							
	e sPP	Z	05:39:45.5							
	e SKSP	N	05:47:53.1							
	e SPP	N	05:49:58.8							
	e SS	T	05:56:12.2							
	e sSS	T	05:58:50.1							
BRG	e PKPdf	Z	05:34:02.8	148.3	21.2					
	e PKPbc	Z	05:34:06.9							
	e pPKPbc	Z	05:35:46.2							
BUG	e PKPdf	Z	05:34:03.5	148.8	9.1					
	e PKPbc	Z	05:34:08.3							
	e pPKPbc	Z	05:35:47.2							
MOX	e PKPdf	Z	05:34:03.2	149.0	17.2					
	e PKPbc	Z	05:34:09.0							
	e pPKPbc	Z	05:35:47.7							
TNS	e PKPdf	Z	05:34:05.3	149.9	11.6					
	e PKPbc	Z	05:34:11.0							
	e pPKPbc	Z	05:35:50.1							
GRA1	e PKPdf	Z	05:34:05.6	150.0	17.0					
	e PKPbc	Z	05:34:10.5							
	e pPKPbc	Z	05:35:50.5							
WET	e PKPdf	Z	05:34:05.4	150.1	20.3					
	e PKPbc	Z	05:34:11.4							
	e pPKPbc	Z	05:35:50.5							

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GEC2	e PKPdf	Z	05:34:05.4	150.2	22.0
	e PKPbc	Z	05:34:11.7		
	e pPKPbc	Z	05:35:50.9		
WLF	e PKPdf	Z	05:34:06.3	150.7	7.5
	e PKPbc	Z	05:34:13.3		
	e pPKPbc	Z	05:35:52.9		
STU	e PKPdf	Z	05:34:07.0	151.2	13.6
	e PKPbc	Z	05:34:13.7		
	e pPKPbc	Z	05:35:53.2		
FUR	e PKPdf	Z	05:34:07.4	151.4	17.9
	e PKPbc	Z	05:34:14.4		
	e pPKPbc	Z	05:35:53.6		
BFO	e PKPdf	Z	05:34:08.0	151.8	12.1
	e PKPbc	Z	05:34:15.0		
	e pPKPbc	Z	05:35:54.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/04	11:07:3.1	39.050N	80.580E	33.0N	5.1	4.9		SZGRF
Southern Xinjiang, China								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e P	Z 11:15:32.6	47.6	77.3	1.1	10	4.6		
	e PP	Z 11:17:25.7							
	e S	R 11:22:09.7							
	e SS	T 11:25:37.2							
	e LR	Z 11:28:56.1							
	e L	Z 11:35:39.1				18.0	1860		5.1
GRA1	e P	Z 11:15:46.1	48.9	74.7	1.1	24	5.1		
	e S	E 11:23:01.3							
	e SS	N 11:25:58.9							
	e L	Z 11:35:59.3				18.7	1235		4.9

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/04	12:44:29.4	45.630N	14.490E	10.0G			3.0	SZGRF
2003/01/04	12:44:35.2	46.070N	14.180E	10G				NEIC
Northwestern Balkan Peninsula								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 12:45:20.3	2.8	173.2					3.0
	e Sn	N 12:45:59.3							
GRA1	e Pn	Z 12:45:39.5	4.1	150.2					
BFO	e Pn	Z 12:45:44.3	4.6	117.5					
	e Sn	N 12:46:40.3							
MOX	e Pn	Z 12:45:48.8	4.9	158.6					
	e Sn	N 12:46:48.8							

CLL e Pn Z 12:45:54.3 5.3 171.1

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/05	04:34:23.2	55.990N	160.970E	33.0N	4.8	4.8		SZGRF
2003/01/05	04:34:11.7	53.873N	160.509E	65*	4.7			NEIC

Kamchatka Peninsula, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z 04:45:16.2	69.4	18.2	0.9	6	4.8		
RUE	e P	Z 04:45:20.8	70.1	20.1	0.8	12	5.2		
CLL	e P	Z 04:45:28.0	71.4	19.5	1.0	14	5.1		
CLZ	e P	Z 04:45:28.9	71.4	18.0	0.9	12	5.0		
IBBN	e P	Z 04:45:28.6	71.4	16.5	0.9	9	4.9		
BRG	e P	Z 04:45:29.4	71.6	20.0	1.0	5	4.6		
MOX	e P	Z 04:45:33.8	72.3	18.6	0.7	4	4.7		
BUG	e P	Z 04:45:33.7	72.3	16.2	0.7	6	4.8		
GRA1	e P	Z 04:45:40.2	73.3	18.3	0.8	11	5.0		
	e L	Z 05:30:30.4			20.2	521		4.8	
TNS	e P	Z 04:45:39.9	73.3	16.8	0.7	4	4.7		
WET	e P	Z 04:45:41.1	73.4	19.2	0.8	7	4.8		
GEC2	e P	Z 04:45:41.3	73.5	19.7	0.8	4	4.7		
STU	e P	Z 04:45:47.1	74.5	17.1	1.0	6	4.7		
FUR	e P	Z 04:45:48.2	74.7	18.2	1.1	10	4.9		
BFO	e P	Z 04:45:50.3	75.1	16.5	0.8	4	4.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/06	04:43:0.8	42.650N	141.990E	33.0N	5.3	4.4		SZGRF
2003/01/06	04:42:52.2	41.254N	142.084E	56D	5.1			NEIC

Hokkaido, Japan, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z 04:54:38.8	76.2	37.4	1.5	54	5.4		
BSEG	e P	Z 04:54:39.1	76.2	35.3	1.2	48	5.4		
BRG	e P	Z 04:54:45.1	77.4	37.3	1.3	24	5.2		
CLL	i P	+ Z 04:54:45.1	77.4	36.7	1.1	28	5.3		
	e PcP	Z 04:54:55.3							
	e pP	Z 04:55:00.5							
	e L	Z 05:31:42.8			20.0	267		4.6	
CLZ	e P	Z 04:54:48.2	77.9	35.0	1.2	34	5.4		
IBBN	e P	Z 04:54:51.3	78.4	33.3	1.1	41	5.5		
MOX	e P	Z 04:54:51.1	78.4	35.7	3.9	362	5.9		
GEC2	e P	Z 04:54:54.7	79.1	36.9	1.1	11	4.9		
WET	e P	Z 04:54:55.2	79.2	36.4	1.1	22	5.2		
BUG	e P	Z 04:54:56.2	79.3	32.9	1.1	20	5.2		
GRA1	e P	Z 04:54:57.0	79.4	35.3	1.1	42	5.5		

	e L	Z	05:33:00.0				21.4	194		4.4
FUR	e P	Z	04:55:03.0	80.6	35.2	1.1		40	5.3	
STU	e P	Z	04:55:04.5	80.9	33.9	1.2		39	5.2	
BFO	e P	Z	04:55:07.6	81.6	33.3	1.4		31	5.2	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/06	05:56:53.3	51.500N	162.000W	33.0N	4.6			SZGRF
2003/01/06	05:57:00.8	53.573N	163.773W	33N	4.7			NEIC

South of Alaska

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 06:08:52.4	76.6	356.9	0.9	6	4.6		
	e	06:09:03.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/06								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	Z 09:27:27.7			0.6	21			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/06	14:57:31.2	19.520N	121.960E	33.0G	5.6	5.6		SZGRF
2003/01/06	14:57:33.8	20.102N	121.486E	33N	5.6	5.3		NEIC

Philippine Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z 15:10:05.5	84.3	64.0	1.3	151	6.1		
BRG	e P	Z 15:10:08.4	85.0	64.0	1.2	63	5.6		
CLL	i P	Z 15:10:09.9	85.3	63.3	1.4	78	5.7		
	e	15:10:25.0							
	e PP	R 15:13:25.6							
	e SKSac	R 15:20:30.7							
	e S	T 15:20:37.8							
	e PS	E 15:21:31.6							
	e SS	R 15:26:20.5							
	e LQ	T 15:39:08.3							
	e L	Z 15:51:58.9			20.0	3306		5.7	
BSEG	e P	Z 15:10:11.3	85.5	61.5	1.2	71	5.7		
GEC2	e P	Z 15:10:13.6	86.0	63.7	1.4	46	5.4		
WET	e P	Z 15:10:15.6	86.3	63.1	1.8	45	5.3		
MOX	e P	Z 15:10:15.4	86.4	62.2	1.5	41	5.3		
CLZ	e P	Z 15:10:16.4	86.5	61.4	1.6	102	5.7		
GRA1	e P	Z 15:10:17.3	87.0	61.9	2.5	199	6.0		

	e			15:10:31.9							
	e S	R		15:20:50.9							
	e SS	R		15:26:56.2							
	e L	Z		15:53:45.2			19.8	2486		5.6	
IBBN	e P	Z		15:10:21.5	87.7	59.4	1.0	40		5.6	
FUR	e P	Z		15:10:22.1	87.7	61.9	1.1	43		5.6	
TNS	e P	Z		15:10:24.8	88.3	59.8	1.1	16		5.2	
BUG	e P	Z		15:10:24.6	88.4	59.0	2.5	198		5.9	
STU	e P	Z		15:10:25.9	88.6	60.4	1.4	29		5.3	
WLF	e P	Z		15:10:32.4	89.9	58.1	1.1	54		5.8	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/06	18:27:49.8	45.260N	142.390E	33.0N	5.1			SZGRF
2003/01/06	18:27:34.1	42.290N	143.027E	59	4.9			NEIC

Hokkaido, Japan, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z	18:39:15.8	75.6	36.3	0.6	18	5.4		
BSEG	e P	Z	18:39:15.7	75.6	34.1	0.8	14	5.1		
CLL	e P	Z	18:39:22.2	76.8	35.6	0.7	13	5.1		
CLZ	e P	Z	18:39:25.7	77.3	33.9	0.6	14	5.2		
MOX	e P	Z	18:39:28.3	77.9	34.6	0.7	7	4.8		
GEC2	e P	Z	18:39:32.3	78.6	35.7	0.7	5	4.8		
WET	e P	Z	18:39:33.2	78.6	35.2	0.8	7	4.8		
BUG	e P	Z	18:39:33.0	78.7	31.8	0.7	12	5.1		
GRA1	e P	Z	18:39:34.1	78.8	34.2	0.7	21	5.4		
STU	e P	Z	18:39:41.9	80.3	32.8	0.9	16	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/06	23:44: 5.0	18.330N	120.130E	33.0N	5.5	6.0		SZGRF
2003/01/06	23:43:54.3	15.640N	119.676E	33N	5.5	5.6		NEIC

Luzon, Philippine Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i P	+ Z	23:56:42.9	86.1	65.5	1.3	20	5.3		
	e		23:56:56.5							
	e PP	Z	00:00:07.9							
	e SKSac	R	00:07:06.8							
	e S	T	00:07:25.0							
	e PS	Z	00:08:15.0							
	e SS	R	00:13:12.0							
	e LQ	T	00:24:18.7							
	e L	Z	00:37:56.8			18.0	5869		6.0	
GRA1	e P	Z	23:56:50.5	89.5	66.0	1.5	34	5.5		
	e PP	Z	00:00:39.1							

e S	N	00:07:39.6									
e SS	N	00:13:35.4									
e L	Z	00:39:28.4			18.0		5752		6.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/07	00:54:52.2	33.572S	69.762W	111D	6.0			NEIC

Chile-Argentina Border

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKiKP	Z 01:13:13.9	111.3	242.7					
	e PS	Z 01:23:22.4							
	e PKKPab	Z 01:24:17.7							
	e (SS)	T 01:29:20.1							
	e LR	Z 01:47:59.6							
	e L	Z 01:56:14.4			20.0	252		4.8	
GRA1	e PKKPab	Z 01:24:26.5	109.5	241.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/07	23:05:19.9	6.323N	94.835E	33N	4.9	4.2		NEIC

Nicobar Isl., India Region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 23:17:36.8	81.1	90.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/08	00:28:31.7	20.382S	174.814W	33N	5.6			NEIC

Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKP	Z 00:48:09.8	146.2	8.7					
RUE	e PKP	Z 00:48:12.9	147.2	15.0					
CLL	e PKPbc	Z 00:48:16.1	148.5	14.1	0.6	18			
	e PKPab	Z 00:48:19.2							
	e	00:48:36.3							
	e SS	T 01:10:54.2							
	e SSS	T 01:16:41.7							
	e SSSS	T 01:20:45.9							
	e LR	Z 01:37:37.6							
	e L	Z 01:57:49.1			20.0	464		5.3	
BRG	e PKP	Z 00:48:17.4	148.7	16.0					
BUG	e PKP	Z 00:48:17.5	148.9	3.8					
MOX	e PKP	Z 00:48:18.7	149.3	11.9					
TNS	e PKP	Z 00:48:20.4	150.0	6.1					

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GRA1	e PKP	Z	00:48:21.9	150.3	11.5						
	e L	Z	01:59:13.7					19.3	432		5.3
WET	e PKP	Z	00:48:22.9	150.6	14.8						
GEC2	e PKP	Z	00:48:22.4	150.7	16.5						
FUR	e PKP	Z	00:48:24.7	151.8	12.1						
BFO	e PKP	Z	00:48:25.1	151.9	6.3						

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/08								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 03:41:41.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/08	14:29:17.7	6.410N	76.730W	33.0N	5.7	5.6		SZGRF
2003/01/08	14:29:10.8	6.075N	77.431W	33N	5.4	5.4		NEIC

Northern Colombia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WLF	e P	Z 14:41:27.3	81.2	269.1	1.3	46	5.4		
BUG	e P	Z 14:41:31.6	82.0	269.7	1.9	138	5.7		
IBBN	e P	Z 14:41:32.7	82.3	269.9	1.6	120	5.8		
TNS	e P	Z 14:41:35.1	82.7	270.7	1.6	69	5.5		
STU	e P	Z 14:41:38.7	83.2	271.5	2.0	131	5.8		
BSEG	e P	Z 14:41:40.7	83.8	271.8	1.7	82	5.7		
CLZ	e P	Z 14:41:41.4	83.9	272.0	1.3	59	5.6		
GRA1	e P	Z 14:41:44.1	84.5	272.9	1.7	78	5.7		
	e L	Z 15:22:02.5			18.6	2468		5.6	
MOX	e P	Z 14:41:45.5	84.7	273.1	1.8	73	5.6		
RGN	e P	Z 14:41:49.9	85.5	274.1	1.4	197	6.1		
CLL	i P	+ Z 14:41:49.7	85.5	274.1	1.7	93	5.6		
	e SKSac	R 14:52:13.0							
	e S	T 14:52:26.0							
	e PPS	Z 14:53:32.2							
	e SS	T 14:57:54.3							
	e L	Z 15:19:31.4			20.0	2460		5.6	
WET	e P	Z 14:41:50.3	85.6	274.2	1.5	95	5.8		
RUE	e P	Z 14:41:51.6	85.9	274.7	1.1	60	5.7		
BRG	e P	Z 14:41:52.5	86.2	274.9	1.5	77	5.6		
GEC2	e P	Z 14:41:52.7	86.2	274.9	1.5	80	5.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/08	17:15: 9.7	51.990N	173.230W	33.0N	5.6	4.9		SZGRF

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2003/01/08 17:15:08.0 52.051N 171.514W 33N 5.2 4.9 NEIC
Andreanof Islands, Aleutian Islands, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i P	Z 17:26:56.3	76.9	4.0	2.0	64	5.4		
	e SS	R 17:41:41.8							
	e L	Z 17:58:22.0			22.0	894		5.0	
GRA1	e P	Z 17:27:06.6	78.2	1.7	1.9	125	5.6		
	e L	Z 18:05:17.4			21.0	562		4.9	

Date Origin Time Lat Long Depth mb Ms ML Source
2003/01/09 02:50:49.3 19.515S 176.476W 33N 5.4 5.8 NEIC
Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e PKP	Z 03:10:22.8	144.2	15.9					
BSEG	e PKP	Z 03:10:25.4	145.2	11.3					
RUE	e PKP	Z 03:10:27.8	146.1	17.5					
IBBN	e PKP	Z 03:10:30.8	147.0	7.3					
CLZ	e PKP	Z 03:10:32.2	147.2	12.0					
CLL	e PKPbc	Z 03:10:32.5	147.3	16.7	0.9	53			
	e	03:10:37.7							
	e SS	T 03:33:02.0							
	e SSS	T 03:38:44.7							
	e LR	Z 04:00:35.3							
	e L	Z 04:13:20.1			22.0	1915		5.8	
BRG	e PKP	Z 03:10:32.7	147.6	18.5					
BUG	e PKP	Z 03:10:34.8	147.9	6.7					
MOX	e PKP	Z 03:10:36.3	148.2	14.6					
TNS	e PKP	Z 03:10:37.2	149.0	9.0					
GRA1	e PKP	Z 03:10:37.1	149.2	14.3					
	e L	Z 04:21:47.5			21.2	1962		5.9	
GRFO	e PKP	Z 03:10:37.5	149.2	14.3					
WET	e PKP	Z 03:10:39.1	149.4	17.5					
GEC2	e PKP	Z 03:10:39.8	149.5	19.2					
WLF	e PKP	Z 03:10:40.4	149.8	4.9					
STU	e PKP	Z 03:10:40.4	150.4	10.9					
FUR	e PKP	Z 03:10:42.1	150.7	15.0					
BFO	e PKP	Z 03:10:42.9	150.9	9.4					

Date Origin Time Lat Long Depth mb Ms ML Source
2003/01/09 04:14:27.3 38.390N 142.930E 33.0N 5.2 SZGRF
2003/01/09 04:14:21.3 36.729N 141.009E 33N 5.1 NEIC

Near east coast of eastern Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	04:26:29.2	79.9	38.1	1.2	22	5.1		
BRG	e P	Z	04:26:34.6	80.8	40.4	1.0	16	4.9		
CLL	i P	+ Z	04:26:34.8	80.9	39.8	0.9	22	5.2		
	e pP	Z	04:26:47.1							
CLZ	e P	Z	04:26:38.1	81.5	37.9	1.0	14	4.9		
MOX	e P	Z	04:26:40.6	82.0	38.7	1.5	15	4.9		
IBBN	e P	Z	04:26:40.9	82.1	36.1	0.9	20	5.2		
GEC2	e P	Z	04:26:43.2	82.5	40.0	2.1	65	5.4		
WET	e P	Z	04:26:44.1	82.6	39.5	0.9	7	4.8		
GRA1	e P	Z	04:26:45.3	82.9	38.4	1.0	29	5.4		
BUG	e P	Z	04:26:45.4	83.0	35.7	0.9	11	5.0		
TNS	e P	Z	04:26:48.4	83.5	36.4	1.5	23	5.2		
FUR	e P	Z	04:26:51.6	84.0	38.3	0.9	31	5.5		
STU	e P	Z	04:26:52.9	84.4	36.9	0.9	28	5.5		
BFO	e P	Z	04:26:56.0	85.1	36.3	1.1	23	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/09	04:42:47.9	0.480N	97.150E	33.0N	5.9			SZGRF
2003/01/09	04:42:42.2	0.610N	98.661E	33N	5.8			NEIC

Northern Sumatera, Indonesia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	04:55:21.6	86.2	93.7	1.0	42	5.6		
GEC2	e P	Z	04:55:21.8	86.2	93.4	1.3	117	5.9		
RUE	e P	Z	04:55:22.7	86.4	93.7	1.0	162	6.1		
WET	e P	Z	04:55:24.4	86.8	92.8	0.9	56	5.7		
RGN	e P	Z	04:55:25.1	86.8	93.4	1.2	158	6.0		
CLL	i P	+ Z	04:55:24.3	86.8	93.0	1.2	48	5.5		
	e pP	Z	04:55:35.8							
MOX	e P	Z	04:55:28.9	87.7	91.9	1.6	96	5.7		
FUR	e P	Z	04:55:28.9	87.8	91.5	1.1	51	5.6		
GRA1	e P	Z	04:55:30.3	87.9	91.6	1.0	71	5.7		
	e		04:55:41.7							
CLZ	e P	Z	04:55:32.9	88.5	91.0	1.0	133	6.2		
BSEG	e P	Z	04:55:33.3	88.5	91.0	1.0	123	6.2		
STU	e P	Z	04:55:35.9	89.2	90.0	1.7	93	5.8		
TNS	e P	Z	04:55:38.7	89.7	89.4	0.9	104	6.0		
BFO	e P	Z	04:55:38.3	89.8	89.3	0.9	42	5.7		
IBBN	e P	Z	04:55:40.5	90.1	88.9	1.0	139	6.2		
BUG	e P	Z	04:55:41.9	90.4	88.5	0.9	90	6.0		
WLF	e P	Z	04:55:45.8	91.2	87.7	1.2	88	5.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/09	07:03: 9.0	16.190S	69.610W	33.0N	5.5	5.3		SZGRF

2003/01/09 07:02:57.2 18.158S 70.948W 33N 5.4 5.0 NEIC
Peru-Bolivia border region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 07:16:36.1	98.9	252.3			5.5		
	e L	Z 07:57:27.6			21.6	991		5.3	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/09	09:49:13.6	44.920S	79.900W	33.0N				SZGRF
2003/01/09	09:49:06.5	44.734S	79.356W	10G	4.8			NEIC

Off coast of southern Chile

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e Pdiff	Z 10:04:29.2	124.6	239.6					
	e PKPdf	Z 10:08:07.5							
	e PP	Z 10:09:54.9							
	e SKS	R 10:15:27.1							
	e SKKSac	R 10:16:47.2							
	e PS	R 10:19:55.3							
	e PPS	Z 10:21:25.4							
	e SS	T 10:26:37.9							
	e SSSS	E 10:34:58.2							
	e LQ	T 10:40:50.9							
	e LR	Z 10:47:14.4							
	e L	Z 11:00:10.4			22.0	2281		5.8	
BFO	e PP	Z 10:09:29.3	120.4	235.4					
STU	e PP	Z 10:09:35.3	121.2	236.1					
TNS	e PP	Z 10:09:37.3	121.6	236.4					
BUG	e PP	Z 10:09:39.3	121.6	236.4					
FUR	e PP	Z 10:09:40.3	122.0	236.9					
IBBN	e PP	Z 10:09:42.3	122.3	237.1					
GRA1	e PP	Z 10:09:46.6	122.8	237.7					
	e PS	Z 10:19:39.8							
	e SS	Z 10:26:28.7							
WET	e PP	Z 10:09:51.4	123.4	238.2					
CLZ	e PP	Z 10:09:49.4	123.5	238.4					
MOX	e PP	Z 10:09:50.4	123.5	238.4					
	e PS	Z 10:19:43.5							
	e SS	Z 10:26:38.9							
BSEG	e PP	Z 10:09:56.4	124.5	239.5					
BRG	e PP	Z 10:09:58.4	124.9	239.8					
RUE	e PP	Z 10:10:05.4	125.6	240.7					
RGN	e PP	Z 10:10:10.4	126.3	241.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
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2003/01/09	19:29:46.4	72.810N	11.620E	33.0N	4.9	3.7		SZGRF
2003/01/09	19:29:22.2	74.660N	8.628E	10G	4.7			NEIC

Norwegian Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e P	Z 19:34:01.4	20.2	356.4	1.3	190	5.1		
BSEG	e P	Z 19:34:06.3	20.7	358.7	2.4	242	5.0		
RUE	e P	Z 19:34:22.2	22.3	356.4	1.7	103	4.8		
IBBN	e P	Z 19:34:22.8	22.4	0.6	1.5	83	4.8		
CLZ	e P	Z 19:34:28.2	22.8	358.8	1.4	44	4.6		
BUG	e P	Z 19:34:32.8	23.2	0.9					
CLL	e P	Z 19:34:34.5	23.4	357.1	1.5	38	4.6		
BRG	e P	Z 19:34:37.7	23.9	356.5	1.8	48	4.6		
MOX	e P	Z 19:34:40.6	24.0	358.1	1.3	66	4.9		
TNS	e P	Z 19:34:44.4	24.4	0.1	1.9	76	4.9		
GRA1	e P	Z 19:34:50.0	25.0	358.4	1.2	44	4.9		
	e L	Z 19:44:45.3			18.1	264		3.7	
WLF	e P	Z 19:34:51.4	25.0	1.5	1.1	35	4.8		
WET	e P	Z 19:34:55.2	25.6	357.4	1.4	45	4.8		
STU	e P	Z 19:34:58.6	25.9	359.7	1.1	28	4.7		
GEC2	e P	Z 19:34:57.9	25.9	356.9	1.3	34	4.7		
BFO	e P	Z 19:35:03.8	26.3	0.2	2.3	209	5.5		
FUR	e P	Z 19:35:04.6	26.5	358.4	1.4	56	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/10	01:37: 8.6	32.920N	149.980E	28.9	4.8			SZGRF

North Pacific Ocean

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 01:50:04.7	89.6	33.6			4.8		
	e pP	Z 01:50:13.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/10	02:08:11.3	17.480N	97.980W	33.0N	5.4			SZGRF
2003/01/10	02:08:03.8	17.131N	100.032W	62*	5.0	4.5		NEIC

Oaxaca, Mexico

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 02:21:00.8	90.0	297.0	1.5	35	5.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/10	13:11:56.7	5.209S	153.566E	71D	5.9			NEIC

New Ireland, Papua New Guinea, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e Pdiff	Z 13:27:15.4	123.6	49.4					
	e PKPdf	Z 13:30:47.2			0.9	60			
	e sPKPdf	Z 13:31:12.5							
	e PP	Z 13:32:35.9							
	e	13:34:02.9							
	e PPP	Z 13:35:10.4							
	e PS	Z 13:42:32.9							
	e PPS	Z 13:43:53.7							
	e SKKSdf	Z 13:48:11.3							
	e SS	E 13:49:37.0							
	e SSS	N 13:54:34.0							
	e LQ	E 14:04:45.5							
	e (P5KP)	Z 14:06:40.5							
	e LR	Z 14:11:17.5							
	e L	Z 14:22:53.6				22.0	15262		6.6
	GRA1	e PKP	Z 13:30:50.7	125.4	48.3				
e PP		Z 13:32:41.5							
e PPP		Z 13:35:24.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/10	15:19: 2.6	0.280N	96.430E	30.2	5.5			SZGRF
2003/01/10	15:18:54.9	0.157N	97.891E	33N	5.6	5.5		NEIC

Off west coast of northern Sumatera, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z 15:31:35.4	86.1	94.3	1.4	61	5.6		
BRG	e P	Z 15:31:35.4	86.1	94.6	1.6	50	5.5		
RUE	e P	Z 15:31:36.7	86.3	94.6	1.7	146	5.9		
WET	e P	Z 15:31:37.9	86.6	93.7	1.3	26	5.2		
CLL	e P	Z 15:31:38.2	86.7	93.9	1.8	48	5.3		
TANN	e P	Z 15:31:40.1	87.0	93.4					
MOX	e P	Z 15:31:42.6	87.5	92.8	1.4	23	5.1		
GRA1	e P	Z 15:31:43.8	87.7	92.4	1.3	36	5.3		
	e pP	Z 15:31:52.6							
CLZ	e P	Z 15:31:46.7	88.3	91.9	1.3	59	5.6		
BSEG	e P	Z 15:31:47.5	88.4	91.9	1.2	58	5.6		
TNS	e P	Z 15:31:52.5	89.5	90.3	1.4	56	5.7		
BFO	e P	Z 15:31:52.0	89.6	90.2	1.2	16	5.1		
IBBN	e P	Z 15:31:54.5	90.0	89.8	1.3	80	5.8		
BUG	e P	Z 15:31:55.9	90.3	89.4	1.2	34	5.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/10	15:26: 6.7	0.840N	97.000E	28.1	5.2			SZGRF

2003/01/10 15:25:59.7 0.181N 97.794E 33N 5.4 NEIC
Northern Sumatera, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z 15:38:39.7	86.0	94.3	1.3	18	5.1		
BRG	e P	Z 15:38:40.1	86.0	94.7	1.9	43	5.4		
RUE	e P	Z 15:38:40.7	86.2	94.6	1.2	27	5.4		
WET	e P	Z 15:38:42.5	86.5	93.7	1.6	23	5.0		
CLL	e P	Z 15:38:42.4	86.6	94.0	1.4	11	4.8		
MOX	e P	Z 15:38:46.9	87.4	92.8	2.1	30	5.1		
GRA1	e P	Z 15:38:48.5	87.6	92.5					
	e pP	Z 15:38:56.7							
CLZ	e P	Z 15:38:51.1	88.3	91.9					
BSEG	e P	Z 15:38:51.5	88.4	91.9	1.0	23	5.2		
TNS	e P	Z 15:38:56.8	89.4	90.4	1.1	20	5.3		
BFO	e P	Z 15:38:56.2	89.5	90.3	2.0	35	5.3		
IBBN	e P	Z 15:38:58.7	89.9	89.9	1.4	39	5.4		
BUG	e P	Z 15:39:00.2	90.2	89.5	1.3	27	5.3		
WLF	e P	Z 15:39:04.2	90.9	88.6					

Date Origin Time Lat Long Depth mb Ms ML Source
2003/01/10 18:19:08.1 15.748S 174.395W 33N 5.0 NEIC
Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 18:38:45.2	145.8	9.6					
	e pPKP	Z 18:39:25.9							

Date Origin Time Lat Long Depth mb Ms ML Source
2003/01/11 07:30: 8.9 5.510S 11.240W 25.4 5.2 SZGRF
2003/01/11 07:30:05.9 4.929S 11.575W 10G 5.1 4.5 NEIC
Ascension Island region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e P	Z 07:39:46.5	56.0	204.1	1.1	21	5.1		
FUR	e P	Z 07:39:51.7	56.7	207.6	1.0	52	5.5		
TNS	e P	Z 07:39:59.2	57.8	203.8	1.1	36	5.3		
GRA1	e P	Z 07:40:01.1	58.1	207.1	1.0	14	4.9		
	e pP	Z 07:40:08.2							
WET	e P	Z 07:40:01.3	58.1	209.1	1.1	31	5.2		
GEC2	e P	Z 07:40:01.5	58.1	210.1	1.0	37	5.4		
MOX	e P	Z 07:40:07.8	59.0	207.2	1.1	24	5.1		
TANN	e P	Z 07:40:08.1	59.1	208.2	1.0	36	5.3		
IBBN	e P	Z 07:40:11.8	59.5	202.5	1.3	34	5.2		
CLZ	e P	Z 07:40:13.0	59.8	205.5	1.2	22	5.1		

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BRG	e P	Z	07:40:14.0	60.0	209.7	0.9	9	4.8
CLL	e P	Z	07:40:14.6	60.0	208.6	1.1	12	4.8
RUE	e P	Z	07:40:23.3	61.3	209.1	1.0	33	5.5
BSEG	e P	Z	07:40:25.7	61.7	205.0	1.2	38	5.5

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/11								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 17:15:45.0							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/11	17:46:1.6	32.200N	48.900E	33.0N	5.8	4.4		SZGRF
2003/01/11	17:45:30.2	29.629N	51.423E	33N	5.2	5.0		NEIC

Western Iran

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e P	Z 17:52:28.4	32.4	112.1	1.1	50	5.3		
	e S	E 17:58:06.3							
	e L	Z 18:10:17.0			18.0	1672		4.8	
GRA1	e P	Z 17:52:33.1	36.2	108.4	1.6	231	5.8		
	e L	Z 18:10:06.5			20.3	788		4.4	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/12								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPbc	Z 04:27:53.2			1.1	22			
	e	04:28:12.1							
GRA1	e PKP	Z 04:27:58.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/12	14:39:16.4	36.628N	42.988E	33.0N	4.5			SZGRF
2003/01/12	14:38:46.0	34.655N	46.067E	33N	4.6			NEIC

Iraq

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 14:44:49.5	29.5	107.4			4.5		

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Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/12	22:12: 8.4	44.980N	151.340E	33.0N	4.9			SZGRF
2003/01/12	22:12:09.5	46.599N	153.380E	33N	4.6			NEIC

East of Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 22:24:10.3	78.3	25.5	1.0	14	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/13	16:30:48.6	10.590N	96.710E	33.0N	4.8			SZGRF
2003/01/13	16:31:00.2	12.984N	95.589E	33N	4.9			NEIC

Andaman Islands, India, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 16:42:49.9	76.5	85.7			4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/13	16:34:49.2	8.500N	97.890E	33.0N				SZGRF
2003/01/13	16:35:03.0	13.112N	95.636E	32D	5.1	4.9		NEIC

Nicobar Islands, India, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 16:47:03.0	76.4	85.6					
	e	16:47:09.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/13	20:02:01.0	15.592S	173.532W	33N	4.9			NEIC

Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPbc	Z 20:21:39.8	145.7	8.1					
	e pPKPbc	Z 20:21:57.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/14	02:44:20.4	33.740N	93.970E	51.4	4.6			SZGRF
2003/01/14	02:44:33.2	36.211N	91.479E	33N	4.5			NEIC

Qinghai, China

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 02:54:25.4	57.4	70.7	1.3	13	4.6		
	e pP	Z 02:54:39.6							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/14	14:14:4.8	27.520N	60.240E	33.0N	5.3	4.3		SZGRF
2003/01/14	14:13:54.5	27.994N	62.347E	33N	5.5	5.0		NEIC

Southern Iran

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z 14:21:49.3	42.5	101.1	1.2	64	5.2		
BRG	e P	Z 14:21:52.9	42.8	103.5	2.2	144	5.3		
WET	e P	Z 14:21:53.7	43.1	100.7	1.8	45	4.9		
RUE	e P	Z 14:21:56.8	43.3	105.0	1.2	51	5.1		
CLL	i P	Z 14:21:57.1	43.4	103.1	1.5	143	5.5		
	e S	R 14:28:22.2							
	e SS	Z 14:31:47.4							
	e L	Z 14:43:57.0			18.4	532		4.5	
FUR	e P	Z 14:22:01.6	44.0	98.3	1.0	58	5.3		
MOX	e P	Z 14:22:02.9	44.2	101.1	1.1	24	4.8		
GRA1	e P	Z 14:22:03.9	44.2	99.8	1.4	74	5.2		
	e L	Z 14:42:29.0			21.3	370		4.3	
CLZ	e P	Z 14:22:11.5	45.2	101.2	1.5	123	5.4		
STU	e P	Z 14:22:11.9	45.4	97.2	0.9	86	5.5		
BSEG	e P	Z 14:22:16.1	45.6	103.2	0.9	34	5.3		
BFO	e P	Z 14:22:17.0	45.9	96.0	1.0	18	4.9		
TNS	e P	Z 14:22:19.2	46.1	97.9	1.8	161	5.6		
IBBN	e P	Z 14:22:25.6	46.8	99.3	1.2	92	5.7		
BUG	e P	Z 14:22:25.7	47.0	98.1	1.1	76	5.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/15	01:42:38.1	31.462N	141.730E	33N	4.7			NEIC

Southeast of Honshu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e P	Z 01:55:17.1	86.1	41.9	1.2	18	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/15	12:31:34.4	38.610N	144.800E	33.0N	4.9			SZGRF
2003/01/15	12:31:41.4	40.520N	143.664E	33N	4.5			NEIC

Off east coast of Honshu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 12:43:55.1	83.0	34.9	1.5	12	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/15								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 16:23:41.6							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/15	19:59:07.4	3.708N	125.265E	150G	4.7			NEIC
Talaud Islands, Indonesia								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 20:16:33.0	102.3	68.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/16	00:19:20.7	57.330N	152.790W	33.0N	5.4			SZGRF
2003/01/16	00:19:15.0	56.751N	152.860W	32	5.0			NEIC
Kodiak Island, Alaska, United States, region								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z 00:30:18.4	68.5	350.2	1.1	32	5.5		
RUE	e P	Z 00:30:29.5	70.2	352.3	1.2	74	5.7		
BUG	e P	Z 00:30:31.4	70.6	348.6	0.9	54	5.7		
CLL	e P	Z 00:30:35.7	71.3	351.9	0.9	19	5.2		
BRG	e P	Z 00:30:39.0	71.8	352.4	1.0	24	5.3		
MOX	e P	Z 00:30:39.2	71.8	351.1	1.1	50	5.6		
TNS	e P	Z 00:30:39.8	71.9	349.3	0.8	22	5.4		
TANN	e P	Z 00:30:41.1	72.1	351.6	0.9	18	5.2		
GRA1	e P	Z 00:30:45.0	72.7	350.9	0.8	33	5.5		
STU	e P	Z 00:30:48.6	73.4	349.8	0.9	26	5.4		
WET	e P	Z 00:30:48.8	73.4	351.9	1.1	19	5.1		
BFO	e P	Z 00:30:50.5	73.8	349.4	0.8	15	5.1		
GEC2	e P	Z 00:30:50.9	73.8	352.4	0.8	19	5.2		
FUR	e P	Z 00:30:53.6	74.3	351.0	0.8	38	5.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/16								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 00:35:30.8							

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Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/16	00:51:1.0	42.330N	131.290W	33.0N	5.1			SZGRF
2003/01/16	00:51:03.5	44.250N	129.162W	10G	4.9			NEIC

Off coast of Oregon, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 01:03:19.7	79.9	332.4	2.0	27	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/16	00:53:13.6	43.210N	131.360W	33.0N	5.5	6.1		SZGRF
2003/01/16	00:53:15.0	44.306N	129.086W	10G	5.3	6.0		NEIC

Off coast of Oregon, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e P	Z 01:05:22.4	81.6	333.8	1.7	52	5.2		
	e S	E 01:15:25.2							
	e SS	E 01:20:37.1							
	e L	Z 01:41:39.9			22.0	7499		6.0	
GRA1	e P	Z 01:05:28.2	79.8	332.3	2.1	86	5.5		
	e	01:06:00.5							
	e L	Z 01:42:50.9			18.8	8310		6.1	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/16	01:06:26.4	42.330N	130.860W	33.0N	5.6			SZGRF
2003/01/16	01:06:30.2	44.213N	129.271W	10G	5.3			NEIC

Off coast of Oregon, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 01:18:44.4	80.0	332.4	1.9	69	5.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/16	02:24:57.3	41.500N	130.040W	33.0N	5.0			SZGRF
2003/01/16	02:25:04.5	44.293N	129.420W	10G	5.2	5.3		NEIC

Off coast of northern California, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 02:37:18.0	79.9	332.5	1.2	12	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/16	03:42:30.5	27.020N	127.410E	33.0N	5.7			SZGRF
2003/01/16	03:42:27.3	27.209N	128.749E	58*	5.1			NEIC

Ryukyu Islands, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 03:55:01.5	85.3	52.3	1.5	82	5.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/16								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 04:57:21.2							
	e	04:57:28.6							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/16	05:03:19.4	41.280N	131.460W	33.0N	5.0			SZGRF
2003/01/16	05:03:29.1	44.201N	129.192W	10G	5.2	5.1		NEIC

Off coast of northern California, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 05:15:43.3	80.0	332.4	1.2	12	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/16	11:37:10.4	31.570N	85.670E	13.6	4.9			SZGRF
2003/01/16	11:36:51.7	29.741N	88.011E	33N	5.0	4.6		NEIC

Xizang

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z 11:46:42.2	57.6	81.3					
GEC2	e P	Z 11:46:45.7	58.1	79.8					
WET	e P	Z 11:46:48.5	58.6	79.5					
TANN	e P	Z 11:46:49.1	58.6	79.9					
MOX	e P	Z 11:46:52.5	59.1	79.5					
BSEG	e P	Z 11:46:54.3	59.3	80.5					
GRA1	e P	Z 11:46:56.0	59.6	78.7	1.3	15	4.9		
	e pP	Z 11:46:59.8							
GRFO	e P	Z 11:46:56.2	59.6	78.7					
FUR	e P	Z 11:46:57.7	59.8	77.8					
STU	e P	Z 11:47:06.4	61.0	76.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/16	22:15:45.1	33.080N	89.000E	33.0N	4.6			SZGRF
2003/01/16	22:15:36.3	32.760N	89.971E	33N	4.9			NEIC

Xizang

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 22:25:34.4	58.7	74.7	1.0	7	4.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/17	02:14:3.1	52.390N	178.040E	33.0N	4.8			SZGRF
2003/01/17	02:13:53.6	51.337N	179.252E	38D	5.2	4.6		NEIC

Rat Islands, Aleutian Islands, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z 02:25:31.6	74.3	7.2					
IBBN	e P	Z 02:25:41.6	76.1	5.5					
BRG	e P	Z 02:25:46.1	77.0	9.4					
MOX	e P	Z 02:25:48.8	77.5	7.9					
TNS	e P	Z 02:25:52.8	78.1	5.9					
GRA1	e P	Z 02:25:54.8	78.5	7.6					
GRFO	e P	Z 02:25:54.9	78.5	7.6					
BFO	e P	Z 02:26:02.8	80.0	5.7	0.9	8	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/17	02:53:15.9	20.600N	96.140E	106.8	5.2			SZGRF
2003/01/17	02:52:55.5	19.881N	95.194E	33N	5.1			NEIC

Myanmar

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z 03:04:02.7	69.2	84.1					
BRG	e P	Z 03:04:03.2	69.3	83.6	0.6	19	5.5		
GEC2	e P	Z 03:04:05.6	69.7	82.7	1.0	20	5.2		
CLL	e P	Z 03:04:06.1	69.8	83.1	1.1	16	5.1		
WET	e P	Z 03:04:08.8	70.2	82.2					
TANN	e P	Z 03:04:09.4	70.3	82.4	0.9	15	5.1		
MOX	e P	Z 03:04:12.4	70.8	81.8					
BSEG	e P	Z 03:04:14.5	71.1	82.0					
GRA1	e P	Z 03:04:14.9	71.1	81.2	1.1	13	5.0		
	e	03:04:40.9							
TNS	e P	Z 03:04:24.8	72.8	79.3	0.9	17	5.1		
BFO	e P	Z 03:04:26.8	73.2	78.7					
BUG	e P	Z 03:04:27.3	73.3	78.8	1.2	24	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/17	03:18:19.8	44.890N	14.800E	10.0G			4.6	SZGRF
2003/01/17	03:18:19.5	44.973N	14.751E	10G				NEIC

Adriatic Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 03:19:21.4	3.9	169.1					4.4
	e Sn	E 03:20:07.7							
FUR	e Pn	Z 03:19:20.6	4.0	141.9					4.8
	e Sg	E 03:20:28.9							
WET	e Pn	Z 03:19:27.1	4.4	162.3					4.2
	e Sn	E 03:20:17.1							
GRA1	e Pn	Z 03:19:40.2	5.3	151.8					4.6
	e Sg	N 03:21:12.8							
STU	e Pn	Z 03:19:40.6	5.4	132.9					5.0
	e Sg	E 03:21:14.6							
BFO	e Pn	Z 03:19:43.1	5.5	124.9					4.5
	e Sn	N 03:20:44.6							
	e Sg	N 03:21:16.8							
TANN	e Pn	Z 03:19:44.3	5.7	163.3					4.6
	e Sn	E 03:20:47.5							
BRG	e Pn	Z 03:19:47.8	5.9	174.5					
MOX	e Pn	Z 03:19:49.8	6.0	158.5					
	e Sn	N 03:20:58.3							
CLL	e Pn	Z 03:19:55.2	6.4	168.9					
	e Sg	E 03:21:45.5							
TNS	e Pn	Z 03:20:00.6	6.7	138.6					
	e Sn	N 03:21:15.5							

Date Origin Time Lat Long Depth mb Ms ML Source
 2003/01/17 07:03:16.0 52.535S 140.421E 10G 5.1 NEIC
 West of Macquarie Island

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 07:23:05.8	148.6	115.0					

Date Origin Time Lat Long Depth mb Ms ML Source
 2003/01/17 14:31: 8.8 7.780N 94.820E 33.0N 5.3 SZGRF
 2003/01/17 14:31:09.5 7.793N 93.814E 33N 5.2 5.0 NEIC
 Nicobar Islands, India, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 14:43:15.0	79.3	90.6	1.7	70	5.3		

Date Origin Time Lat Long Depth mb Ms ML Source
 2003/01/17 23:54:50.2 39.820N 81.540E 33.0N 5.2 SZGRF

Southern Xinjiang, China

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 00:03:34.2	49.0	73.3	1.5	41	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/18	05:06:47.9	19.893S	178.347W	600G	4.5			NEIC

Fiji Islands Region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKP	Z 05:25:20.0	145.3	14.4					
CLL	e PKP	Z 05:25:25.6	147.3	20.1					
BRG	e PKP	Z 05:25:26.5	147.5	21.9					
TNS	e PKP	Z 05:25:30.8	149.2	12.5					
GRA1	e PKP	Z 05:25:31.7	149.2	17.8					
GEC2	e PKP	Z 05:25:31.4	149.5	22.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/18	11:25:47.3	22.267S	176.692W	114D	4.7			NEIC

South of the Fiji Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	Z 11:45:25.8	150.0	18.2	1.0	23			
	i PKPab	Z 11:45:31.7			1.2	46			
	e pPKPbc	Z 11:45:56.6							
GRA1	e PKPbc	Z 11:45:31.1	151.9	15.7					
	e PKP	Z 11:45:40.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/18	19:50:34.8	35.740N	139.400E	29.4	5.6			SZGRF
2003/01/18	19:50:28.0	33.872N	137.161E	33N	5.1	4.9		NEIC

Near south coast of eastern Honshu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z 20:02:41.5	80.6	44.7					
BSEG	e P	Z 20:02:42.7	80.9	42.3					
BRG	e P	Z 20:02:47.0	81.6	44.6					
CLL	i P	Z 20:02:47.2	81.7	44.0	0.9	22	5.3		
	e pP	Z 20:02:55.0							
	e PP	Z 20:05:58.2							
	e S	T 20:13:11.5							
	e SS	R 20:18:31.1							
	e LR	Z 20:30:17.4							

	e L	Z	20:42:23.2				18.0	1928	5.5
IBBN	e P	Z	20:02:54.3	83.2	40.2				
GEC2	e P	Z	20:02:54.0	83.2	44.2				
WET	e P	Z	20:02:55.8	83.4	43.7				
GRA1	e P	Z	20:02:57.5	83.7	42.6	1.0	36	5.6	
	e pP	Z	20:03:06.0						
GRFO	e P	Z	20:02:57.5	83.7	42.6				
BUG	e P	Z	20:02:57.6	84.0	39.8				
TNS	e P	Z	20:03:00.8	84.5	40.6				
FUR	e P	Z	20:03:02.5	84.8	42.5				
STU	e P	Z	20:03:05.0	85.3	41.1				
BFO	e P	Z	20:03:09.2	86.0	40.4				

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/18	20:39:32.3	40.790N	21.580W	33.0N	4.5			SZGRF
2003/01/18	20:37:40.7	35.008N	34.832W	10G	4.9	4.7		NEIC

Azores Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e P	Z 20:44:31.1	34.3	263.4	1.1	21	4.5		
TNS	e P	Z 20:44:34.7	34.7	260.8					
STU	e P	Z 20:44:36.4	35.0	263.5					
FUR	e P	Z 20:44:49.7	36.3	266.1					
GRA1	e P	Z 20:44:49.1	36.4	264.0					
BSEG	e P	Z 20:44:49.8	36.5	257.5					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/19								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 09:12:29.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/19	13:13:52.1	20.407S	178.903W	600G	4.5			NEIC

Fiji Islands Region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPdf	Z 13:32:36.5	149.6	19.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/19	18:34:36.0	5.107S	153.673E	33N	5.2	4.6		NEIC

New Ireland Region, P.N.G.

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPdf	Z 18:53:36.7	125.4	48.1					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/20	02:33:39.3	17.935S	178.622W	600G	4.0			NEIC

Fiji Islands Region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKP	Z 02:52:06.1	143.3	14.3					
CLL	i PKPbc	- Z 02:52:12.5	145.4	19.7	0.9	28			
TNS	e PKP	Z 02:52:17.9	147.2	12.5					
GRA1	e PKP	Z 02:52:18.5	147.3	17.5					
GEC2	e PKP	Z 02:52:18.8	147.5	22.2					
FUR	e PKP	Z 02:52:21.7	148.7	18.4					
BFO	e PKP	Z 02:52:22.4	149.1	13.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/20	03:01:26.0	52.680N	154.620E	33.0N	5.2	4.5		SZGRF
2003/01/20	03:01:03.4	49.268N	155.527E	43D	5.2	4.3		NEIC

Northwest of Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e P	Z 03:12:40.6	74.5	24.3					
BRG	e P	Z 03:12:41.9	74.6	24.9					
IBBN	e P	Z 03:12:43.2	74.8	21.1					
MOX	e P	Z 03:12:47.1	75.4	23.4					
BUG	e P	Z 03:12:48.3	75.7	20.7					
GRA1	e P	Z 03:12:53.1	76.4	23.1	0.8	22	5.3		
	e L	Z 03:50:37.9			20.5	254		4.5	
WET	e P	Z 03:12:53.5	76.5	24.0					
GEC2	e P	Z 03:12:53.2	76.5	24.5					
TNS	e P	Z 03:12:53.8	76.6	21.4	0.7	16	5.2		
FUR	e P	Z 03:13:00.3	77.8	23.0					
BFO	e P	Z 03:13:03.5	78.4	21.2	0.9	16	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/20	08:43: 9.6	11.220S	160.770E	50.0N		7.7		SZGRF
2003/01/20	08:43:06.0	10.478S	160.749E	33N	6.7	7.8		NEIC

Bougainville - Solomon Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
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RGN	e Pdiff	Z	08:59:01.2	129.0	42.9			
	e PKPdf	Z	09:02:09.1					
	e PP	Z	09:04:18.9					
RUE	e Pdiff	Z	08:59:06.7	130.3	44.6			
	e PKPdf	Z	09:02:14.2					
	e PP	Z	09:04:27.1					
BSEG	e Pdiff	Z	08:59:08.3	130.6	39.7			
	e PKPdf	Z	09:02:14.9					
	e PP	Z	09:04:29.6					
BRG	e Pdiff	Z	08:59:12.1	131.3	45.8			
	e PKPdf	Z	09:02:16.7					
	e PP	Z	09:04:34.5					
CLL	e Pdiff	Z	08:59:11.2	131.4	44.4			
	e PKPpre	Z	09:02:02.6					
	i PKPdf	+ Z	09:02:16.9			1.2	246	
	e PP	Z	09:04:36.6					
	e SKP	Z	09:05:39.5					
	e SKSac	Z	09:09:23.2					
	e SKKSac	R	09:11:33.2					
	e PS	Z	09:14:48.1					
	e PPS	R	09:16:31.3					
	e SS	R	09:22:14.9					
	e SKSSKS	R	09:24:36.0					
	e LQ	T	09:40:07.4					
	e LR	Z	09:47:52.1					
	e L	Z	10:00:03.2			22.0	246925	7.9
MOX	e Pdiff	Z	08:59:17.5	132.5	43.2			
	e PKPdf	Z	09:02:18.8					
	e PP	Z	09:04:42.1					
	e SKP	Z	09:05:44.5					
IBBN	e Pdiff	Z	08:59:18.7	132.8	37.5			
	e PKPdf	Z	09:02:19.4					
	e PP	Z	09:04:43.7					
	e SKP	Z	09:05:45.4					
	e PPP	Z	09:07:39.3					
GEC2	e Pdiff	Z	08:59:19.0	132.8	46.8			
	e PKPdf	Z	09:02:19.2					
	e PP	Z	09:04:44.3					
	e SKP	Z	09:05:45.4					
	e PPP	Z	09:07:42.0					
WET	e PKPdf	Z	09:02:19.7	133.0	45.7			
GRA1	e Pdiff	Z	08:59:22.0	133.4	43.3			
	e PKPdf	Z	09:02:20.6					
	e PP	Z	09:04:48.1					
	e SKP	Z	09:05:49.4					
	e PPP	Z	09:07:46.1					
	e		09:14:31.3					
	e		09:18:05.8					
	e L	Z	10:02:20.3			21.9	187688	7.7

./2003/bul0301.txt

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BUG	e Pdiff	Z	08:59:22.9	133.7	37.4
	e PKPdf	Z	09:02:20.1		
	e PP	Z	09:04:49.3		
	e SKP	Z	09:05:53.3		
TNS	e PKPdf	Z	09:02:21.5	134.2	39.6
FUR	e Pdiff	Z	08:59:26.6	134.5	44.4
	e PKPdf	Z	09:02:21.8		
	e PP	Z	09:04:54.8		
	e SKP	Z	09:05:55.2		
BFO	e Pdiff	Z	08:59:31.9	135.7	40.7
	e PKPdf	Z	09:02:24.3		
	e PP	Z	09:05:02.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/20	17:18:55.1	41.991S	116.664W	10G	4.9	4.6		NEIC
Southern East Pacific Rise								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z	17:38:27.8	143.7	261.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/20	18:42:50.0	20.630S	179.110W	33.0N				SZGRF
2003/01/20	18:43:49.3	20.339S	178.355W	550G	5.1			NEIC
Fiji Islands region								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPbc	Z	19:02:28.4	145.8	14.6					
RUE	e PKPbc	Z	19:02:30.8	146.5	20.9					
CLL	e PKPdf	Z	19:02:29.7	147.8	20.3	1.9	55			
	i PKPbc	- Z	19:02:33.2			0.8	64			
	i PKPab	Z	19:02:38.1			0.7	49			
	e pPKPbc	Z	19:04:40.6							
BRG	e PKPdf	Z	19:02:30.7	148.0	22.1					
	e PKPbc	Z	19:02:34.0							
	e PKPab	Z	19:02:39.3							
MOX	e PKPdf	Z	19:02:31.4	148.7	18.2					
	e PKPbc	Z	19:02:35.4							
	e PKPab	Z	19:02:41.8							
TNS	e PKPbc	Z	19:02:38.9	149.6	12.7					
GRA1	e PKPbc	Z	19:02:38.8	149.7	18.0					
	e PKPab	Z	19:02:46.5							
FUR	e PKPbc	Z	19:02:41.4	151.1	18.9					
	e PKPab	Z	19:02:52.7							
BFO	e PKPbc	Z	19:02:43.0	151.5	13.2					
	e PKPab	Z	19:02:52.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/20	19:04:43.1	15.562S	173.509W	33N	5.5	5.1		NEIC
Tonga Islands								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPdf	+ Z	19:24:14.8	144.0	10.7					
MOX	e PKP	Z	19:24:18.2	144.7	8.6					
TNS	e PKP	Z	19:24:20.0	145.3	3.3					
GRA1	e PKP	Z	19:24:20.9	145.7	8.1					
WET	e PKP	Z	19:24:22.2	146.0	11.1					
GEC2	e PKP	Z	19:24:22.7	146.2	12.6					
FUR	e PKP	Z	19:24:24.8	147.2	8.5					
BFO	e PKP	Z	19:24:25.7	147.2	3.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/21	02:46:51.9	13.840N	90.510W	33.0N	5.7	6.4		SZGRF
2003/01/21	02:46:47.8	13.648N	90.749W	24G	5.6	6.3		NEIC
Near coast of Guatemala								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e P	Z	02:59:29.1	86.8	289.3					
MOX	e P	Z	02:59:32.9	87.1	288.1					
GRFO	e P	Z	02:59:33.7	87.2	287.9					
GRA1	e P	Z	02:59:33.6	87.2	287.9	0.9	59	5.7		
	e PP	Z	03:03:02.9							
	e S	N	03:10:03.1							
	e SS	E	03:15:45.1							
	e L	Z	03:35:48.6			20.7	16009		6.4	
FUR	e P	Z	02:59:35.9	87.7	288.0					
CLL	e P	Z	02:59:36.5	87.7	289.2	0.8	33	5.7		
	e (pP)	Z	02:59:54.9							
	e (sP)	Z	03:00:06.5							
	e PP	Z	03:03:05.7							
	e SKSac	R	03:09:52.0							
	e PS	Z	03:11:43.8							
	e		03:12:58.9							
	e SS	R	03:15:55.8							
	e SSS	E	03:20:22.6							
	e LR	Z	03:28:09.0							
	e L	Z	03:39:59.4			20.0	14014		6.4	
WET	e P	Z	02:59:39.4	88.4	289.1					
BRG	e P	Z	02:59:39.9	88.4	289.9					
GEC2	e P	Z	02:59:41.8	89.0	289.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/21	04:19:27.0	37.140N	142.100E	33.0N	5.5			SZGRF
2003/01/21	04:19:23.2	36.321N	140.931E	41D	5.3	5.2		NEIC

Off east coast of Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z	04:31:31.4	80.0	40.7	1.3	63	5.4		
BSEG	e P	Z	04:31:32.8	80.2	38.4	1.1	54	5.4		
BRG	e P	Z	04:31:37.8	81.2	40.6	1.0	30	5.3		
CLL	i P	+ Z	04:31:37.7	81.2	40.0	1.0	62	5.7		
	i pP	Z	04:31:49.4							
MOX	e P	Z	04:31:43.3	82.3	39.0	1.3	33	5.3		
IBBN	e P	Z	04:31:44.0	82.4	36.4	0.8	40	5.6		
GEC2	e P	Z	04:31:46.3	82.8	40.3	1.1	21	5.3		
WET	e P	Z	04:31:47.3	82.9	39.7	1.1	24	5.4		
GRA1	e P	Z	04:31:49.0	83.2	38.6	1.0	85	5.9		
	e		04:32:01.4							
BUG	e P	Z	04:31:48.9	83.3	35.9	1.2	28	5.4		
TNS	e P	Z	04:31:50.9	83.9	36.7	2.0	107	5.7		
FUR	e P	Z	04:31:54.5	84.4	38.6	0.9	62	5.8		
STU	e P	Z	04:31:56.1	84.7	37.1	0.9	62	5.8		
WLF	e P	Z	04:31:58.5	85.2	35.0	1.3	38	5.5		
BFO	e P	Z	04:31:59.5	85.4	36.5	1.0	50	5.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/21	14:18:30.1	22.248S	179.868W	650G	4.5			NEIC

South of the Fiji Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	+ Z	14:37:09.7	149.3	23.9	0.6	20			
	i PKPab	Z	14:37:16.5			0.9	9			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/21	21:57:21.2	20.383S	178.391W	513?	5.1			NEIC

Fiji Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPdf	Z	22:16:01.5	145.8	14.6					
	e PKPbc	Z	22:16:03.8							
RUE	e PKPdf	Z	22:16:02.8	146.5	21.0					
	e PKPbc	Z	22:16:05.8							
IBBN	e PKPdf	Z	22:16:04.8	147.7	10.8					
	e PKPbc	Z	22:16:08.7							

	e	PKPab	Z	22:16:12.6					
CLL	e	PKPdf	Z	22:16:04.8	147.8	20.3	1.4	16	
	i	PKPbc	Z	22:16:08.5			0.9	137	
	i	PKPab	Z	22:16:13.4			0.7	66	
	e	pPKPbc	Z	22:18:08.8					
BRG	e	PKPdf	Z	22:16:05.3	148.0	22.2			
	e	PKPbc	Z	22:16:09.4					
	e	PKPab	Z	22:16:14.4					
BUG	e	PKPbc	Z	22:16:10.8	148.6	10.2			
	e	PKPab	Z	22:16:16.8					
MOX	e	PKPdf	Z	22:16:06.5	148.7	18.3			
	e	PKPbc	Z	22:16:11.2					
	e	PKPab	Z	22:16:17.2					
TNS	e	PKPdf	Z	22:16:08.0	149.7	12.8			
	e	PKPbc	Z	22:16:13.6					
	e	PKPab	Z	22:16:21.3					
GRA1	e	PKPbc	Z	22:16:13.8	149.7	18.1			
	e	PKPab	Z	22:16:22.1					
WET	e	PKPdf	Z	22:16:08.3	149.9	21.4			
	e	PKPbc	Z	22:16:14.0					
	e	PKPab	Z	22:16:22.7					
GEC2	e	PKPdf	Z	22:16:08.4	149.9	23.1			
	e	PKPbc	Z	22:16:14.0					
	e	PKPab	Z	22:16:22.9					
WLF	e	PKPbc	Z	22:16:15.4	150.5	8.7			
	e	PKPab	Z	22:16:24.7					
STU	e	PKPdf	Z	22:16:10.1	151.0	14.8			
	e	PKPbc	Z	22:16:16.5					
	e	PKPab	Z	22:16:26.5					
FUR	e	PKPbc	Z	22:16:17.0	151.1	19.0			
	e	PKPab	Z	22:16:27.9					
BFO	e	PKPbc	Z	22:16:17.7	151.5	13.3			
	e	PKPab	Z	22:16:28.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/22	02:06:38.1	18.920N	103.630W	33.0N	7.1	8.1		SZGRF
2003/01/22	02:06:34.0	18.837N	103.817W	24G	6.4	7.4		NEIC

Near coast of Michoacan, Mexico

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
HLG	e PP	Z 02:22:43.5	86.7	298.3					
TNS	e P	Z 02:19:29.4	88.9	298.8	1.0	546	6.7		
	e PP	Z 02:22:56.1							
RGN	e PP	Z 02:23:03.3	89.3	302.6					
STU	e P	Z 02:19:34.7	90.1	299.4					
	e PP	Z 02:23:06.9							
MOX	e P	Z 02:19:36.8	90.5	301.3	2.6	3907	7.2		

	e PP	Z	02:23:10.5							
RUE	e P	Z	02:19:36.7	90.6	303.0	1.6		623	6.7	
	e PP	Z	02:23:12.2							
CLL	e P	Z	02:19:37.4	90.9	302.2	1.4		37	5.5	
	e PP	Z	02:23:21.3							
	e SKKSac	R	02:30:20.9							
	e S	T	02:30:40.1							
	e PS	R	02:31:55.9							
	e SS	R	02:36:39.0							
	e SSS	E	02:41:32.0							
	e SKKSdf	R	02:44:11.8							
	e LQ	T	02:47:09.1							
	e LR	Z	02:50:01.2							
	e L	Z	03:02:16.9			20.0		776481		
GRFO	e P	Z	02:19:38.7	90.7	301.0	1.7		1780	7.1	
	e PP	Z	02:23:15.8							
GRA1	e P	Z	02:19:37.6	90.7	301.0	1.7		1969	7.2	
	e L	Z	03:01:48.3			18.2		655840		8.1
WERD	e P	Z	02:19:39.0	90.9	301.8					
GUNZ	e P	Z	02:19:39.4	91.0	301.8					
TANN	e P	Z	02:19:39.6	91.0	301.9	2.7		5312	7.4	
	e PP	Z	02:23:19.4							
FUR	e P	Z	02:19:42.3	91.6	301.0	1.3		765	6.9	
	e PP	Z	02:23:21.2							
WET	e P	Z	02:19:44.0	91.9	302.2	2.2		2547	7.2	
	e PP	Z	02:23:23.0							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/22	02:28:51.2	17.240N	106.620W	33.0N	5.3			SZGRF
2003/01/22	02:29:01.3	18.921N	103.820W	33N	4.8			NEIC

Off coast of Jalisco, Mexico

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z 02:41:50.9	88.0	300.3					
TNS	e P	Z 02:41:55.1	88.9	298.9					
BFO	e P	Z 02:41:58.2	89.7	298.8					
STU	e P	Z 02:42:00.3	90.0	299.5					
MOX	e P	Z 02:42:02.0	90.4	301.3					
GRA1	e P	Z 02:42:04.3	90.7	301.0	1.0	17	5.3		
CLL	e P	Z 02:42:03.5	90.8	302.4					
TANN	e P	Z 02:42:04.7	91.0	302.0					
BRG	e P	Z 02:42:07.2	91.5	303.1					
WET	e P	Z 02:42:09.4	91.9	302.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
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2003/01/22	02:58:51.8	5.110N	98.450E	33.0N	5.9				SZGRF
2003/01/22	02:58:51.2	4.577N	97.540E	33N	5.7				NEIC

Northern Sumatera, Indonesia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	03:11:11.7	82.4	92.1					
GEC2	e P	Z	03:11:12.2	82.5	91.6	1.3	93	5.8		
RUE	e P	Z	03:11:12.7	82.6	92.2					
CLL	e P	Z	03:11:14.4	83.0	91.4					
WET	e P	Z	03:11:14.9	83.0	91.0					
TANN	e P	Z	03:11:16.4	83.3	90.9					
MOX	e P	Z	03:11:19.4	83.9	90.2					
GRA1	e P	Z	03:11:20.8	84.1	89.8	1.4	109	5.9		
BSEG	e P	Z	03:11:23.7	84.7	89.5					
STU	e P	Z	03:11:27.0	85.5	88.2					
TNS	e P	Z	03:11:29.6	85.9	87.8					
BFO	e P	Z	03:11:29.6	86.1	87.5					
IBBN	e P	Z	03:11:31.6	86.2	87.4					
BUG	e P	Z	03:11:32.8	86.6	86.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/22	16:34:43.6	36.040N	70.600E	33.0N	4.5			SZGRF
2003/01/22	16:34:10.5	36.177N	70.615E	33N	4.5			NEIC

Hindu Kush, Afghanistan, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	16:42:51.0	44.3	84.4	1.0	10	4.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/22	19:41:39.1	16.850N	103.570W	33.0N	5.9	5.9		SZGRF
2003/01/22	19:41:42.9	18.998N	104.221W	33N	5.6	5.5		NEIC

Off coast of Michoacan, Mexico

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
IBBN	e P	Z	19:54:30.2	87.6	298.6					
BUG	e P	Z	19:54:31.2	87.8	298.3					
BSEG	e P	Z	19:54:32.8	88.2	300.6					
TNS	e P	Z	19:54:36.9	89.0	299.2	1.3	94	5.9		
BFO	e P	Z	19:54:40.0	89.9	299.2					
MOX	e P	Z	19:54:43.8	90.5	301.7					
GRA1	e P	Z	19:54:45.9	90.8	301.4	1.7	231	6.2		
	e PP	Z	19:58:15.3							
	e L	Z	20:35:58.9			18.9	4004		5.9	
CLL	e P	Z	19:54:45.4	90.9	302.8	1.1	16	5.3		
	e PP	Z	19:58:21.7							

	e	SKSac	R	20:05:16.7							
	e	PS	R	20:06:59.4							
	e	SS	R	20:12:06.6							
	e	SSS	E	20:16:09.6							
	e	LQ	T	20:22:09.9							
	e	LR	Z	20:25:50.0							
	e	L	Z	20:37:12.4			20.0	4909		5.9	
TANN	e	P	Z	19:54:46.9	91.1	302.3					
FUR	e	P	Z	19:54:49.4	91.7	301.4					
BRG	e	P	Z	19:54:48.8	91.7	303.5					
WET	e	P	Z	19:54:51.2	92.0	302.6					
GEC2	e	P	Z	19:54:53.5	92.7	303.2	1.8	77		5.7	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/22	20:15:25.7	17.920N	108.900W	33.0N	6.0			SZGRF
2003/01/22	20:15:37.3	18.754N	104.250W	33N	5.0	4.4		NEIC

Revilla Gigedo Islands, Mexico, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 20:28:41.9	91.0	301.2	2.3	163	6.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/24	04:52:28.6	65.530N	146.740W	33.0N	5.3	4.4		SZGRF
2003/01/24	04:52:10.0	63.262N	145.207W	5	5.1	4.7		NEIC

Northern Alaska, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z 05:02:28.3	61.3	347.7	2.9	179	5.6		
IBBN	e P	Z 05:02:37.1	62.5	346.7	1.7	69	5.2		
BUG	e P	Z 05:02:42.2	63.3	346.5	0.9	26	5.5		
CLL	e P	Z 05:02:47.8	64.2	349.3	1.1	15	5.1		
TNS	e P	Z 05:02:51.6	64.6	347.2	1.5	24	5.1		
MOX	e P	Z 05:02:51.2	64.6	348.7	2.4	93	5.5		
BRG	e P	Z 05:02:50.6	64.7	349.8	1.8	39	5.2		
WLF	e P	Z 05:02:53.2	64.8	346.2	1.2	20	5.1		
GRA1	e P	Z 05:02:56.1	65.5	348.6	1.8	43	5.4		
	e	05:03:14.5							
	e L	Z 05:30:59.9			20.0	239		4.4	
STU	e P	Z 05:03:01.6	66.2	347.7	1.3	23	5.2		
WET	e P	Z 05:03:02.1	66.3	349.4	1.6	30	5.3		
BFO	e P	Z 05:03:03.0	66.5	347.4	1.5	25	5.2		
GEC2	e P	Z 05:03:03.9	66.7	349.8	1.5	17	5.0		
FUR	e P	Z 05:03:06.3	67.0	348.8	2.4	156	5.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/26	07:08:23.9	53.780N	169.770W	33.0N	5.3	4.8		SZGRF
2003/01/26	07:08:11.9	52.228N	170.258W	33N	5.4	5.1		NEIC

Fox Islands, Aleutian Islands, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	07:19:46.5	73.8	0.4	1.0	34	5.4		
RUE	e P	Z	07:19:54.5	75.2	2.6	1.2	60	5.5		
IBBN	e P	Z	07:19:56.2	75.5	358.7	1.0	58	5.6		
BUG	e P	Z	07:20:00.3	76.3	358.4	1.0	32	5.3		
CLL	i P	+ Z	07:20:00.9	76.4	2.1	1.1	23	5.2		
	e S	Z	07:30:03.5							
	e SS	Z	07:34:49.4							
	e LR	Z	07:45:31.2							
	e L	Z	08:00:13.2			20.0	777		5.0	
BRG	e P	Z	07:20:03.4	76.8	2.6	1.2	37	5.4		
MOX	e P	Z	07:20:05.2	77.1	1.2	1.1	36	5.4		
TNS	e P	Z	07:20:07.4	77.5	359.2	1.1	23	5.2		
WLF	e P	Z	07:20:10.7	78.1	357.8	1.0	21	5.2		
GRA1	e P	Z	07:20:11.1	78.1	0.9	1.0	45	5.5		
	e L	Z	07:58:52.3			21.6	534		4.8	
WET	e P	Z	07:20:13.8	78.6	2.0	1.3	26	5.2		
GEC2	e P	Z	07:20:15.0	78.9	2.5	1.2	30	5.3		
STU	e P	Z	07:20:15.6	79.0	359.7	1.0	28	5.3		
BFO	e P	Z	07:20:18.0	79.4	359.1	1.1	25	5.2		
FUR	e P	Z	07:20:19.1	79.6	1.0	1.4	62	5.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/26	10:49:39.9	13.340N	94.100E	33.0N	4.8			SZGRF
2003/01/26	10:49:30.7	13.023N	95.708E	33N	4.9			NEIC

Andaman Islands, India, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	11:01:20.2	75.4	86.6	1.0	21	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/26	15:14:14.7	40.050N	136.310E	33.0N	4.7			SZGRF
2003/01/26	15:14:40.8	37.634N	134.708E	372	4.4			NEIC

Eastern Sea of Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z	15:25:53.3	76.3	44.4	0.8	6	4.7		
BSEG	e P	Z	15:25:54.2	76.7	42.2	0.8	5	4.7		
BRG	e P	Z	15:25:59.0	77.4	44.2	0.8	3	4.5		

CLL	e P	Z	15:25:59.4	77.5	43.6	0.8	12	5.1
MOX	e P	Z	15:26:04.5	78.6	42.6	0.8	2	4.4
IBBN	e P	Z	15:26:06.9	78.9	40.2	0.8	13	5.1
GEC2	e P	Z	15:26:07.4	79.0	43.8	0.7	3	4.5
WET	e P	Z	15:26:08.5	79.1	43.2	0.9	3	4.4
GRA1	e P	Z	15:26:10.8	79.5	42.2	0.8	11	5.1
TNS	e P	Z	15:26:14.2	80.2	40.4	0.8	5	4.6
FUR	e P	Z	15:26:16.2	80.6	42.1	0.8	11	4.8
STU	e P	Z	15:26:19.1	81.0	40.7	0.8	8	4.7
BFO	e P	Z	15:26:21.8	81.7	40.1	0.9	9	4.8

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/26	19:57: 4.5	43.920N	12.140E	10.0G				SZGRF
2003/01/26	19:57:03.2	43.966N	11.904E	10G	5.0			NEIC

Central Italy

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
FUR	e Pn	Z	19:58:10.5	4.2	173.8					
BFO	e Pn	Z	19:58:20.7	5.0	149.1					
	e Sn	N	19:59:17.8							
GEC2	e Pn	Z	19:58:19.3	5.0	194.9					
STU	e Pn	Z	19:58:23.7	5.2	157.7					
WET	e Pn	Z	19:58:22.3	5.2	187.7					
	e Sn	Z	19:59:21.4							
GRA1	e Pn	Z	19:58:29.1	5.7	175.1					
MOX	e Pn	Z	19:58:41.9	6.7	178.2					
	e Sn	N	19:59:57.3							
TNS	e Pn	Z	19:58:44.2	6.7	158.1					
WLF	e Pn	Z	19:58:47.5	6.9	143.2					
BRG	e Pn	Z	19:58:46.6	7.0	192.1					
	e Sn	N	20:00:04.5							
CLL	e Pn	Z	19:58:51.9	7.4	186.2					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/26	20:15: 1.5	43.720N	12.450E	10.0G				SZGRF
2003/01/26	20:15:02.2	43.871N	11.941E	10G	4.6			NEIC

Central Italy

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
FUR	e Pn	Z	20:16:10.1	4.3	173.6					
BFO	e Pn	Z	20:16:20.4	5.1	149.4					
	e Sn	N	20:17:22.9							
GEC2	e Pn	Z	20:16:19.4	5.1	194.4					
	e Sn	N	20:17:19.8							
WET	e Pn	Z	20:16:21.9	5.3	187.3					

	e Sn	N	20:17:22.0									
GRA1	e Pn	Z	20:16:29.3	5.8	174.9							
MOX	e Pn	Z	20:16:42.0	6.8	178.0							
	e Sn	E	20:17:56.1									
TNS	e Pn	Z	20:16:43.8	6.8	158.2							
	e Sn	N	20:18:00.1									
WLF	e Pn	Z	20:16:48.4	7.0	143.5							
	e Sn	N	20:18:10.8									
BRG	e Pn	Z	20:16:47.5	7.1	191.7							
CLL	e Pn	Z	20:16:51.5	7.5	185.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/26	20:21:58.8	10.984N	48.561E	33N	4.7			SZGRF
2003/01/26	20:22:09.9	12.540N	48.016E	33N	4.7			NEIC

Eastern Gulf of Aden

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 20:30:46.0	47.8	127.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/26	21:37:26.2	23.641S	179.700E	600G	4.6			NEIC

South of the Fiji Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKP	Z 21:56:08.7	148.7	18.9					
RUE	e PKP	Z 21:56:09.9	149.2	25.8					
CLL	i PKPbc	+ Z 21:56:12.9	150.5	25.3	1.0	44			
	e PKPab	Z 21:56:21.9			1.0	10			
	e pPKPbc	Z 21:58:24.5							
BRG	e PKP	Z 21:56:13.3	150.6	27.3					
IBBN	e PKP	Z 21:56:13.2	150.7	15.2					
MOX	e PKP	Z 21:56:14.9	151.5	23.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/26	22:20:22.7	43.990N	12.090E	10.0G				SZGRF
2003/01/26	22:20:19.0	43.813N	11.961E	10G				NEIC

Central Italy

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z 22:21:38.4	5.2	149.5					
	e Sn	N 22:22:34.2							
GEC2	e Pn	Z 22:21:37.0	5.2	194.1					
	e Sn	N 22:22:34.7							

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WET	e Pn	Z	22:21:38.5	5.4	187.1
	e Sn	N	22:22:37.5		
GRA1	e Sn	N	22:22:50.7	5.9	174.8
MOX	e Pn	Z	22:22:00.6	6.8	177.9
	e Sn	E	22:23:11.9		
TNS	e Sn	E	22:23:15.9	6.8	158.2
BRG	e Pn	Z	22:22:04.9	7.2	191.5
	e Sn	N	22:23:20.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/26	23:18:3.5	43.930N	12.050E	10.0G				SZGRF
2003/01/26	23:18:01.2	43.820N	11.917E	10G	3.6			NEIC

Central Italy

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z	23:19:20.0	5.1	149.8					
	e Sn	N	23:20:17.0							
GEC2	e Pn	Z	23:19:18.3	5.2	194.4					
	e Sn	N	23:20:17.2							
WET	e Pn	Z	23:19:20.8	5.4	187.4					
	e Sn	N	23:20:20.5							
GRA1	e Sn	N	23:20:31.8	5.9	175.1					
TNS	e Pn	Z	23:19:43.2	6.8	158.4					
	e Sn	N	23:20:56.4							
MOX	e Pn	Z	23:19:40.4	6.8	178.2					
	e Sn	N	23:20:54.7							
BRG	e Sn	N	23:21:03.4	7.2	191.8					
CLL	e Pn	Z	23:19:51.0	7.5	186.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/27	04:03:49.3	41.840N	14.720E	10.0G				SZGRF

Southern Italy

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z	04:05:31.5	7.0	173.8					
	e Sn	E	04:06:49.7							
WET	e Pn	Z	04:05:36.7	7.4	169.3					
	e Sn	E	04:06:57.4							
	e Sn	N	04:06:58.0							
BFO	e Sn	N	04:07:09.2	7.9	142.9					
GRA1	e Sn	E	04:07:15.4	8.2	161.5					
MOX	e Sn	N	04:07:36.4	9.1	165.2					
TNS	e Sn	E	04:07:46.9	9.4	150.2					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/27	04:39:26.9	43.860N	11.900E	10.0G				SZGRF
2003/01/27	04:39:25.2	43.843N	11.973E	10G				NEIC

Central Italy

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z	04:40:43.0	5.1	194.0					
	e Sn	N	04:41:40.9							
BFO	e Pn	Z	04:40:44.1	5.1	149.3					
	e Sn	E	04:41:38.9							
WET	e Pn	Z	04:40:45.5	5.3	187.0					
	e Sn	E	04:41:44.3							
GRA1	e Sn	N	04:42:00.4	5.9	174.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/27	05:26:22.6	39.040N	40.280E	33.0N	6.1	5.6		SZGRF
2003/01/27	05:26:23.0	39.492N	39.855E	10G	5.5	6.0		NEIC

Turkey

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z	05:31:07.1	20.8	106.9	2.4	2045	6.0		
BRG	e P	Z	05:31:12.6	21.3	112.1	2.7	3238	6.3		
WET	e P	Z	05:31:13.0	21.4	106.6	1.3	353	5.6		
CLL	e P	Z	05:31:20.3	22.1	111.9	1.7	954	6.0		
RUE	e P	Z	05:31:19.8	22.1	115.6	1.2	936	6.2		
FUR	e P	Z	05:31:21.1	22.2	102.3	2.6	4650	6.5		
GRA1	e P	Z	05:31:26.5	22.6	105.9	1.4	1374	6.3		
	e S	N	05:35:40.3							
	e L	E	05:41:22.0			21.1	25612		5.6	
MOX	e P	Z	05:31:25.8	22.7	108.5	1.8	343	5.6		
RGN	e P	Z	05:31:34.1	23.3	119.3	1.1	1202	6.3		
STU	e P	Z	05:31:35.7	23.7	101.5	1.6	562	5.8		
CLZ	e P	Z	05:31:37.0	23.8	109.6	1.1	262	5.7		
BFO	e P	Z	05:31:41.0	24.2	99.6	2.8	2081	6.2		
TNS	e P	Z	05:31:45.5	24.5	103.9	2.4	2812	6.6		
BSEG	e P	Z	05:31:45.5	24.6	113.9	1.8	1052	6.3		
IBBN	e P	Z	05:31:54.3	25.4	107.4	3.2	6326	6.7		
BUG	e P	Z	05:31:54.0	25.5	105.1	1.9	827	6.0		
WLF	e P	Z	05:31:57.2	25.8	100.3	1.2	218	5.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/27	06:19:27.4	59.030N	28.980W	33.0N	4.8			SZGRF
2003/01/27	06:19:17.9	59.401N	30.380W	10G	4.4			NEIC

North Atlantic Ocean

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	06:24:46.4	25.5	308.3	1.6	32	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/27	11:02:20.8	20.949S	178.838W	600G	4.4			NEIC

Fiji Islands Region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z	11:21:06.3	150.2	19.1					
	e		11:21:15.6							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/27	16:17:28.2	45.940N	10.790E	10.0G			3.0	SZGRF
2003/01/27	16:17:23.9	45.756N	10.642E	10G				NEIC

Northern Italy

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
FUR	e Sg	E	16:18:38.9	2.4	190.4					3.3
BFO	e Pn	Z	16:18:13.0	3.0	147.7					2.9
	e Sn	E	16:18:50.0							
WET	e Pn	Z	16:18:21.1	3.7	204.9					2.9
	e Sn	N	16:19:03.8							
GEC2	e Pn	Z	16:18:21.3	3.7	215.0					
	e Sn	N	16:19:03.9							
GRA1	e Sg	E	16:19:27.5	4.0	185.9					
MOX	e Sn	E	16:19:32.7	4.9	187.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/27	17:56:40.3	43.380S	37.400E	33.0N		6.5		SZGRF
2003/01/27	17:56:25.9	46.074S	35.028E	10G	5.6	6.3		NEIC

Prince Edward Islands, South Africa, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	18:10:04.0	98.0	163.6					
	e PP	Z	18:13:58.6							
	e SS	R	18:28:03.3							
	e L	Z	18:55:25.2			21.4	16166		6.5	
CLL	e Pdiff	Z	18:10:07.8	96.7	162.4	1.3	8			
	e PP	Z	18:14:11.4							
	e SKSac	N	18:20:54.9							
	e SKKSac	N	18:21:09.4							
	e PS	R	18:23:14.2							

e SS	R	18:28:29.6									
e SSSS	E	18:36:07.9									
e LR	Z	18:43:45.2									
e L	Z	18:57:26.3			20.0		18333		6.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/27	19:12:57.4	47.810N	25.470W	33.0N	4.9			SZGRF

Northern Mid-Atlantic Ridge

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 19:18:10.2	24.0	279.7	2.0	78	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/29	03:40:36.9	16.668S	173.734W	33N	4.6			NEIC

Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKP	Z 04:00:11.7	145.0	11.3	1.3	20			
	e	04:00:35.5							
GRA1	e PKP	Z 04:00:18.3	146.7	8.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/29	23:50:17.0	43.930N	12.040E	10.0G			4.1	SZGRF
2003/01/29	23:50:13.8	43.830N	12.100E	10G				NEIC

Central Italy

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
FUR	e Pn	Z 23:51:22.2	4.4	172.2					
GEC2	e Pn	Z 23:51:32.5	5.1	193.0					4.0
	e Sn	N 23:52:30.7							
BFO	e Pn	Z 23:51:33.2	5.2	148.5					4.2
	e Sn	E 23:52:29.3							
WET	e Pn	Z 23:51:34.5	5.3	186.0					4.2
	e Sn	N 23:52:33.2							
GRA1	e Pn	Z 23:51:42.0	5.9	173.8					
	e Sn	N 23:52:46.1							
MOX	e Pn	Z 23:51:54.2	6.8	177.1					
	e Sn	E 23:53:07.5							
TNS	e Pn	N 23:51:56.1	6.9	157.4					
	e Sn	N 23:53:11.3							
BRG	e Pn	Z 23:51:59.4	7.2	190.7					
	e Sn	N 23:53:16.8							
CLL	e Pn	Z 23:52:04.1	7.5	185.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/30	17:21:09.4	7.905N	94.148E	33N	4.8			NEIC

Nicobar Isl., India Region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e P	Z 17:33:08.6	78.3	91.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/01/31	16:54:43.1	1.372S	76.363W	115.1	5.0			SZGRF
2003/01/31	16:54:33.5	2.706S	77.008W	111D	5.0			NEIC

Equador

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 17:07:27.0	89.4	267.3	0.9	4	5.0		
	e pP	Z 17:07:56.8							

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