

## 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)

MAY 2003      UPDATED    1.OCTOBER.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		
2003/05/01	00:27: 7.9	38.761N	40.498E	33.0N	6.0	6.0		SZGRF		
2003/05/01	00:27:04.8	39.008N	40.511E	10G	5.8	6.4		NEIC		
Turkey										
Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z	00:31:55.7	21.5	107.1	1.2	360	5.7		
BRG	e P	Z	00:32:01.3	22.1	112.2	2.6	2380	6.2		
WET	e P	Z	00:32:01.4	22.1	106.8	1.5	677	5.8		
CLL	e P	Z	00:32:08.6	22.8	111.9	1.1	835	6.2		
TANN	e P	Z	00:32:08.6	22.8	109.2	2.2	1343	6.1		
RUE	e P	Z	00:32:08.4	22.8	115.5					
WERD	e P	Z	00:32:09.7	22.9	109.1	1.7	500	5.8		
FUR	e P	Z	00:32:10.1	22.9	102.7	1.0	747	6.2		
GRA1	e P	Z	00:32:14.8	23.3	106.1	1.4	1965	6.5		
	e S	R	00:36:36.8							
	e L	Z	00:36:53.9			19.2	51113		6.0	
MOX	e P	Z	00:32:14.5	23.4	108.7	1.8	741	5.9		
STU	e P	Z	00:32:24.0	24.4	101.8	1.3	645	6.2		
CLZ	e P	Z	00:32:25.7	24.5	109.7	1.2	406	6.0		
BFO	e P	Z	00:32:29.0	24.8	100.0	1.3	295	5.9		
NRDL	e P	Z	00:32:29.7	24.9	110.7	1.6	392	5.9		
TNS	e P	Z	00:32:32.6	25.2	104.1	1.2	482	6.1		
BSEG	e P	Z	00:32:33.7	25.3	113.8	1.4	732	6.1		
IBBN	e P	Z	00:32:42.0	26.2	107.5	1.1	337	5.9		
BUG	e P	Z	00:32:41.9	26.2	105.2	1.6	484	5.9		
WLF	e P	Z	00:32:43.6	26.5	100.5	1.1	267	5.9		
HLG	e P	Z	00:32:48.8	26.7	111.2	1.2	769	6.3		

./2003/bul0305.txt

Thu Apr 23 08:38:25 2020

2

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
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2003/05/01

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 06:13:07.6							
	e Sn	N 06:14:12.6							
WET	e Pn	Z 06:13:12.9							
	e Sn	E 06:14:21.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/01	06:34:43.8	38.726N	40.810E	33.0N	4.6			SZGRF

Turkey

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 06:39:52.8	23.7	106.3	1.3	24	4.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/01	15:48:34.5	31.692S	178.918W	80D	4.8			NEIC

Kermadec Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 16:08:24.1	160.5	26.6					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
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2003/05/01

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 16:49:02.4							
	e Sn	N 16:50:07.3							
WET	e Pn	Z 16:49:07.9							
	e Sn	N 16:50:17.0							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/01	22:28:38.4	46.321N	13.037E	10.0G				SZGRF

Austria

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
KBA	e Pg	Z 22:28:52.4	0.8	195.7					
WTTA	e Pg	Z 22:29:02.8	1.3	134.0					
	e Sg	N 22:29:20.9							
MOA	e Pg	Z 22:29:09.9	1.7	209.1					

./2003/bul0305.txt

Thu Apr 23 08:38:25 2020

3

DAVA	e Pg	Z	22:29:20.2	2.4	112.9
	e Sg	N	22:29:54.5		
GEC2	e Pn	Z	22:29:20.1	2.6	190.3
	e Sg	N	22:30:00.1		
WET	e Pn	Z	22:29:23.7	2.8	177.8
	e Sn	E	22:29:58.0		
	e Sg	E	22:30:07.5		
GRA1	e Sn	E	22:30:15.7	3.6	159.5
TANN	e Pn	Z	22:29:41.0	4.1	174.4
WERD	e Sn	E	22:30:30.0	4.2	173.0
MOX	e Pn	Z	22:29:44.9	4.4	167.2
	e Sn	N	22:30:35.1		
CLL	e Pn	Z	22:29:53.2	5.0	179.7

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/01	22:59:27.5	43.030N	14.661E	10.0G				SZGRF
Adriatic Sea								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z	23:00:53.4	5.9	173.1					
	e Sn	N	23:01:58.7							
WET	e Pn	Z	23:00:58.8	6.2	167.9					
	e Sn	N	23:02:07.7							
WERD	e Pn	Z	23:01:18.0	7.6	166.9					
MOX	e Pn	Z	23:01:20.8	7.9	163.6					
	e Sn	N	23:02:47.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/01	23:22:29.7	43.101N	15.180E	10.0G				SZGRF
Adriatic Sea								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z	23:23:55.8	5.8	169.3					
	e Sn	N	23:25:00.4							
WET	e Pn	Z	23:24:01.1	6.2	164.4					
	e Sn	N	23:25:10.3							
MOX	e Pn	Z	23:24:24.1	7.9	160.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/02	03:26: 3.3	22.215N	120.519E	33.0N	5.2			SZGRF
2003/05/02	03:25:59.4	21.742N	120.159E	33N	5.0			NEIC
Taiwan								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	03:38:34.9	85.0	61.9	1.0	16	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/02	03:53: 9.2	41.740N	14.339E	10.0G			4.0	SZGRF

Southern Italy

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z	03:54:52.8	7.1	176.2					4.1
	e Sn	N	03:56:10.1							
WET	e Pn	Z	03:54:56.9	7.5	171.6					3.9
	e Sn	N	03:56:19.0							
GRA1	e Sn	N	03:56:36.9	8.2	163.6					
MOX	e Sn	N	03:56:57.7	9.1	167.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/02	09:26:35.9	46.598N	149.137E	33.0N	5.5			SZGRF
2003/05/02	09:26:22.1	44.405N	149.126E	37D	5.2	4.5		NEIC

Kuril Islands, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	09:38:06.4	75.6	29.1	1.1	44	5.4		
NRDL	e P	Z	09:38:13.8	76.9	28.8					
CLL	i P	+ Z	09:38:14.1	77.0	30.5	1.0	72	5.7		
	e pP	Z	09:38:24.8							
	e PP	Z	09:41:11.9							
	e SP	Z	09:48:42.4							
	e (SS)	Z	09:53:32.6							
	e L	Z	10:13:21.1			22.0	277		4.5	
BRG	e P	Z	09:38:14.8	77.1	31.1	1.2	33	5.3		
CLZ	e P	Z	09:38:17.0	77.4	28.9	1.3	95	5.8		
IBBN	e P	Z	09:38:18.5	77.7	27.2					
TANN	e P	Z	09:38:19.9	78.0	30.1					
WERD	e P	Z	09:38:20.1	78.0	30.0					
MOX	e P	Z	09:38:20.1	78.1	29.6	1.3	51	5.5		
BUG	e P	Z	09:38:23.4	78.6	26.7					
GEC2	e P	Z	09:38:25.2	78.9	30.7	1.4	34	5.3		
WET	e P	Z	09:38:25.7	79.0	30.2	1.3	83	5.7		
GRA1	e P	Z	09:38:26.1	79.0	29.2	1.1	103	5.9		
TNS	e P	Z	09:38:27.7	79.4	27.4					
FUR	e P	Z	09:38:33.0	80.3	29.1					
STU	e P	Z	09:38:33.3	80.4	27.8					
BFO	e P	Z	09:38:36.9	81.1	27.2	1.3	31	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/03	05:03:02.8	15.166S	173.792W	33N	6.3	6.1		NEIC

Tonga Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML								
CLL	e PKPpre	Z	05:22:32.4	143.5	11.1	0.9	28											
	i PKPdf	- Z	05:22:34.4															
	e PKiKP	Z	05:22:37.2															
	e		05:22:40.0															
	e PP	Z	05:26:02.8															
	e PPP	Z	05:28:56.3															
	e SKKSac	Z	05:32:38.9															
	e SS	T	05:44:29.9															
	e SSS	T	05:49:44.5															
	e LR	Z	06:10:33.6															
	e L	Z	06:24:17.9								22.0	4464	6.2					
	GRA1	e PKP	Z								05:22:39.8	145.2	8.5					
		e									05:22:51.8							
		e PP	Z								05:25:59.0							
e L		Z	06:25:56.7	21.8	4928	6.2												

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/03	06:13: 5.9	36.232N	95.253E	33.0N	5.1			SZGRF
2003/05/03	06:12:58.6	37.472N	96.531E	10G	5.0			NEIC

Qinghai, China

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	06:23:07.3	59.6	66.5	1.0	21	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/03	07:28:32.5	49.214N	25.391W	33.0N	4.5			SZGRF
2003/05/03	07:28:08.7	48.944N	28.409W	10G	4.4	3.9		NEIC

Northern Mid-Atlantic Ridge

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	07:33:40.7	25.5	283.7	0.9	15	4.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/03	11:22:40.9	37.360N	30.890E	33.0N	5.4			SZGRF
2003/05/03	11:22:40.5	36.888N	31.524E	135	4.9			NEIC

Turkey

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z	11:26:39.2	17.6	126.1	2.5	784	5.4		
	e S	N	11:29:54.4							
	e ScP	Z	11:34:34.9							
WET	e P	Z	11:26:45.5	18.2	125.2					
	e S	N	11:30:06.2							
	e ScP	Z	11:34:35.9							
FUR	e P	Z	11:26:49.6	18.6	119.8	2.1	929	5.5		
	e ScP	Z	11:34:37.1							
BRG	e P	Z	11:26:51.1	18.8	131.4	2.4	836	5.4		
	e S	N	11:30:19.8							
TANN	e P	Z	11:26:56.3	19.2	127.5					
WERD	e P	Z	11:26:57.1	19.3	127.2					
GRA1	e P	Z	11:26:58.3	19.4	123.5	1.3	115	4.9		
	e S	N	11:30:32.2							
	e ScP	Z	11:34:39.5							
CLL	e P	Z	11:26:58.9	19.5	130.5	2.0	354	5.3		
MOX	e P	Z	11:27:02.5	19.8	126.4	2.5	1096	5.6		
	e S	N	11:30:39.0							
	e ScP	Z	11:34:39.8							
RUE	e P	Z	11:27:03.7	19.9	134.4	2.5	1029	5.6		
STU	e P	Z	11:27:05.5	20.1	117.9					
BFO	e P	Z	11:27:08.9	20.4	115.5	2.2	636	5.5		
	e S	N	11:30:49.6							
	e ScP	Z	11:34:40.8							
CLZ	e P	Z	11:27:15.7	21.1	126.8					
	e ScP	Z	11:34:43.1							
TNS	e S	E	11:31:03.8	21.2	120.1					
WLF	e P	Z	11:27:28.0	22.3	115.3					
BSEG	e P	Z	11:27:28.4	22.5	130.8					
BUG	e P	Z	11:27:29.4	22.5	120.8	2.5	627	5.6		
IBBN	e P	Z	11:27:32.0	22.7	123.4	2.3	651	5.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/03	21:33: 9.1	43.871N	144.588E	33.0N	5.2			SZGRF
2003/05/03	21:33:30.0	43.929N	142.117E	199	4.3			NEIC

Hokkaido, Japan, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	21:45:04.5	77.1	34.0	0.8	16	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/03	22:51: 3.5	37.050N	143.158E	33.0N	5.3			SZGRF
0003/05/03	22:51:03.4	37.311N	142.090E	33N	4.6			NEIC

Off east coast of Honshu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 23:03:28.0			1.7	38	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/04								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 02:15:10.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/04								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 05:42:39.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/04								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 05:51:31.4							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/03	11:00:33.4	38.195N	26.875E	10G				NEIC
Near the coast of western Turkey								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 11:04:07.3	14.3	133.3					
WET	e Pn	Z 11:04:13.8	14.9	132.1					

GRA1	e Pn	Z 11:04:27.1	16.1	129.8					
MOX	e Pn	Z 11:04:31.9	16.5	133.1					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/04	13:15:14.0	31.629S	178.603W	33.0N		6.8		SZGRF
2003/05/04	13:15:14.9	30.625S	178.315W	33N	6.1	6.5		NEIC
Kermadec Islands region								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
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BSEG	e	PKPdf	Z	13:35:05.7	155.9	18.4			
NRDL	e	PKPdf	Z	13:35:07.6	157.3	19.0			
CLL	e	PKPdf	Z	13:35:07.6	157.7	26.4	1.4	117	
	e	PKPdif	Z	13:35:23.2			1.0	112	
	e	PKPab	Z	13:35:40.6			1.1	386	
	e	PP	Z	13:39:24.9					
	e	PPP	Z	13:43:01.3					
	e			13:45:31.1					
	e			13:48:03.2					
	e	SKSP	R	13:49:48.5					
	e	PPS	Z	13:52:39.8					
	e	SS	T	13:59:14.9					
	e	SSS	T	14:05:28.1					
	e	LR	Z	14:31:34.6					
	e	L	Z	14:44:23.7			22.0	10272	
BRG	e	PKPdf	Z	13:35:08.0	157.8	28.9			
	e	PKPab	Z	13:35:44.2					
CLZ	e	PKPdf	Z	13:35:08.4	157.8	20.2			
	e	PKPab	Z	13:35:45.3					
TANN	e	PKPab	Z	13:35:45.7	158.6	26.2			
MOX	e	PKPdf	Z	13:35:09.1	158.7	24.1			
BUG	e	PKPdf	Z	13:35:09.1	158.8	13.4			
	e	PKPab	Z	13:35:48.9					
GRA1	e	PKPdf	Z	13:35:10.6	159.6	24.2			
	e	PKPab	Z	13:35:49.8					
	e	PP	Z	13:39:34.4					
	e	SS	E	13:59:47.0					
	e	L	Z	14:49:27.6			21.2	13140	6.8
GEC2	e	PKPdf	Z	13:35:10.2	159.6	31.0			
WET	e	PKPdf	Z	13:35:09.6	159.6	28.7			
TNS	e	PKPdf	Z	13:35:10.6	159.8	17.0			
WLF	e	PKPab	Z	13:35:53.8	160.7	11.7			
BFO	e	PKPdf	Z	13:35:12.1	161.6	18.4			
	e	PKPab	Z	13:35:58.5					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/04	15:44:48.8	40.366N	76.884E	33.0N	5.1			SZGRF
2003/05/04	15:44:35.1	39.413N	77.124E	10G	5.0	5.6		NEIC

Kyrgyzstan-Xinjiang border region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	15:52:51.7	44.6	79.3					
CLL	e P	Z	15:52:55.4	45.1	79.1					
GEC2	e P	Z	15:52:56.1	45.1	77.2					
TANN	e P	Z	15:53:00.0	45.6	77.9					
WET	e P	Z	15:52:59.5	45.6	76.9	1.0	18	4.9		



MOX	e P	Z	15:53:03.7	46.1	77.6				
BSEG	e P	Z	15:53:04.4	46.2	79.8	1.1	27	5.2	
GRA1	e P	Z	15:53:07.8	46.5	76.4	0.8	39	5.5	
CLZ	e P	Z	15:53:08.3	46.6	77.9				
NRDL	e P	Z	15:53:08.3	46.6	78.3				
FUR	e P	Z	15:53:10.4	46.9	75.1				
IBBN	e P	Z	15:53:18.6	48.0	76.6				
STU	e P	Z	15:53:18.9	48.0	74.4				
TNS	e P	Z	15:53:19.8	48.1	75.2	0.9	10	4.9	
BUG	e P	Z	15:53:22.7	48.5	75.5				
BFO	e P	Z	15:53:23.9	48.7	73.5	1.5	25	5.1	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/04	20:08:45.0	30.422S	178.060W	33.0N		6.3		SZGRF
2003/05/04	20:08:45.0	30.686S	178.230W	33N	6.0	6.1		NEIC

Kermadec Islands, New Zealand

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPdf	Z	20:28:35.9	155.9	18.3					
	e PKPab	Z	20:29:03.7							
CLL	e PKPdf	Z	20:28:37.7	157.8	26.3					
	e PKPbc	Z	20:28:50.3							
BRG	e PKPab	Z	20:29:11.7							
	e PKPdf	Z	20:28:38.3	157.9	28.8					
	e PKPbc	Z	20:28:50.6							
	e PKPab	Z	20:29:12.3							
CLZ	e PKPdf	Z	20:28:38.3	157.9	20.0					
	e PKPbc	Z	20:28:50.8							
	e PKPab	Z	20:29:12.3							
IBBN	e PKPdf	Z	20:28:38.1	157.9	13.8					
	e PKPbc	Z	20:28:50.8							
	e PKPab	Z	20:29:12.3							
TANN	e PKPdf	Z	20:28:39.4	158.7	26.1					
WERD	e PKPdf	Z	20:28:39.4	158.7	25.7					
MOX	e PKPdf	Z	20:28:39.4	158.7	23.9					
BUG	e PKPdf	Z	20:28:39.3	158.9	13.2					
	e PKPab	Z	20:29:15.9							
GRA1	e PKPdf	Z	20:28:40.0	159.7	24.0					
	e PKPab	Z	20:29:20.1							
	e PP	Z	20:33:02.4							
	e PPP	Z	20:36:49.6							
	e SS	E	20:52:56.6							
	e SSS	N	20:59:27.2							
	e L	Z	21:42:54.6			21.5	5234		6.3	
GRFO	e PKPdf	Z	20:28:40.0	159.7	24.0					
GEC2	e PKPdf	Z	20:28:40.4	159.7	30.8					
WET	e PKPdf	Z	20:28:39.9	159.7	28.6					

TNS	e PKPdf	Z	20:28:40.6	159.8	16.9
	e PKPab	Z	20:29:20.2		
WLF	e PKPdf	Z	20:28:42.2	160.7	11.5
	e PKPab	Z	20:29:24.0		
STU	e PKPdf	Z	20:28:41.8	161.1	20.0
FUR	e PKPdf	Z	20:28:41.2	161.1	26.0
	e PKPab	Z	20:29:26.3		
BFO	e PKPdf	Z	20:28:41.6	161.7	18.2

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/05	06:16:41.0	43.059N	15.006E	10.0G			4.0	SZGRF
2003/05/05	06:16:38.4	43.164N	15.400E	10G	4.2			NEIC

Adriatic Sea

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z	06:18:06.6	5.8	167.7					4.0
	e Sn	N	06:19:12.1							
WET	e Pn	Z	06:18:12.8	6.2	162.8					4.0
	e Sn	N	06:19:22.0							
GRA1	e Sn	N	06:19:42.3	7.1	154.7					
TANN	e Pn	Z	06:18:30.3	7.5	163.4					
WERD	e Pn	Z	06:18:31.8	7.6	162.6					
MOX	e Pn	Z	06:18:34.8	7.9	159.5					
	e Sn	N	06:20:01.6							
CLL	e Pn	Z	06:18:41.2	8.3	167.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/05	06:34:47.7	41.622N	72.563E	33.0N	5.1	4.7		SZGRF
2003/05/05	06:34:42.2	41.080N	72.508E	33N	5.1	4.7		NEIC

Kyrgyzstan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	06:42:22.7	40.7	80.3	1.1	37	5.0		
CLL	i P	Z	06:42:27.4	41.2	80.2	0.9	31	5.0		
	e PP	Z	06:44:06.6							
	e S	Z	06:48:41.8							
	e SS	Z	06:51:47.6							
	e LR	Z	06:54:48.7							
	e L	Z	07:01:06.2			18.0	2079		5.0	
GEC2	e P	Z	06:42:27.4	41.3	77.9	1.0	59	5.3		
WET	e P	Z	06:42:31.0	41.7	77.7	1.0	36	5.1		
TANN	e P	Z	06:42:31.4	41.7	78.9	1.1	26	4.9		
WERD	e P	Z	06:42:31.7	41.8	78.8	1.2	29	4.9		
MOX	e P	Z	06:42:34.9	42.2	78.6	1.2	32	4.9		
BSEG	e P	Z	06:42:36.9	42.4	81.3	1.2	61	5.2		

GRA1	e P	Z	06:42:39.0	42.7	77.3	1.1	87	5.4	
	e L	Z	07:02:12.6			21.8	1098		4.7
CLZ	e P	Z	06:42:40.1	42.7	79.0	1.3	26	4.8	
NRDL	e P	Z	06:42:39.9	42.8	79.6	1.3	70	5.2	
FUR	e P	Z	06:42:42.2	43.0	75.7	1.2	105	5.4	
IBBN	e P	Z	06:42:51.6	44.2	77.8				
TNS	e P	Z	06:42:52.1	44.3	76.2	1.8	53	5.0	
BUG	e P	Z	06:42:55.2	44.7	76.6	1.4	44	5.2	
BFO	e P	Z	06:42:55.7	44.8	74.2	1.0	27	5.1	
WLF	e P	Z	06:43:04.4	45.8	74.2				

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/05	15:50: 5.0	2.253N	129.371E	33.0N				SZGRF
2003/05/05	15:50:08.2	0.185N	127.268E	123D	5.9			NEIC

Halmahera, Indonesia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i Pdiff	+ Z	16:04:02.1	104.4	67.5	1.8	34			
	e pPdiff	Z	16:04:35.4							
	e PP	Z	16:08:24.8							
	e SKSac	R	16:14:29.1							
	e SP	Z	16:17:18.7							
	e SS	R	16:23:12.0							
	e SSS	T	16:27:08.8							
	e L	Z	16:57:01.3			18.0	2888			
GEC2	e PP	Z	16:08:28.3	105.1	71.7					
BSEG	e PP	Z	16:08:28.6	105.3	67.6					
CLZ	e PP	Z	16:08:34.6	106.1	68.1					
GRA1	e Pdiff	Z	16:04:12.0	106.4	69.4					
	e PP	Z	16:08:37.0							
	e SKSac	E	16:14:37.0							
	e PS	Z	16:17:46.8							
	e SS	E	16:23:36.3							
	e SSS	E	16:27:36.3							
TNS	e PP	Z	16:08:47.6	107.8	67.0					
BFO	e PP	Z	16:08:53.5	108.6	67.4					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/05	23:04:44.5	4.533N	130.815E	81.3				SZGRF
2003/05/05	23:04:42.6	3.745N	127.894E	33N	6.2	5.7		NEIC

North of Halmahera, Indonesia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e PP	Z	23:22:39.6	100.8	67.5					
RUE	e Pdiff	Z	23:18:32.3	101.3	68.3					

	e PP	Z	23:22:43.7				
BRG	e Pdiff	Z	23:18:34.8	101.8	68.7		
	e PP	Z	23:22:47.8				
CLL	i Pdiff	+ Z	23:18:36.5	102.2	67.8	1.3	36
	e		23:18:52.1				
	e PP	Z	23:22:55.5				
	e PPP	Z	23:25:09.0				
	e Sdiff	T	23:30:15.3				
	e PS	R	23:31:56.0				
	e SS	R	23:37:27.0				
	e SSS	R	23:41:20.6				
	e LQ	T	23:52:03.4				
	e LR	Z	23:55:14.9				
	e L	Z	00:07:59.5			22.0	2660
BSEG	e Pdiff	Z	23:18:38.7	102.7	65.0		
	e PP	Z	23:22:54.1				
GEC2	e Pdiff	Z	23:18:38.9	102.7	68.9		
	e PP	Z	23:22:54.3				
TANN	e Pdiff	Z	23:18:39.4	102.9	67.6		
	e PP	Z	23:22:55.5				
WET	e Pdiff	Z	23:18:40.5	103.1	68.2		
	e PP	Z	23:22:57.5				
MOX	e Pdiff	Z	23:18:41.2	103.3	66.8		
	e PP	Z	23:22:58.5				
NRDL	e Pdiff	Z	23:18:41.9	103.4	65.2		
	e PP	Z	23:22:59.5				
CLZ	e Pdiff	Z	23:18:42.5	103.5	65.5		
	e PP	Z	23:23:00.6				
HLG	e PP	Z	23:23:02.4	103.8	62.9		
GRA1	e Pdiff	Z	23:18:44.0	103.9	66.7		
	e pPdiff	Z	23:18:59.5				
	e PP	Z	23:23:03.5				
	e pPP	Z	23:23:23.7				
	e Sdiff	N	23:30:30.1				
	e PS	E	23:32:15.7				
	e SS	E	23:37:50.5				
FUR	e Pdiff	Z	23:18:46.9	104.5	67.1		
	e PP	Z	23:23:07.2				
IBBN	e Pdiff	Z	23:18:47.8	104.8	63.2		
	e PP	Z	23:23:08.7				
TNS	e Pdiff	Z	23:18:50.1	105.3	64.3		
	e PP	Z	23:23:13.1				
BUG	e Pdiff	Z	23:18:51.0	105.4	63.0		
	e PP	Z	23:23:14.1				
STU	e PP	Z	23:23:14.4	105.5	65.3		
BFO	e PP	Z	23:23:19.7	106.2	64.6		
WLF	e PP	Z	23:23:24.1	106.9	62.5		
GRA1	e L	Z	00:09:44.0	103.9	66.7	21.7	1976

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/06	02:39:26.1	53.140N	172.340W	33.0N	5.0			SZGRF
2003/05/06	02:39:21.6	52.417N	170.719W	33N	4.5			NEIC

Andreanof Islands, Aleutian Islands, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z 02:50:56.6	73.6	0.7	1.1	10	4.9		
IBBN	e P	Z 02:51:06.0	75.3	359.0	0.9	21	5.2		
CLZ	e P	Z 02:51:08.8	75.7	0.7	0.9	11	4.9		
CLL	e P	Z 02:51:10.9	76.2	2.3	1.1	10	4.9		
BRG	e P	Z 02:51:13.2	76.6	2.9	1.0	11	5.0		
MOX	e P	Z 02:51:15.2	76.9	1.5	1.0	11	4.9		
TNS	e P	Z 02:51:17.5	77.4	359.5	0.8	6	4.8		
GRA1	e P	Z 02:51:21.1	77.9	1.2	1.0	21	5.2		
WET	e P	Z 02:51:23.6	78.4	2.2	1.2	8	4.7		
GEC2	e P	Z 02:51:24.8	78.7	2.7	1.0	8	4.8		
STU	e P	Z 02:51:25.9	78.8	359.9	0.7	14	5.2		
FUR	e P	Z 02:51:29.2	79.4	1.2	1.4	20	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/06								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 19:35:57.6							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/06	20:16:11.8	22.710S	177.600W	532.5				SZGRF
2003/05/06	20:16:15.7	24.310S	179.523E	623	4.7			NEIC

South of Fiji Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPdf	Z 20:34:52.7	149.3	19.5					
	e PKPbc	Z 20:34:58.3							
	e PKPab	Z 20:35:04.7							
	e pPKPbc	Z 20:37:02.4							
RUE	e PKPbc	Z 20:34:59.8	149.8	26.5					
CLL	e PKPdf	Z 20:34:55.6	151.1	26.1					
	e PKPbc	Z 20:35:02.3							
	e PKPab	Z 20:35:12.2							
	e pPKPbc	Z 20:37:06.5							
BRG	e PKPdf	Z 20:34:56.2	151.2	28.1					
	e PKPbc	Z 20:35:02.8							
	e PKPab	Z 20:35:13.7							

	e pPKPbc	Z	20:37:07.4		
CLZ	e PKPdf	Z	20:34:56.0	151.2	20.9
	e PKPbc	Z	20:35:03.1		
	e PKPab	Z	20:35:13.4		
	e pPKPbc	Z	20:37:07.6		
IBBN	e PKPbc	Z	20:35:02.8	151.3	15.8
	e PKPab	Z	20:35:13.6		
	e pPKPbc	Z	20:37:07.0		
TANN	e PKPbc	Z	20:35:04.7	152.0	25.8
WERD	e PKPbc	Z	20:35:04.7	152.0	25.5
	e PKPab	Z	20:35:17.1		
MOX	e PKPbc	Z	20:35:04.6	152.1	24.0
BUG	e PKPbc	Z	20:35:04.6	152.2	15.3
GRA1	e PKPdf	Z	20:34:58.8	153.0	24.0
	e PKPbc	Z	20:35:06.8		
	e PKPab	Z	20:35:21.6		
GEC2	e PKPbc	Z	20:35:06.7	153.1	29.5
TNS	e PKPbc	Z	20:35:07.1	153.2	18.3
	e PKPab	Z	20:35:21.3		
WLF	e PKPbc	Z	20:35:09.5	154.1	13.9
STU	e PKPdf	Z	20:35:00.5	154.4	20.7
	e PKPbc	Z	20:35:09.8		
FUR	e PKPbc	Z	20:35:09.4	154.4	25.4
	e PKPab	Z	20:35:27.4		
BFO	e PKPbc	Z	20:35:10.8	155.0	19.3
	e PKPab	Z	20:35:29.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/06	21:59:41.4	46.791N	8.884E	10.0G			4.3	SZGRF
2003/05/06	21:59:43.5	46.900N	8.900E	6				NEIC

Switzerland

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pg	Z	22:00:10.3	1.5	164.7					4.1
	e Sg	N	22:00:31.4							
STU	e Pn	Z	22:00:15.2	1.9	186.1					4.4
	e Sn	N	22:00:38.4							
FUR	e Pn	Z	22:00:18.7	2.0	232.7					4.4
	e Sg	N	22:00:49.2							
GRA1	e Pn	Z	22:00:32.1	3.2	209.8					4.4
	e Sn	N	22:01:12.2							
WLF	e Pn	Z	22:00:37.3	3.3	145.5					4.3
	e Sg	N	22:01:28.2							
TNS	e Pn	Z	22:00:35.8	3.3	174.7					4.3
	e Sn	N	22:01:15.3							
WET	e Pn	Z	22:00:37.7	3.5	231.4					4.4
	e Sn	N	22:01:17.8							

MOX	e Pn	Z	22:00:44.6	4.1	206.6						4.3
	e Sn	N	22:01:35.3								
WERD	e Pn	Z	22:00:45.2	4.2	213.7						4.2
	e Sn	E	22:01:35.4								
TANN	e Pn	Z	22:00:45.8	4.2	215.1						4.4
	e Sn	E	22:01:35.8								
BUG	e Sn	N	22:01:48.3	4.7	166.2						
CLZ	e Pn	Z	22:00:57.3	5.0	191.5						
	e Sg	N	22:02:25.0								
CLL	e Pn	Z	22:00:58.2	5.2	212.9						
	e Sg	N	22:02:30.0								
BRG	e Pn	Z	22:00:59.5	5.2	221.8						
	e Sn	N	22:01:58.9								

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/07	02:58:16.2	49.781N	87.906E	33.0N	5.9	5.1		SZGRF
2003/05/07	02:58:00.0	48.527N	89.552E	33N	5.6	4.8		NEIC

Kazakhstan-Xinjiang border region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	i P	+ Z	03:06:24.5	46.1	63.0	0.8	240	6.2		
	e PP	Z	03:08:12.0							
BRG	e P	Z	03:06:29.5	46.8	61.7	1.7	166	5.7		
	e PP	Z	03:08:16.7							
CLL	i P	+ Z	03:06:32.0	47.1	61.6	0.8	148	6.2		
	e PP	Z	03:08:20.5							
	e S	R	03:13:28.9							
	e SS	T	03:16:55.0							
	e LQ	T	03:20:02.7							
	e L	Z	03:27:27.8			18.0	609		4.6	
BSEG	e P	Z	03:06:34.1	47.3	62.3	1.0	153	6.0		
TANN	e P	Z	03:06:37.9	47.8	60.6	1.0	88	5.7		
	e PP	Z	03:08:28.2							
WERD	e P	Z	03:06:38.4	47.9	60.6	0.9	69	5.7		
GEC2	e P	Z	03:06:38.5	47.9	60.0	1.0	57	5.6		
NRDL	e P	Z	03:06:40.5	48.1	61.1	1.1	200	6.1		
MOX	e P	Z	03:06:40.5	48.2	60.4	0.9	118	6.0		
WET	e P	Z	03:06:41.1	48.2	59.8	1.0	79	5.8		
	e PP	Z	03:08:32.5							
CLZ	e P	Z	03:06:41.4	48.2	60.7	1.1	84	5.8		
GRA1	i P	+ Z	03:06:46.6	48.8	59.5	1.0	276	6.3		
	e PP	Z	03:08:37.4							
	e L	Z	03:28:30.9			14.7	1600		5.1	
IBBN	e P	Z	03:06:50.1	49.4	59.7	1.0	161	6.1		
FUR	e P	Z	03:06:52.2	49.6	58.4	0.9	196	6.2		
	e PP	Z	03:08:44.8							
TNS	e P	Z	03:06:55.7	50.1	58.5	1.1	91	5.7		





GRA1 e PKP Z 00:17:51.3

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/08	01:44:19.6	38.232N	41.200E	33.0N	5.0	3.8		SZGRF
2003/05/08	01:44:20.1	39.038N	40.328E	5	4.4			NEIC

Turkey

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 01:49:33.6	23.2	106.2	1.0	45	5.0		
	e L	Z 01:59:46.6			22.0	318		3.8	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/08	16:33:16.5	8.600S	78.270W	33.0N		5.5		SZGRF
2003/05/08	16:33:00.9	12.942S	77.130W	33N	5.2	5.3		NEIC

Near coast of northern Peru

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BUG	e P	Z 16:46:30.7	96.7	257.6					
BFO	e P	Z 16:46:30.7	96.7	258.0					
	e PP	Z 16:50:23.4							
TNS	e PP	Z 16:50:27.0	97.1	258.3					
STU	e P	Z 16:46:34.8	97.3	258.7					
	e PP	Z 16:50:28.2							
HLG	e P	Z 16:46:36.3	97.6	258.4					
CLZ	e P	Z 16:46:39.9	98.6	260.0					
	e PP	Z 16:50:37.0							
GRA1	e P	Z 16:46:41.5	98.8	260.3	18.0	186			
	e PP	Z 16:50:38.7							
	e L	Z 17:28:32.9			20.9	1533		5.5	
BSEG	e P	Z 16:46:40.5	98.9	260.3					
	e PP	Z 16:50:37.6							
MOX	e P	Z 16:46:43.0	99.2	260.8					
	e PP	Z 16:50:43.1							
WET	e P	Z 16:46:45.1	99.8	261.5					
CLL	e Pdiff	Z 16:46:47.1	100.1	261.9					
	e PP	Z 16:50:54.1							
	e SKSac	R 16:57:23.5							
	e Sdiff	T 16:58:23.5							
	e PS	R 16:59:56.7							
	e SS	R 17:05:21.1							
	e SSS	R 17:09:11.5							
	e LR	Z 17:22:35.7							
	e L	Z 17:29:41.0			20.0	2032		5.6	
GEC2	e Pdiff	Z 16:46:48.5	100.2	262.0					
	e PP	Z 16:50:49.9							

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Thu Apr 23 08:38:25 2020

18

BRG	e Pdiff	Z	16:46:49.2	100.7	262.6
RGN	e Pdiff	Z	16:46:49.3	100.8	262.8
	e PP	Z	16:50:52.8		
RUE	e Pdiff	Z	16:46:49.9	100.8	262.7
	e PP	Z	16:50:53.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/08	17:49:28.1	20.038S	176.444W	300G	4.4			NEIC

Fiji Region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPbc	Z 18:08:39.0	147.9	16.9	1.4	29			
	e PKPab	Z 18:08:42.3			0.9	19			
GRA1	e PKPdf	Z 18:08:43.9	149.7	14.4					
	e	18:08:49.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/08	18:34:55.7	32.518N	28.021E	33.0N	4.7			SZGRF
2003/05/08	18:35:27.5	34.550N	25.050E	37	4.3			NEIC

Eastern Mediterranean Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z 18:39:21.0	16.6	145.4					
WET	e P	Z 18:39:27.1	17.1	143.9					
GRA1	e P	Z 18:39:39.3	18.2	141.0	0.9	29	4.6		
TANN	e P	Z 18:39:40.9	18.3	145.2					
WERD	e P	Z 18:39:41.7	18.4	144.9					
BFO	e P	Z 18:39:42.5	18.5	131.8					
MOX	e P	Z 18:39:46.7	18.8	143.6					
CLL	e P	Z 18:39:45.7	18.9	147.9					
TNS	e P	Z 18:39:58.2	19.8	136.0					
CLZ	e P	Z 18:40:00.6	20.2	142.9	2.0	58	4.8		
NRDL	e P	Z 18:40:07.5	20.9	143.4					
BSEG	e P	Z 18:40:16.2	22.0	146.0	0.8	17	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/08	20:22:11.0	3.466S	150.545E	33N	5.5	5.7		NEIC

New Ireland Region, Papua New Guinea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e (PKPdf)	Z 20:41:11.5	120.6	51.5	1.0	6			
	e PP	Z 20:42:36.1							
	e PPP	Z 20:44:44.9							

	e Sdiff	T	20:50:27.5								
	e PS	R	20:52:25.4								
	e		20:54:30.6								
	e SS	R	20:59:17.0								
	e SSS	R	21:03:42.6								
	e LR	Z	21:20:26.6								
	e L	Z	21:33:05.8			22.0	2383		5.8		
GRA1	e PKP	Z	20:41:10.4	122.4	50.4						
	e		20:42:41.9								
	e L	Z	21:35:07.9			21.8	2085				

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/08	22:42:47.9	48.340N	31.893W	33.0N	5.2			SZGRF
2003/05/08	22:42:58.1	50.251N	30.087W	10G	4.9	4.2		NEIC

Northern Mid-Atlantic Ridge

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WLF	e P	Z 22:48:07.5	23.1	285.5					
BUG	e P	Z 22:48:08.9	23.4	281.9					
IBBN	e P	Z 22:48:10.1	23.5	280.2					
TNS	e P	Z 22:48:20.3	24.4	285.1	1.6	104	5.2		
BSEG	e P	Z 22:48:21.7	24.7	278.1	1.2	54	5.2		
BFO	e P	Z 22:48:22.7	24.9	289.0	1.3	34	4.9		
NRDL	e P	Z 22:48:22.9	24.9	281.1					
CLZ	e P	Z 22:48:26.3	25.2	282.6					
STU	e P	Z 22:48:26.9	25.3	288.4	0.9	44	5.2		
MOX	e P	Z 22:48:35.6	26.2	285.6	1.4	28	4.9		
GRA1	e P	Z 22:48:35.4	26.2	287.3	3.9	1162	6.1		
TANN	e P	Z 22:48:40.5	26.8	286.4					
CLL	e P	Z 22:48:41.0	26.9	284.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/09	20:25:51.3	50.736S	36.203E	33.0N		6.5		SZGRF
2003/05/09	20:26:15.8	48.137S	32.265E	10G	5.6	6.1		NEIC

Prince Edward Islands, South Africa, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
FUR	e Pdiff	Z 20:39:52.0	98.0	166.0					
	e PP	Z 20:43:46.8							
GEC2	e Pdiff	Z 20:39:52.8	98.3	167.6					
	e PP	Z 20:43:49.3							
BFO	e Pdiff	Z 20:39:53.1	98.7	164.1					
	e PP	Z 20:43:52.3							
WET	e Pdiff	Z 20:39:54.9	98.7	167.0					
	e PP	Z 20:43:52.7							

./2003/bul0305.txt

Thu Apr 23 08:38:25 2020

20

GRA1	e Pdiff	Z	20:39:58.1	99.5	165.9			
	e PP	Z	20:44:01.4					
	e SKSac	R	20:50:37.9					
	e SP	R	20:53:03.6					
	e SS	R	20:58:13.8					
	e L	Z	21:22:40.6			22.0	14351	6.5
GUNZ	e Pdiff	Z	20:40:01.0	100.0	166.6			
WERD	e Pdiff	Z	20:40:01.1	100.1	166.6			
BRG	e Pdiff	Z	20:39:58.3	100.3	167.7			
	e PP	Z	20:44:04.2					
WLF	e Pdiff	Z	20:40:04.0	100.4	162.6			
	e PP	Z	20:44:05.6					
MOX	e Pdiff	Z	20:39:59.7	100.4	166.2			
	e PP	Z	20:44:05.1					
CLL	e Pdiff	Z	20:40:04.7	100.8	167.0	1.8	35	
	e PP	Z	20:44:09.5					
	e PPP	Z	20:46:24.8					
	e PPPP	Z	20:48:03.6					
	e SKSac	R	20:50:49.0					
	e Sdiff	T	20:51:50.8					
	e PS	N	20:53:21.8					
	e SS	R	20:58:34.0					
	e LR	Z	21:14:03.4					
	e L	Z	21:25:37.1			22.0	10727	6.3
CLZ	e PP	Z	20:44:15.5	101.7	165.3			
BUG	e Pdiff	Z	20:40:08.8	101.8	163.3			
	e PP	Z	20:44:16.9					
NRDL	e Pdiff	Z	20:40:14.4	102.4	165.1			
	e PP	Z	20:44:20.9					
IBBN	e PP	Z	20:44:22.6	102.6	163.5			
BSEG	e Pdiff	Z	20:40:15.9	103.7	165.1			
	e PP	Z	20:44:30.2					
HLG	e PP	Z	20:44:35.1	104.4	163.5			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/10	02:45:51.0	35.883N	140.005E	33.0N	5.4			SZGRF
2003/05/10	02:45:54.1	35.686N	139.874E	90	4.5			NEIC

Near east coast of eastern Honshu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 02:58:14.6	83.3	39.7	2.1	48	5.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/10	06:42:51.2	43.928N	17.188E	10.0G		3.9		SZGRF
2003/05/10	06:42:49.9	43.991N	17.004E	10G	4.4			NEIC

## Northwestern Balkan Peninsula

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 06:44:12.4	5.4	153.7					
	e L	Z 06:46:18.7			10.7	1350		3.6	
FUR	e Pn	Z 06:44:18.9	5.8	134.3					
WET	e Pn	Z 06:44:19.2	5.9	149.7					
GRA1	e Pn	Z 06:44:33.7	6.9	143.1					
GUNZ	e Pn	Z 06:44:35.8	7.1	151.8					
BRG	e Pn	Z 06:44:37.1	7.2	162.1					
STU	e Pn	Z 06:44:37.2	7.2	128.7					
	e Sn	N 06:45:57.4							
WERD	e Pn	Z 06:44:37.1	7.2	152.0					
BFO	e Pn	Z 06:44:40.0	7.4	122.6					
	e Sn	N 06:46:03.5							
MOX	e Pn	Z 06:44:42.2	7.6	149.2					
CLL	e Pn	Z 06:44:45.3	7.8	158.3					
	e L	Z 06:47:45.4			8.3	1505		4.0	
TNS	e Pn	Z 06:44:56.0	8.5	133.7					
	e L	Z 06:48:28.9			10.6	1434		4.0	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/10								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 09:42:43.6							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/10	09:47:01.8	5.193S	153.617E	52D	4.9			NEIC
Nwe Ireland Rag, P.N.G.								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 10:06:11.7	125.4	48.2					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/10	10:28: 1.0	18.578N	120.460E	33.0N	5.0			SZGRF
2003/05/10	10:27:47.4	17.257N	122.485E	33N	4.9			NEIC
Luzon, Philippine Islands								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 10:40:46.5	89.9	62.9	0.9	8	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/10	11:20:40.7	42.850N	72.690E	33.0N	4.5			SZGRF
2003/05/10	11:19:59.9	39.404N	77.185E	33N	4.4			NEIC

Kyrgyzstan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	11:28:12.2	44.6	79.3	0.7	6	4.3		
CLL	e P	Z	11:28:15.7	45.1	79.1	0.7	5	4.2		
GEC2	e P	Z	11:28:17.1	45.2	77.1	0.8	9	4.5		
WET	e P	Z	11:28:20.5	45.6	76.9	0.8	5	4.3		
WERD	e P	Z	11:28:20.9	45.7	77.8	0.9	4	4.2		
GUNZ	e P	Z	11:28:21.0	45.7	77.7	0.8	6	4.3		
MOX	e P	Z	11:28:24.1	46.1	77.5	0.7	4	4.3		
GRA1	e P	Z	11:28:28.5	46.6	76.4	0.7	15	4.8		
CLZ	e P	Z	11:28:28.0	46.6	77.8	1.0	5	4.2		
NRDL	e P	Z	11:28:28.4	46.6	78.3	0.8	7	4.5		
FUR	e P	Z	11:28:31.1	46.9	75.0	0.5	15	5.0		
STU	e P	Z	11:28:41.5	48.1	74.4	0.6	14	4.8		
WLF	e P	Z	11:28:53.6	49.7	73.3	1.0	11	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/10	14:35:26.6	39.350N	140.322E	33.0N	4.8			SZGRF

Eastern Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	14:47:34.8	80.3	37.5	1.4	15	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/10	14:57:16.8	38.646N	144.200E	33.0N	5.0			SZGRF

Off east coast of Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	15:09:36.2	82.4	35.2	1.1	12	5.0		
	e pP	Z	15:09:43.6							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/10	15:12:26.2	27.770S	66.655E	25.1	5.1			SZGRF

South Indian Ocean

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	15:25:30.8	91.8	133.2	0.9	8	5.1		
	e pP	Z	15:25:38.2							

e sP Z 15:25:42.3

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/10	15:45:0.4	38.740N	39.330E	33.0N	4.6			SZGRF
2003/05/10	15:44:51.2	39.050N	40.360E	10G	4.6			NEIC

Turkey

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z 15:49:41.7	21.4	107.2	1.3	22	4.3		
BRG	e P	Z 15:49:47.5	21.9	112.3	1.3	17	4.3		
WET	e P	Z 15:49:47.7	22.0	106.9	1.1	10	4.2		
CLL	e P	Z 15:49:54.7	22.6	112.0	1.3	24	4.5		
RUE	e P	Z 15:49:54.2	22.7	115.7	1.8	100	4.9		
GUNZ	e P	Z 15:49:56.2	22.7	109.1	1.3	17	4.3		
WERD	e P	Z 15:49:56.1	22.8	109.2	1.7	27	4.4		
FUR	e P	Z 15:49:56.4	22.8	102.7	1.8	74	4.8		
GRA1	e P	Z 15:50:02.0	23.2	106.2	1.0	77	5.2		
MOX	e P	Z 15:50:05.6	23.2	108.8	1.7	22	4.4		
RGN	e P	Z 15:50:08.1	23.9	119.3	1.3	60	5.0		
STU	e P	Z 15:50:10.8	24.2	101.9	1.0	21	4.6		
CLZ	e P	Z 15:50:11.8	24.4	109.8	1.0	24	4.7		
NRDL	e P	Z 15:50:16.7	24.7	110.8	0.9	4	4.0		
TNS	e P	Z 15:50:18.5	25.0	104.2	1.3	29	4.8		
BSEG	e P	Z 15:50:22.0	25.2	113.9	1.0	24	4.9		
IBBN	e P	Z 15:50:28.0	26.0	107.6	4.2	423	5.4		
WLF	e P	Z 15:50:32.1	26.4	100.6	1.0	15	4.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/10	23:41:32.2			G				SZGRF

Turkey

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 23:46:52.6							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/11	08:08:21.2	45.156N	152.759E	33.0N	4.7			SZGRF
2003/05/11	08:08:21.9	45.946N	152.577E	33N	4.4			NEIC

East of Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 08:20:24.6	78.7	26.3	0.6	7	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/11								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 09:08:35.5							
	e Sn	N 09:09:41.1							
WET	e Sn	N 09:09:50.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/11	15:57: 3.5	36.210N	140.780E	33.0N	5.3			SZGRF
2003/05/11	15:57:05.7	35.805N	139.920E	59D	5.1			NEIC

Near east coast of eastern Honshu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z 16:09:12.0	80.1	41.7	0.9	36	5.3		
BSEG	e P	Z 16:09:13.2	80.3	39.3	1.2	50	5.4		
BRG	e P	Z 16:09:17.8	81.2	41.6	1.0	19	5.1		
CLL	i P	+ Z 16:09:18.1	81.3	41.0	0.9	32	5.4		
	e pP	Z 16:09:32.8							
	e sP	Z 16:09:39.3							
	e S	T 16:19:25.7							
	e SS	R 16:25:07.4							
	e LQ	T 16:31:16.1							
	e LR	Z 16:36:37.8							
	e L	Z 16:49:56.8			20.0	338		4.7	
NRDL	e P	Z 16:09:19.4	81.5	39.0	1.0	12	5.0		
CLZ	e P	Z 16:09:21.8	81.9	39.2	1.0	26	5.3		
WERD	e P	Z 16:09:23.3	82.2	40.4	1.3	16	5.0		
GUNZ	e P	Z 16:09:23.7	82.2	40.4	1.0	16	5.2		
MOX	e P	Z 16:09:23.8	82.3	40.0	1.2	15	5.1		
IBBN	e P	Z 16:09:24.7	82.5	37.3	0.8	24	5.5		
GEC2	e P	Z 16:09:26.3	82.8	41.3	1.8	33	5.3		
WET	e P	Z 16:09:27.4	82.9	40.7	1.2	14	5.1		
GRA1	e P	Z 16:09:29.0	83.2	39.6	1.0	42	5.6		
BUG	e P	Z 16:09:29.0	83.4	36.9	1.0	16	5.2		
TNS	e P	Z 16:09:32.1	83.9	37.7	1.5	22	5.2		
FUR	e P	Z 16:09:34.4	84.4	39.5	0.9	32	5.6		
STU	e P	Z 16:09:36.2	84.8	38.1	1.0	25	5.4		
WLF	e P	Z 16:09:39.0	85.2	36.0	1.5	42	5.4		
BFO	e P	Z 16:09:39.6	85.5	37.5	1.7	53	5.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/11	16:34:52.1	33.196N	75.917E	33N	4.3			NEIC

Eastern Kashmir



Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 16:43:43.3	49.5	83.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/11	17:51:59.7	3.090N	127.560E	33.0N		5.5		SZGRF
2003/05/11	17:51:35.4	0.961S	126.896E	33N	5.6	5.8		NEIC

Talau Islands, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e PP	Z 18:09:57.1	104.2	71.0					
RUE	e Pdiff	Z 18:05:44.8	104.6	71.9					
	e PP	Z 18:10:00.2							
BRG	e Pdiff	Z 18:05:46.7	105.0	72.4					
	e PP	Z 18:10:05.2							
CLL	e Pdiff	Z 18:05:41.6	105.4	71.5					
	e PP	Z 18:10:06.2							
	e PPP	Z 18:12:16.3							
	e SKSac	R 18:16:16.0							
	e Sdiff	T 18:17:37.7							
	e SP	Z 18:19:22.2							
	e PPS	N 18:20:20.6							
	e SS	T 18:25:02.1							
	e SSS	T 18:29:03.2							
	e L	Z 18:59:56.3			22.0	1284		5.4	
GEC2	e Pdiff	Z 18:05:46.4	105.8	72.7					
	e PP	Z 18:10:10.6							
BSEG	e Pdiff	Z 18:05:53.8	106.1	68.5					
	e PP	Z 18:10:11.4							
WET	e Pdiff	Z 18:06:00.2	106.2	72.0					
	e PP	Z 18:10:14.7							
MOX	e PP	Z 18:10:16.3	106.5	70.5					
NRDL	e PP	Z 18:10:16.5	106.7	68.7					
CLZ	e Pdiff	Z 18:06:03.1	106.8	69.2					
	e PP	Z 18:10:17.9							
GRA1	e Pdiff	Z 18:06:02.9	107.0	70.5					
	e PP	Z 18:10:20.5							
	e SKSac	R 18:16:38.5							
	e SS	T 18:25:29.5							
	e L	Z 18:59:39.1			20.3	1280		5.5	
GRFO	e PP	Z 18:10:20.6	107.0	70.5					
HLG	e PP	Z 18:10:20.1	107.3	66.3					
FUR	e PP	Z 18:10:23.2	107.5	71.0					
IBBN	e Pdiff	Z 18:06:09.6	108.1	66.8					
	e PP	Z 18:10:26.8							
TNS	e Pdiff	Z 18:06:11.6	108.5	68.0					
	e PP	Z 18:10:30.9							

./2003/bul0305.txt

Thu Apr 23 08:38:25 2020

26

STU	e PP	Z	18:10:31.2	108.6	69.1
BUG	e Pdiff	Z	18:06:12.3	108.7	66.6
	e PP	Z	18:10:31.8		
BFO	e Pdiff	Z	18:06:15.4	109.3	68.5
	e PP	Z	18:10:35.9		
WLF	e Pdiff	Z	18:06:16.8	110.1	66.2
	e PP	Z	18:10:42.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/12	03:03:12.8	1.440N	97.650E	84.5	5.9			SZGRF
2003/05/12	03:03:05.4	1.175N	98.946E	78D	5.7			NEIC

Northern Sumatera, Indonesia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	03:15:38.5	85.9	93.1	1.5	108	5.8		
GEC2	e P	Z	03:15:38.7	86.0	92.8	1.4	148	6.0		
RUE	e P	Z	03:15:39.4	86.1	93.1	1.2	222	6.3		
RGN	e P	Z	03:15:41.4	86.5	92.9	1.5	302	6.2		
WET	e P	Z	03:15:41.4	86.5	92.2	1.2	77	5.8		
CLL	i P	- Z	03:15:41.2	86.5	92.4	1.4	74			
	e pP	Z	03:16:02.4							
	e sP	Z	03:16:08.1							
	e S	E	03:26:14.8							
	e PS	Z	03:27:16.4							
	e SS	Z	03:32:21.1							
	e LR	Z	03:45:16.5							
	e L	Z	03:58:15.0			22.0	99		4.2	
GUNZ	e P	Z	03:15:43.5	86.9	91.9	1.3	61	5.6		
WERD	e P	Z	03:15:43.4	87.0	91.8	1.5	66	5.6		
MOX	e P	Z	03:15:45.7	87.4	91.3	1.5	111	5.8		
FUR	e P	Z	03:15:45.9	87.6	91.0	1.2	62	5.6		
GRA1	e P	Z	03:15:47.0	87.6	91.0	1.2	107	5.9		
	e pP	Z	03:16:09.6							
	e		03:16:14.5							
CLZ	e P	Z	03:15:49.6	88.2	90.4	1.2	175	6.1		
BSEG	e P	Z	03:15:49.9	88.2	90.4	1.2	162	6.0		
NRDL	e P	Z	03:15:50.7	88.4	90.2	1.2	206	6.1		
STU	e P	Z	03:15:52.9	89.0	89.4	1.9	173	6.1		
TNS	e P	Z	03:15:55.5	89.4	88.9	1.1	133	6.2		
BFO	e P	Z	03:15:55.3	89.5	88.8	1.2	54	5.8		
HLG	e P	Z	03:15:56.6	89.7	88.5	1.2	102	5.9		
IBBN	e P	Z	03:15:57.3	89.8	88.3	1.2	213	6.2		
BUG	e P	Z	03:15:58.7	90.1	88.0	1.2	122	6.0		
WLF	e P	Z	03:16:02.7	90.9	87.1	1.2	104	5.9		



Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 00:45:53.9							
	e Sn	N 00:46:58.7							
WET	e Pn	Z 00:45:59.4							
	e Sn	E 00:47:07.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/13	04:31:32.8	49.701N	155.506E	33.0N	5.3			SZGRF
2003/05/13	04:31:28.3	49.369N	156.112E	56*	4.5			NEIC

Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 04:43:17.1	76.5	22.7	0.9	22	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/13	09:30:27.6	46.277N	15.574E	10.0G			3.3	SZGRF
2003/05/13	09:30:24.1	46.124N	15.643E	10G				NEIC

Northwestern Balkan Peninsula

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
ARSA	e Pg	Z 09:30:44.5	1.1	175.8					3.0
	e Sg	E 09:30:58.5							
KBA	e Pg	Z 09:30:57.4	1.8	120.3					3.0
	e Sg	E 09:31:23.5							
MOA	e Pg	Z 09:30:59.2	2.0	150.9					3.0
	e Sg	E 09:31:24.1							
WTTA	e Pn	Z 09:31:14.5	3.0	111.1					
GEC2	e Pn	Z 09:31:13.1	3.0	153.5					3.4
	e Sn	N 09:31:48.3							
WET	e Pn	Z 09:31:20.3	3.5	147.3					
DAVA	e Pn	Z 09:31:29.4	4.1	104.3					
GRA1	e Pn	Z 09:31:36.2	4.6	138.6					4.0
	e Sn	E 09:32:25.7							
GUNZ	e Pn	Z 09:31:36.9	4.8	151.3					
WERD	e Sn	N 09:32:31.4	4.9	151.6					
BRG	e Sn	E 09:32:33.7	4.9	166.0					
MOX	e Pn	Z 09:31:43.0	5.3	147.9					
	e Sn	N 09:32:40.6							
BFO	e Pn	Z 09:31:47.6	5.4	111.2					
	e Sn	N 09:32:46.9							
TNS	e Pn	Z 09:31:58.9	6.3	127.8					
	e Sn	N 09:33:07.2							

./2003/bul0305.txt

Thu Apr 23 08:38:25 2020

29

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/13								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 16:50:00.0							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/13	19:30:55.0	37.750N	77.859E	33.0N	5.1			SZGRF
2003/05/13	19:30:42.0	37.084N	78.944E	33N	4.7			NEIC

Southern Xinjiang, China

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 19:39:30.8	49.0	77.8	1.2	21	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/13	19:52:24.3	34.230N	34.610E	33.0G	4.5			SZGRF
2003/05/13	19:52:29.8	34.939N	34.407E	33N	4.4			NEIC

Cyprus region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z 19:57:08.1	20.6	124.7	1.5	30	4.4		
WET	e P	Z 19:57:14.7	21.2	123.9	0.8	20	4.6		
FUR	e P	Z 19:57:20.3	21.6	119.2	2.7	173	5.0		
BRG	e P	Z 19:57:21.3	21.7	129.3	1.0	12	4.3		
GUNZ	e P	Z 19:57:26.3	22.2	125.5	1.0	9	4.2		
WERD	e P	Z 19:57:26.9	22.3	125.6	0.9	7	4.2		
CLL	e P	Z 19:57:27.8	22.5	128.5	1.1	11	4.3		
MOX	e P	Z 19:57:31.9	22.8	124.9	0.9	12	4.4		
BFO	e P	Z 19:57:37.6	23.5	115.2	0.8	17	4.6		
CLZ	e P	Z 19:57:43.1	24.1	125.1	0.8	10	4.6		
TNS	e P	Z 19:57:45.1	24.3	119.1	1.2	16	4.6		
BSEG	e P	Z 19:57:55.2	25.4	128.7	1.2	33	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/13	21:21:14.0	17.355S	167.617E	33N	5.9	6.3		NEIC

Vanuatu Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPpre	Z 21:40:36.2	140.6	40.1					
	e PKPdf	Z 21:40:42.1			1.4	111			
	e PP	Z 21:43:32.9							
	e PKSbc	N 21:44:20.1							
	e SKKSac	R 21:50:32.9							

	e Sdiff	T	21:52:10.1							
	e SKSP	Z	21:53:52.2							
	e		21:55:44.9							
	e		21:57:24.2							
	e SS	T	22:02:01.4							
	e SSS	R	22:07:32.8							
	e L	Z	22:42:36.5			22.0	8509		6.5	
GRA1	e PKP	Z	21:40:40.7	142.5	38.9					
	e PP	Z	21:43:53.5							
	e SS	N	22:02:33.0							
	e L	Z	22:55:20.4			20.0	5887		6.3	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/14	03:33:36.3	42.550N	138.040E	33.0N	5.1			SZGRF
2003/05/14	03:34:15.5	43.231N	136.034E	331	4.4			NEIC

Eastern Sea of Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z 03:45:09.2	72.3	38.4	0.9	25	5.2		
BRG	e P	Z 03:45:14.7	73.3	40.1	0.8	12	5.0		
CLL	e P	Z 03:45:14.7	73.4	39.6	0.6	24	5.4		
NRDL	e P	Z 03:45:16.1	73.6	38.0	1.0	13	4.9		
CLZ	e P	Z 03:45:18.8	74.0	38.0	0.7	23	5.4		
WERD	e P	Z 03:45:20.5	74.3	39.0	0.9	6	4.7		
GUNZ	e P	Z 03:45:21.0	74.4	39.0	0.7	8	5.0		
MOX	e P	Z 03:45:20.7	74.4	38.6	0.9	8	4.9		
IBBN	e P	Z 03:45:21.7	74.6	36.4	0.6	17	5.4		
GEC2	e P	Z 03:45:24.2	75.0	39.6	0.6	7	4.9		
WET	e P	Z 03:45:25.3	75.1	39.1	0.9	11	5.0		
GRA1	e P	Z 03:45:26.9	75.3	38.2	0.8	39	5.6		
BUG	e P	Z 03:45:26.4	75.4	35.9	1.0	20	5.2		
TNS	e P	Z 03:45:29.5	76.0	36.5	0.9	10	5.0		
FUR	e P	Z 03:45:33.2	76.5	38.0	1.2	26	5.2		
WLF	e P	Z 03:45:37.5	77.3	35.0					
BFO	e P	Z 03:45:38.6	77.6	36.2	1.0	19	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/14	06:03:31.9	17.680N	58.930W	33.0N	7.0	6.3		SZGRF
2003/05/14	06:03:35.6	18.236N	58.674W	41D	6.3	6.6		NEIC

North Atlantic Ocean

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WLF	e P	Z 06:13:40.7	60.0	263.0	1.5	2181	6.8		
BUG	e P	Z 06:13:46.7	60.9	262.9	1.7	1904	7.1		
BFO	e P	Z 06:13:49.2	61.3	265.5	1.8	1702	7.0		

IBBN	e P	Z	06:13:49.7	61.3	262.9	1.7	4056	7.4
TNS	e P	Z	06:13:51.2	61.5	264.5	1.4	1738	7.1
HLG	e P	Z	06:13:51.6	61.6	261.9	1.6	2774	7.1
STU	e P	Z	06:13:53.0	61.9	265.9	1.2	1418	7.0
NRDL	e P	Z	06:13:59.6	62.8	264.7	1.4	1659	7.1
CLZ	e P	Z	06:14:00.0	62.9	265.2	1.5	2226	7.2
BSEG	e P	Z	06:14:00.8	63.0	264.1	1.3	1176	7.0
FUR	e P	Z	06:14:01.9	63.2	267.8	2.3	4053	7.2
GRA1	e P	Z	06:14:02.7	63.3	267.0	1.7	2342	7.1
	e PP	Z	06:16:29.4					
	e S	R	06:22:38.5					
	e L	Z	06:37:30.0			20.4	18562	6.3
MOX	e P	Z	06:14:04.4	63.6	266.8	1.7	616	6.6
WERD	e P	Z	06:14:07.3	64.0	267.5	1.3	559	6.6
GUNZ	e P	Z	06:14:07.6	64.0	267.5	1.6	694	6.6
WET	e P	Z	06:14:09.5	64.3	268.6	1.5	1796	7.1
CLL	e P	Z	06:14:10.4	64.5	267.6	1.4	1672	7.1
RGN	e P	Z	06:14:13.0	64.8	266.3	1.4	1533	7.0
GEC2	e P	Z	06:14:12.8	64.9	269.3	1.3	1230	7.0
RUE	e P	Z	06:14:13.8	65.0	267.7	1.5	1298	6.9
BRG	e P	Z	06:14:14.2	65.1	268.6			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/14	07:40:31.7	8.730S	106.540E	33.0N				SZGRF
2003/05/14	07:40:30.0	8.061S	107.367E	33N	5.2	5.3		NEIC

South of Jawa, Indonesia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pdiff	Z	07:54:06.5	98.5	92.6					
	e PP	Z	07:58:06.6							
WET	e Pdiff	Z	07:54:09.0	99.0	91.9					
	e PP	Z	07:58:10.5							
GRB3	e Pdiff	Z	07:54:11.6	99.7	91.1					
	e PP	Z	07:58:16.4							
GRC3	e PP	Z	07:58:17.1	99.9	91.0					
MOX	e PP	Z	07:58:16.5	99.9	90.7					
GRA1	e PP	Z	07:58:18.9	100.1	90.6					
WLF	e PP	Z	07:58:18.4	103.4	86.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/14	10:26:30.8	19.269S	177.438W	500G	4.2			NEIC

Fiji Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z	10:45:22.0	148.8	15.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/15	01:17:58.8	25.417N	121.693E	33.0N	4.8	4.5		SZGRF
2003/05/15	01:17:43.2	25.050N	122.396E	33N	4.8			NEIC

Taiwan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	01:30:20.8	83.6	58.2	1.1	6	4.8		
	e		01:30:28.8							
	e		01:30:35.3							
GRFO	e L	Z	02:05:41.9	83.6	58.2	20.6	235		4.5	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/15	07:11:28.2	22.913S	176.764W	105?	4.8			NEIC

South of Fiji Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPbc	Z	07:31:04.5	148.5	12.6					
HLG	e PKPbc	Z	07:31:05.1	148.5	8.2					
NRDL	e PKPbc	Z	07:31:08.0	150.0	12.7					
	e PKPab	Z	07:31:13.8							
IBBN	e PKPbc	Z	07:31:09.6	150.4	8.5					
CLZ	e PKPbc	Z	07:31:09.7	150.6	13.5					
	e PKPab	Z	07:31:15.8							
CLL	i PKPbc	+ Z	07:31:09.7	150.6	18.6	0.8	51			
	e PKPab	Z	07:31:16.1							
	e		07:31:20.4							
	e pPKPbc	Z	07:31:37.8							
	e pPKPab	Z	07:31:42.9							
BRG	e PKPbc	Z	07:31:10.4	150.8	20.6					
	e PKPab	Z	07:31:18.0							
BUG	e PKPbc	Z	07:31:11.0	151.3	7.8					
MOX	e PKPbc	Z	07:31:11.7	151.5	16.3					
	e PKPab	Z	07:31:20.2							
WERD	e PKPbc	Z	07:31:12.0	151.6	17.8					
GUNZ	e PKPbc	Z	07:31:12.3	151.6	17.9					
	e PKPab	Z	07:31:21.4							
TNS	e PKPbc	Z	07:31:13.7	152.4	10.4					
	e PKPab	Z	07:31:24.3							
GRA1	e PKPbc	Z	07:31:13.8	152.5	16.1					
WET	e PKPbc	Z	07:31:14.7	152.7	19.6					
	e PKPab	Z	07:31:26.0							
GEC2	e PKPbc	Z	07:31:14.5	152.8	21.5					
	e PKPab	Z	07:31:26.1							
WLF	e PKPbc	Z	07:31:16.2	153.2	6.0					



./2003/bul0305.txt

Thu Apr 23 08:38:25 2020

33

BFO e PKPbc Z 07:31:17.8 154.3 10.9  
e PKPab Z 07:31:32.0

Date Origin Time Lat Long Depth mb Ms ML Source  
2003/05/15 15:45:04.0 18.583S 178.084W 600G 4.5  
Fiji Region NEIC

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML  
GRA1 e PKP Z 16:03:44.8 148.0 16.8

Date Origin Time Lat Long Depth mb Ms ML Source  
2003/05/16 14:08:53.6 48.417N 156.003E 48.0 5.3 SZGRF  
2003/05/16 14:08:50.0 48.393N 155.019E 33N 4.3 NEIC  
East of Kuril Islands, Russia

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML  
GRA1 e P Z 14:20:45.3 77.1 23.7 0.9 26 5.3  
e pP Z 14:20:59.1

Date Origin Time Lat Long Depth mb Ms ML Source  
2003/05/16 14:27:57.7 28.903N 94.946E 33.0N 5.3 SZGRF  
2003/05/16 14:30:00.8 39.508N 77.133E 10G 4.6 NEIC  
Eastern Xizang-India border region

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML  
GRA1 e P Z 14:38:31.6 46.5 76.3 0.7 14 5.3

Date Origin Time Lat Long Depth mb Ms ML Source  
2003/05/16 18:02:23.9 21.047S 169.789E 69D 4.9 NEIC  
SE of the Loyality Islands

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML  
GRA1 e PKP Z 18:21:58.0 146.7 38.4

Date Origin Time Lat Long Depth mb Ms ML Source  
2003/05/17 01:46:23.8 51.779N 160.799E 36.3 5.2 SZGRF  
2003/05/17 01:46:22.7 51.722N 159.580E 60\* 4.6 4.0 NEIC  
Off east coast of Kamchatka Peninsula, Russia

./2003/bul0305.txt

Thu Apr 23 08:38:25 2020

34

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i P	+ Z	01:57:51.7	73.7	20.2	1.0	20	5.1		
	e pP	Z	01:58:05.7							
	e PP	Z	02:00:48.5							
	e PS	Z	02:07:41.7							
	e SS	Z	02:13:06.2							
	e L	Z	02:36:34.1			22.0	243		4.4	
GRA1	e P	Z	01:58:04.0	75.1	19.7	0.9	21	5.2		
	e pP	Z	01:58:14.4							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/17	02:05:11.1	5.351S	129.749E	32D	5.3	5.2		NEIC

Banda Sea

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e Pdiff	Z	02:20:15.9	110.7	71.9					
	e PP	Z	02:24:23.4							
	e PS	Z	02:33:48.5							
	e L	Z	03:18:21.8			20.0	985		5.4	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/17	11:35:27.9	17.298S	172.896W	33N	4.5			NEIC

Tonga Region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z	11:55:12.6	147.4	7.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/17	14:33:17.1	37.338N	141.237E	33.0N	5.5			SZGRF
2003/05/17	14:33:08.6	35.597N	140.505E	42*	5.4	4.7		NEIC

Near east coast of eastern Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	14:45:20.5	80.7	39.0	1.1	75	5.5		
BRG	e P	Z	14:45:25.3	81.6	41.3	1.0	31	5.3		
CLL	i P	+ Z	14:45:25.4	81.7	40.7	1.0	77	5.8		
	e pP	Z	14:45:40.6							
	e PP	Z	14:48:34.0							
	e PS	Z	14:56:33.1							
	e SS	Z	15:01:42.9							
	e SSS	T	15:04:28.1							
	e LR	Z	15:12:42.3							
	e L	Z	15:24:47.9			18.0	494		4.9	

NRDL	e P	Z	14:45:26.7	81.9	38.7	1.0	27	5.2
CLZ	e P	Z	14:45:29.2	82.3	38.9	1.1	76	5.6
WERD	e P	Z	14:45:30.6	82.6	40.1	1.2	29	5.3
MOX	e P	Z	14:45:31.2	82.7	39.6	1.2	37	5.4
IBBN	e P	Z	14:45:32.3	82.9	37.0	1.1	78	5.7
GEC2	e P	Z	14:45:33.7	83.2	41.0	1.2	26	5.2
WET	e P	Z	14:45:34.8	83.4	40.4	1.2	36	5.4
GRA1	i P	+ Z	14:45:36.4	83.6	39.3	1.1	121	6.0
TNS	e P	Z	14:45:39.3	84.3	37.4	1.1	34	5.5
FUR	e P	Z	14:45:41.9	84.8	39.2	1.0	70	5.8
WLF	e P	Z	14:45:46.3	85.7	35.7	1.4	69	5.7
BFO	e P	Z	14:45:46.9	85.9	37.2	1.1	72	5.8

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/17	18:23:25.3	35.782N	139.794E	33.0N	5.0			SZGRF
2003/05/17	18:23:27.5	35.876N	137.545E	33N	4.5			NEIC

Near south coast of eastern Honshu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 18:35:48.5	82.2	41.2	1.1	10	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/18								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 01:45:39.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/18	01:31:49.2	18.793S	168.701E	87D	5.5			NEIC

Vanuatu Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
IBBN	e PKP	Z 01:51:11.7	143.3	31.2					
GEC2	e PKP	Z 01:51:14.0	143.8	42.7					
BUG	e PKP	Z 01:51:14.7	144.2	31.0					
GRA1	e PKP	Z 01:51:15.5	144.2	38.3					
TNS	e PKP	Z 01:51:17.1	144.9	33.8					
FUR	e PKP	Z 01:51:19.2	145.4	39.8					
BFO	e PKP	Z 01:51:21.6	146.5	35.1					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
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./2003/bul0305.txt

Thu Apr 23 08:38:25 2020

36

2003/05/18 15:56:09.5 18.802S 178.367W 600G 4.1 NEIC  
Fiji Region

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML  
GRA1 e PKPdf Z 16:14:49.4 148.2 17.4

Date Origin Time Lat Long Depth mb Ms ML Source  
2003/05/18 22:41:46.4 30.790N 131.752E 33.0N 4.9 SZGRF  
2003/05/18 22:41:38.8 29.731N 131.874E 33N 4.7 NEIC  
Kyushu, Japan

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML  
GRA1 e P Z 22:54:12.8 84.7 48.6 1.5 13 4.9

Date Origin Time Lat Long Depth mb Ms ML Source  
2003/05/19 10:42:19.0 19.830S 177.140W 566.4 SZGRF  
2003/05/19 10:43:22.3 18.026S 178.741W 562D 5.7 NEIC  
Fiji Islands region

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML  
IBBN e PKPbc Z 11:01:59.2 145.3 10.9  
CLZ e PKPdf Z 11:01:58.0 145.4 15.4  
e PKPbc Z 11:01:59.8  
CLL i PKPdf Z 11:01:57.5 145.4 19.9  
i PKPbc + Z 11:01:59.6 0.8 388  
e pPKPbc Z 11:04:12.5  
e sPKPbc Z 11:05:07.9  
e PPP Z 11:08:20.4  
e SS T 11:23:28.9  
e sSS T 11:27:02.9  
e SSS T 11:29:11.7  
BRG e PKPdf Z 11:01:58.4 145.6 21.7  
e PKPbc Z 11:02:00.2  
MOX e PKPdf Z 11:01:59.4 146.4 18.0  
e PKPbc Z 11:02:02.2  
TANN e PKPbc Z 11:01:18.1 146.4 19.5  
WERD e PKPdf Z 11:01:59.3 146.4 19.2  
e PKPbc Z 11:02:02.5  
e PKPab Z 11:02:05.5  
GUNZ e PKPdf Z 11:01:59.8 146.5 19.3  
e PKPbc Z 11:02:02.9  
TNS e PKPdf Z 11:02:01.1 147.3 12.7  
e PKPbc Z 11:02:04.8  
e PKPab Z 11:02:09.0  
GRA1 e PKPdf Z 11:02:01.1 147.3 17.7

	e	PKPbc	Z	11:02:05.4				
	e	PKPab	Z	11:02:09.2				
	e	pPKPbc	Z	11:04:15.3				
WET	e	PKPdf	Z	11:02:01.5	147.5	20.9		
	e	PKPbc	Z	11:02:05.6				
GEC2	e	PKPdf	Z	11:02:01.6	147.6	22.5		
	e	PKPbc	Z	11:02:05.6				
	e	PKPab	Z	11:02:10.7				
WLF	e	PKPdf	Z	11:02:02.8	148.1	8.8		
	e	PKPbc	Z	11:02:07.3				
	e	PKPab	Z	11:02:12.8				
STU	e	PKPdf	Z	11:02:03.2	148.6	14.6		
	e	PKPbc	Z	11:02:08.1				
	e	PKPab	Z	11:02:13.7				
FUR	e	PKPdf	Z	11:02:03.3	148.8	18.6		
	e	PKPbc	Z	11:02:08.5				
	e	PKPab	Z	11:02:14.9				
BFO	e	PKPdf	Z	11:02:04.0	149.2	13.2		
	e	PKPbc	Z	11:02:09.2				
	e	PKPab	Z	11:02:16.1				
	e	pPKPbc	Z	11:04:20.0				

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/19	16:27:13.8	18.550N	107.880W	33.0N	6.1	6.2		SZGRF
2003/05/19	16:27:10.0	17.507N	105.526W	10G	5.6	5.8		NEIC

Off coast of Jalisco, Mexico

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
IBBN	e P	Z 16:40:12.3	89.6	298.8					
BUG	e P	Z 16:40:11.0	89.7	298.5					
WLF	e P	Z 16:40:12.3	89.9	297.6					
BSEG	e P	Z 16:40:12.7	90.1	300.9					
	e PP	Z 16:43:46.8							
NRDL	e P	Z 16:40:15.9	90.7	300.7					
	e PP	Z 16:43:52.8							
TNS	e P	Z 16:40:17.0	91.0	299.4					
CLZ	e P	Z 16:40:18.4	91.2	300.9					
	e PP	Z 16:43:57.0							
RGN	e P	Z 16:40:20.5	91.3	303.3					
	e PP	Z 16:43:57.9							
STU	e P	Z 16:40:22.5	92.1	299.9					
MOX	e P	Z 16:40:24.3	92.5	301.8					
RUE	e P	Z 16:40:24.0	92.6	303.6					
GRA1	e P	Z 16:40:26.1	92.8	301.5	2.9	495	6.4		
	e PP	Z 16:44:11.4							
	e S	N 16:51:29.8							
	e SS	N 16:57:31.1							

	e L	Z	17:21:15.1			21.6	9234		6.2
CLL	e P	Z	16:40:26.5	92.9	303.0	2.3	73	5.7	
	e PP	Z	16:44:22.3						
	e PPP	Z	16:46:14.2						
	e SKSac	R	16:51:10.7						
	e S	T	16:51:30.8						
	e SP	R	16:52:43.7						
	e SS	T	16:57:48.5						
	e LQ	T	17:07:30.3						
	e LR	Z	17:09:51.2						
	e L	Z	17:20:18.9			22.0	6473		6.0
WERD	e P	Z	16:40:26.4	93.0	302.4				
GUNZ	e P	Z	16:40:26.8	93.0	302.4				
	e PP	Z	16:44:11.8						
BRG	e P	Z	16:40:29.1	93.6	303.7				
FUR	e P	Z	16:40:29.7	93.6	301.5				
WET	e P	Z	16:40:31.3	94.0	302.8				
	e PP	Z	16:44:20.6						
GEC2	e P	Z	16:40:33.9	94.6	303.4	2.3	94	5.8	

Date 2003/05/20 Origin Time 04:59:51.2 Lat 18.401S Long 177.774W Depth 500G mb 4.4 Ms ML Source NEIC  
Fiji Islands region

Sta GRA1 Phase e PKP Time Z 05:18:40.4 Dist 147.9 BAz 16.2 T[s] A[nm] mb MS ML

Date 2003/05/20 Origin Time 05:05:19.2 Lat 18.515S Long 177.575W Depth 500G mb 4.3 Ms ML Source NEIC  
Fiji Islands region

Sta GRA1 Phase e PKP Time Z 05:24:08.4 Dist 148.0 BAz 15.9 T[s] A[nm] mb MS ML

Date 2003/05/20 Origin Time 06:18:20.5 Lat 38.602N Long 74.082E Depth 123D mb 4.6 Ms ML Source NEIC  
Southern Xinjiang, Chinas

Sta GRA1 Phase e P Time Z 06:26:27.4 Dist 45.1 BAz 79.3 T[s] A[nm] mb MS ML

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/20	06:37:52.5	35.750N	72.370E	33.0N	5.4			SZGRF
2003/05/20	06:38:19.3	36.451N	71.222E	226D	4.8			NEIC

Pakistan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	06:45:56.8	42.7	86.8	0.9	52	5.3		
RUE	e P	Z	06:45:56.5	42.7	88.4	0.8	64	5.4		
RGN	e P	Z	06:45:59.8	43.0	90.3	1.2	188	5.7		
GEC2	e P	Z	06:45:59.2	43.0	84.5	0.9	10	4.6		
CLL	e P	Z	06:46:00.9	43.2	86.6	0.9	30	5.2		
WET	e P	Z	06:46:03.1	43.5	84.2	1.5	14	4.7		
GUNZ	e P	Z	06:46:05.4	43.7	85.1	1.0	30	5.2		
WERD	e P	Z	06:46:05.4	43.7	85.2	1.0	27	5.1		
MOX	e P	Z	06:46:08.7	44.2	84.9	0.8	26	5.2		
GRA1	e P	Z	06:46:12.4	44.5	83.6	1.6	119	5.7		
FUR	e P	Z	06:46:12.8	44.7	82.1	1.0	47	5.5		
BSEG	e P	Z	06:46:13.3	44.7	87.3	0.8	74	5.7		
CLZ	e P	Z	06:46:14.1	44.8	85.2	1.4	77	5.5		
NRDL	e P	Z	06:46:15.0	44.9	85.7	0.9	45	5.5		
STU	e P	Z	06:46:22.5	45.9	81.4	0.7	32	5.5		
TNS	e P	Z	06:46:24.8	46.2	82.3	1.0	24	5.3		
IBBN	e P	Z	06:46:26.0	46.4	83.7	0.8	86	5.9		
BFO	e P	Z	06:46:26.8	46.6	80.4	1.0	12	5.0		
BUG	e P	Z	06:46:29.1	46.8	82.6	1.0	57	5.6		
WLF	e P	Z	06:46:37.0	47.8	80.2	0.9	51	5.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/20	18:34:45.5	32.789N	92.131E	33.0N	5.3	4.6		SZGRF
2003/05/20	18:34:37.6	32.656N	93.096E	33N	4.9	4.6		NEIC

Xizang

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e P	Z	18:44:39.0	58.7	75.5					
	e S	R	18:52:46.6							
	e ScS	R	18:54:25.8							
	e SS	R	18:56:40.9							
	e LQ	T	19:04:08.3							
	e LR	Z	19:07:27.5							
	e L	Z	19:12:36.6			18.0	575			
GRA1	e P	Z	18:44:50.6	60.8	72.8	1.7	55	5.3		
	e S	N	18:53:18.7							
	e L	Z	19:10:56.7			21.8	515		4.6	

./2003/bul0305.txt

Thu Apr 23 08:38:25 2020

40

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/20	19:26:28.8	47.297N	6.476E	20.0G				SZGRF
2003/05/20	19:26:29.0	47.136N	6.509E	13				NEIC

France

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
ZUR	e Sn	N	19:27:10.2	1.4	261.4					
SLE	e Sg	N	19:27:14.9	1.5	245.6					
BFO	e Sn	E	19:27:16.2	1.7	226.4					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/20	20:13:36.4	48.693N	22.910E	10.0G				SZGRF
2003/05/20	20:13:40.7	48.976N	22.215E	10G	4.4			NEIC

Ukraine - Moldova - Southwestern Russia region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z	20:15:04.6	5.6	85.5					
BRG	e Pn	Z	20:15:07.5	5.6	106.4					
WET	e Pn	Z	20:15:12.2	6.1	88.0					
CLL	e Pn	Z	20:15:17.1	6.3	108.0					
TANN	e Pn	Z	20:15:17.1	6.5	99.1					
	e Sg	E	20:17:19.1							
GUNZ	e Pn	Z	20:15:18.4	6.5	98.4					
WERD	e Pn	Z	20:15:18.7	6.6	99.1					
MOX	e Pn	Z	20:15:25.6	7.0	99.6					
GRA1	e Pn	Z	20:15:30.5	7.2	91.5					
FUR	e Pn	Z	20:15:28.7	7.3	79.5					
RGN	e Pn	Z	20:15:36.2	7.8	131.8					
CLZ	e Pn	Z	20:15:40.7	8.1	106.2					
NRDL	e Pn	Z	20:15:46.0	8.4	109.9					
BSEG	e Pn	Z	20:15:50.7	8.9	119.0					
TNS	e Pn	Z	20:15:53.2	9.0	92.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/21	05:44:34.5	13.705S	167.204E	196D	4.9			NEIC

Vanuatu Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPpre	Z	06:03:26.9	137.1	38.4					
	i PKPdf	+ Z	06:03:35.9			0.8	23			
	e PKiKP	Z	06:03:37.9							
GRA1	e PKPdf	Z	06:03:39.0	139.0	37.1					



./2003/bul0305.txt

Thu Apr 23 08:38:25 2020

41

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/21	06:23:12.4	6.070S	34.540E	33.0N	5.0			SZGRF
2003/05/21	06:22:41.9	9.943S	34.181E	10G	4.9			NEIC

Tanzania

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z 06:33:00.0	61.5	156.9	1.2	19	5.0		
WET	e P	Z 06:33:03.0	62.0	156.1	1.4	11	4.7		
STU	e P	Z 06:33:09.9	62.7	152.1	0.7	19	5.2		
GRA1	e P	Z 06:33:10.1	62.9	154.4	1.6	41	5.2		
TANN	e P	Z 06:33:11.8	63.3	155.9	1.5	14	4.8		
WERD	e P	Z 06:33:12.4	63.3	155.8	1.4	15	4.8		
MOX	e P	Z 06:33:15.3	63.7	155.1	1.5	11	4.7		
TNS	e P	Z 06:33:18.6	64.2	151.6	1.1	12	4.9		
WLF	e P	Z 06:33:20.4	64.5	149.1	1.9	60	5.1		
NRDL	e P	Z 06:33:29.4	65.8	153.9	1.1	14	5.1		
IBBN	e P	Z 06:33:33.2	66.3	151.4	0.5	16	5.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/21								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 16:08:29.6							
	e Sn	N 16:09:34.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/21	18:44:18.1	36.490N	3.604E	10.0G		6.4		SZGRF
2003/05/21	18:44:19.7	36.976N	3.668E	10G	6.6	6.9		NEIC

Northern Algeria

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z 18:47:09.8	11.9	198.4					
	e Sn	N 18:49:23.7							
STU	e Pn	Z 18:47:18.5	12.5	200.9					
	e Sn	N 18:49:37.4							
FUR	e Pn	Z 18:47:22.3	12.5	209.3					
WLF	e Pn	Z 18:47:25.5	12.8	189.0					
TNS	e Pn	Z 18:47:35.6	13.7	196.3					
	e Sn	E 18:50:05.0							
GRA1	e Pn	Z 18:47:38.4	13.8	206.1					
	e L	Z 18:51:56.0			26.0	437341		6.4	
WET	e Pn	Z 18:47:38.4	13.9	212.2					
GEC2	e Pn	Z 18:47:39.5	13.9	215.3					
BUG	e Pn	Z 18:47:49.9	14.7	191.4	1.0	434			
	e Sn	N 18:50:31.5							

GUNZ	e Pn	Z	18:47:49.3	14.8	208.2				
MOX	e Pn	Z	18:47:51.7	14.8	205.6				
TANN	e Pn	Z	18:47:51.7	14.8	208.5				
IBBN	e Pn	Z	18:48:04.4	15.6	192.2				
CLZ	e Pn	Z	18:48:03.8	15.6	200.3				
BRG	e Pn	Z	18:48:04.8	15.7	211.8				
CLL	e Pn	Z	18:48:06.1	15.8	208.4	1.5		1932	
	e S	E	18:51:04.6						
	e LR	Z	18:52:24.5						
	e L	Z	18:54:00.8			20.0		146712	6.2
	e R3	Z	21:55:13.4						
	e R5	Z	00:57:58.7						
NRDL	e Pn	Z	18:48:11.2	16.2	198.8				
BSEG	e Pn	Z	18:48:30.2	17.6	197.8				

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/21	18:51:15.0	37.488N	1.866E	10.0G				SZGRF
2003/05/21	18:51:10.1	36.973N	3.847E	10G	5.7			NEIC

Western Mediterranean Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z 18:53:58.6	11.8	197.7					
TNS	e Pn	Z 18:54:25.2	13.7	195.7					
BUG	e Pn	Z 18:54:38.9	14.7	190.9					
CLL	e Pn	Z 18:54:59.2	15.7	207.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/21	19:02:19.2	37.507N	3.863E	10.0G				SZGRF
2003/05/21	19:02:06.5	36.799N	3.759E	10G	5.2			NEIC

Western Mediterranean Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z 19:04:56.0	12.0	197.9					
	e Sn	E 19:07:02.3							
WLF	e Pn	Z 19:05:11.9	13.0	188.6					
TNS	e Pn	Z 19:05:21.9	13.8	195.9					
GRA1	e Pn	Z 19:05:25.3	14.0	205.5					
WET	e Pn	Z 19:05:27.2	14.0	211.6					
	e Sn	E 19:07:45.4							
GEC2	e Pn	Z 19:05:26.9	14.1	214.7					
BUG	e Pn	Z 19:05:35.8	14.9	191.0					
MOX	e Pn	Z 19:05:38.3	14.9	205.1					
WERD	e Pn	Z 19:05:42.8	15.0	207.5					
CLL	e Pn	Z 19:05:55.0	15.9	208.0					
BSEG	e Pn	Z 19:06:16.8	17.7	197.5					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/21	19:13:13.3	37.152N	3.636E	10.0G				SZGRF
2003/05/21	19:13:09.6	36.927N	4.255E	10G	4.5			NEIC

Western Mediterranean Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z 19:15:57.0	11.8	196.1					
	e Sn	E 19:18:03.0							
WLF	e Pn	Z 19:16:12.2	12.8	186.9					
TNS	e Pn	Z 19:16:22.6	13.6	194.4					
GEC2	e Pn	Z 19:16:27.4	13.8	213.5					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/21	19:11:19.8	39.948N	148.525E	33.0N	5.9			SZGRF

North Pacific Ocean

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 19:23:41.2	82.8	31.6	2.6	228	5.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/21								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 19:56:44.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/21	22:04:19.4	37.470N	3.701E	10.0G				SZGRF
2003/05/21	22:04:10.5	37.038N	3.945E	10G	4.7			NEIC

Western Mediterranean Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z 22:06:58.5	11.7	197.5					
	e Sn	E 22:09:01.5							
FUR	e Pn	Z 22:07:10.8	12.4	208.4					
WLF	e Pn	Z 22:07:13.1	12.7	188.0					
TNS	e Pn	Z 22:07:23.6	13.6	195.5					
WET	e Pn	Z 22:07:25.6	13.7	211.5					
MOX	e Pn	Z 22:07:40.2	14.7	204.9					
WERD	e Pn	Z 22:07:42.5	14.7	207.3					
CLL	e Pn	Z 22:07:53.3	15.7	207.8					

BSEG e Pn Z 22:08:18.6 17.5 197.2

Date Origin Time Lat Long Depth mb Ms ML Source  
 2003/05/21 21:55:15.1 18.604S 178.294W 500G 4.1 NEIC  
 Fiji Region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKP	Z	22:13:54.5	144.1	14.0					
NRDL	e PKP	Z	22:13:58.8	145.5	14.1					
CLZ	e PKP	Z	22:14:01.1	146.1	14.8					
CLL	i PKPbc	+ Z	22:14:00.8	146.1	19.4	0.7	15			
	e PKPab	Z	22:14:02.6			0.6	4			
BRG	e PKP	Z	22:14:01.9	146.3	21.2					
MOX	e PKP	Z	22:14:03.4	147.0	17.4					
TANN	e PKP	Z	22:14:04.0	147.1	19.0					
WERD	e PKP	Z	22:14:04.0	147.1	18.7					
GUNZ	e PKP	Z	22:14:04.3	147.1	18.8					
TNS	e PKP	Z	22:14:06.2	147.9	12.1					
GRA1	e PKP	Z	22:14:06.4	148.0	17.2					
WLF	e PKP	Z	22:14:08.4	148.7	8.1					
BFO	e PKP	Z	22:14:10.4	149.8	12.5					

Date Origin Time Lat Long Depth mb Ms ML Source  
 2003/05/21 22:20:53.9 17.550S 178.880W 600G 4.3 NEIC  
 Fiji Region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKP	Z	22:39:19.5	142.9	14.6					
HLG	e PKP	Z	22:39:20.8	143.0	10.8					
NRDL	e PKP	Z	22:39:24.0	144.3	14.8					
IBBN	e PKP	Z	22:39:26.0	144.9	11.0					
CLZ	e PKP	Z	22:39:25.9	144.9	15.5					
CLL	i PKPbc	Z	22:39:25.7	144.9	20.0	1.2	19			
	e pPKPbc	Z	22:41:39.7							
BRG	e PKP	Z	22:39:26.4	145.1	21.7					
TANN	e PKP	Z	22:39:28.7	145.9	19.5					
WERD	e PKP	Z	22:39:28.7	145.9	19.3					
GUNZ	e PKP	Z	22:39:29.2	146.0	19.4					
TNS	e PKP	Z	22:39:31.3	146.8	12.8					
GRA1	e PKP	Z	22:39:31.4	146.8	17.8					
WLF	e PKP	Z	22:39:34.0	147.6	9.0					
FUR	e PKP	Z	22:39:35.2	148.3	18.6					
BFO	e PKP	Z	22:39:36.3	148.7	13.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/21	23:23:49.7	36.956N	4.193E	10.0G				SZGRF
2003/05/21	23:23:44.2	36.969N	3.531E	10G	4.7			NEIC

Northern Algeria

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z 23:26:34.2	11.9	198.9					
	e Sn	N 23:28:41.4							
WLF	e Pn	Z 23:26:49.8	12.8	189.5					
TNS	e Pn	Z 23:27:00.1	13.7	196.8					
GRA1	e Sn	Z 23:29:27.8	13.9	206.5					
BSEG	e Pn	Z 23:27:54.9	17.6	198.2					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/22	01:39:21.6	37.328N	2.711E	10.0G				SZGRF
2003/05/22	01:39:13.3	36.777N	3.654E	10G	4.4			NEIC

Western Mediterranean Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z 01:42:04.7	12.0	198.2					
	e Sn	N 01:44:12.5							
WLF	e Pn	Z 01:42:20.3	13.0	188.9					
TNS	e Pn	Z 01:42:30.5	13.9	196.2					
GEC2	e Pn	Z 01:42:39.1	14.1	215.0					
BSEG	e Pn	Z 01:43:24.5	17.8	197.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/22	03:14:11.8	37.302N	3.795E	10.0G		3.9		SZGRF
2003/05/22	03:14:03.9	36.909N	3.683E	10G	5.5	4.7		NEIC

Western Mediterranean Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z 03:16:52.0	11.9	198.3					
	e Sn	E 03:18:57.2							
WLF	e Pn	Z 03:17:07.5	12.9	188.9					
TNS	e Pn	Z 03:17:17.7	13.7	196.2					
GRFO	e L	Z 03:22:27.8	13.9	205.9	18.2	939		3.9	
WET	e Pn	Z 03:17:21.0	13.9	212.0					
GEC2	e Pn	Z 03:17:22.4	14.0	215.1					
BUG	e Pn	Z 03:17:33.2	14.8	191.3					
MOX	e Pn	Z 03:17:37.0	14.9	205.5					
CLL	e Pn	Z 03:17:48.0	15.8	208.3					
BSEG	e Pn	Z 03:18:12.7	17.6	197.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/22	13:57:29.2	37.441N	3.117E	10.0G		3.9		SZGRF
2003/05/22	13:57:20.2	36.871N	4.020E	10G	4.9	4.3		NEIC

Western Mediterranean Sea

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z	14:00:09.2	11.9	197.0					
	e Sn	N	14:02:15.1							
WLF	e Pn	Z	14:00:24.3	12.9	187.7					
TNS	e Pn	Z	14:00:34.1	13.7	195.1					
GRFO	e L	Z	14:05:36.4	13.8	204.8	20.3	1070		3.9	
GEC2	e Pn	Z	14:00:39.0	13.9	214.1					
GUNZ	e Pn	Z	14:00:53.0	14.8	207.0					
BUG	e Pn	Z	14:00:48.4	14.8	190.3					
MOX	e Pn	Z	14:00:56.7	14.8	204.4					
CLL	e Pn	Z	14:01:07.8	15.8	207.3					
NRDL	e Pn	Z	14:01:12.7	16.2	197.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/22	17:45:42.9	11.527N	122.525E	33.0N	5.3			SZGRF
2003/05/22	17:45:35.0	11.233N	125.412E	50?	5.3			NEIC

Panay, Philippine Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z	17:58:48.5	93.8	66.0	0.7	25	5.6		
BRG	e P	Z	17:58:50.8	94.3	66.3	1.1	8	5.0		
CLL	e P	Z	17:58:52.4	94.7	65.5	0.9	8	5.1		
BSEG	e P	Z	17:58:54.0	95.0	63.1	1.1	11	5.2		
TANN	e P	Z	17:58:55.9	95.4	65.1	1.2	6	4.8		
WERD	e P	Z	17:58:56.0	95.4	65.0	1.1	6	4.8		
GUNZ	e P	Z	17:58:56.2	95.5	65.0	1.2	11	5.1		
WET	e P	Z	17:58:57.2	95.7	65.6	1.4	10	4.9		
MOX	e P	Z	17:58:57.4	95.8	64.4	1.0	6	4.9		
NRDL	e P	Z	17:58:58.0	95.8	63.0	1.4	22	5.3		
CLZ	e P	Z	17:58:58.6	95.9	63.3	3.0	144	5.8		
GRA1	e P	Z	17:59:00.0	96.4	64.2	1.4	16	5.3		
IBBN	e P	Z	17:59:04.1	97.1	61.1	0.7	11	5.4		
TNS	e P	Z	17:59:06.8	97.7	61.9	2.5	56	5.6		
BUG	e P	Z	17:59:06.9	97.8	60.8	0.9	11	5.4		
WLF	e P	Z	17:59:14.3	99.3	60.1	0.9	21	5.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/22	18:12: 7.9	43.796N	72.068E	33.0N	5.4			SZGRF

2003/05/22 18:11:53.3  
Central Kazakhstan

42.864N 72.810E 10G 5.3 5.2 NEIC

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e P	Z	18:19:28.5	39.6	81.8	1.2	308	5.8		
RUE	e P	Z	18:19:28.4	39.7	79.6	1.3	94	5.3		
BRG	e P	Z	18:19:30.7	39.9	77.8	1.2	89	5.3		
CLL	i P	+ Z	18:19:34.4	40.4	77.8	1.0	84	5.4		
	e PP	Z	18:21:06.3							
	e PcP	Z	18:21:35.7							
	e S	N	18:25:44.5							
	e SS	N	18:28:38.8							
	e ScS	E	18:29:38.3							
	e LR	Z	18:34:31.4							
	e L	Z	18:39:32.7			18.0	5606		5.5	
TANN	e P	Z	18:19:39.2	40.9	76.4	1.2	86	5.3		
WET	e P	Z	18:19:39.8	41.0	75.2	1.2	80	5.2		
WERD	e P	Z	18:19:39.9	41.0	76.4	1.2	80	5.2		
GUNZ	e P	Z	18:19:40.1	41.0	76.3	1.2	98	5.3		
MOX	e P	Z	18:19:43.0	41.4	76.2	1.2	88	5.3		
BSEG	e P	Z	18:19:43.8	41.5	79.0	1.2	95	5.4		
CLZ	e P	Z	18:19:46.8	41.9	76.7	1.2	53	5.1		
GRA1	e P	Z	18:19:47.8	41.9	74.9	1.1	201	5.8		
GRFO	e PP	Z	18:21:26.2	41.9	74.9					
	e S	N	18:26:08.7							
	e SS	N	18:29:12.3							
NRDL	e P	Z	18:19:47.3	41.9	77.2	1.2	105	5.4		
FUR	e P	Z	18:19:50.7	42.3	73.3	1.1	283	5.9		
IBBN	e P	Z	18:19:58.5	43.3	75.5	1.3	115	5.5		
STU	e P	Z	18:19:59.4	43.4	72.8	1.4	172	5.6		
TNS	e P	Z	18:19:59.8	43.5	73.8	1.3	51	5.1		
BUG	e P	Z	18:20:02.9	43.9	74.4	1.9	169	5.5		
BFO	e P	Z	18:20:04.7	44.1	71.9	1.3	113	5.4		
WLF	e P	Z	18:20:12.7	45.0	72.0	1.1	93	5.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/23	00:09:2.4	37.253N	3.421E	10.0G				SZGRF
2003/05/23	00:08:55.6	36.833N	3.879E	10G	4.4			NEIC

Western Mediterranean Sea

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z	00:11:46.7	11.9	197.5					
	e Sn	N	00:13:51.0							
WLF	e Pn	Z	00:11:59.8	12.9	188.2					
TNS	e Pn	Z	00:12:10.6	13.8	195.5					
GEC2	e Pn	Z	00:12:16.1	14.0	214.4					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/23	02:24:58.0	11.785N	122.197E	33.0N	5.3			SZGRF
2003/05/23	02:24:44.2	11.685N	124.104E	33N	5.0	5.0		NEIC

Panay, Philippine Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 02:38:13.3	95.3	65.0	1.9	27	5.3		
	e pP	Z 02:38:22.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/23	04:11:40.5	4.329N	36.914W	33.0N	4.6			SZGRF

North Atlantic Ocean

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 04:21:49.6	60.8	238.3	1.2	13	4.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/23	11:05:18.1	5.400N	82.400W	33.0N	5.1	5.5		SZGRF
2003/05/23	11:05:10.4	5.557N	82.543W	10G	5.2	5.4		NEIC

South of Panama

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WLF	e P	Z 11:17:50.8	84.9	272.6	1.0	17	5.3		
BUG	e P	Z 11:17:53.1	85.5	273.3	1.1	29	5.3		
HLG	e P	Z 11:17:54.5	85.7	273.6	0.8	102	6.0		
IBBN	e P	Z 11:17:54.2	85.8	273.6	1.2	29	5.3		
TNS	e P	Z 11:17:57.3	86.4	274.3	1.2	15	5.0		
BFO	e P	Z 11:17:57.4	86.4	274.4	1.2	10	4.8		
STU	e P	Z 11:18:00.1	87.0	275.0	0.8	11	5.1		
BSEG	e P	Z 11:18:01.2	87.2	275.6	1.1	16	5.1		
NRDL	e P	Z 11:18:01.8	87.2	275.5	1.8	44	5.3		
CLZ	e P	Z 11:18:02.6	87.4	275.7	1.1	22	5.4		
GRFO	e P	Z 11:18:07.9	88.2	276.5					
	e PP	Z 11:21:46.6							
	e S	R 11:28:45.9							
	e SS	R 11:34:59.6							
	e SSS	Z 11:38:27.0							
	e L	Z 11:51:54.5			21.9	2125		5.5	
GRA1	e P	Z 11:18:06.0	88.2	276.5	1.1	20	5.4		
MOX	e P	Z 11:18:07.3	88.3	276.7	1.4	15	5.1		
WERD	e P	Z 11:18:09.4	88.8	277.3	1.2	9	4.9		
GUNZ	e P	Z 11:18:09.1	88.8	277.3	1.1	10	5.0		
TANN	e P	Z 11:18:10.4	88.9	277.4	1.1	12	5.0		



./2003/bul0305.txt

Thu Apr 23 08:38:25 2020

49

CLL	i P	Z	11:18:10.8	89.1	277.8	1.1	13	5.1			
	e SKKSac	R	11:28:50.4								
	e PS	E	11:30:01.2								
	e SS	R	11:34:48.9								
	e SSS	T	11:38:27.8								
	e LR	Z	11:46:37.3								
	e L	Z	11:52:45.6			22.0	1593		5.4		
WET	e P	Z	11:18:11.0	89.3	277.7	1.5	17	5.0			
BRG	e P	Z	11:18:13.9	89.8	278.5	1.2	10	4.9			
GEC2	e P	Z	11:18:14.6	89.9	278.4	1.2	8	4.8			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/23								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 13:00:15.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/23								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 13:07:22.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/24	00:30:37.5	14.570S	70.960W	33.0N	5.2			SZGRF
2003/05/24	00:30:47.5	14.517S	71.437W	142D	5.4			NEIC

Central Peru

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WLF	e P	Z 00:43:46.6	93.2	251.3	1.2	13	5.2		
BFO	e P	Z 00:43:50.8	94.2	252.8	1.1	5	4.7		
TNS	e P	Z 00:43:54.6	94.8	253.0	2.5	48	5.4		
STU	e P	Z 00:43:54.4	94.9	253.5	1.1	11	5.1		
IBBN	e P	Z 00:43:55.4	95.0	252.7	0.8	9	5.3		
FUR	e P	Z 00:43:59.9	96.0	254.9	1.0	20	5.6		
GRA1	e P	Z 00:44:01.6	96.4	255.0	1.2	13	5.3		
CLZ	e P	Z 00:44:01.6	96.4	254.6	1.1	14	5.4		
BSEG	e P	Z 00:44:03.8	96.9	254.8	1.0	9	5.4		
WERD	e P	Z 00:44:05.4	97.2	255.9	1.2	6	5.1		
WET	e P	Z 00:44:05.4	97.3	256.2	1.4	9	5.2		
TANN	e P	Z 00:44:06.1	97.3	256.1	1.3	8	5.2		
GEC2	e P	Z 00:44:07.1	97.7	256.8	0.9	5	5.1		
CLL	e P	Z 00:44:08.7	97.9	256.6	1.0	4	5.2		

BRG e P Z 00:44:10.3 98.4 257.2 1.1 5 5.1

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/24	01:46:13.2	15.064N	53.891E	33.0N	5.7	5.2		SZGRF
2003/05/24	01:46:06.4	14.439N	53.933E	10G	5.5	5.5		NEIC

Arabian Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z 01:54:42.1	47.6	122.1	1.1	87	5.8		
WET	e P	Z 01:54:46.4	48.2	121.5	0.9	14	5.1		
BRG	e P	Z 01:54:49.4	48.6	123.9	1.7	120	5.8		
FUR	e P	Z 01:54:50.4	48.6	119.0	0.9	207	6.3		
TANN	e P	Z 01:54:54.2	49.1	122.0	1.3	89	5.6		
GUNZ	e P	Z 01:54:55.0	49.2	121.8	1.1	149	5.9		
WERD	e P	Z 01:54:55.2	49.2	121.8	1.1	96	5.7		
CLL	i P	Z 01:54:55.9	49.3	123.2	1.6	163	5.8		
	e PP	Z 01:56:54.4							
	e PPP	Z 01:57:44.1							
	e S	R 02:02:04.7							
	e SS	T 02:05:37.7							
	e LQ	T 02:08:28.1							
	e LR	Z 02:10:11.6							
	e L	Z 02:17:55.0			22.0	3260		5.3	
GRA1	e P	Z 01:54:56.1	49.4	120.1	0.9	164	6.1		
	e PP	Z 01:56:55.5							
	e S	R 02:02:13.5							
	e L	Z 02:16:53.3			21.7	2955		5.2	
RUE	e P	Z 01:54:57.7	49.6	124.9	1.0	160	6.0		
MOX	e P	Z 01:54:58.8	49.7	121.2	0.9	54	5.6		
STU	e P	Z 01:55:02.2	50.1	117.4	0.9	39	5.3		
BFO	e P	Z 01:55:04.4	50.5	116.2	1.1	158	5.9		
CLZ	e P	Z 01:55:08.6	51.0	120.8	1.0	82	5.6		
RGN	e P	Z 01:55:09.0	51.0	125.8	1.1	190	5.9		
TNS	e P	Z 01:55:10.0	51.2	117.7	2.1	284	5.8		
NRDL	e P	Z 01:55:12.7	51.5	121.0	0.9	123	5.8		
BSEG	e P	Z 01:55:16.6	52.1	122.2	1.3	71	5.4		
WLF	e P	Z 01:55:18.6	52.3	115.0	0.9	153	5.9		
BUG	e P	Z 01:55:19.6	52.5	117.3	1.0	60	5.5		
IBBN	e P	Z 01:55:21.0	52.6	118.4	1.0	72	5.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/24	11:28: 8.3	33.063N	91.775E	33.0N	5.1			SZGRF
2003/05/24	11:27:59.5	32.552N	92.418E	33N	5.0	4.2		NEIC

Qinghai, China

./2003/bul0305.txt

Thu Apr 23 08:38:25 2020

51

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 11:38:09.7	60.4	73.3	1.0	19	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/24								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 11:47:54.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/24	15:51:51.2	37.737N	2.561E	10.0G				SZGRF
2003/05/24	15:51:43.7	37.178N	3.935E	10G	4.6			NEIC

Western Mediterranean Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z 15:54:31.7	11.6	197.7					
	e Sn	Z 15:56:33.9							
TNS	e Pn	Z 15:54:56.8	13.4	195.6					
WET	e Pn	Z 15:55:02.1	13.6	211.8					
GEC2	e Pn	Z 15:55:04.2	13.7	214.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/24	16:39:32.2	35.709N	74.963E	33N	4.6			NEIC

Northwestern Kashmir

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 16:48:05.6	47.4	81.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/24	15:51:51.2	37.551N	23.488E	33.0N				SZGRF
2003/05/24	17:23:16.6	35.262N	27.556E	33N	4.0			NEIC

Southern Greece

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 17:27:34.6	18.7	134.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/24	19:21:28.6	37.147N	3.731E	10.0G		3.5		SZGRF
2003/05/24	19:21:24.4	36.930N	3.962E	10G	4.4			NEIC

Western Mediterranean Sea

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z	19:24:12.3	11.8	197.3					
	e Sn	N	19:26:18.0							
WLF	e Pn	Z	19:24:27.7	12.8	187.9					
TNS	e Pn	Z	19:24:36.0	13.7	195.3					
GRFO	e L	Z	19:29:49.1	13.8	205.1	18.3	388		3.5	
WET	e Pn	Z	19:24:41.0	13.8	211.2					
GEC2	e Pn	Z	19:24:42.6	13.9	214.4					
BUG	e Pn	Z	19:24:52.8	14.7	190.5					
MOX	e Pn	Z	19:25:02.5	14.8	204.7					
TANN	e Pn	Z	19:25:03.2	14.8	207.6					
CLL	e Pn	Z	19:25:13.2	15.7	207.6					
NRDL	e Pn	Z	19:25:17.6	16.2	197.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/24	19:32:41.8	33.458N	92.637E	33.0N	5.1	4.4		SZGRF
2003/05/24	19:32:37.3	32.535N	92.335E	67*	5.0			NEIC

Qinghai, China

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	19:42:30.6	58.4	75.9	1.1	13	4.9		
CLL	e P	Z	19:42:33.6	58.8	75.5	1.0	10	4.8		
GEC2	e P	Z	19:42:35.6	59.1	74.5	1.3	29	5.1		
TANN	e P	Z	19:42:37.8	59.4	74.6	1.3	17	4.9		
WET	e P	Z	19:42:38.6	59.5	74.2	1.3	14	4.9		
WERD	e P	Z	19:42:38.4	59.5	74.5	1.1	12	4.8		
GUNZ	e P	Z	19:42:38.6	59.5	74.5	0.8	12	5.0		
BSEG	e P	Z	19:42:40.7	59.8	75.1	0.9	25	5.3		
MOX	e P	Z	19:42:40.9	59.9	74.2	1.4	18	4.9		
NRDL	e P	Z	19:42:44.2	60.3	74.2	1.1	32	5.3		
CLZ	e P	Z	19:42:44.1	60.3	74.0	0.9	31	5.3		
GRA1	e P	Z	19:42:45.0	60.4	73.4	1.3	38	5.3		
GRFO	e L	Z	20:12:10.9	60.4	73.4	21.6	284		4.4	
FUR	e P	Z	19:42:47.7	60.8	72.6	1.0	44	5.3		
IBBN	e P	Z	19:42:43.5	61.7	72.4					
	e P	Z	19:42:53.5			1.4	24	4.8		
STU	e P	Z	19:42:54.9	61.9	71.6	1.5	47	5.5		
TNS	e P	Z	19:42:55.0	61.9	71.8	0.9	8	4.9		
BUG	e P	Z	19:42:57.2	62.2	71.7	1.1	12	5.0		
BFO	e P	Z	19:42:59.1	62.6	70.8	1.2	17	5.2		
WLF	e P	Z	19:43:06.1	63.5	70.1	1.3	43	5.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
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2003/05/24 21:02:59.7 18.536S 177.961W 600G 4.3 NEIC  
Fiji Region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKP	Z	21:21:28.9	144.0	13.4					
HLG	e PKP	Z	21:21:29.2	144.1	9.5					
NRDL	e PKP	Z	21:21:33.3	145.5	13.6					
IBBN	e PKP	Z	21:21:34.4	145.9	9.7					
CLZ	e PKP	Z	21:21:35.3	146.1	14.2					
CLL	e PKP	Z	21:21:35.1	146.1	18.9					
BRG	e PKP	Z	21:21:35.7	146.3	20.6					
MOX	e PKP	Z	21:21:37.4	147.0	16.8					
WERD	e PKP	Z	21:21:37.8	147.1	18.1					
TANN	e PKP	Z	21:21:37.9	147.1	18.4					
GUNZ	e PKP	Z	21:21:38.2	147.1	18.2					
TNS	e PKP	Z	21:21:40.1	147.9	11.5					
GRA1	e PKP	Z	21:21:39.8	148.0	16.6					
WET	e PKP	Z	21:21:41.0	148.2	19.8					
GEC2	e PKP	Z	21:21:41.1	148.3	21.4					
WLF	e PKP	Z	21:21:42.5	148.7	7.5					
STU	e PKP	Z	21:21:43.1	149.2	13.3					
BFO	e PKP	Z	21:21:44.4	149.8	11.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/25	04:31:17.8	36.990N	84.262E	33.0N	4.8			SZGRF
2003/05/25	04:31:57.6	39.467N	77.423E	33N	4.6			NEIC

Southern Xinjiang, China

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	04:40:27.5	46.7	76.2	1.1	14	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/25	07:28:7.7	8.455N	37.641W	33.0N	4.5			SZGRF

Central Mid-Atlantic Ridge

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	07:37:56.0	57.8	241.7	1.0	5	4.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/25	11:56:38.6	50.189N	151.376E	33.0N	4.7			SZGRF
2003/05/25	11:57:32.2	50.799N	149.991E	536	4.1			NEIC

Northwest of Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z 12:07:53.0	70.0	25.8	0.8	6	4.8		
CLL	e P	Z 12:08:01.9	71.6	27.0	0.7	11	5.1		
CLZ	e P	Z 12:08:04.1	71.8	25.5	0.9	7	4.8		
WERD	e P	Z 12:08:08.2	72.5	26.5	1.7	9	4.5		
MOX	e P	Z 12:08:08.0	72.6	26.1	1.2	6	4.5		
GUNZ	e P	Z 12:08:08.8	72.6	26.5	2.4	36	5.0		
BUG	e P	Z 12:08:10.4	73.0	23.6	0.5	9	5.0		
GRA1	e P	Z 12:08:14.0	73.5	25.7	0.7	11	5.0		
WET	e P	Z 12:08:14.0	73.5	26.6	0.7	4	4.6		
GEC2	e P	Z 12:08:13.7	73.6	27.1	1.3	4	4.2		
TNS	e P	Z 12:08:15.6	73.8	24.2	0.9	6	4.6		
FUR	e P	Z 12:08:21.4	74.9	25.6	0.7	8	4.9		
BFO	e P	Z 12:08:25.1	75.6	23.9	1.4	10	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/25								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 15:58:52.5							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/25								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 16:25:57.2							
	e	16:26:10.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/25	17:15:13.6	42.988N	13.689E	10.0G				SZGRF
Central Italy								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 17:16:39.6	5.9	180.1					
	e Sn	Z 17:17:45.9							
WET	e Pn	Z 17:16:43.5	6.2	174.5					
	e Sn	N 17:17:53.4							
BFO	e Pn	Z 17:16:48.9	6.5	143.0					
	e Sn	N 17:18:00.0							
GRA1	e Pn	Z 17:16:54.3	6.9	164.8					
	e Sn	N 17:18:10.1							
TANN	e Pn	Z 17:17:02.1	7.5	173.1					
	e Sn	N 17:18:24.7							

MOX	e Pn	Z	17:17:05.6	7.8	168.7
	e Sn	N	17:18:28.0		
TNS	e Pn	Z	17:17:10.7	8.1	151.6
	e Sn	N	17:18:39.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/25	17:15:17.1	43.271N	13.740E	10.0G				SZGRF
2003/05/25	17:15:15.4	43.277N	13.378E	10G				NEIC

Central Italy

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 17:16:39.3	5.6	182.4					
	e Sn	N 17:17:40.7							
WET	e Pn	Z 17:16:43.5	5.9	176.4					
	e Sn	N 17:17:50.8							
BFO	e Pn	Z 17:16:48.9	6.2	143.3					
	e Sn	N 17:17:58.5							
GRA1	e Pn	Z 17:16:54.4	6.6	166.2					
	e Sn	N 17:18:06.1							
GUNZ	e Pn	Z 17:17:02.1	7.1	173.8					
TANN	e Pn	Z 17:17:02.0	7.2	174.6					
MOX	e Pn	Z 17:17:05.5	7.5	170.1					
	e Sn	Z 17:18:27.6							
TNS	e Pn	Z 17:17:10.7	7.7	152.2					
	e Sn	N 17:18:36.6							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/25	23:03:31.5	45.026N	6.443E	10.0G			3.9	SZGRF
2003/05/25	23:03:32.4	45.144N	6.477E	6				NEIC

France

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
ZUR	e Pn	Z 23:04:16.9	2.7	213.9					
	e Sg	N 23:04:59.6							
SLE	e Pn	Z 23:04:20.3	3.0	208.6					
BFO	e Pn	Z 23:04:25.8	3.4	202.4					3.7
	e Sg	N 23:05:24.5							
STU	e Pn	Z 23:04:35.5	4.1	208.1					
FUR	e Pn	Z 23:04:42.4	4.5	229.3					
WLF	e Pn	Z 23:04:42.8	4.5	177.1					4.1
	e Sg	N 23:05:58.4							
TNS	e Pn	Z 23:04:51.1	5.2	195.4					3.9
	e Sg	E 23:06:22.0							
GRA1	e Pn	Z 23:04:54.1	5.6	217.0					
WET	e Pn	Z 23:05:01.0	5.9	229.8					

MOX	e Pn	Z	23:05:07.8	6.5	214.0
GUNZ	e Pn	Z	23:05:07.1	6.5	219.2
TANN	e Pn	Z	23:05:08.1	6.6	219.6

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/26	02:51:27.0	3.545S	13.933W	33.0N	4.7			SZGRF
2003/05/26	02:51:40.8	1.146S	14.085W	10G	4.7	4.0		NEIC

North of Ascension Island

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 03:01:13.3	55.3	211.3	1.6	12	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/26	08:48: 3.7	0.317S	30.114W	33.0N	4.3			SZGRF

Central Mid-Atlantic Ridge

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 08:58:15.7	61.2	228.9	1.2	5	4.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/26	09:24:32.6	38.650N	141.490E	58.5	6.8	7.0		SZGRF
2003/05/26	09:24:32.9	38.901N	141.446E	68D	6.8			NEIC

Near east coast of eastern Honshu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e P	Z 09:36:20.0	76.5	39.0	1.1	1217	7.0		
	e S	N 09:46:04.8							
RUE	e P	Z 09:36:27.6	78.0	39.0	1.4	1122	6.7		
	e S	N 09:46:19.3							
HLG	e P	Z 09:36:32.4	78.7	35.1	1.0	799	6.7		
CLL	e P	Z 09:36:33.5	79.7	38.5	1.0	690	6.5		
	e	09:36:57.1							
	e PP	Z 09:39:46.7							
	e PPP	Z 09:41:24.9							
	e S	T 09:46:31.0							
	e SS	T 09:51:27.7							
	e SSS	T 09:55:04.3							
	e LQ	T 10:00:00.6							
	e LR	Z 10:02:36.6							
	e PKPPKPdf	Z 10:03:23.4							
	e L	Z 10:15:00.3			20.0	85150		7.1	
	e P'P'P'df	Z 10:23:33.3							
MOX	e P	Z 09:36:39.4	80.2	37.3	1.4	686	6.5		



	e sP	Z	09:37:02.4							
	e S	E	09:46:43.9							
WET	e P	Z	09:36:43.4	80.9	38.0	1.4	611	6.4		
	e sP	Z	09:37:06.7							
	e S	E	09:46:50.2							
GRA1	e P	Z	09:36:45.0	81.2	37.0	1.5	1965	7.0		
	e PP	Z	09:40:10.9							
	e S	N	09:46:53.0							
	e SS	N	09:52:43.9							
	e L	Z	10:16:09.1			20.7	70176		7.0	
GRB3	e P	Z	09:36:44.9	81.2	37.3	1.4	1403	6.9		
GRC1	e P	Z	09:36:47.0	81.6	37.1	1.0	690	6.7		
	e S	N	09:46:58.5							
TNS	e P	Z	09:36:47.8	81.8	35.1	2.8	4108	7.1		
	e S	N	09:46:58.6							
FUR	e P	Z	09:36:51.7	82.4	36.9	1.6	1644	7.0		
	e S	E	09:47:06.8							
STU	e P	Z	09:36:52.3	82.7	35.5	0.9	578	6.8		
	e S	E	09:47:08.5							
WLF	e P	Z	09:36:54.8	83.1	33.5	2.0	2430	7.1		
	e S	E	09:47:13.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/26	13:34:35.9	38.449N	140.069E	33.0N	5.0			SZGRF
2003/05/26	13:34:17.9	38.987N	141.402E	86*	4.6			NEIC

Eastern Honshu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 13:46:47.8	81.1	37.0	1.4	22	5.0		
	e	13:46:56.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/26	15:44:35.4	39.705N	142.125E	33.0N	5.6			SZGRF
2003/05/26	15:44:16.8	39.061N	141.483E	70D	4.8			NEIC

Near east coast of eastern Honshu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 15:56:45.7	81.0	36.9	1.0	59	5.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/26	19:23:29.7	2.810N	129.470E	33.0N		7.3		SZGRF
2003/05/26	19:23:28.2	2.406N	128.811E	33N	6.5	7.0		NEIC

Halmahera, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML								
RGN	e Pdiff	Z 19:37:21.3	102.4	67.4													
	e PP	Z 19:41:41.3															
	e SP	Z 19:50:35.1															
RUE	e Pdiff	Z 19:37:23.9	103.0	68.3													
	e PP	Z 19:41:45.9															
	e SP	Z 19:50:42.6															
BRG	e Pdiff	Z 19:37:27.6	103.4	68.8													
	e PP	Z 19:41:51.3															
	e SP	Z 19:50:41.7															
CLL	e Pdiff	Z 19:37:28.9	103.8	67.9	2.2	195											
	e PP	Z 19:41:48.1															
	e SKSac	R 19:48:07.7															
	e Sdiff	T 19:49:16.1															
	e SP	Z 19:50:48.6															
	e PPS	Z 19:51:54.4															
	e SS	T 19:56:33.1															
	e SSS	T 20:00:28.6															
	e P'P'	Z 20:01:26.6															
	e LQ	T 20:06:15.9															
	e L	Z 20:30:13.9															
	BSEG	e Pdiff								Z 19:37:30.7	104.3	65.0	20.0	60822		7.1	
		e PP								Z 19:41:59.3							
e SP		Z 19:50:54.7															
GEC2	e Pdiff	Z 19:37:31.5	104.3	69.0													
	e PP	Z 19:41:58.8															
	e SP	Z 19:50:59.8															
TANN	e Pdiff	Z 19:37:32.0	104.5	67.6													
	e PP	Z 19:42:00.6															
	e SP	Z 19:50:59.8															
WET	e Pdiff	Z 19:37:33.0	104.7	68.3													
	e PP	Z 19:42:01.0															
	e SP	Z 19:50:58.1															
MOX	e Pdiff	Z 19:37:33.0	104.9	66.9													
	e PP	Z 19:42:03.4															
	e SP	Z 19:51:00.2															
NRDL	e Pdiff	Z 19:37:33.8	105.0	65.1													
	e PP	Z 19:42:04.7															
	e SP	Z 19:50:54.7															
CLZ	e Pdiff	Z 19:37:34.8	105.1	65.5													
	e PP	Z 19:42:04.3															
	e SP	Z 19:51:03.8															
HLG	e Pdiff	Z 19:37:36.2	105.5	62.8													
	e PP	Z 19:42:06.7															
	e SP	Z 19:51:08.9															
GRA1	e Pdiff	Z 19:37:36.3	105.5	66.8													
	e PP	Z 19:42:06.6															
	e SKSac	R 19:48:21.6															

	e Sdiff	T	19:49:33.4							
	e SP	Z	19:51:09.2							
	e SS	T	19:57:11.5							
	e L	Z	20:29:31.7			21.2	94515		7.3	
FUR	e Pdiff	Z	19:37:38.0	106.1	67.2					
	e PP	Z	19:42:12.4							
IBBN	e Pdiff	Z	19:37:40.2	106.4	63.1					
	e PP	Z	19:42:12.0							
	e SP	Z	19:51:17.0							
TNS	e Pdiff	Z	19:37:42.6	106.9	64.3					
	e PP	Z	19:42:16.6							
	e SP	Z	19:51:21.7							
BUG	e Pdiff	Z	19:37:43.5	107.0	62.9					
	e PP	Z	19:42:18.8							
	e SP	Z	19:51:24.8							
STU	e Pdiff	Z	19:37:42.3	107.1	65.3					
	e PP	Z	19:42:19.2							
	e SP	Z	19:51:27.8							
BFO	e Pdiff	Z	19:37:49.6	107.8	64.7					
	e PP	Z	19:42:23.3							
	e SP	Z	19:51:35.7							
WLF	e Pdiff	Z	19:37:50.3	108.5	62.5					
	e PP	Z	19:42:28.3							
	e SP	Z	19:51:38.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/26	20:31:42.2	37.418N	3.544E	10.0G				SZGRF
2003/05/26	20:31:32.1	37.128N	3.767E	10G	3.8			NEIC

Western Mediterranean Sea

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z	20:34:21.4	11.7	198.2					
	e Sn	N	20:36:26.2							
TNS	e Pn	Z	20:34:46.5	13.5	196.2					
WET	e Pn	Z	20:34:48.6	13.7	212.2					
GEC2	e Pn	Z	20:34:50.6	13.8	215.3					
MOX	e Pn	Z	20:35:08.6	14.6	205.5					
TANN	e Pn	Z	20:35:08.9	14.7	208.4					
CLL	e Pn	Z	20:35:20.1	15.6	208.4					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/26	23:13:43.5	8.270N	122.180E	604.2				SZGRF
2003/05/26	23:13:28.9	6.764N	123.762E	561D	6.3			NEIC

Mindanao, Philippine Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML								
RGN	e Pdiff	Z	23:25:58.1	96.0	69.3													
	e pP	Z	23:28:08.6															
	e SKSac	N	23:35:39.0															
RUE	e Pdiff	Z	23:26:00.4	96.5	69.9													
	e pP	Z	23:28:10.8															
	e SKSac	E	23:35:38.1															
BRG	e Pdiff	Z	23:26:02.2	97.0	70.2													
	e pP	Z	23:28:12.7															
	e pP	E	23:28:16.6															
CLL	e SKSac	E	23:35:41.3	97.4	69.4	1.3	122											
	i Pdiff	- Z	23:26:04.0															
	e pPdiff	Z	23:28:04.6															
	e sPdiff	Z	23:29:04.5															
	e PP	Z	23:30:13.1															
	e sPP	Z	23:33:00.6															
	e SKSac	E	23:35:39.9															
	e Sdiff	T	23:36:38.9															
	e SP	Z	23:38:04.0															
	e sSdiff	T	23:40:24.2															
	e SS	R	23:43:41.9															
	e sSS	T	23:46:47.3															
	e L	Z	00:13:27.0															
	BSEG	e Pdiff	Z								23:26:06.5	97.9	66.9	20.0	6373		6.1	
		e pP	Z								23:28:17.0							
e SKSac		N	23:35:47.4															
TANN	e Pdiff	Z	23:26:06.9	98.0	69.1													
	e pP	Z	23:28:17.4															
	e SKSac	E	23:35:46.7															
WERD	e Pdiff	Z	23:26:07.3	98.1	69.0													
	e pP	Z	23:28:17.8															
	e SKSac	N	23:35:46.7															
GUNZ	e Pdiff	Z	23:26:07.5	98.1	69.0													
	e pP	Z	23:28:18.0															
	e SKSac	E	23:35:46.3															
WET	e Pdiff	Z	23:26:08.0	98.2	69.6													
	e pP	Z	23:28:18.5															
	e SKSac	E	23:35:46.6															
MOX	e Pdiff	Z	23:26:08.8	98.4	68.4													
	e pP	Z	23:28:19.3															
	e SKSac	E	23:35:47.2															
CLZ	e Pdiff	Z	23:26:10.5	98.7	67.2													
	e pP	Z	23:28:21.0															
	e SKSac	N	23:35:50.7															
GRA1	e Pdiff	Z	23:26:11.8	99.0	68.2													
	e pP	Z	23:28:22.3															
	e sP	Z	23:29:18.5															
	e PPP	Z	23:32:09.9															
	e SKSac	R	23:35:30.1															

	e Sdiff	R	23:36:44.0		
	e SP	Z	23:38:17.4		
	e sS	T	23:40:33.4		
	e SS	T	23:43:56.9		
	e SSS	T	23:47:12.8		
	e SKKSdf	T	23:49:07.6		
GRFO	e pP	Z	23:28:22.3	99.0	68.2
HLG	e Pdiff	Z	23:26:11.6	99.1	64.8
	e pP	Z	23:28:22.1		
	e SKSac	N	23:35:52.4		
FUR	e Pdiff	Z	23:26:13.8	99.5	68.5
	e pP	Z	23:28:24.3		
	e SKSac	N	23:35:53.5		
IBBN	e Pdiff	Z	23:26:16.0	100.0	65.0
	e pP	Z	23:28:26.5		
	e SKSac	N	23:35:54.5		
TNS	e Pdiff	Z	23:26:18.2	100.4	65.9
	e pP	Z	23:28:28.7		
	e SKSac	N	23:35:58.7		
STU	e Pdiff	Z	23:26:18.5	100.6	66.7
	e pP	Z	23:28:29.0		
BUG	e Pdiff	Z	23:26:18.8	100.6	64.7
	e pP	Z	23:28:29.3		
	e SKSac	N	23:35:58.7		
BFO	e Pdiff	Z	23:26:21.2	101.3	66.1
	e pP	Z	23:28:31.7		
	e SKSac	E	23:36:00.1		
WLF	e Pdiff	Z	23:26:25.6	102.0	64.1
	e pP	Z	23:28:36.1		

Date Origin Time Lat Long Depth mb Ms ML Source  
 2003/05/26 23:54:49.9 8.869N 121.831E 33.0N 5.3  
 Mindanao, Philippine Islands

	Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	GRA1	e P	Z 00:08:14.8	96.2	68.5	1.1	12	5.3		

Date Origin Time Lat Long Depth mb Ms ML Source  
 2003/05/27

	Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
	GEC2	e Pn	Z 02:06:24.4							
		e Sn	N 02:07:30.6							
	WET	e Pn	Z 02:06:29.8							
		e Sn	E 02:07:39.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/27	04:23:27.0	29.890N	79.340E	33.0N				SZGRF
2003/05/27	04:23:15.1	2.285N	128.719E	33N	5.0	4.1		NEIC

Northern India

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e P	Z 04:32:38.0	102.5	67.6	0.7	36			
BRG	e P	Z 04:32:35.7	103.5	68.9	0.7	18			
CLL	e P	Z 04:32:39.7	103.9	68.0	0.7	5			
BSEG	e P	Z 04:32:50.9	104.3	65.1	0.8	27			
GEC2	e P	Z 04:32:37.7	104.4	69.2	0.7	4			
TANN	e P	Z 04:32:43.0	104.5	67.8	1.0	6			
WERD	e P	Z 04:32:43.5	104.6	67.6	0.8	10			
GUNZ	e P	Z 04:32:44.0	104.6	67.7	0.8	10			
MOX	e P	Z 04:32:46.8	104.9	67.0	0.7	13			
NRDL	e P	Z 04:32:52.6	105.1	65.3	0.8	29			
CLZ	e P	Z 04:32:51.7	105.2	65.7	0.8	39			
GRA1	e P	Z 04:32:49.6	105.5	66.9	1.6	35			
IBBN	e P	Z 04:33:02.9	106.4	63.3	1.0	26			
TNS	e P	Z 04:33:01.6	107.0	64.4	0.8	11			
BUG	e P	Z 04:33:05.6	107.1	63.1	0.9	25			
STU	e P	Z 04:32:59.7	107.1	65.5	0.7	25			
BFO	e P	Z 04:33:03.4	107.8	64.9	0.8	3			
WLF	e P	Z 04:33:13.0	108.5	62.6	0.8	14			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/27	08:38:59.3			N	4.8			SZGRF

Northern India

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 08:48:43.6			1.8	18	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/27	10:31:14.1	31.701N	49.776E	33.0N	5.5			SZGRF
2003/05/27	10:30:50.5	29.229N	51.134E	33N	5.0	3.9		NEIC

Western Iran

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 10:37:53.7	36.4	109.2	1.1	66	5.5		
	e	10:37:58.2							
	e	10:38:06.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/27	17:11:35.5	37.058N	3.901E	10.0G	5.4	5.0		SZGRF
2003/05/27	17:11:29.1	36.882N	3.652E	10G	5.6	5.5		NEIC

Western Mediterranean Sea

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z	17:14:19.1	11.9	198.4					
	e Sn	E	17:16:26.1							
STU	e Pn	Z	17:14:28.6	12.6	200.8					
FUR	e Pn	Z	17:14:31.5	12.6	209.1					
WLF	e Pn	Z	17:14:34.5	12.9	189.0					
TNS	e Pn	Z	17:14:45.3	13.8	196.3					
GRA1	e Pn	Z	17:14:47.6	13.9	206.0					
	e L	Z	17:20:00.1			18.1	12720		5.0	
WET	e Pn	Z	17:14:48.1	14.0	212.1					
GEC2	e Pn	Z	17:14:49.2	14.0	215.2					
BUG	e Pn	Z	17:14:59.5	14.8	191.4					
GUNZ	e Pn	Z	17:14:58.5	14.8	208.1					
MOX	e Pn	Z	17:15:00.4	14.9	205.5					
WERD	e Pn	Z	17:15:00.1	14.9	207.9					
TANN	e Pn	Z	17:15:01.9	14.9	208.4					
IBBN	e Pn	Z	17:15:13.2	15.7	192.2					
CLZ	e Pn	Z	17:15:13.5	15.7	200.2					
BRG	e Pn	Z	17:15:14.3	15.8	211.7					
CLL	e Pn	Z	17:15:15.5	15.9	208.4					
NRDL	e P	Z	17:15:20.0	16.3	198.7	1.2	137	5.0		
RUE	e P	Z	17:15:31.5	17.1	208.5	1.3	308	5.3		
HLG	e P	Z	17:15:37.3	17.5	191.3	2.7	1890	5.7		
BSEG	e P	Z	17:15:39.9	17.7	197.8	2.1	1351	5.7		
RGN	e P	Z	17:15:52.4	18.9	204.5	2.0	612	5.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/28								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z	02:12:37.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/28	04:57:24.6	35.697N	23.709E	33.0N	4.4			SZGRF
2003/05/28	04:57:30.9	35.781N	22.702E	100G	4.5			NEIC

Crete, Greece

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
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GEC2	e P	Z	05:01:00.4	14.6	149.9				
WET	e P	Z	05:01:06.4	15.2	148.1	1.2	30	4.3	
GRA1	e P	Z	05:01:18.5	16.2	144.7	1.1	82	4.8	
BRG	e P	Z	05:01:18.9	16.4	154.0	0.8	20	4.3	
TANN	e P	Z	05:01:19.8	16.4	149.3				
BFO	e P	Z	05:01:18.3	16.4	134.6				
WERD	e P	Z	05:01:20.3	16.5	148.9				
CLL	e P	Z	05:01:24.9	17.0	152.1	1.0	20	4.2	
TNS	e P	Z	05:01:36.1	17.7	139.0				
CLZ	e P	Z	05:01:40.8	18.3	146.5				
NRDL	e P	Z	05:01:49.4	18.9	147.0				
BUG	e P	Z	05:01:52.3	19.2	138.9				
BSEG	e P	Z	05:01:59.6	20.1	149.6	0.9	29	4.5	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/28	06:58:36.4	36.432N	2.943E	10.0G		3.8		SZGRF
2003/05/28	06:58:37.1	36.737N	3.454E	10G	5.0	4.2		NEIC

Northern Algeria

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z 07:01:30.8	12.1	198.9					
	e L	Z 07:05:36.9			19.6	998		3.8	
WLF	e Pn	Z 07:01:43.1	13.1	189.6					
TNS	e Pn	Z 07:01:57.4	14.0	196.8					
GRA1	e Pn	Z 07:02:00.1	14.1	206.4					
	e L	Z 07:08:03.0			19.6				
BUG	e L	Z 07:08:36.7	15.0	191.9	19.6				
MOX	e Pn	Z 07:02:11.2	15.1	205.9					
	e Sn	Z 07:04:56.2							
IBBN	e Pn	Z 07:02:24.9	15.9	192.7					
CLZ	e Sn	Z 07:05:16.2	15.9	200.7					
CLL	e Pn	Z 07:02:28.3	16.1	208.7					
NRDL	e Pn	Z 07:02:32.9	16.4	199.2					
	e L	Z 07:08:25.8			18.9	723		3.9	
RUE	e Pn	Z 07:02:44.6	17.3	208.8					
BSEG	e Pn	Z 07:02:49.3	17.8	198.2					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/28	16:15:23.7	17.439S	66.254E	38.9	5.5			SZGRF
2003/05/28	16:15:16.1	17.796S	65.547E	10G	5.4	6.0		NEIC

Mauritius - Reunion region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z 16:27:35.0	81.0	130.7	1.4	28	5.1		
WET	e P	Z 16:27:38.0	81.6	130.1					



FUR	e P	Z	16:27:40.1	81.8	128.6						
BRG	e P	Z	16:27:42.6	82.2	131.1	1.1	26	5.3			
TANN	e P	Z	16:27:44.7	82.6	129.9						
GUNZ	e P	Z	16:27:45.1	82.6	129.7						
WERD	e P	Z	16:27:45.3	82.7	129.7						
GRA1	e P	Z	16:27:45.0	82.8	128.8	1.0	78	5.9			
	e pP	Z	16:27:55.2								
	e sP	Z	16:28:02.3								
	e S	E	16:37:55.6								
	e SS	N	16:43:20.8								
CLL	i P	Z	16:27:43.5	82.9	130.4	1.3	44	5.4			
	e S	T	16:37:56.1								
	e SS	T	16:43:25.3								
	e SSS	T	16:46:50.8								
	e LQ	T	16:49:33.9								
	e L	Z	17:06:21.1			18.0	1905	5.5			
MOX	e P	Z	16:27:47.6	83.2	129.2	1.1	28	5.4			
STU	e P	Z	16:27:47.6	83.2	127.0						
RUE	e P	Z	16:27:48.4	83.3	131.1						
BFO	e P	Z	16:27:48.7	83.4	126.3	1.2	44	5.6			
TNS	e P	Z	16:27:54.5	84.5	126.6	1.4	47	5.5			
CLZ	e P	Z	16:27:54.8	84.5	128.3						
RGN	e P	Z	16:27:56.7	84.9	130.9						
NRDL	e P	Z	16:27:57.6	85.0	128.1						
WLF	e P	Z	16:27:58.7	85.4	124.7						
BUG	e P	Z	16:28:01.4	85.8	125.7						
BSEG	e P	Z	16:28:01.0	85.8	128.4	1.4	31	5.3			
IBBN	e P	Z	16:28:02.6	86.1	126.1						

Date Origin Time Lat Long Depth mb Ms ML Source  
 2003/05/28 16:43:56.4 31.015S 179.764W 263? 4.6 NEIC  
 Kermadec Islands Region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	i PKPab	+ Z 17:03:54.0	157.6	29.9	0.8	20			

Date Origin Time Lat Long Depth mb Ms ML Source  
 2003/05/28 21:26:53.3 11.894S 76.018W 33.0N 5.4 SZGRF  
 2003/05/28 21:26:46.7 12.369S 77.021W 41D 5.4 4.8 NEIC  
 Central Peru

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 21:40:23.1	98.3	260.6	1.0	11	5.4		
CLL	i Pdiff	Z 21:40:28.1	98.6	261.8	0.8	6			
	e PP	Z 21:44:35.5							

e PPPP	Z	21:48:19.9							
e SKSac	R	21:50:59.6							
e Sdiff	T	21:51:56.8							
e PS	Z	21:53:21.1							
e PPS	Z	21:54:15.7							
e SS	R	21:58:53.2							
e SSSS	R	22:06:27.5							
e LR	Z	22:14:22.1							
e L	Z	22:22:46.9			20.0		413		4.9

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/29	02:14:52.7	35.649N	4.121E	10.0G		4.3		SZGRF
2003/05/29	02:15:00.2	36.837N	3.393E	10G	4.9	4.6		NEIC

Northern Algeria

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z 02:17:55.3	12.0	199.3					
	e Sn	E 02:20:14.2							
	e L	Z 02:21:56.7			19.0	2302		4.2	
FUR	e Pn	Z 02:18:05.8	12.7	209.9					
	e L	Z 02:22:38.6			18.0	3522		4.5	
TNS	e Pn	Z 02:18:18.6	13.9	197.1					
GRA1	e Pn	Z 02:18:22.7	14.0	206.7					
	e L	Z 02:23:20.0			18.5	1840		4.2	
GEC2	e Sn	N 02:20:58.4	14.2	215.8					
MOX	e Sn	E 02:21:23.0	15.0	206.2					
CLZ	e Pn	Z 02:18:47.5	15.8	200.9					
CLL	e Pn	Z 02:18:50.3	16.0	209.0					
	e L	Z 02:24:28.9			18.7	2184		4.4	
BSEG	e Pn	Z 02:19:11.4	17.8	198.4					
	e Sn	N 02:22:33.5							
	e L	Z 02:24:57.2			19.3	666		4.0	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/29	05:28:30.4	48.819N	127.967W	33.0N	5.1			SZGRF
2003/05/29	05:28:20.1	48.808N	128.286W	10G	4.6			NEIC

Vancouver Island, Canada, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 05:40:11.4	75.5	333.8	1.6	23	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/29	05:59:16.0	52.263N	157.309E	33.0N	5.4			SZGRF

./2003/bul0305.txt

Thu Apr 23 08:38:25 2020

67

2003/05/29 05:59:07.0  
Kamchatka Peninsula, Russia

50.856N 157.207E 49D 5.4 NEIC

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	06:10:26.6	71.6	21.3					
CLL	i P	+ Z	06:10:37.0	73.4	22.7	1.0	26	5.2		
	e S	R	06:20:03.3							
	e PPS	Z	06:20:53.8							
	e SS	Z	06:24:40.1							
	e LR	Z	06:35:01.8							
	e L	Z	06:45:05.9			22.0	420		4.7	
CLZ	e P	Z	06:10:38.4	73.5	21.1	1.9	87	5.5		
BRG	e P	Z	06:10:38.4	73.6	23.2					
IBBN	e P	Z	06:10:38.9	73.7	19.5					
MOX	e P	Z	06:10:42.8	74.4	21.7	1.4	17	4.9		
BUG	e P	Z	06:10:44.0	74.6	19.1	1.0	32	5.3		
GRA1	e P	Z	06:10:49.1	75.3	21.4	1.8	138	5.8		
WET	e P	Z	06:10:49.6	75.5	22.4	1.6	49	5.4		
TNS	e P	Z	06:10:49.4	75.5	19.8	0.9	27	5.4		
GEC2	e P	Z	06:10:49.7	75.5	22.8	2.3	69	5.4		
WLF	e P	Z	06:10:55.6	76.5	18.3					
STU	e P	Z	06:10:56.2	76.7	20.1					
FUR	e P	Z	06:10:56.9	76.8	21.3					
BFO	e P	Z	06:10:59.6	77.3	19.5	1.8	53	5.4		

Date Origin Time Lat Long Depth mb Ms ML Source  
 2003/05/29 06:01:07.2 23.712S 175.924W 33N 4.9 NEIC  
 Tonga Region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKP	Z	06:20:54.5	149.4	11.3					
CLZ	e PKP	Z	06:20:59.6	151.5	12.1					
CLL	e PKP	Z	06:20:59.4	151.6	17.4					
BRG	e PKP	Z	06:20:59.9	151.8	19.4					
GRA1	e PKP	Z	06:21:04.0	153.4	14.7					

Date Origin Time Lat Long Depth mb Ms ML Source  
 2003/05/29 11:24:25.7 3.089S 12.625W 33.0N 5.0 SZGRF  
 2003/05/29 11:24:35.9 0.916S 13.256W 10G 4.8 NEIC  
 North of Ascension Island

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	11:34:06.0	54.8	210.5	1.5	24	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/29	11:38:14.7	39.422N	19.554E	10.0G		2.8		SZGRF
2003/05/29	11:38:09.0	39.640N	20.601E	10G	4.6			NEIC

Greece-Albania border region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z	11:40:40.2	10.4	149.3					
WET	e Pn	Z	11:40:47.1	11.0	147.1					
GRA1	e Pn	Z	11:40:58.2	12.0	143.0					
BFO	e Pn	Z	11:41:05.7	12.4	130.1					
	e Sn	N	11:43:12.5							
MOX	e Pn	Z	11:41:12.2	12.7	146.8					
	e L	Z	11:46:20.6			20.9	100		2.8	
BSEG	e Pn	Z	11:41:58.7	15.9	149.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/29	14:18:56.3	36.430N	81.405E	33.0N	5.3			SZGRF
2003/05/29	14:18:53.0	35.846N	80.598E	33N	5.0	4.3		NEIC

Southern Xinjiang, China

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	14:27:39.9	48.9	80.8					
GEC2	e P	Z	14:27:44.0	49.4	78.9	2.6	171	5.5		
CLL	e P	Z	14:27:43.3	49.4	80.5	1.3	25	5.0		
	e PP	Z	14:29:35.7							
	e PPP	Z	14:30:25.0							
	e LR	Z	14:45:41.3							
	e L	Z	14:50:18.6			20.0	302			
WET	e P	Z	14:27:47.6	49.9	78.6					
TANN	e P	Z	14:27:47.6	49.9	79.4					
WERD	e P	Z	14:27:48.3	50.0	79.3					
GUNZ	e P	Z	14:27:48.4	50.0	79.3					
MOX	e P	Z	14:27:51.2	50.4	79.0	1.9	44	5.1		
BSEG	e P	Z	14:27:53.1	50.6	80.8	1.4	44	5.2		
GRA1	e P	Z	14:27:55.3	50.9	78.0	2.5	284	5.8		
CLZ	e P	Z	14:27:55.4	51.0	79.2					
IBBN	e P	Z	14:28:06.3	52.4	77.7					
TNS	e P	Z	14:28:06.7	52.5	76.6					
BUG	e P	Z	14:28:10.0	52.9	76.7					
BFO	e P	Z	14:28:10.2	53.0	75.1	2.0	34	4.9		
WLF	e P	Z	14:28:18.5	54.0	74.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
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./2003/bul0305.txt

Thu Apr 23 08:38:25 2020

69

2003/05/29 18:41: 8.5 53.695N 154.926E 33.0N 5.1 SZGRF  
2003/05/29 18:40:55.2 51.311N 158.301E 116\* 4.6 NEIC  
Sea of Okhotsk

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	18:52:08.0	71.4	20.5	0.9	14	5.2		
CLL	e P	Z	18:52:18.3	73.3	21.8	0.9	21	5.3		
CLZ	i P	+ Z	18:52:19.9	73.4	20.3	0.9	18	5.2		
BRG	e P	Z	18:52:19.5	73.4	22.3	0.9	7	4.8		
IBBN	e P	Z	18:52:21.2	73.4	18.7					
MOX	e P	Z	18:52:24.3	74.2	20.9	1.1	13	4.9		
TANN	e P	Z	18:52:24.5	74.2	21.4					
WERD	e P	Z	18:52:24.6	74.2	21.3					
GUNZ	e P	Z	18:52:25.1	74.3	21.3					
BUG	e P	Z	18:52:25.3	74.4	18.3					
GRA1	e P	Z	18:52:30.5	75.2	20.6	1.0	32	5.4		
TNS	e P	Z	18:52:30.8	75.3	18.9					
WET	e P	Z	18:52:31.1	75.3	21.5					
FUR	e P	Z	18:52:38.2	76.6	20.5	0.9	16	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/30	10:46:49.0	32.760N	27.400E	10.0G	4.5			SZGRF
2003/05/30	10:47:12.8	34.904N	26.025E	33N	4.7			NEIC

Eastern Mediterranean Sea

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z	10:51:10.6	16.6	142.3	1.2	19	4.2		
FUR	e P	Z	10:51:16.8	17.2	135.1	1.0	44	4.6		
WET	e P	Z	10:51:17.2	17.2	140.9	1.1	12	4.0		
BRG	e P	Z	10:51:27.6	18.2	146.7	1.0	9	4.1		
GRA1	e P	Z	10:51:30.6	18.3	138.2	1.4	64	4.8		
TANN	e P	Z	10:51:31.4	18.4	142.4	0.9	27	4.6		
GUNZ	e P	Z	10:51:31.6	18.4	142.0	0.9	24	4.5		
WERD	e P	Z	10:51:32.0	18.5	142.1	0.9	20	4.4		
STU	e P	Z	10:51:32.9	18.6	131.9	1.8	30	4.3		
BFO	e P	Z	10:51:33.8	18.8	129.2	1.0	20	4.4		
MOX	e P	Z	10:51:36.8	18.9	140.9	0.9	15	4.3		
CLL	e P	Z	10:51:35.3	18.9	145.2	1.1	21	4.4		
TNS	e P	Z	10:51:47.3	20.0	133.5	1.1	35	4.7		
CLZ	e P	Z	10:51:50.0	20.3	140.4	1.0	13	4.4		
WLF	e P	Z	10:51:55.1	20.7	128.0	0.8	38	5.0		
NRDL	e P	Z	10:51:56.5	20.9	141.0	1.1	23	4.6		
BUG	e P	Z	10:52:01.6	21.3	133.5	1.2	45	4.9		
BSEG	e P	Z	10:52:07.8	22.0	143.6	1.1	22	4.6		

./2003/bul0305.txt

Thu Apr 23 08:38:25 2020

70

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/30	11:17:53.0	5.087N	32.529W	33.0N	4.6			SZGRF

Central Mid-Atlantic Ridge

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 11:27:41.4	57.8	234.5	1.1	7	4.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/30								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 14:23:49.3							
	e Sn	E 14:24:53.6							
GUNZ	e Pn	Z 14:24:12.9							
WET	e Pn	Z 14:23:54.0							
	e Sn	N 14:25:03.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/30								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 17:48:27.4							
	e Sn	N 17:49:31.3							
GUNZ	e Pn	Z 17:48:51.1							
WET	e Pn	Z 17:48:31.4							
	e Sn	N 17:49:41.7							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/30	19:49:17.6	16.127N	119.535E	33.0N	4.6			SZGRF
2003/05/30	19:48:06.4	6.231N	126.376E	33N	4.7			NEIC

Luzon, Philippine Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 20:02:09.7	101.0	66.4	0.8	3	4.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/30	20:27:54.3	38.248N	68.905E	33.0N	4.4			SZGRF
2003/05/30	20:27:29.7	36.470N	71.328E	33N	4.4			NEIC

Tajikistan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
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./2003/bul0305.txt

Thu Apr 23 08:38:25 2020

71

GRA1 e P Z 20:35:42.3 44.6 83.5 1.6 13 4.4

Date Origin Time Lat Long Depth mb Ms ML Source  
2003/05/30

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML  
GRA1 e PKP Z 20:51:35.6

Date Origin Time Lat Long Depth mb Ms ML Source  
2003/05/30 22:57: 5.9 39.660N 143.776E 33.0N 4.9 SZGRF  
2003/05/30 22:57:01.6 39.345N 143.560E 33N 4.6 NEIC

Off east coast of Honshu, Japan

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML  
GRA1 e P Z 23:09:19.7 81.6 35.3 1.2 13 4.9  
e 23:09:29.6

Date Origin Time Lat Long Depth mb Ms ML Source  
2003/05/31 00:34: 4.7 16.354N 58.836E 33.0N 4.2 SZGRF  
Arabian Sea

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML  
GRA1 e P Z 00:43:01.5 50.7 113.7 1.1 4 4.2  
e 00:43:07.4

Date Origin Time Lat Long Depth mb Ms ML Source  
2003/05/31

Sta Phase Time Dist BAz T[s] A[nm] mb MS ML  
GEC2 e Pn Z 01:47:15.0  
e Sn N 01:48:19.8  
WET e Sn N 01:48:29.7

Date Origin Time Lat Long Depth mb Ms ML Source  
2003/05/31 03:15:27.7 54.021N 171.746E 33.0N 4.6 SZGRF  
2003/05/31 03:15:42.9 55.730N 162.360E 48\* 4.5 NEIC

Near Islands, Aleutian Islands, United States

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

GRA1	e P	Z	03:27:06.3	71.9	16.6	0.9	6	4.6
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Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/31								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 04:10:34.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/31	05:59:14.3	45.753N	15.264E	10.0G			4.0	SZGRF
2003/05/31	05:59:14.1	45.843N	15.187E	10G				NEIC

Northwestern Balkan Peninsula

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z 06:00:05.4	3.2	160.9					3.6
	e Sg	N 06:00:59.3							
FUR	e Sg	N 06:01:08.9	3.5	129.6					4.3
WET	e Pn	Z 06:00:11.9	3.7	153.8					3.7
	e Sn	E 06:00:56.3							
GRA1	e Sg	N 06:01:46.4	4.7	143.8					4.3
GUNZ	e Sn	N 06:01:24.2	4.9	156.1					4.0
TANN	e Pn	Z 06:00:30.0	4.9	157.3					4.0
	e Sn	E 06:01:23.8							
WERD	e Pn	Z 06:00:29.8	5.0	156.3					
BFO	e Pn	Z 06:00:34.4	5.3	115.5					3.8
	e Sn	N 06:01:34.5							
MOX	e Pn	Z 06:00:35.0	5.4	152.3					3.9
	e Sn	N 06:01:35.8							
CLL	e Pn	Z 06:00:38.9	5.7	164.4					
TNS	e Pn	Z 06:00:49.1	6.3	131.6					
	e Sn	N 06:01:58.8							
CLZ	e Sg	E 06:02:54.5	6.8	150.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2003/05/31	17:37:17.5	54.483N	165.908E	33.0N	4.2			SZGRF
2003/05/31	17:37:28.3	55.879N	162.423E	68*	4.3			NEIC

Komandorsky Islands, Russia, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 17:48:48.4	71.7	16.5	1.3	4	4.2		



## 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