

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

(produced by SZGRF/BGR - HANNOVER)

February 2009 UPDATED 05.AUGUST.2009

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
2009/02/01	00:57: 4.2	38.127N	20.317E	33.0G				SZGRF

Greece

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RJOB	e Pn	Z 00:59:39.6	11.1	147.5					
	e Sn	N 01:01:34.0							
GEC2	e Pn	Z 00:59:47.8	11.7	153.5					
	e Sn	N 01:01:49.0							
FUR	e Pn	Z 00:59:52.1	12.0	143.5					
WET	e Pn	Z 00:59:54.5	12.2	151.3					
	e Sn	N 01:02:00.3							
ROTZ	e Pn	Z 01:00:04.9	13.0	150.5					
	e Sn	N 01:02:18.2							
STU	e Pn	Z 01:00:10.4	13.3	138.8					
BFO	e Pn	Z 01:00:11.0	13.4	135.2					
WERN	e Pn	Z 01:00:11.6	13.4	152.1					
TANN	e Pn	Z 01:00:12.9	13.5	152.6					
WERD	e Pn	Z 01:00:13.7	13.6	152.1					
PLN	e Pn	Z 01:00:15.3	13.6	151.8					
MOX	e Pn	Z 01:00:19.3	14.0	150.4					
CLL	e Pn	Z 01:00:22.0	14.2	155.8					
UBBA	e Pn	Z 01:00:29.6	14.6	146.1					
TNS	e Pn	Z 01:00:29.7	14.8	140.5					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/01	09:32:50.3	38.424N	143.344E	33.0G	5.3	5.0		SZGRF

Off east coast of Honshu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z 09:44:51.7	79.1	38.0	1.3	56	5.3		
BSEG	e P	Z 09:44:52.4	79.2	35.7	1.0	73	5.5		
BRG	e P	Z 09:44:57.7	80.3	37.9	1.1	22	5.1		
CLL	e P	Z 09:44:57.7	80.3	37.3	1.0	41	5.4		
NRDL	e P	Z 09:44:58.2	80.4	35.4	1.3	17	4.9		
FBE	e P	Z 09:44:59.1	80.5	37.5	1.1	47	5.4		
CLZ	e P	Z 09:45:01.3	80.9	35.5	1.2	49	5.4		
NEUB	e P	Z 09:45:00.9	80.9	36.4	1.1	52	5.5		
TANN	e P	Z 09:45:02.6	81.2	36.8	1.4	23	5.1		
WERD	e P	Z 09:45:03.0	81.3	36.7	1.1	13	5.0		
PLN	e P	Z 09:45:03.1	81.3	36.6	1.5	153	5.9		
GUNZ	e P	Z 09:45:03.4	81.3	36.7	1.2	25	5.2		
WERN	e P	Z 09:45:03.9	81.4	36.7	1.1	20	5.2		
MOX	e P	Z 09:45:03.6	81.4	36.3	1.4	28	5.2		
IBBN	e P	Z 09:45:03.8	81.4	33.7	1.3	59	5.6		
ROTZ	e P	Z 09:45:06.5	81.9	36.6	1.3	28	5.2		
GEC2	e P	Z 09:45:06.7	82.0	37.5	1.1	15	5.1		
WET	e P	Z 09:45:07.5	82.1	37.0	1.2	20	5.2		
BUG	e P	Z 09:45:08.3	82.3	33.3	1.1	27	5.4		
GRA1	e P	Z 09:45:09.0	82.3	35.9	1.0	42	5.6		
	e L	Z 10:25:01.1			19.1	568		5.0	
TNS	e P	Z 09:45:11.4	82.9	34.0	1.2	19	5.2		
RJOB	e P	Z 09:45:13.6	83.3	36.8	1.0	32	5.5		
FUR	e P	Z 09:45:14.9	83.5	35.8	2.4	283	6.1		
STU	e P	Z 09:45:16.2	83.8	34.4	1.3	46	5.5		
BFO	e P	Z 09:45:19.7	84.5	33.8	1.2	48	5.6		

Date 2009/02/01  
 Origin Time 10:27:23.6  
 Lat 40.700N  
 Long 42.100E  
 Depth 22.0  
 mb 4.5  
 Ms  
 ML  
 Source NEIC  
 Turkey

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z 10:32:14.6	21.6	101.4	0.9	11	4.3		
BRG	e P	Z 10:32:16.2	21.9	106.7	1.1	6	3.9		
WET	e P	Z 10:32:18.8	22.2	101.3	1.3	14	4.2		
RUE	e P	Z 10:32:21.9	22.5	110.2	1.1	48	4.9		
CLL	e P	Z 10:32:23.8	22.6	106.5	0.9	22	4.7		
NKC	e P	Z 10:32:23.9	22.7	103.4					
WERD	e P	Z 10:32:31.6	22.8	103.7	1.5	16	4.3		
GRA1	e P	Z 10:32:30.5	23.3	100.8	0.9	16	4.6		
CLZ	e P	Z 10:32:40.3	24.3	104.6	1.2	15	4.4		
STU	e P	Z 10:32:41.3	24.5	96.8	1.0	19	4.8		

Date  
 Origin Time  
 Lat  
 Long  
 Depth  
 mb  
 Ms  
 ML  
 Source

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2009/02/01 14:51:59.3  
Corsica, France

43.903N

8.528E

10.0G

4.1

SZGRF

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z	14:53:05.8	4.4	178.1					4.0
	e Sn	N	14:53:55.7							
FUR	e Pn	Z	14:53:09.7	4.7	205.1					4.3
	e Sn	N	14:53:59.7							
RJOB	e Pn	Z	14:53:13.1	4.9	219.4					4.0
	e Sn	N	14:54:06.9							
STU	e Pn	Z	14:53:12.5	4.9	185.6					4.2
WET	e Pn	Z	14:53:27.5	6.0	211.3					
GRA1	e Pn	Z	14:53:28.3	6.1	198.7					
GEC2	e Pn	Z	14:53:28.0	6.1	217.7					
	e Sn	N	14:54:32.3							
ROTZ	e Pn	Z	14:53:30.9	6.4	204.6					
WERN	e Pn	Z	14:53:38.9	6.9	203.7					
GUNZ	e Sn	E	14:54:52.1	7.0	203.2					
WERD	e Pn	Z	14:53:39.8	7.0	202.8					
TANN	e Pn	Z	14:53:39.9	7.0	203.8					
MOX	e Sn	N	14:54:54.5	7.1	198.4					
CLL	e Pn	Z	14:53:53.4	8.0	203.8					

Date Origin Time  
2009/02/01 15:20:28.0  
Tonga Islands

Lat 17.580S

Long 174.090W

Depth 33.0G

mb

Ms

ML

Source  
SZGRF

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
NRDL	e PKPbc	Z	15:40:00.4	144.9	7.0					
IBBN	e PKPbc	Z	15:40:01.6	145.2	3.1					
CLZ	e PKPbc	Z	15:40:02.8	145.6	7.5					
BRG	e PKPbc	Z	15:40:04.2	146.1	13.8					
BUG	e PKPbc	Z	15:40:04.1	146.1	2.3					
MOX	e PKPbc	Z	15:40:05.7	146.6	9.9					
TANN	e PKPbc	Z	15:40:06.3	146.7	11.4					
ROTZ	e PKPbc	Z	15:40:08.5	147.4	11.2					
GRA1	e PKPbc	Z	15:40:10.5	147.6	9.5					
GEC2	e PKPbc	Z	15:40:10.1	148.1	14.2					
STU	e PKPbc	Z	15:40:12.1	148.7	6.0					
FUR	e PKPbc	Z	15:40:13.2	149.1	10.0					
BFO	e PKPbc	Z	15:40:13.4	149.2	4.5					
RJOB	e PKPbc	Z	15:40:13.4	149.3	12.9					

Date Origin Time  
2009/02/01 20:30:35.2

Lat 17.992S

Long 178.316W

Depth 600.0G

mb

Ms

ML

Source  
SZGRF

Fiji Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e PKPbc	Z	20:50:10.4	144.2	19.9					
CLZ	e PKPbc	Z	20:50:14.4	145.5	14.7					
CLL	e PKPbc	Z	20:50:14.2	145.5	19.2					
BRG	e PKPbc	Z	20:50:14.9	145.7	21.0					
FBE	e PKPbc	Z	20:50:15.5	145.8	20.0					
TANN	e PKPbc	Z	20:50:17.2	146.5	18.8					
WERD	e PKPbc	Z	20:50:17.1	146.5	18.5					
GUNZ	e PKPbc	Z	20:50:17.4	146.5	18.6					
ROTZ	e PKPbc	Z	20:50:19.0	147.1	18.7					
TNS	e PKPbc	Z	20:50:19.6	147.3	12.0					
GRA1	e PKPbc	Z	20:50:20.1	147.4	17.0					
GEC2	e PKPbc	Z	20:50:20.4	147.6	21.7					
WLF	e PKPbc	Z	20:50:22.2	148.1	8.1					
FUR	e PKPbc	Z	20:50:23.8	148.8	17.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/02	08:36:54.5	27.540N	65.990E	33.0G	5.3	4.3		SZGRF

Pakistan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z	08:45:08.1	45.2	98.4	1.1	26	5.2		
BRG	e P	Z	08:45:10.5	45.3	100.6	1.1	44	5.5		
RJOB	e P	Z	08:45:11.6	45.6	96.6	1.3	20	5.1		
CLL	e P	Z	08:45:15.3	46.0	100.2	1.0	17	5.1		
TANN	e P	Z	08:45:16.8	46.2	98.9	1.2	14	5.0		
ROTZ	e P	Z	08:45:17.5	46.3	98.1	1.2	18	5.1		
MOX	e P	Z	08:45:21.5	46.8	98.4	1.1	64	5.7		
GRA1	e P	Z	08:45:22.6	46.9	97.2	1.1	57	5.6		
	e L	Z	09:09:21.7			20.7	329		4.3	
CLZ	e P	Z	08:45:28.6	47.7	98.4	1.2	43	5.4		
NRDL	e P	Z	08:45:30.7	48.0	98.8	1.1	34	5.3		
BSEG	e P	Z	08:45:30.9	48.1	100.2	1.3	57	5.4		
TNS	e P	Z	08:45:36.5	48.7	95.3	1.4	59	5.3		
IBBN	e P	Z	08:45:41.2	49.4	96.6	1.2	63	5.4		
BUG	e P	Z	08:45:43.0	49.6	95.4	1.2	49	5.3		
WLF	e P	Z	08:45:47.5	50.1	93.0	1.4	56	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/02	17:53:23.4	13.500S	76.500W	25.0		5.4		NEIC

Near coast of Peru

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
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GRA1	e Pdiff	Z	18:07:00.8	98.8	259.5							
	e L	Z	18:47:25.6			21.8	1494	5.4				

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/03	00:07:11.3	19.100S	169.500E	268.0				NEIC

Vanuatu Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 00:26:15.8	144.8	37.4					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/03	04:38:24.9	18.450S	178.560W	467.7N				SZGRF

Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
NRDL	e PKPbc	Z 04:57:08.5	145.3	14.5					
CLL	e PKPbc	Z 04:57:10.5	145.9	19.8					
BRG	e PKPbc	Z 04:57:11.4	146.1	21.6					
TNS	e PKPbc	Z 04:57:15.8	147.7	12.5					
GRA1	e PKPbc	Z 04:57:16.2	147.8	17.6					
	e PKPab	Z 04:57:20.3							
GEC2	e PKPbc	Z 04:57:16.6	148.0	22.4					
WLF	e PKPbc	Z 04:57:18.3	148.6	8.6					
STU	e PKPab	Z 04:57:25.1	149.0	14.4					
FUR	e PKPbc	Z 04:57:19.5	149.2	18.5					
RJOB	e PKPbc	Z 04:57:19.7	149.3	21.4					
	e PKPab	Z 04:57:26.4							
BFO	e PKPbc	Z 04:57:20.4	149.6	13.0					
	e PKPab	Z 04:57:27.2							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/03	15:48:49.0	4.639S	35.312E	33.0N	5.1			SZGRF

Tanzania

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 15:58:40.2	58.2	151.4	1.4	25	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/03	22:09:13.7	44.316N	18.177E	10.0G			3.8	SZGRF

Northwestern Balkan Peninsula

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
OBKA	e Pn	Z	22:10:03.6	3.4	129.4					4.1
ARSA	e Pn	Z	22:10:05.2	3.5	146.8					3.6
RJOB	e Pn	Z	22:10:28.3	5.1	130.5					
	e Sn	N	22:11:22.1							
GEC2	e Pn	Z	22:10:33.5	5.5	144.2					
ROTZ	e Pn	Z	22:10:53.2	6.8	141.0					
	e Sn	N	22:12:01.6							
TANN	e Pn	Z	22:10:57.7	7.2	145.5					
MOX	e Pn	Z	22:11:05.2	7.7	142.5					
CLL	e Pn	Z	22:11:07.0	7.8	151.6					
BFO	e Pn	Z	22:11:04.6	7.9	116.9					
TNS	e Pn	Z	22:11:19.6	8.8	128.2					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/04	09:03:30.9	0.837S	98.916E	33.0G	4.9			SZGRF

Southern Sumatera, Indonesia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	09:16:27.5	89.1	92.3	1.0	8	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/04	19:01:35.2	44.048N	17.907E	10.0G			3.7	SZGRF

Northwestern Balkan Peninsula

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
OBKA	e Pn	Z	19:02:27.0	3.4	135.0					3.9
ARSA	e Pn	Z	19:02:29.3	3.6	151.7					3.5
GEC2	e Pn	Z	19:02:57.0	5.6	147.3					
	e Sn	N	19:03:55.6							
TANN	e Pn	Z	19:03:21.4	7.4	147.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/05	21:36:14.1	19.200N	39.100E	10.0	4.8			NEIC

Red Sea

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	21:43:28.6	37.7	133.8	1.6	36	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/06	02:18:55.5	45.881N	15.469E	10.0G			2.7	SZGRF

## Northwestern Balkan Peninsula

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RJOB	e Pn	Z	02:19:38.2	2.6	134.4					2.7
GEC2	e Pn	Z	02:19:44.2	3.2	157.4					2.6
	e Sn	N	02:20:21.3							
WET	e Pn	Z	02:19:50.9	3.7	150.8					
	e Sn	N	02:20:33.5							
ROTZ	e Pn	Z	02:20:00.9	4.5	149.4					
	e Sg	N	02:21:15.5							
TANN	e Pn	Z	02:20:07.5	5.0	155.0					
PLN	e Pn	Z	02:20:10.2	5.1	153.1					
MOX	e Pn	Z	02:20:14.2	5.4	150.2					
BFO	e Pn	Z	02:20:14.5	5.4	114.1					

Date Origin Time Lat Long Depth mb Ms ML Source  
 2009/02/06 23:51:18.6 36.809N 27.637E 57.0G  
 Dodecanese Islands, Greece

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	23:55:17.9	17.5	131.2					

Date Origin Time Lat Long Depth mb Ms ML Source  
 2009/02/07 21:51:57.0 20.870S 177.400W 556.9  
 Fiji Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPbc	Z	22:10:35.2	146.4	13.1					
HLG	e PKPbc	Z	22:10:35.7	146.4	9.0					
RUE	e PKPdf	Z	22:10:34.4	147.2	19.6					
	e PKPbc	Z	22:10:37.5							
NRDL	e PKPdf	Z	22:10:35.4	147.8	13.3					
	e PKPbc	Z	22:10:38.9							
IBBN	e PKPbc	Z	22:10:40.4	148.3	9.2					
CLZ	e PKPbc	Z	22:10:40.9	148.4	14.0					
CLL	e PKPdf	Z	22:10:36.5	148.5	18.8					
	e PKPbc	Z	22:10:40.7							
	e pPKPbc	Z	22:12:47.8							
BRG	e PKPdf	Z	22:10:37.0	148.7	20.7					
	e PKPbc	Z	22:10:41.2							
	e PKPab	Z	22:10:46.3							
FBE	e PKPbc	Z	22:10:41.8	148.8	19.7					
NEUB	e PKPdf	Z	22:10:37.3	148.8	16.7					
	e PKPbc	Z	22:10:41.7							
BUG	e PKPdf	Z	22:10:37.7	149.2	8.5					

	e PKPbc	Z	22:10:42.6		
MOX	e PKPpdf	Z	22:10:37.9	149.4	16.7
	e PKPbc	Z	22:10:43.0		
	e PKPab	Z	22:10:48.8		
PLN	e PKPpdf	Z	22:10:38.1	149.4	17.8
	e PKPbc	Z	22:10:43.1		
WERD	e PKPpdf	Z	22:10:38.2	149.4	18.1
	e PKPbc	Z	22:10:43.2		
TANN	e PKPpdf	Z	22:10:38.1	149.4	18.4
	e PKPbc	Z	22:10:43.2		
UBBA	e PKPpdf	Z	22:10:38.6	149.5	13.7
	e PKPbc	Z	22:10:43.8		
GUNZ	e PKPpdf	Z	22:10:38.4	149.5	18.1
	e PKPbc	Z	22:10:43.5		
WERN	e PKPpdf	Z	22:10:38.3	149.6	18.3
	e PKPbc	Z	22:10:43.8		
	e PKPab	Z	22:10:50.2		
ROTZ	e PKPbc	Z	22:10:44.9	150.1	18.2
TNS	e PKPbc	Z	22:10:45.3	150.3	11.1
	e PKPab	Z	22:10:53.0		
GRA1	e PKPpdf	Z	22:10:39.4	150.4	16.5
	e PKPbc	Z	22:10:45.6		
	e PKPab	Z	22:10:53.7		
WET	e PKPbc	Z	22:10:45.8	150.6	19.8
GEC2	e PKPbc	Z	22:10:45.9	150.7	21.5
WLF	e PKPbc	Z	22:10:47.5	151.1	6.9
	e PKPab	Z	22:10:56.8		
STU	e PKPpdf	Z	22:10:41.5	151.6	13.0
	e PKPbc	Z	22:10:48.1		
	e PKPab	Z	22:10:58.6		
	e pPKPbc	Z	22:12:57.9		
FUR	e PKPbc	Z	22:10:48.5	151.8	17.4
BFO	e PKPbc	Z	22:10:49.3	152.2	11.5
	e pPKPbc	Z	22:12:58.9		

Date 2009/02/08 Origin Time 07:24:30.9 Lat 24.600S Long 176.700W Depth 10.0 mb Ms ML Source NEIC  
 South of Fiji Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPbc	Z 07:44:47.0	154.2	16.7					

Date 2009/02/08 Origin Time 09:45:44.2 Lat 16.400S Long 173.300W Depth 10.0G mb Ms ML Source NEIC  
 Tonga



Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPbc	Z 10:05:27.2	146.4	7.5					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/08	15:34:38.3	6.200S	147.800E	54.0				NEIC

Eastern New Guinea, Papua New Guinea, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPdf	Z 15:53:30.4	123.3	54.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/09	01:17:56.5	21.400N	145.900E	78.0				NEIC

Mariana Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e Pdiff	Z 01:31:27.0	98.4	42.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/09	14:09: 2.9	6.600S	81.100W	15.0	5.9	5.3		NEIC

Near coast of northern Peru

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BUG	e P	Z 14:22:21.9	94.1	264.6	2.0	94	5.8		
TNS	e P	Z 14:22:25.0	94.8	265.4	1.8	53	5.7		
NRDL	e P	Z 14:22:30.4	96.0	266.9	1.9	52	5.7		
CLZ	e P	Z 14:22:31.3	96.1	267.1	1.5	36	5.7		
BSEG	e P	Z 14:22:31.4	96.2	267.2	1.6	74	6.0		
GRA1	e P	Z 14:22:32.5	96.5	267.5	1.3	20	5.5		
	e L	Z 14:59:21.7			22.0	1079		5.3	
PLN	e P	Z 14:22:35.9	97.2	268.3	2.6	618	6.8		
ROTZ	e P	Z 14:22:36.0	97.2	268.2	2.2	51	5.8		
GUNZ	e P	Z 14:22:36.3	97.3	268.4	2.4	114	6.1		
TANN	e P	Z 14:22:36.1	97.3	268.5	2.4	95	6.0		
WET	e P	Z 14:22:37.0	97.6	268.7	0.9	12	5.6		
FBE	e P	Z 14:22:40.2	97.9	269.3	2.0	37	5.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/11	05:52:28.4	46.497N	150.157E	33.0N	5.1			SZGRF

Kuril Islands, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	06:04:00.7	73.9	27.5	1.2	40	5.3		
NRDL	e P	Z	06:04:08.1	75.3	27.2	1.4	19	5.0		
CLL	e P	Z	06:04:09.0	75.5	28.9	0.9	30	5.4		
BRG	e P	Z	06:04:09.5	75.6	29.5	1.2	10	4.8		
FBE	e P	Z	06:04:10.7	75.7	29.1	0.9	18	5.2		
CLZ	e P	Z	06:04:11.5	75.8	27.3	1.1	32	5.3		
NEUB	e P	Z	06:04:11.7	75.9	28.1	1.2	37	5.4		
MOX	e P	Z	06:04:14.9	76.5	28.0	1.2	20	5.1		
GUNZ	e P	Z	06:04:15.2	76.5	28.4	0.8	11	5.0		
WERN	e P	Z	06:04:15.6	76.6	28.4	0.8	14	5.1		
BUG	e P	Z	06:04:17.8	77.0	25.2	1.0	21	5.2		
ROTZ	e P	Z	06:04:18.6	77.1	28.2	1.0	14	5.1		
WET	e P	Z	06:04:20.6	77.4	28.6	1.0	20	5.2		
GEC2	e P	Z	06:04:20.2	77.4	29.1	0.9	9	4.9		
GRA1	e P	Z	06:04:20.9	77.4	27.6	0.9	29	5.4		
TNS	e P	Z	06:04:22.4	77.8	25.9	1.0	14	5.0		
BFO	e P	Z	06:04:31.3	79.5	25.6	1.4	21	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/11	09:31: 4.9	20.800S	177.400W	10.0				NEIC

Fiji Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPab	Z	09:51:05.7	150.3	16.4					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/11	13:52:43.8	16.200S	178.300E	22.0				NEIC

Fiji Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPab	Z	14:12:19.4	144.9	21.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/11	16:02: 7.1	5.600S	151.800E	61.0				NEIC

New Britain, Papua New Guinea, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPdf	Z	16:21:01.2	124.9	50.4					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
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2009/02/11 17:34:49.5 3.190N 127.070E 33.0G 7.5 SZGRF  
 Talaud Islands, Indonesia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e PP	Z	17:52:44.2	100.8	68.5					
	e SKSac	R	17:59:16.9							
RUE	e Pdiff	Z	17:48:37.8	101.3	69.3					
	e PP	Z	17:52:48.0							
BRG	e SKSac	R	17:59:17.5							
	e Pdiff	Z	17:48:39.8	101.8	69.7					
FBE	e PP	Z	17:52:51.9							
	e SKSac	R	17:59:18.7							
CLL	e Pdiff	Z	17:48:41.5	102.1	69.2					
	e Pdiff	Z	17:48:41.2	102.2	68.9					
GEC2	e PP	Z	17:52:54.5							
	e SKSac	R	17:59:20.7							
BSEG	e Pdiff	Z	17:48:43.5	102.6	69.9					
	e PP	Z	17:52:56.9							
TANN	e SKSac	R	17:59:23.9							
	e Pdiff	Z	17:48:43.7	102.7	66.0					
WERD	e PP	Z	17:52:57.6							
	e SKSac	R	17:59:25.0							
GUNZ	e Pdiff	Z	17:48:44.4	102.8	68.6					
	e PP	Z	17:52:59.4							
WERN	e SKSac	R	17:59:25.2							
	e Pdiff	Z	17:48:44.8	102.9	68.5					
NEUB	e Pdiff	Z	17:48:45.0	102.9	68.5					
	e Pdiff	Z	17:48:45.1	102.9	68.5					
PLN	e Pdiff	Z	17:48:44.9	102.9	67.9					
	e PP	Z	17:52:59.9							
WET	e SKSac	R	17:59:25.4							
	e Pdiff	Z	17:48:45.2	103.0	68.3					
ROTZ	e Pdiff	Z	17:48:45.6	103.0	69.2					
	e PP	Z	17:53:00.6							
MOX	e SKSac	R	17:59:26.2							
	e Pdiff	Z	17:48:46.8	103.2	68.5					
NRDL	e PP	Z	17:53:02.4							
	e SKSac	R	17:59:28.5							
CLZ	e Pdiff	Z	17:48:46.3	103.2	67.8					
	e PP	Z	17:53:02.1							
RJOB	e SKSac	R	17:59:27.8							
	e L	Z	18:41:31.7			20.5	112274		7.4	
RJOB	e Pdiff	Z	17:48:47.3	103.4	66.2					
	e PP	Z	17:53:03.1							
RJOB	e SKSac	R	17:59:28.5							
	e Pdiff	Z	17:48:47.9	103.5	66.5					
RJOB	e PP	Z	17:53:04.3							
	e SKSac	R	17:59:29.8							
RJOB	e Pdiff	Z	17:48:47.4	103.6	69.5					

	e PP	Z	17:53:03.9						
	e SKSac	R	17:59:26.4						
GRA1	e Pdiff	Z	17:48:49.3	103.8	67.7				
	e PP	Z	17:53:06.5						
	e SKSac	R	17:59:30.8						
	e L	Z	18:39:27.8			21.0	168365		7.6
HLG	e PP	Z	17:53:05.6	103.9	63.9				
	e SKSac	R	17:59:30.5						
UBBA	e Pdiff	Z	17:48:50.8	104.1	66.5				
	e PP	Z	17:53:09.0						
FUR	e Pdiff	Z	17:48:51.4	104.4	68.1				
	e PP	Z	17:53:09.8						
	e SKSac	R	17:59:30.6						
IBBN	e Pdiff	Z	17:48:53.2	104.8	64.2				
	e PP	Z	17:53:13.4						
	e SKSac	R	17:59:34.2						
TNS	e Pdiff	Z	17:48:55.7	105.3	65.3				
	e PP	Z	17:53:17.6						
	e SKSac	R	17:59:37.5						
BUG	e Pdiff	Z	17:48:56.1	105.4	64.0				
	e PP	Z	17:53:18.5						
	e SKSac	R	17:59:37.8						
STU	e Pdiff	Z	17:48:56.1	105.4	66.3				
	e PP	Z	17:53:18.1						
	e SKSac	R	17:59:36.1						
BFO	e Pdiff	Z	17:48:58.6	106.1	65.7				
	e PP	Z	17:53:23.1						
	e SKSac	R	17:59:39.8						
WLF	e PP	Z	17:53:29.2	106.8	63.5				

Date Origin Time Lat Long Depth mb Ms ML Source  
 2009/02/11 18:25:11.6 4.000N 126.800E 35.0 NEIC  
 Talaud Islands, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e Pdiff	Z 18:38:56.6	100.5	69.0					
BRG	e Pdiff	Z 18:38:58.6	101.0	69.4					
FBE	e Pdiff	Z 18:39:00.3	101.3	69.0					
CLL	e Pdiff	Z 18:39:00.0	101.4	68.6					
GEC2	e Pdiff	Z 18:39:02.3	101.8	69.6					
BSEG	e Pdiff	Z 18:39:02.4	101.9	65.8					
TANN	e Pdiff	Z 18:39:03.1	102.0	68.3					
WERD	e Pdiff	Z 18:39:03.5	102.1	68.2					
GUNZ	e Pdiff	Z 18:39:03.7	102.1	68.2					
WERN	e Pdiff	Z 18:39:03.8	102.1	68.3					
NEUB	e Pdiff	Z 18:39:03.6	102.1	67.6					
WET	e Pdiff	Z 18:39:04.2	102.2	68.9					

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ROTZ	e Pdiff	Z	18:39:05.5	102.4	68.2
MOX	e Pdiff	Z	18:39:05.1	102.4	67.6
NRDL	e Pdiff	Z	18:39:05.8	102.6	65.9
CLZ	e Pdiff	Z	18:39:06.5	102.7	66.3
RJOB	e Pdiff	Z	18:39:06.0	102.8	69.1
GRA1	e Pdiff	Z	18:39:08.0	103.0	67.5

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/11	19:01:55.8	3.900N	126.500E	35.0				NEIC
Talaud Islands, Indonesia								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e Pdiff	Z	19:15:42.2	100.9	69.8					
FBE	e Pdiff	Z	19:15:44.0	101.2	69.3					
CLL	e Pdiff	Z	19:15:43.7	101.3	68.9					
GEC2	e Pdiff	Z	19:15:46.0	101.7	69.9					
TANN	e Pdiff	Z	19:15:46.9	101.9	68.6					
GUNZ	e Pdiff	Z	19:15:47.4	102.0	68.5					
NEUB	e Pdiff	Z	19:15:47.4	102.0	67.9					
ROTZ	e Pdiff	Z	19:15:49.2	102.3	68.6					
MOX	e Pdiff	Z	19:15:48.9	102.3	67.9					
CLZ	e Pdiff	Z	19:15:50.4	102.6	66.6					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/11	19:56:46.4	3.900N	126.700E	33.0				GSRC
Talaud Islands, Indonesia								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e Pdiff	Z	20:10:33.7	100.5	69.2					
BRG	e Pdiff	Z	20:10:35.6	101.0	69.6					
FBE	e Pdiff	Z	20:10:37.2	101.3	69.1					
CLL	e Pdiff	Z	20:10:37.1	101.4	68.7					
GEC2	e Pdiff	Z	20:10:39.3	101.8	69.8					
TANN	e Pdiff	Z	20:10:40.2	102.0	68.5					
WERD	e Pdiff	Z	20:10:40.6	102.1	68.3					
GUNZ	e Pdiff	Z	20:10:40.7	102.1	68.4					
WERN	e Pdiff	Z	20:10:40.9	102.1	68.4					
NEUB	e Pdiff	Z	20:10:40.7	102.1	67.7					
PLN	e Pdiff	Z	20:10:41.0	102.2	68.2					
WET	e Pdiff	Z	20:10:41.3	102.2	69.1					
ROTZ	e Pdiff	Z	20:10:42.5	102.4	68.4					
MOX	e Pdiff	Z	20:10:42.2	102.5	67.7					
NRDL	e Pdiff	Z	20:10:43.0	102.6	66.1					
CLZ	e Pdiff	Z	20:10:43.7	102.7	66.4					
GRA1	e Pdiff	Z	20:10:45.0	103.0	67.6					

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TNS	e Pdiff	Z	20:10:51.5	104.5	65.2
BUG	e Pdiff	Z	20:10:52.0	104.6	63.9

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/11	20:09:28.3	4.100N	126.800E	33.0				GSRC
Talaud Islands, Indonesia								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e Pdiff	Z	20:23:15.4	100.4	69.0					
BRG	e Pdiff	Z	20:23:17.4	100.9	69.4					
FBE	e Pdiff	Z	20:23:19.1	101.2	68.9					
CLL	e Pdiff	Z	20:23:18.8	101.3	68.5					
GEC2	e Pdiff	Z	20:23:21.1	101.8	69.6					
BSEG	e Pdiff	Z	20:23:22.3	101.8	65.8					
TANN	e Pdiff	Z	20:23:22.1	101.9	68.3					
WERD	e Pdiff	Z	20:23:22.4	102.0	68.1					
GUNZ	e Pdiff	Z	20:23:22.6	102.0	68.2					
WERN	e Pdiff	Z	20:23:22.6	102.0	68.2					
PLN	e Pdiff	Z	20:23:22.7	102.1	68.0					
WET	e Pdiff	Z	20:23:23.0	102.2	68.9					
ROTZ	e Pdiff	Z	20:23:24.3	102.3	68.2					
MOX	e Pdiff	Z	20:23:23.9	102.3	67.5					
CLZ	e Pdiff	Z	20:23:25.4	102.6	66.2					
GRA1	e Pdiff	Z	20:23:26.7	102.9	67.4					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/11	22:14:26.4	3.700N	126.600E	20.0				NEIC
Talaud Islands, Indonesia								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e Pdiff	Z	22:28:14.3	100.6	69.4					
BRG	e Pdiff	Z	22:28:16.2	101.1	69.8					
FBE	e Pdiff	Z	22:28:17.9	101.4	69.3					
CLL	e Pdiff	Z	22:28:17.6	101.5	68.9					
GEC2	e Pdiff	Z	22:28:20.1	101.9	70.0					
BSEG	e Pdiff	Z	22:28:20.2	102.0	66.2					
TANN	e Pdiff	Z	22:28:20.9	102.1	68.7					
WERD	e Pdiff	Z	22:28:21.2	102.2	68.5					
GUNZ	e Pdiff	Z	22:28:21.5	102.2	68.6					
WERN	e Pdiff	Z	22:28:21.6	102.2	68.6					
NEUB	e Pdiff	Z	22:28:21.4	102.3	67.9					
WET	e Pdiff	Z	22:28:22.0	102.3	69.3					
ROTZ	e Pdiff	Z	22:28:23.1	102.5	68.6					
MOX	e Pdiff	Z	22:28:22.8	102.6	67.9					
NRDL	e Pdiff	Z	22:28:23.7	102.7	66.3					

CLZ	e	Pdiff	Z	22:28:24.3	102.8	66.6
RJOB	e	Pdiff	Z	22:28:23.9	102.9	69.5
GRA1	e	Pdiff	Z	22:28:25.5	103.1	67.8
UBBA	e	Pdiff	Z	22:28:27.3	103.4	66.5
FUR	e	Pdiff	Z	22:28:27.8	103.7	68.2
IBBN	e	Pdiff	Z	22:28:29.8	104.1	64.3
BUG	e	Pdiff	Z	22:28:32.6	104.7	64.1

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/11	23:43:32.4	5.600S	151.700E	29.0				NEIC

New Britain, Papua New Guinea, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e	PKPdf	Z	00:02:25.2	122.7	52.7				
CLL	e	PKPdf	Z	00:02:25.3	122.9	51.5				
FBE	e	PKPdf	Z	00:02:25.9	123.0	52.1				
NRDL	e	PKPdf	Z	00:02:26.8	123.5	47.9				
NEUB	e	PKPdf	Z	00:02:26.9	123.6	50.3				
TANN	e	PKPdf	Z	00:02:27.2	123.7	51.4				
CLZ	e	PKPdf	Z	00:02:27.6	123.8	48.5				
GUNZ	e	PKPdf	Z	00:02:27.6	123.8	51.3				
WERN	e	PKPdf	Z	00:02:27.6	123.9	51.4				
GEC2	e	PKPdf	Z	00:02:27.7	124.1	53.5				
GRA1	e	PKPdf	Z	00:02:29.2	124.8	50.5				
STU	e	PKPdf	Z	00:02:32.4	126.4	48.8				

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/11	23:48:14.8	45.050N	147.820E	33.0G	5.1			SZGRF

Kuril Islands, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e	P	Z	23:59:53.3	74.6	29.7	0.8	15	5.1	
RUE	e	P	Z	23:59:54.2	74.8	31.8	1.2	27	5.2	
NRDL	e	P	Z	00:00:00.4	75.9	29.3	1.0	17	5.1	
CLL	e	P	Z	00:00:00.9	76.0	31.1	0.7	26	5.5	
BRG	e	P	Z	00:00:01.4	76.1	31.6	1.1	12	5.0	
FBE	e	P	Z	00:00:02.6	76.3	31.3	0.8	18	5.2	
CLZ	e	P	Z	00:00:03.8	76.4	29.4	0.7	23	5.4	
NEUB	e	P	Z	00:00:03.8	76.5	30.3	0.8	15	5.2	
IBBN	e	P	Z	00:00:05.4	76.8	27.8	0.8	22	5.3	
WERD	e	P	Z	00:00:06.7	77.0	30.5	0.9	10	5.0	
PLN	e	P	Z	00:00:06.8	77.0	30.4	1.1	61	5.6	
MOX	e	P	Z	00:00:06.9	77.1	30.1	0.9	12	5.0	
GUNZ	e	P	Z	00:00:07.1	77.1	30.5	0.8	11	5.0	
WERN	e	P	Z	00:00:07.5	77.1	30.6	0.8	13	5.1	

ROTZ	e P	Z	00:00:10.5	77.6	30.4	1.1	11	4.9
GEC2	e P	Z	00:00:11.6	77.9	31.2	0.7	7	4.9
WET	e P	Z	00:00:12.1	77.9	30.8	1.0	16	5.1
GRA1	e P	Z	00:00:12.7	78.0	29.8	0.9	29	5.4
TNS	e P	Z	00:00:14.6	78.4	28.0	0.9	11	4.9
RJOB	e P	Z	00:00:19.0	79.2	30.6	0.9	8	4.6
FUR	e P	Z	00:00:19.5	79.3	29.6	1.0	25	5.1
BFO	e P	Z	00:00:23.5	80.1	27.8	1.0	9	4.7

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/12	01:25:27.8	4.000N	126.800E	36.0				NEIC
Talaud Islands, Indonesia								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e Pdiff	Z 01:39:14.9	101.0	69.4					
FBE	e Pdiff	Z 01:39:16.7	101.3	69.0					
CLL	e Pdiff	Z 01:39:16.3	101.4	68.6					
GEC2	e Pdiff	Z 01:39:18.8	101.8	69.6					
TANN	e Pdiff	Z 01:39:19.7	102.0	68.3					
WERD	e Pdiff	Z 01:39:19.9	102.1	68.2					
GUNZ	e Pdiff	Z 01:39:20.1	102.1	68.2					
WERN	e Pdiff	Z 01:39:20.2	102.1	68.3					
NEUB	e Pdiff	Z 01:39:20.0	102.1	67.6					
PLN	e Pdiff	Z 01:39:20.4	102.2	68.1					
WET	e Pdiff	Z 01:39:20.9	102.2	68.9					
ROTZ	e Pdiff	Z 01:39:21.9	102.4	68.2					
MOX	e Pdiff	Z 01:39:21.5	102.4	67.6					
NRDL	e Pdiff	Z 01:39:22.3	102.6	65.9					
CLZ	e Pdiff	Z 01:39:23.0	102.7	66.3					
GRA1	e Pdiff	Z 01:39:24.2	103.0	67.5					
TNS	e Pdiff	Z 01:39:31.1	104.4	65.0					
STU	e Pdiff	Z 01:39:31.3	104.6	66.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/12	01:42: 8.6	4.000N	126.800E	35.0				NEIC
Talaud Islands, Indonesia								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e Pdiff	Z 01:55:53.7	100.5	69.0					
BRG	e Pdiff	Z 01:55:55.6	101.0	69.4					
FBE	e Pdiff	Z 01:55:57.3	101.3	69.0					
CLL	e Pdiff	Z 01:55:57.0	101.4	68.6					
GEC2	e Pdiff	Z 01:55:59.4	101.8	69.6					
BSEG	e Pdiff	Z 01:55:59.7	101.9	65.8					
TANN	e Pdiff	Z 01:56:00.3	102.0	68.3					
WERD	e Pdiff	Z 01:56:00.7	102.1	68.2					



GUNZ	e Pdiff	Z	01:56:00.8	102.1	68.2
WERN	e Pdiff	Z	01:56:00.9	102.1	68.3
PLN	e Pdiff	Z	01:56:01.0	102.2	68.1
WET	e Pdiff	Z	01:56:01.3	102.2	68.9
ROTZ	e Pdiff	Z	01:56:02.5	102.4	68.2
MOX	e Pdiff	Z	01:56:02.1	102.4	67.6
NRDL	e Pdiff	Z	01:56:03.0	102.6	65.9
CLZ	e Pdiff	Z	01:56:03.8	102.7	66.3
RJOB	e Pdiff	Z	01:56:03.3	102.8	69.1
GRA1	e Pdiff	Z	01:56:05.0	103.0	67.5
BUG	e Pdiff	Z	01:56:11.9	104.6	63.8

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/12	03:49:41.3	3.900N	126.500E	42.0		6.1		NEIC
Talaud Islands, Indonesia								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e Pdiff	Z	04:03:24.5	100.4	69.3					
BRG	e Pdiff	Z	04:03:26.4	100.9	69.8					
FBE	e Pdiff	Z	04:03:28.1	101.2	69.3					
CLL	e Pdiff	Z	04:03:27.9	101.3	68.9					
GEC2	e Pdiff	Z	04:03:30.2	101.7	69.9					
BSEG	e Pdiff	Z	04:03:30.4	101.8	66.1					
TANN	e Pdiff	Z	04:03:31.1	101.9	68.6					
WERD	e Pdiff	Z	04:03:31.4	102.0	68.5					
GUNZ	e Pdiff	Z	04:03:31.6	102.0	68.5					
WERN	e Pdiff	Z	04:03:31.7	102.0	68.6					
NEUB	e Pdiff	Z	04:03:31.5	102.0	67.9					
PLN	e Pdiff	Z	04:03:31.9	102.1	68.4					
WET	e Pdiff	Z	04:03:32.3	102.1	69.2					
ROTZ	e Pdiff	Z	04:03:33.3	102.3	68.6					
MOX	e Pdiff	Z	04:03:33.0	102.3	67.9					
NRDL	e Pdiff	Z	04:03:34.0	102.5	66.3					
CLZ	e Pdiff	Z	04:03:34.6	102.6	66.6					
RJOB	e Pdiff	Z	04:03:34.1	102.7	69.4					
GRA1	e Pdiff	Z	04:03:35.9	102.9	67.8					
	e L	Z	04:53:48.8			19.8	5241		6.1	
UBBA	e Pdiff	Z	04:03:37.8	103.2	66.5					
IBBN	e Pdiff	Z	04:03:40.0	103.9	64.3					
TNS	e Pdiff	Z	04:03:42.4	104.4	65.3					
BUG	e Pdiff	Z	04:03:42.8	104.5	64.1					
STU	e Pdiff	Z	04:03:42.7	104.5	66.3					
BFO	e Pdiff	Z	04:03:45.6	105.2	65.7					
WLF	e Pdiff	Z	04:03:49.9	105.9	63.6					

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Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/12	04:04:52.4	20.818S	176.732W	33.0G				SZGRF

Fiji Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPbc	Z	04:24:30.4	146.4	12.0					
NRDL	e PKPbc	Z	04:24:34.0	147.9	12.1					
CLZ	e PKPbc	Z	04:24:36.1	148.5	12.8					
CLL	e PKPbc	Z	04:24:35.9	148.6	17.6					
BRG	e PKPbc	Z	04:24:36.5	148.8	19.5					
FBE	e PKPbc	Z	04:24:37.2	148.9	18.5					
NEUB	e PKPbc	Z	04:24:36.8	148.9	15.5					
MOX	e PKPbc	Z	04:24:38.2	149.5	15.5					
PLN	e PKPbc	Z	04:24:38.4	149.5	16.5					
WERD	e PKPbc	Z	04:24:38.4	149.5	16.8					
TANN	e PKPbc	Z	04:24:38.5	149.5	17.1					
GUNZ	e PKPbc	Z	04:24:38.8	149.6	16.9					
WERN	e PKPbc	Z	04:24:39.1	149.7	17.0					
ROTZ	e PKPbc	Z	04:24:40.2	150.2	17.0					
TNS	e PKPbc	Z	04:24:40.5	150.3	9.8					
GRA1	e PKPbc	Z	04:24:40.5	150.4	15.2					
GEC2	e PKPbc	Z	04:24:41.2	150.8	20.3					
WLF	e PKPbc	Z	04:24:42.7	151.1	5.6					
RJOB	e PKPbc	Z	04:24:44.5	152.0	19.2					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/12	04:27: 6.1	4.100N	126.900E	35.0				NEIC

Talau Islands, Indonesia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e Pdiff	Z	04:40:52.7	101.0	69.3					
GEC2	e Pdiff	Z	04:40:56.4	101.8	69.5					
TANN	e Pdiff	Z	04:40:57.2	102.0	68.2					
GUNZ	e Pdiff	Z	04:40:56.7	102.1	68.1					
WET	e Pdiff	Z	04:40:58.3	102.2	68.8					
ROTZ	e Pdiff	Z	04:40:59.7	102.4	68.1					
CLZ	e Pdiff	Z	04:41:00.9	102.7	66.2					
GRA1	e Pdiff	Z	04:41:02.1	103.0	67.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/12	07:07:37.9	4.000N	126.700E	35.0				NEIC

Talau Islands, Indonesia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e Pdiff	Z	07:21:22.6	100.4	69.1					

BRG	e Pdiff	Z	07:21:24.6	100.9	69.5
FBE	e Pdiff	Z	07:21:26.3	101.2	69.0
CLL	e Pdiff	Z	07:21:26.0	101.3	68.7
GEC2	e Pdiff	Z	07:21:28.3	101.8	69.7
TANN	e Pdiff	Z	07:21:29.2	102.0	68.4
WERD	e Pdiff	Z	07:21:29.5	102.0	68.3
GUNZ	e Pdiff	Z	07:21:29.8	102.1	68.3
WERN	e Pdiff	Z	07:21:29.8	102.1	68.4
NEUB	e Pdiff	Z	07:21:29.7	102.1	67.7
PLN	e Pdiff	Z	07:21:29.9	102.1	68.1
WET	e Pdiff	Z	07:21:30.3	102.2	69.0
ROTZ	e Pdiff	Z	07:21:31.5	102.3	68.3
MOX	e Pdiff	Z	07:21:31.0	102.4	67.7
NRDL	e Pdiff	Z	07:21:32.0	102.5	66.0
CLZ	e Pdiff	Z	07:21:32.7	102.6	66.4
GRA1	e Pdiff	Z	07:21:33.9	103.0	67.5
UBBA	e Pdiff	Z	07:21:35.6	103.2	66.3

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/12	08:30:16.4	4.100N	126.900E	35.0		6.0		NEIC
Talaud Islands, Indonesia								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e Pdiff	Z	08:44:02.8	100.5	68.9					
BRG	e Pdiff	Z	08:44:04.4	101.0	69.3					
FBE	e Pdiff	Z	08:44:06.1	101.3	68.8					
CLL	e Pdiff	Z	08:44:05.8	101.3	68.5					
GEC2	e Pdiff	Z	08:44:08.2	101.8	69.5					
BSEG	e Pdiff	Z	08:44:08.4	101.8	65.7					
TANN	e Pdiff	Z	08:44:09.0	102.0	68.2					
WERD	e Pdiff	Z	08:44:09.3	102.1	68.0					
GUNZ	e Pdiff	Z	08:44:09.6	102.1	68.1					
WERN	e Pdiff	Z	08:44:09.6	102.1	68.1					
NEUB	e Pdiff	Z	08:44:09.5	102.1	67.5					
PLN	e Pdiff	Z	08:44:09.8	102.2	67.9					
WET	e Pdiff	Z	08:44:10.2	102.2	68.8					
ROTZ	e Pdiff	Z	08:44:11.3	102.4	68.1					
MOX	e Pdiff	Z	08:44:10.9	102.4	67.4					
NRDL	e Pdiff	Z	08:44:11.9	102.5	65.8					
CLZ	e Pdiff	Z	08:44:12.6	102.7	66.2					
RJOB	e Pdiff	Z	08:44:12.2	102.8	69.0					
GRA1	e Pdiff	Z	08:44:13.9	103.0	67.3					
	e L	Z	09:34:43.1			20.1	4785		6.0	
UBBA	e Pdiff	Z	08:44:15.7	103.3	66.1					
IBBN	e Pdiff	Z	08:44:17.9	103.9	63.8					
TNS	e Pdiff	Z	08:44:20.3	104.4	64.9					
BUG	e Pdiff	Z	08:44:20.7	104.6	63.6					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/12	13:15: 7.7	4.100N	126.600E	35.0		6.3		NEIC
Talaud Islands, Indonesia								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e Pdiff	Z	13:28:52.0	100.3	69.1					
BRG	e Pdiff	Z	13:28:53.9	100.8	69.6					
FBE	e Pdiff	Z	13:28:55.6	101.1	69.1					
CLL	e Pdiff	Z	13:28:55.4	101.2	68.7					
GEC2	e Pdiff	Z	13:28:57.7	101.6	69.7					
BSEG	e Pdiff	Z	13:28:57.9	101.7	65.9					
TANN	e Pdiff	Z	13:28:58.6	101.8	68.4					
WERD	e Pdiff	Z	13:28:58.9	101.9	68.3					
GUNZ	e Pdiff	Z	13:28:59.1	101.9	68.3					
WERN	e Pdiff	Z	13:28:59.2	101.9	68.4					
NEUB	e Pdiff	Z	13:28:59.0	101.9	67.7					
PLN	e Pdiff	Z	13:28:59.4	102.0	68.2					
WET	e Pdiff	Z	13:28:59.8	102.0	69.0					
ROTZ	e Pdiff	Z	13:29:00.8	102.2	68.3					
MOX	e Pdiff	Z	13:29:00.5	102.2	67.7					
NRDL	e Pdiff	Z	13:29:01.5	102.4	66.1					
CLZ	e Pdiff	Z	13:29:02.1	102.5	66.4					
RJOB	e Pdiff	Z	13:29:01.6	102.6	69.2					
GRA1	e Pdiff	Z	13:29:03.5	102.8	67.6					
	e L	Z	14:19:23.8			20.2	10138		6.3	
UBBA	e Pdiff	Z	13:29:05.2	103.1	66.3					
FUR	e Pdiff	Z	13:29:05.5	103.4	67.9					
IBBN	e Pdiff	Z	13:29:07.5	103.7	64.1					
TNS	e Pdiff	Z	13:29:09.9	104.3	65.1					
BUG	e Pdiff	Z	13:29:10.3	104.4	63.9					
STU	e Pdiff	Z	13:29:10.2	104.4	66.1					
BFO	e Pdiff	Z	13:29:12.9	105.1	65.5					
WLF	e Pdiff	Z	13:29:17.4	105.8	63.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/12	13:22:33.3	46.546N	150.752E	33.0N	5.4			SZGRF
Kuril Islands, Russia								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e P	Z	13:34:14.6	75.6	28.5	0.9	36	5.5		
FBE	e P	Z	13:34:16.3	75.9	28.7	1.1	37	5.4		
CLZ	e P	Z	13:34:17.1	75.9	26.9	1.1	40	5.5		
NEUB	e P	Z	13:34:17.4	76.1	27.7	0.9	30	5.4		
IBBN	e P	Z	13:34:18.3	76.2	25.2	0.7	28	5.5		

WERD	e P	Z	13:34:20.5	76.6	28.0	1.0	19	5.2
PLN	e P	Z	13:34:20.6	76.6	27.9	1.1	124	5.9
MOX	e P	Z	13:34:20.6	76.6	27.6	1.1	28	5.3
GUNZ	e P	Z	13:34:20.9	76.7	28.0	0.9	18	5.2
WERN	e P	Z	13:34:21.2	76.7	28.0	0.8	23	5.3
BUG	e P	Z	13:34:23.5	77.1	24.8	1.0	42	5.5
ROTZ	e P	Z	13:34:24.4	77.2	27.8	1.0	26	5.3
WET	e P	Z	13:34:26.3	77.6	28.2	1.0	40	5.5
GEC2	e P	Z	13:34:25.8	77.6	28.7	1.0	17	5.1
GRA1	e P	Z	13:34:26.4	77.6	27.2	1.0	65	5.7
TNS	e P	Z	13:34:27.9	77.9	25.5	1.1	31	5.4
RJOB	e P	Z	13:34:33.2	78.8	28.0	0.9	22	5.2
FUR	e P	Z	13:34:33.5	78.9	27.1	1.1	62	5.5
STU	e P	Z	13:34:33.7	79.0	25.8	1.2	43	5.4
BFO	e P	Z	13:34:37.2	79.6	25.2	1.0	27	5.1

Date Origin Time Lat Long Depth mb Ms ML Source  
 2009/02/12 16:57:53.0 4.000N 126.700E 21.0 NEIC  
 Talaud Islands, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e Pdiff	Z 17:11:42.3	100.9	69.5					
CLL	e Pdiff	Z 17:11:43.8	101.3	68.7					
GEC2	e Pdiff	Z 17:11:46.1	101.8	69.7					
TANN	e Pdiff	Z 17:11:47.0	102.0	68.4					
WERD	e Pdiff	Z 17:11:47.3	102.0	68.3					
GUNZ	e Pdiff	Z 17:11:47.6	102.1	68.3					
WERN	e Pdiff	Z 17:11:47.6	102.1	68.4					
PLN	e Pdiff	Z 17:11:47.7	102.1	68.1					
ROTZ	e Pdiff	Z 17:11:49.2	102.3	68.3					
GRA1	e Pdiff	Z 17:11:51.8	103.0	67.5					

Date Origin Time Lat Long Depth mb Ms ML Source  
 2009/02/12 17:46: 4.8 4.000N 126.500E 35.0 5.4 NEIC  
 Talaud Islands, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e Pdiff	Z 17:59:48.5	100.3	69.3					
BRG	e Pdiff	Z 17:59:50.4	100.8	69.7					
FBE	e Pdiff	Z 17:59:52.2	101.1	69.2					
CLL	e Pdiff	Z 17:59:51.8	101.2	68.8					
GEC2	e Pdiff	Z 17:59:54.2	101.6	69.9					
BSEG	e Pdiff	Z 17:59:54.4	101.7	66.1					
TANN	e Pdiff	Z 17:59:55.1	101.8	68.6					
WERD	e Pdiff	Z 17:59:55.4	101.9	68.4					

GUNZ	e Pdiff	Z	17:59:55.6	101.9	68.5				
WERN	e Pdiff	Z	17:59:55.7	101.9	68.5				
NEUB	e Pdiff	Z	17:59:55.5	101.9	67.8				
PLN	e Pdiff	Z	17:59:55.9	102.0	68.3				
WET	e Pdiff	Z	17:59:56.2	102.0	69.2				
ROTZ	e Pdiff	Z	17:59:57.3	102.2	68.5				
MOX	e Pdiff	Z	17:59:57.0	102.3	67.8				
NRDL	e Pdiff	Z	17:59:58.0	102.4	66.2				
CLZ	e Pdiff	Z	17:59:58.6	102.5	66.5				
RJOB	e Pdiff	Z	17:59:58.0	102.6	69.4				
GRA1	e Pdiff	Z	17:60:00.0	102.8	67.7				
	e L	Z	18:50:09.7			20.3	1170	5.4	
HLG	e Pdiff	Z	17:59:59.7	102.9	63.9				
UBBA	e Pdiff	Z	18:00:01.8	103.1	66.5				
TNS	e Pdiff	Z	18:00:06.4	104.3	65.3				
STU	e Pdiff	Z	18:00:06.7	104.4	66.2				

Date Origin Time Lat Long Depth mb Ms ML Source  
 2009/02/12 18:54:26.2 31.430S 177.310W 25.2 5.8 NEIC  
 Kermadec Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPdf	Z	19:14:20.9	156.8	16.7					
RUE	e PKPab	Z	19:14:51.6	157.5	25.3					
NRDL	e PKPdf	Z	19:14:22.4	158.3	17.3					
	e PKPab	Z	19:14:55.0							
CLL	e PKPdf	Z	19:14:23.0	158.7	24.9					
	e PKPab	Z	19:14:56.8							
IBBN	e PKPab	Z	19:14:57.8	158.8	12.0					
CLZ	e PKPdf	Z	19:14:23.3	158.8	18.4					
	e PKPab	Z	19:14:57.9							
BRG	e PKPdf	Z	19:14:23.2	158.8	27.5					
	e PKPab	Z	19:14:57.6							
FBE	e PKPab	Z	19:14:58.5	159.0	26.1					
NEUB	e PKPdf	Z	19:14:23.8	159.1	22.2					
	e PKPab	Z	19:14:58.7							
TANN	e PKPdf	Z	19:14:24.2	159.7	24.6					
	e PKPab	Z	19:15:01.4							
MOX	e PKPdf	Z	19:14:24.0	159.7	22.4					
	e PKPab	Z	19:15:01.1							
	e pPKPab	Z	19:15:08.6							
WERD	e PKPdf	Z	19:14:24.3	159.7	24.2					
	e PKPab	Z	19:15:01.5							
PLN	e PKPab	Z	19:15:01.3	159.7	23.8					
BUG	e PKPab	Z	19:15:01.2	159.7	11.3					
GUNZ	e PKPab	Z	19:15:01.9	159.8	24.4					
WERN	e PKPdf	Z	19:14:24.4	159.8	24.6					

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	e	PKPab	Z	19:15:02.2							
UBBA	e	PKPdf	Z	19:14:24.7	159.9	18.4					
	e	PKPab	Z	19:15:02.1							
GRA1	e	PKPab	Z	19:15:06.0	160.7	22.5					
	e	L	Z	20:36:24.8			19.9		1526		5.8
WET	e	PKPdf	Z	19:14:25.3	160.7	27.2					
	e	PKPab	Z	19:15:06.2							
GEC2	e	PKPdf	Z	19:14:25.3	160.7	29.6					
TNS	e	PKPab	Z	19:15:05.9	160.7	15.0					
WLF	e	PKPab	Z	19:15:10.3	161.6	9.4					
STU	e	PKPab	Z	19:15:11.4	162.0	18.2					
FUR	e	PKPab	Z	19:15:12.0	162.0	24.4					
BFO	e	PKPab	Z	19:15:13.8	162.6	16.3					

Date Origin Time Lat Long Depth mb Ms ML Source  
 2009/02/13 02:17:50.6 30.800S 178.200W 59.0  
 Kermadec Islands, New Zealand NEIC

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e	PKPab	Z 02:38:04.3	156.1	18.3					
CLL	e	PKPab	Z 02:38:11.7	157.9	26.3					
BRG	e	PKPab	Z 02:38:12.3	158.0	28.8					
CLZ	e	PKPab	Z 02:38:13.0	158.0	20.0					
IBBN	e	PKPab	Z 02:38:13.0	158.1	13.8					
FBE	e	PKPab	Z 02:38:13.3	158.1	27.5					
NEUB	e	PKPab	Z 02:38:13.6	158.3	23.7					
TANN	e	PKPab	Z 02:38:15.5	158.8	26.1					
WERD	e	PKPab	Z 02:38:16.5	158.8	25.7					
MOX	e	PKPab	Z 02:38:16.2	158.9	23.9					
PLN	e	PKPab	Z 02:38:16.6	158.9	25.3					
GUNZ	e	PKPab	Z 02:38:16.7	158.9	25.9					
WERN	e	PKPab	Z 02:38:17.1	159.0	26.1					
ROTZ	e	PKPab	Z 02:38:19.7	159.5	26.3					
GRA1	e	PKPab	Z 02:38:21.1	159.8	24.1					
	e		02:38:24.0							
GEC2	e	PKPab	Z 02:38:20.4	159.8	30.9					
WET	e	PKPab	Z 02:38:21.1	159.8	28.6					
TNS	e	PKPab	Z 02:38:20.9	160.0	16.9					
RJOB	e	PKPab	Z 02:38:26.4	161.1	30.4					
STU	e	PKPab	Z 02:38:26.4	161.2	20.0					
FUR	e	PKPab	Z 02:38:26.9	161.2	26.0					
BFO	e	PKPab	Z 02:38:28.8	161.8	18.2					

Date Origin Time Lat Long Depth mb Ms ML Source  
 2009/02/13 13:18:35.9 8.500S 74.000W 151.0 5.3  
 NEIC

Peru-Brazil border region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WLF	e P	Z	13:31:18.5	90.2	257.0	0.9	34	5.6		
BUG	e P	Z	13:31:23.4	91.3	257.9	1.0	30	5.6		
BFO	e P	Z	13:31:23.0	91.3	258.6	1.2	11	5.1		
IBBN	e P	Z	13:31:25.6	91.7	258.3	0.6	20	5.6		
TNS	e P	Z	13:31:25.6	91.7	258.8	1.2	12	5.1		
CLZ	e P	Z	13:31:32.8	93.2	260.3	1.7	39	5.6		
BSEG	e P	Z	13:31:34.1	93.5	260.4	0.8	18	5.6		
MOX	e P	Z	13:31:35.4	93.8	261.2	1.2	6	4.8		
RJOB	e P	Z	13:31:36.6	94.1	261.9	1.2	13	5.1		
TANN	e P	Z	13:31:38.2	94.3	261.9	1.3	12	5.0		
WET	e P	Z	13:31:38.4	94.4	262.1	2.0	34	5.3		
CLL	e P	Z	13:31:39.8	94.8	262.3	0.9	8	5.2		
GEC2	e P	Z	13:31:40.0	94.9	262.7	1.0	5	4.9		
BRG	e P	Z	13:31:42.4	95.3	263.0	1.2	10	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/13	14:38:30.2	4.200N	126.900E	35.0				NEIC

Talau Islands, Indonesia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e Pdiff	Z	14:52:17.3	100.9	69.2					
GEC2	e Pdiff	Z	14:52:21.4	101.7	69.4					
TANN	e Pdiff	Z	14:52:22.4	101.9	68.1					
ROTZ	e Pdiff	Z	14:52:24.6	102.3	68.0					
MOX	e Pdiff	Z	14:52:24.2	102.3	67.4					
CLZ	e Pdiff	Z	14:52:25.9	102.6	66.1					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/13	21:26:36.7	3.800N	126.500E	32.0		5.0		NEIC

Talau Islands, Indonesia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e Pdiff	Z	21:40:21.6	100.5	69.4					
BRG	e Pdiff	Z	21:40:23.4	101.0	69.8					
FBE	e Pdiff	Z	21:40:25.2	101.3	69.3					
CLL	e Pdiff	Z	21:40:25.1	101.4	69.0					
GEC2	e Pdiff	Z	21:40:27.4	101.8	70.0					
TANN	e Pdiff	Z	21:40:28.2	102.0	68.7					
WERD	e Pdiff	Z	21:40:28.6	102.1	68.6					
GUNZ	e Pdiff	Z	21:40:28.9	102.1	68.6					
WERN	e Pdiff	Z	21:40:29.0	102.1	68.6					
NEUB	e Pdiff	Z	21:40:28.6	102.1	68.0					



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WET	e Pdiff	Z	21:40:29.2	102.2	69.3				
ROTZ	e Pdiff	Z	21:40:30.4	102.4	68.6				
MOX	e Pdiff	Z	21:40:30.3	102.4	67.9				
NRDL	e Pdiff	Z	21:40:31.4	102.6	66.3				
CLZ	e Pdiff	Z	21:40:31.7	102.7	66.7				
GRA1	e Pdiff	Z	21:40:33.1	103.0	67.8				
	e L	Z	22:30:39.6			20.3	466	5.0	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/13	23:33:2.7	47.600N	81.600E	33.0G	4.7			SZGRF

Eastern Kazakhstan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z 23:40:58.4	42.7	66.8	0.8	4	4.2		
FBE	e P	Z 23:41:01.1	43.0	66.6	1.0	16	4.7		
CLL	e P	Z 23:41:01.1	43.1	66.8	0.7	11	4.7		
BSEG	e P	Z 23:41:05.7	43.6	67.9	1.2	44	5.1		
TANN	e P	Z 23:41:07.0	43.8	65.6	1.6	20	4.6		
NEUB	e P	Z 23:41:07.0	43.8	66.0	0.7	12	4.8		
WERD	e P	Z 23:41:07.4	43.8	65.6	0.9	5	4.2		
GUNZ	e P	Z 23:41:07.6	43.9	65.5	0.9	8	4.5		
WERN	e P	Z 23:41:07.9	43.9	65.5	1.0	8	4.4		
PLN	e P	Z 23:41:08.0	43.9	65.5	0.9	34	5.1		
WET	e P	Z 23:41:09.2	44.1	64.6	1.0	5	4.2		
MOX	e P	Z 23:41:09.8	44.2	65.4	0.9	10	4.6		
ROTZ	e P	Z 23:41:10.4	44.2	64.9	1.3	7	4.2		
NRDL	e P	Z 23:41:10.9	44.3	66.4	1.0	19	4.8		
GRA1	e P	Z 23:41:15.4	44.8	64.3	1.0	13	4.8		
IBBN	e P	Z 23:41:21.3	45.6	64.9	0.5	30	5.6		
STU	e P	Z 23:41:27.3	46.4	62.6	0.9	8	4.8		
BFO	e P	Z 23:41:32.6	47.1	61.8	1.0	14	5.0		
WLF	e P	Z 23:41:38.9	47.7	61.9	1.8	35	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/14	02:06:52.8	21.377S	171.682E	110.9				SZGRF

Southeast of Loyalty Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPbc	Z 02:26:15.0	144.5	30.8					
RUE	e PKPbc	Z 02:26:14.9	144.5	37.2					
BRG	e PKPbc	Z 02:26:18.8	145.8	38.8					
CLL	e PKPbc	Z 02:26:18.7	145.8	37.0					
NRDL	e PKPbc	Z 02:26:19.2	145.8	31.6					
	e pPKPbc	Z 02:26:48.7							
FBE	e PKPbc	Z 02:26:19.8	145.9	37.9					

	e	pPKPbc	Z	02:26:49.2		
CLZ	e	PKPbc	Z	02:26:20.9	146.3	32.5
NEUB	e	PKPbc	Z	02:26:20.6	146.3	35.2
	e	pPKPbc	Z	02:26:50.1		
IBBN	e	PKPbc	Z	02:26:21.9	146.7	28.0
TANN	e	PKPbc	Z	02:26:21.9	146.7	37.0
WERD	e	PKPbc	Z	02:26:21.9	146.7	36.7
	e	pPKPbc	Z	02:26:52.9		
PLN	e	PKPbc	Z	02:26:22.0	146.7	36.4
GUNZ	e	PKPbc	Z	02:26:22.3	146.8	36.8
MOX	e	PKPbc	Z	02:26:22.2	146.8	35.5
WERN	e	PKPbc	Z	02:26:22.5	146.8	37.0
UBBA	e	PKPbc	Z	02:26:23.6	147.3	32.8
ROTZ	e	PKPbc	Z	02:26:23.7	147.3	37.2
	e	pPKPbc	Z	02:26:53.6		
GEC2	e	PKPbc	Z	02:26:23.7	147.4	40.4
WET	e	PKPbc	Z	02:26:24.2	147.5	38.8
BUG	e	PKPbc	Z	02:26:24.3	147.6	27.8
TNS	e	PKPbc	Z	02:26:26.4	148.3	30.7
RJOB	e	PKPbc	Z	02:26:26.6	148.6	40.1
FUR	e	PKPbc	Z	02:26:27.6	149.0	37.3
STU	e	PKPbc	Z	02:26:28.7	149.3	33.2
WLF	e	PKPbc	Z	02:26:30.0	149.5	27.3
BFO	e	PKPbc	Z	02:26:30.0	149.9	32.2

Date Origin Time Lat Long Depth mb Ms ML Source  
 2009/02/14 05:59:22.1 18.344S 177.554W 33.0N  
 Fiji Islands region SZGRF

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
NRDL	e	PKPbc	Z	06:18:55.5	145.3	12.9				
IBBN	e	PKPbc	Z	06:18:57.4	145.8	9.0				
CLZ	e	PKPbc	Z	06:18:57.7	145.9	13.5				
CLL	e	PKPbc	Z	06:18:57.1	146.0	18.1				
BRG	e	PKPbc	Z	06:18:58.2	146.2	19.9				
FBE	e	PKPbc	Z	06:18:58.6	146.3	18.9				
BUG	e	PKPbc	Z	06:18:59.7	146.7	8.4				
MOX	e	PKPbc	Z	06:19:00.3	146.9	16.1				
WERD	e	PKPbc	Z	06:19:00.3	146.9	17.3				
TANN	e	PKPbc	Z	06:19:00.4	146.9	17.6				
ROTZ	e	PKPbc	Z	06:19:02.3	147.6	17.5				
GRA1	e	PKPbc	Z	06:19:03.4	147.9	15.8				
GEC2	e	PKPbc	Z	06:19:03.8	148.2	20.6				
WLF	e	PKPbc	Z	06:19:05.5	148.5	6.8				
BFO	e	PKPbc	Z	06:19:07.2	149.6	11.1				

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/14	07:48:55.8	18.083N	69.133W	33.0N	4.9			SZGRF

Dominican Republic region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 08:00:05.4	70.1	274.8	1.2	12	4.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/14	08:29:30.1	14.781S	167.524E	33.0G				SZGRF

Vanuatu Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e PKPdf	Z 08:48:52.3	138.1	40.1					
CLL	e PKPdf	Z 08:48:52.0	138.1	38.6					
FBE	e PKPdf	Z 08:48:52.8	138.3	39.3					
TANN	e PKPdf	Z 08:48:54.2	139.1	38.5					
WERD	e PKPdf	Z 08:48:54.0	139.1	38.2					
PLN	e PKPdf	Z 08:48:54.2	139.1	38.0					
	e SKPbc	Z 08:52:24.3							
GUNZ	e PKPdf	Z 08:48:54.3	139.1	38.3					
WERN	e PKPdf	Z 08:48:54.5	139.2	38.4					
	e SKPbc	Z 08:52:24.9							
NKC	e PKPdf	Z 08:48:54.4	139.2	38.6					
MOX	e PKPdf	Z 08:48:54.1	139.2	37.2					
ROHR	e PKPdf	Z 08:48:54.6	139.3	38.4					
ROTZ	e SKPbc	Z 08:52:26.1	139.7	38.6					
GEC2	e PKPdf	Z 08:48:55.2	139.7	41.3					
	e SKPbc	Z 08:52:26.1							
GRA1	e PKPdf	Z 08:48:55.9	140.1	37.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/14	14:47:16.2	18.547S	176.721W	33.0N				SZGRF

Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPbc	Z 15:06:47.4	144.2	11.5					
NRDL	e PKPbc	Z 15:06:51.9	145.6	11.5					
CLZ	e PKPbc	Z 15:06:54.1	146.2	12.2					
CLL	e PKPbc	Z 15:06:54.0	146.3	16.8					
BRG	e PKPbc	Z 15:06:54.7	146.6	18.6					
NEUB	e PKPbc	Z 15:06:55.0	146.7	14.8					
MOX	e PKPbc	Z 15:06:56.3	147.2	14.7					
UBBA	e PKPbc	Z 15:06:56.9	147.3	11.9					
TANN	e PKPbc	Z 15:06:56.6	147.3	16.3					

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ROTZ	e	PKPbc	Z	15:06:58.6	148.0	16.1
GRA1	e	PKPbc	Z	15:06:59.2	148.2	14.4
GEC2	e	PKPbc	Z	15:06:59.7	148.6	19.2
WLF	e	PKPbc	Z	15:07:01.3	148.8	5.3
STU	e	PKPbc	Z	15:07:02.2	149.4	11.1
BFO	e	PKPbc	Z	15:07:03.4	149.9	9.6

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/14	15:42:25.7	20.436S	172.441E	33.0G				SZGRF
Vanuatu Islands region								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e	PKPbc	Z	16:01:55.8	143.8	29.2				
CLL	e	PKPbc	Z	16:01:59.3	145.2	35.2				
BRG	e	PKPbc	Z	16:01:59.4	145.2	37.0				
FBE	e	PKPbc	Z	16:02:00.3	145.4	36.1				
TANN	e	PKPbc	Z	16:02:02.3	146.1	35.1				
WERD	e	PKPbc	Z	16:02:02.2	146.1	34.9				
PLN	e	PKPbc	Z	16:02:02.3	146.2	34.6				
GUNZ	e	PKPbc	Z	16:02:02.7	146.2	35.0				
WERN	e	PKPbc	Z	16:02:02.9	146.2	35.1				
NKC	e	PKPbc	Z	16:02:02.7	146.3	35.3				
ROHR	e	PKPbc	Z	16:02:03.1	146.3	35.1				
GRA1	e	PKPbc	Z	16:02:05.0	147.2	33.8				

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/14	20:29:12.8	5.500S	151.700E	64.0				NEIC
New Britain, Papua New Guinea, region								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e	PKPdf	Z	20:48:01.1	122.4	47.3				
BRG	e	PKPdf	Z	20:48:02.0	122.6	52.6				
CLL	e	PKPdf	Z	20:48:02.1	122.8	51.4				
NRDL	e	PKPdf	Z	20:48:03.6	123.4	47.8				
TANN	e	PKPdf	Z	20:48:03.7	123.7	51.3				
CLZ	e	PKPdf	Z	20:48:04.5	123.7	48.4				
MOX	e	PKPdf	Z	20:48:04.6	123.9	50.3				
GEC2	e	PKPdf	Z	20:48:04.5	124.0	53.4				
ROTZ	e	PKPdf	Z	20:48:04.8	124.2	51.4				
WET	e	PKPdf	Z	20:48:05.3	124.2	52.4				
IBBN	e	PKPdf	Z	20:48:05.6	124.6	45.4				
GRA1	e	PKPdf	Z	20:48:05.9	124.7	50.4				
RJOB	e	PKPdf	Z	20:48:06.2	125.1	53.1				
BUG	e	PKPdf	Z	20:48:07.2	125.4	45.3				
FUR	e	PKPdf	Z	20:48:07.6	125.7	51.3				

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TNS	e	PKPdf	Z	20:48:08.0	125.7	47.2
STU	e	PKPdf	Z	20:48:09.6	126.3	48.8
BFO	e	PKPdf	Z	20:48:10.5	127.1	48.1
WLF	e	PKPdf	Z	20:48:11.3	127.2	45.0

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/15	01:17:59.6	17.240S	173.030W	33.0G				SZGRF

Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
IBBN	e	PKPbc	Z 01:37:37.0	144.9	1.3				
CLZ	e	PKPbc	Z 01:37:37.7	145.3	5.7				
CLL	e	PKPbc	Z 01:37:38.4	145.6	10.2				
BUG	e	PKPbc	Z 01:37:39.0	145.8	0.5				
NEUB	e	PKPbc	Z 01:37:39.4	145.8	8.2				
BRG	e	PKPbc	Z 01:37:39.7	145.9	11.9				
FBE	e	PKPbc	Z 01:37:40.3	145.9	10.9				
UBBA	e	PKPbc	Z 01:37:41.7	146.3	5.2				
MOX	e	PKPbc	Z 01:37:41.4	146.4	8.0				
PLN	e	PKPbc	Z 01:37:41.7	146.5	9.0				
WERD	e	PKPbc	Z 01:37:41.9	146.5	9.3				
TANN	e	PKPbc	Z 01:37:42.1	146.5	9.5				
GUNZ	e	PKPbc	Z 01:37:42.3	146.6	9.3				
WERN	e	PKPbc	Z 01:37:42.7	146.7	9.4				
TNS	e	PKPbc	Z 01:37:44.0	147.0	2.6				
ROTZ	e	PKPbc	Z 01:37:44.5	147.2	9.3				
GRA1	e	PKPbc	Z 01:37:44.8	147.4	7.5				
WLF	e	PKPbc	Z 01:37:45.7	147.6	358.5				
WET	e	PKPbc	Z 01:37:45.7	147.7	10.6				
GEC2	e	PKPbc	Z 01:37:46.4	147.9	12.2				
STU	e	PKPbc	Z 01:37:47.6	148.4	4.1				
FUR	e	PKPbc	Z 01:37:48.7	148.9	8.0				
BFO	e	PKPbc	Z 01:37:48.8	148.9	2.5				
RJOB	e	PKPbc	Z 01:37:49.5	149.1	10.9				

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/15	03:56:39.4	1.664N	96.012E	39.3N	4.9			SZGRF

Off west coast of northern Sumatra, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e	P	Z 04:09:04.5	83.7	94.7	1.1	9	4.9	
BRG	e	P	Z 04:09:03.9	83.7	95.1	1.0	4	4.6	
WET	e	P	Z 04:09:07.1	84.3	94.1	1.0	5	4.6	
ROTZ	e	P	Z 04:09:09.8	84.7	93.7	1.0	5	4.7	
GRA1	e	P	Z 04:09:12.7	85.4	92.9	1.3	12	5.0	

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CLZ	e P	Z	04:09:16.0	86.0	92.4	1.0	5	4.6
BSEG	e P	Z	04:09:16.7	86.1	92.5	1.2	24	5.2
IBBN	e P	Z	04:09:23.7	87.6	90.4	1.0	13	5.2
BUG	e P	Z	04:09:25.4	87.9	89.9	1.0	12	5.1

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/15	04:40:34.8	4.100N	126.900E	35.0				NEIC
Talaud Islands, Indonesia								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e Pdiff	Z 04:54:21.2	101.0	69.3					
CLL	e Pdiff	Z 04:54:22.9	101.3	68.5					
GEC2	e Pdiff	Z 04:54:25.3	101.8	69.5					
ROTZ	e Pdiff	Z 04:54:28.3	102.4	68.1					
MOX	e Pdiff	Z 04:54:28.5	102.4	67.4					
CLZ	e Pdiff	Z 04:54:29.8	102.7	66.2					
GRA1	e Pdiff	Z 04:54:30.5	103.0	67.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/15	06:40:58.3	22.590S	178.390W	33.0G				SZGRF
South of Fiji Islands								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPbc	Z 07:00:40.1	148.0	15.3					
NRDL	e PKPbc	Z 07:00:43.8	149.4	15.5					
CLL	e PKPbc	Z 07:00:45.2	150.0	21.4					
CLZ	e PKPbc	Z 07:00:45.6	150.0	16.3					
BRG	e PKPbc	Z 07:00:45.8	150.1	23.3					
	e PKPab	Z 07:00:51.4							
NEUB	e PKPbc	Z 07:00:46.3	150.3	19.2					
MOX	e PKPbc	Z 07:00:47.5	150.9	19.2					
TANN	e PKPbc	Z 07:00:47.7	150.9	20.9					
	e PKPab	Z 07:00:55.1							
PLN	e PKPbc	Z 07:00:47.7	150.9	20.3					
	e PKPab	Z 07:00:54.8							
WERD	e PKPbc	Z 07:00:47.9	150.9	20.6					
	e PKPab	Z 07:00:55.0							
GUNZ	e PKPbc	Z 07:00:48.0	151.0	20.7					
	e PKPab	Z 07:00:55.4							
WERN	e PKPbc	Z 07:00:48.4	151.0	20.9					
	e PKPab	Z 07:00:55.8							
ROTZ	e PKPbc	Z 07:00:49.4	151.6	20.9					
	e PKPab	Z 07:00:57.8							
TNS	e PKPbc	Z 07:00:50.0	151.9	13.5					
GRA1	e PKPbc	Z 07:00:49.4	151.9	19.1					

	e	PKPab	Z	07:00:59.3					
WET	e	PKPab	Z	07:00:59.8	152.0	22.6			
GEC2	e	PKPbc	Z	07:00:50.3	152.0	24.4			
WLF	e	PKPbc	Z	07:00:52.2	152.7	9.2			
STU	e	PKPbc	Z	07:00:52.9	153.1	15.6			
	e	PKPab	Z	07:01:04.0					
RJOB	e	PKPab	Z	07:01:05.9	153.3	23.5			
BFO	e	PKPbc	Z	07:00:53.8	153.7	14.1			
	e	PKPab	Z	07:01:06.6					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/15	09:24:33.9	40.920N	143.450E	44.7	6.2	5.4		SZGRF
Off east coast of Honshu, Japan								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e P	Z	09:36:15.4	75.5	36.6	1.0	404	6.5		
	e pP	Z	09:36:28.2							
RUE	e P	Z	09:36:23.6	77.0	36.7	1.5	634	6.5		
	e pP	Z	09:36:36.5							
BSEG	e P	Z	09:36:24.0	77.0	34.5	1.1	524	6.6		
CLL	e P	Z	09:36:29.9	78.2	36.0	1.0	215	6.2		
BRG	e P	Z	09:36:30.2	78.2	36.6	1.2	150	6.0		
	e pP	Z	09:36:42.9							
NRDL	e P	Z	09:36:30.7	78.2	34.1	2.2	562	6.3		
FBE	e P	Z	09:36:31.4	78.4	36.2	1.1	224	6.2		
CLZ	e P	Z	09:36:33.5	78.7	34.3	1.2	367	6.3		
NEUB	e P	Z	09:36:33.0	78.7	35.1	1.2	285	6.2		
TANN	e P	Z	09:36:35.4	79.1	35.5	1.9	266	6.0		
	e pP	Z	09:36:48.3							
WERD	e P	Z	09:36:35.5	79.1	35.4	1.9	346	6.1		
	e pP	Z	09:36:48.5							
PLN	e P	Z	09:36:35.9	79.2	35.3	1.5	1097	6.7		
	e pP	Z	09:36:48.9							
IBBN	e P	Z	09:36:35.9	79.2	32.5	1.0	265	6.2		
GUNZ	e P	Z	09:36:36.0	79.2	35.4	1.1	142	5.9		
MOX	e P	Z	09:36:36.0	79.2	35.0	2.2	666	6.3		
WERN	e P	Z	09:36:36.3	79.2	35.4	2.1	578	6.2		
UBBA	e P	Z	09:36:39.0	79.7	33.9	1.6	206	5.8		
	e pP	Z	09:36:51.8							
ROTZ	e P	Z	09:36:39.2	79.7	35.3	2.0	744	6.3		
GEC2	e P	Z	09:36:39.6	79.9	36.2	1.1	115	5.7		
WET	e P	Z	09:36:40.4	80.0	35.7	1.2	241	6.0		
	e pP	Z	09:36:53.1							
BUG	e P	Z	09:36:40.5	80.1	32.1	1.2	234	6.0		
GRA1	e P	Z	09:36:41.4	80.2	34.6	1.3	503	6.3		
	e L	Z	10:14:42.3			21.7	1679		5.4	
TNS	e P	Z	09:36:44.1	80.7	32.8	1.6	253	6.0		

	e pP	Z	09:36:57.4						
RJOB	e P	Z	09:36:46.7	81.2	35.5	1.1	219	6.1	
FUR	e P	Z	09:36:47.7	81.4	34.5	0.9	327	6.3	
STU	e P	Z	09:36:49.2	81.7	33.2	0.9	259	6.3	
	e pP	Z	09:37:02.1						
WLF	e P	Z	09:36:51.1	82.0	31.2	1.3	104	5.8	
BFO	e P	Z	09:36:52.5	82.3	32.5	1.1	184	6.1	

Date Origin Time Lat Long Depth mb Ms ML Source  
 2009/02/15 10:04:53.4 5.600S 80.470W 33.1 5.7 5.6  
 Near coast of northern Peru

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WLF	e P	Z	10:17:59.3	92.1	263.8	1.1	76	6.0		
BUG	e P	Z	10:18:03.1	93.0	264.7	1.4	84	6.0		
	e pP	Z	10:18:12.8							
IBBN	e P	Z	10:18:04.9	93.3	265.2	1.1	57	5.9		
	e pP	Z	10:18:14.6							
BFO	e P	Z	10:18:04.4	93.4	265.4	1.4	24	5.4		
TNS	e P	Z	10:18:06.1	93.6	265.6	1.3	38	5.6		
	e pP	Z	10:18:16.1							
STU	e P	Z	10:18:07.6	94.0	266.1	1.3	47	5.7		
UBBA	e P	Z	10:18:11.8	94.6	266.8	3.0	132	5.8		
NRDL	e P	Z	10:18:11.9	94.8	267.0	1.3	50	5.8		
CLZ	e P	Z	10:18:12.5	94.9	267.2	1.0	46	5.8		
	e PP	Z	10:22:00.8							
BSEG	e P	Z	10:18:12.5	95.0	267.3	1.2	102	6.1		
	e pP	Z	10:18:22.2							
FUR	e P	Z	10:18:14.0	95.3	267.6	1.4	49	5.7		
	e pP	Z	10:18:23.4							
GRA1	e P	Z	10:18:14.5	95.4	267.7	1.6	43	5.6		
	e L	Z	11:02:44.8			19.9	2115		5.6	
MOX	e P	Z	10:18:15.7	95.6	268.0	1.4	29	5.6		
	e PP	Z	10:22:08.3							
NEUB	e P	Z	10:18:16.3	95.8	268.2	1.3	40	5.8		
PLN	e P	Z	10:18:17.4	96.0	268.5	1.2	136	6.4		
ROTZ	e P	Z	10:18:17.6	96.0	268.4	1.4	26	5.6		
	e pP	Z	10:18:27.2							
	e PP	Z	10:22:09.6							
WERD	e P	Z	10:18:17.7	96.1	268.6	1.2	24	5.6		
	e pP	Z	10:18:27.5							
GUNZ	e P	Z	10:18:17.9	96.1	268.6	1.1	17	5.5		
WERN	e P	Z	10:18:18.2	96.1	268.6	1.3	32	5.7		
	e pP	Z	10:18:27.5							
TANN	e P	Z	10:18:18.4	96.2	268.7	1.0	30	5.8		
	e pP	Z	10:18:27.7							
RJOB	e P	Z	10:18:18.4	96.3	268.6	1.0	16	5.5		



	e PP	Z	10:22:12.7						
WET	e P	Z	10:18:19.3	96.4	268.9	1.5	32	5.6	
CLL	e P	Z	10:18:19.7	96.5	269.2	1.5	37	5.8	
	e pP	Z	10:18:29.8						
	e PP	Z	10:22:13.3						
FBE	e P	Z	10:18:21.1	96.8	269.4	1.1	22	5.7	
GEC2	e P	Z	10:18:21.2	97.0	269.4	1.3	11	5.3	
	e PP	Z	10:22:17.0						
RUE	e P	Z	10:18:21.8	97.0	269.9	1.3	63	6.1	
BRG	e P	Z	10:18:22.5	97.1	269.9	1.3	24	5.7	

Date Origin Time Lat Long Depth mb Ms ML Source  
 2009/02/15 16:16:53.0 4.100N 126.700E 35.0  
 Talaud Islands, Indonesia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e Pdiff	Z	16:30:39.5	100.8	69.5					
CLL	e Pdiff	Z	16:30:40.9	101.2	68.6					
GEC2	e Pdiff	Z	16:30:43.2	101.7	69.7					
TANN	e Pdiff	Z	16:30:44.1	101.9	68.3					
WET	e Pdiff	Z	16:30:45.2	102.1	68.9					
ROTZ	e Pdiff	Z	16:30:46.3	102.3	68.3					
CLZ	e Pdiff	Z	16:30:47.6	102.5	66.3					

Date Origin Time Lat Long Depth mb Ms ML Source  
 2009/02/15 19:34:49.9 60.158N 146.017W 33.0N 4.8  
 Southern Alaska, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	19:45:50.0	68.6	348.1	1.4	10	4.8		

Date Origin Time Lat Long Depth mb Ms ML Source  
 2009/02/15 20:28:44.8 46.496N 7.025E 10.0G  
 Switzerland

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e Pn	Z	20:29:16.5	2.0	206.2					2.5
	e Sg	N	20:29:47.6							
DAVA	e Pg	Z	20:29:23.0	2.1	249.0					2.7
	e Sg	N	20:29:50.9							
WLF	e Sg	N	20:30:27.9	3.2	169.2					3.0
WTTA	e Pn	Z	20:29:36.1	3.2	258.0					2.9
FUR	e Sg	N	20:30:30.6	3.3	241.5					3.2



MOX	e	PKPbc	Z	01:03:11.2	145.0	10.1
PLN	e	PKPbc	Z	01:03:11.5	145.1	11.1
TANN	e	PKPbc	Z	01:03:12.7	145.1	11.6
GUNZ	e	PKPbc	Z	01:03:11.9	145.2	11.4
WERN	e	PKPbc	Z	01:03:12.5	145.3	11.5
NKC	e	PKPbc	Z	01:03:12.5	145.3	11.6
TNS	e	PKPbc	Z	01:03:13.6	145.7	4.9
ROTZ	e	PKPbc	Z	01:03:14.2	145.8	11.4
GRA1	e	PKPbc	Z	01:03:15.1	146.0	9.7
WET	e	PKPbc	Z	01:03:16.1	146.3	12.7
WLF	e	PKPbc	Z	01:03:15.7	146.3	1.0
GEC2	e	PKPbc	Z	01:03:16.4	146.5	14.2
STU	e	PKPbc	Z	01:03:17.9	147.1	6.4
FUR	e	PKPbc	Z	01:03:19.6	147.5	10.2
BFO	e	PKPbc	Z	01:03:19.1	147.6	4.9
RJOB	e	PKPbc	Z	01:03:19.8	147.7	13.0

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/16	02:22:48.7	29.000S	69.600W	78.0				NEIC
Chile-Argentina border region								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e Pdiff	Z 02:36:53.0	106.2	244.1					
	e PP	Z 02:41:13.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/16	05:54:35.2	6.900S	155.300E	83.0				NEIC
Bougainville - Solomon Islands region								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPpdf	Z 06:13:27.1	125.2	44.2					
BRG	e PKPpdf	Z 06:13:27.9	125.6	49.7					
CLL	e PKPpdf	Z 06:13:28.0	125.8	48.5					
NRDL	e PKPpdf	Z 06:13:29.5	126.3	44.7					
CLZ	e PKPpdf	Z 06:13:30.2	126.6	45.3					
TANN	e PKPpdf	Z 06:13:30.1	126.6	48.4					
GUNZ	e PKPpdf	Z 06:13:30.4	126.7	48.2					
MOX	e PKPpdf	Z 06:13:30.3	126.9	47.3					
GEC2	e PKPpdf	Z 06:13:30.7	127.0	50.6					
ROTZ	e PKPpdf	Z 06:13:31.3	127.2	48.4					
WET	e PKPpdf	Z 06:13:31.5	127.3	49.5					
GRA1	e PKPpdf	Z 06:13:32.2	127.7	47.4					
RJOB	e PKPpdf	Z 06:13:32.6	128.2	50.3					
WLF	e PKPpdf	Z 06:13:37.5	130.0	41.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/16	06:05:59.8	55.860N	162.300E	33.0G	5.2			SZGRF
Near east coast of Kamchatka Peninsula, Russia								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
NRDL	e P	Z	06:17:03.6	69.2	16.3	0.9	6	4.7		
IBBN	e P	Z	06:17:07.5	69.8	14.9	1.2	28	5.3		
CLZ	e P	Z	06:17:07.5	69.8	16.3	1.0	21	5.2		
CLL	e P	Z	06:17:07.1	69.9	17.8	1.6	46	5.4		
BRG	e P	Z	06:17:08.6	70.1	18.2	0.9	11	5.0		
FBE	e P	Z	06:17:09.4	70.2	17.9	1.2	29	5.3		
NEUB	e P	Z	06:17:09.3	70.2	17.1	0.9	17	5.2		
BUG	e P	Z	06:17:12.6	70.7	14.5	1.0	17	5.1		
MOX	e P	Z	06:17:12.9	70.8	16.9	1.0	14	5.0		
PLN	e P	Z	06:17:13.4	70.8	17.2	0.9	57	5.7		
WERD	e P	Z	06:17:13.4	70.8	17.3	1.0	17	5.1		
TANN	e P	Z	06:17:13.5	70.8	17.4	1.7	26	5.1		
UBBA	e P	Z	06:17:14.5	70.9	16.0	1.6	18	5.0		
GUNZ	e P	Z	06:17:13.9	70.9	17.3	1.2	18	5.1		
WERN	e P	Z	06:17:14.3	71.0	17.3	0.9	20	5.3		
ROTZ	e P	Z	06:17:17.7	71.5	17.2	3.5	213	5.7		
TNS	e P	Z	06:17:18.8	71.7	15.1	0.9	8	4.8		
GRA1	e P	Z	06:17:19.3	71.7	16.6	0.8	22	5.4		
WET	e P	Z	06:17:20.5	71.9	17.5	1.9	46	5.3		
GEC2	e P	Z	06:17:20.8	72.1	17.9	0.9	9	4.9		
STU	e P	Z	06:17:26.1	73.0	15.4	0.8	17	5.2		
FUR	e P	Z	06:17:27.5	73.2	16.5	1.1	21	5.1		
RJOB	e P	Z	06:17:28.4	73.3	17.3	0.8	11	5.0		
BFO	e P	Z	06:17:29.4	73.6	14.9	0.8	8	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/16	08:24:26.7	3.593S	34.479E	33.0N	4.8	4.2		SZGRF
Lake Victoria region								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z	08:33:58.3	55.5	154.5	1.3	12	4.8		
WET	e P	Z	08:34:00.5	56.0	153.7	1.0	5	4.5		
ROTZ	e P	Z	08:34:07.1	56.7	153.1	1.3	8	4.6		
GRA1	e P	Z	08:34:09.1	56.9	152.0	2.6	67	5.2		
	e L	Z	08:59:29.0			21.0	182		4.2	
TANN	e P	Z	08:34:12.2	57.2	153.6	2.0	31	5.0		
MOX	e P	Z	08:34:14.6	57.7	152.7	1.4	9	4.6		

./2009/bul0902.txt

Thu Apr 23 08:38:25 2020

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Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/16	15:07:53.2	21.568S	178.069W	33.0G				SZGRF

Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPbc	Z 15:27:37.6	149.0	20.3					
BRG	e PKPbc	Z 15:27:38.2	149.2	22.2					
MOX	e PKPbc	Z 15:27:39.8	149.9	18.2					
TANN	e PKPbc	Z 15:27:40.2	150.0	19.9					
WERD	e PKPbc	Z 15:27:40.2	150.0	19.6					
ROTZ	e PKPbc	Z 15:27:41.9	150.7	19.8					
TNS	e PKPbc	Z 15:27:42.1	150.9	12.5					
GRA1	e PKPbc	Z 15:27:42.3	150.9	18.0					
GEC2	e PKPbc	Z 15:27:43.0	151.2	23.2					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/16	19:54:34.2	34.569N	138.203E	55.8N	4.9			SZGRF

Near south coast of eastern Honshu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e P	Z 20:06:45.4	81.6	42.9	0.8	7	4.8		
GRA1	e P	Z 20:06:56.3	83.6	41.5	0.9	9	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/16	23:16:36.5	37.070N	21.334E	10.0G	5.8	5.1		SZGRF

Southern Greece

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
OBKA	e Pn	Z 23:19:08.4	10.7	149.5					
ARSA	e Pn	Z 23:19:13.2	11.0	155.1					
KBA	e Pn	Z 23:19:19.8	11.6	146.6					
	e Sn	N 23:21:25.0							
MOA	e Pn	Z 23:19:25.2	12.0	151.7					
RJOB	e Pn	Z 23:19:31.3	12.4	146.4					
GEC2	e Pn	Z 23:19:39.5	13.0	151.9					
DAVA	e Pn	Z 23:19:44.1	13.3	136.3					
WET	e Pn	Z 23:19:46.8	13.5	149.9					
ROTZ	e Pn	Z 23:19:56.7	14.3	149.2					
GRA1	e Pn	Z 23:19:59.5	14.6	146.2					
	e Sn	N 23:22:30.4							
	e L	Z 23:26:59.8			18.8	12149		5.0	
WERN	e Pn	Z 23:20:03.9	14.7	150.7					
BFO	e Pn	Z 23:20:02.9	14.7	135.1					
BRG	e Pn	Z 23:20:03.6	14.8	156.3					
GUNZ	e Pn	Z 23:20:05.1	14.8	150.7					

TANN	e Pn	Z	23:20:05.2	14.8	151.2				
WERD	e Pn	Z	23:20:06.2	14.9	150.8				
PLN	e Pn	Z	23:20:05.5	14.9	150.4				
FBE	e Pn	Z	23:20:07.0	15.0	154.6				
MOX	e Pn	Z	23:20:09.5	15.2	149.2				
	e L	Z	23:27:28.6			15.8	12452		5.2
CLL	e Pn	Z	23:20:11.5	15.4	154.2				
UBBA	e P	Z	23:20:17.9	15.9	145.2				
TNS	e P	Z	23:20:20.6	16.1	140.0				
CLZ	e P	Z	23:20:29.6	16.7	148.1	2.3	2604		6.0
WLF	e P	Z	23:20:28.1	16.7	133.3	1.3	887		5.7
BUG	e P	Z	23:20:40.6	17.5	139.8	2.2	1335		5.7
IBBN	e P	Z	23:20:45.5	18.0	142.6	2.1	950		5.6
RGN	e P	Z	23:20:50.0	18.3	159.3	2.4	3881		6.1
BSEG	e P	Z	23:20:52.2	18.5	151.3	1.8	2476		6.1
HLG	e P	Z	23:21:03.7	19.5	146.1				

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/17	00:12:57.7	37.690N	142.680E	72.4	5.1			SZGRF

Off east coast of Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	00:24:58.9	79.6	36.5	1.0	32	5.2		
BRG	e P	Z	00:25:04.3	80.7	38.7	1.0	12	4.9		
CLL	e P	Z	00:25:04.1	80.7	38.1	1.0	19	5.1		
CLZ	e P	Z	00:25:07.9	81.3	36.3	1.3	25	5.2		
TANN	e P	Z	00:25:09.5	81.6	37.6	2.0	30	5.1		
MOX	e P	Z	00:25:10.1	81.8	37.1	1.6	25	5.1		
IBBN	e P	Z	00:25:10.5	81.8	34.5	0.7	24	5.5		
UBBA	e P	Z	00:25:12.9	82.2	36.0	1.5	12	4.9		
ROTZ	e P	Z	00:25:13.1	82.2	37.4	1.3	17	5.1		
GEC2	e P	Z	00:25:13.0	82.4	38.4	0.9	8	4.9		
WET	e P	Z	00:25:14.0	82.5	37.8	1.1	10	5.0		
GRA1	e P	Z	00:25:15.4	82.7	36.7	1.2	30	5.4		
	e pP	Z	00:25:35.0							
BUG	e P	Z	00:25:15.2	82.7	34.1	0.9	12	5.1		
RJOB	e P	Z	00:25:19.9	83.6	37.7	0.9	14	5.2		
FUR	e P	Z	00:25:21.2	83.9	36.7	0.8	24	5.5		
STU	e P	Z	00:25:22.7	84.2	35.2	1.0	19	5.3		
BFO	e P	Z	00:25:26.1	84.9	34.6	0.9	20	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/17	03:30:53.4	30.200S	177.410W	33.0G		5.6		SZGRF

Kermadec Islands, New Zealand

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e PKPdf	Z 03:50:44.8	154.5	21.9					
	e PP	Z 03:54:40.0							
BSEG	e PKPdf	Z 03:50:45.0	155.6	16.3					
	e PP	Z 03:54:47.9							
HLG	e PKPdf	Z 03:50:45.1	155.7	11.2					
NRDL	e PKPdf	Z 03:50:46.7	157.0	16.8					
	e PKPab	Z 03:51:17.1							
	e PP	Z 03:54:54.2							
CLL	e PKPdf	Z 03:50:47.1	157.5	24.1					
	e PKPab	Z 03:51:19.7							
	e PP	Z 03:54:56.9							
IBBN	e PKPdf	Z 03:50:47.4	157.6	11.8					
	e PKPab	Z 03:51:19.3							
	e PP	Z 03:54:58.7							
CLZ	e PKPdf	Z 03:50:47.8	157.6	17.9					
	e PKPab	Z 03:51:19.6							
	e PP	Z 03:54:58.7							
NEUB	e PKPdf	Z 03:50:47.5	157.9	21.5					
	e PKPab	Z 03:51:21.1							
	e PP	Z 03:54:59.3							
MOX	e PKPdf	Z 03:50:48.3	158.5	21.7					
	e PKPab	Z 03:51:23.5							
	e PP	Z 03:55:02.8							
TANN	e L	Z 05:06:11.7			21.2	970		5.6	
	e PKPdf	Z 03:50:48.5	158.5	23.8					
	e PKPab	Z 03:51:26.4							
	e PP	Z 03:55:03.7							
BUG	e PKPdf	Z 03:50:48.6	158.5	11.1					
	e PKPab	Z 03:51:23.2							
	e PP	Z 03:55:03.9							
UBBA	e PKPdf	Z 03:50:49.3	158.7	17.8					
	e PP	Z 03:55:03.1							
ROTZ	e PKPdf	Z 03:50:49.6	159.1	23.9					
	e PKPab	Z 03:51:26.4							
	e PP	Z 03:55:06.7							
GRA1	e PKPdf	Z 03:50:49.7	159.4	21.7					
	e PKPab	Z 03:51:27.8							
	e PP	Z 03:55:08.7							
TNS	e L	Z 05:05:34.3			21.3	842		5.6	
	e PKPdf	Z 03:50:50.1	159.5	14.6					
	e PP	Z 03:55:08.8							
WET	e PKPdf	Z 03:50:49.6	159.5	26.2					
	e PKPab	Z 03:51:28.2							
	e PP	Z 03:55:09.1							
GEC2	e PKPdf	Z 03:50:49.4	159.5	28.4					
	e PKPab	Z 03:51:28.3							
	e PP	Z 03:55:08.2							
WLF	e PKPdf	Z 03:50:51.7	160.4	9.2					

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	e PP	Z	03:55:13.5		
STU	e PKPdf	Z	03:50:51.2	160.8	17.6
	e PKPab	Z	03:51:33.3		
	e PP	Z	03:55:14.5		
RJOB	e PKPdf	Z	03:50:50.9	160.8	27.7
	e PKPab	Z	03:51:33.8		
	e PP	Z	03:55:15.7		
FUR	e PKPdf	Z	03:50:50.7	160.8	23.4
	e PKPab	Z	03:51:33.9		
	e PP	Z	03:55:16.4		
BFO	e PKPdf	Z	03:50:51.9	161.3	15.7
	e PKPab	Z	03:51:35.9		
	e PP	Z	03:55:17.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/17	05:28:17.8	38.604N	29.874E	33.0G	4.7	4.2		SZGRF

Turkey

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pn	Z	05:31:47.6	15.5	125.4					
WET	e Pn	Z	05:32:03.9	16.1	124.5					
BRG	e Pn	Z	05:32:07.0	16.6	131.4					
TANN	e P	Z	05:32:11.5	17.1	127.1					
GRA1	e P	Z	05:32:10.3	17.3	122.8					
	e L	Z	05:38:30.0			21.2	1633		4.2	
CLL	e P	Z	05:32:16.3	17.4	130.5					
MOX	e P	Z	05:32:15.6	17.6	126.0					
	e L	Z	05:40:00.5			19.0	1732		4.3	
BFO	e P	Z	05:32:29.5	18.3	114.1	1.7	48	4.4		
BSEG	e P	Z	05:32:51.6	20.3	131.1	1.8	190	5.0		
IBBN	e P	Z	05:32:54.7	20.5	123.0	1.1	46	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/17	19:21:25.8	20.380S	169.610E	98.0				SZGRF

Vanuatu Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
TANN	e PKPbc	Z	19:40:49.7	145.0	39.4					
IBBN	e PKPbc	Z	19:40:49.9	145.1	30.7					
MOX	e PKPbc	Z	19:40:50.1	145.1	37.9					
ROTZ	e PKPbc	Z	19:40:52.1	145.6	39.6					
UBBA	e PKPbc	Z	19:40:52.2	145.6	35.3					
GEC2	e PKPbc	Z	19:40:51.9	145.6	42.7					
WET	e PKPbc	Z	19:40:52.4	145.8	41.2					
GRA1	e PKPbc	Z	19:40:53.6	146.0	38.2					



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TNS	e	PKPbc	Z	19:40:55.6	146.6	33.4
RJOB	e	PKPbc	Z	19:40:56.1	146.8	42.4
FUR	e	PKPbc	Z	19:40:57.7	147.2	39.7
STU	e	PKPbc	Z	19:40:58.4	147.6	35.9
WLF	e	PKPbc	Z	19:40:59.8	147.9	30.1
BFO	e	PKPbc	Z	19:41:00.0	148.3	34.9
	e	pPKPbc	Z	19:41:26.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/18	03:07:50.3	52.900S	21.000E	10.0		5.7		NEIC
South of Africa								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PP	Z 03:25:59.4	102.9	174.0					
	e L	Z 04:12:46.3			20.9	2351		5.7	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/18	05:41:20.2	16.165N	95.340W	33.0N	5.4			SZGRF
Oaxaca, Mexico								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 05:54:07.3	88.0	292.9	1.4	26	5.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/18	10:19:22.8	27.500S	179.000W	367.0				NEIC
Kermadec Islands region								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 10:39:05.3	156.5	23.2					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/18	21:53:45.0	27.400S	176.400W	25.0		7.3		NEIC
Kermadec Islands region								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 22:13:37.6	157.0	17.5					
	e L	Z 23:23:26.8			21.6	53464		7.3	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
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2009/02/19 19:01:1.6  
Hokkaido, Japan, region

42.370N 143.274E 30.9 4.7 4.6

SZGRF

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z 19:12:40.4	75.6	33.9					
CLL	e P	Z 19:12:46.5	76.9	35.4	0.9	10	4.9		
BRG	e P	Z 19:12:46.8	76.9	35.9	1.0	6	4.7		
NRDL	e P	Z 19:12:47.0	76.9	33.6					
CLZ	e P	Z 19:12:50.0	77.3	33.7	1.2	17	5.1		
IBBN	e P	Z 19:12:52.2	77.8	32.0					
MOX	e P	Z 19:12:52.6	77.9	34.4	1.3	7	4.6		
	e L	Z 19:51:21.0			18.3	238		4.6	
ROTZ	e P	Z 19:12:55.8	78.4	34.7					
GEC2	e P	Z 19:12:56.3	78.6	35.5	1.0	3	4.3		
WET	e P	Z 19:12:57.1	78.7	35.0	1.2	12	4.8		
BUG	e P	Z 19:12:56.8	78.7	31.6					
GRA1	e P	Z 19:12:58.1	78.8	34.0	1.2	19	5.0		
	e pP	Z 19:13:06.9							
	e L	Z 19:49:21.4			18.7	208		4.5	
TNS	e P	Z 19:13:00.5	79.4	32.2	1.1	7	4.5		
RJOB	e P	Z 19:13:03.5	79.9	34.8	1.1	12	4.7		
FUR	e P	Z 19:13:04.7	80.1	33.9					

Date Origin Time  
2009/02/19 20:37:28.9  
Fiji Islands region

Lat Long Depth mb Ms ML  
21.648S 176.725W 33.0N

Source  
SZGRF

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPbc	Z 20:57:09.0	147.3	12.2					
NRDL	e PKPbc	Z 20:57:12.4	148.7	12.3					
CLZ	e PKPbc	Z 20:57:14.7	149.3	13.0					
CLL	e PKPbc	Z 20:57:14.5	149.4	18.0					
BRG	e PKPbc	Z 20:57:15.4	149.6	19.9					
MOX	e PKPbc	Z 20:57:17.0	150.3	15.8					
TANN	e PKPbc	Z 20:57:17.1	150.3	17.5					
ROTZ	e PKPbc	Z 20:57:18.6	151.0	17.3					
TNS	e PKPbc	Z 20:57:19.4	151.1	10.0					
GRA1	e PKPbc	Z 20:57:19.0	151.3	15.5					
GEC2	e PKPbc	Z 20:57:19.7	151.6	20.7					
BFO	e PKPbc	Z 20:57:22.8	153.0	10.4					

Date Origin Time  
2009/02/20 01:46:17.8  
Fiji Islands region

Lat Long Depth mb Ms ML  
18.610S 176.230W 523.6

Source  
SZGRF

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPbc	Z 02:04:52.8	144.3	10.7					
NRDL	e PKPbc	Z 02:04:57.5	145.8	10.7					
IBBN	e PKPdf	Z 02:04:57.6	146.2	6.8					
	e PKPbc	Z 02:04:59.1							
CLZ	e PKPdf	Z 02:04:57.9	146.4	11.3					
	e PKPbc	Z 02:04:59.5							
CLL	e PKPdf	Z 02:04:57.7	146.5	16.0					
	e PKPbc	Z 02:04:59.3							
BRG	e PKPdf	Z 02:04:57.8	146.7	17.8					
	e PKPbc	Z 02:04:59.9							
BUG	e PKPdf	Z 02:04:58.9	147.1	6.1					
	e PKPbc	Z 02:05:01.5							
	e pPKPbc	Z 02:07:03.7							
MOX	e PKPdf	Z 02:04:59.0	147.4	13.9					
	e PKPbc	Z 02:05:02.0							
	e pPKPbc	Z 02:07:03.4							
UBBA	e PKPdf	Z 02:04:58.9	147.4	11.0					
	e PKPbc	Z 02:05:02.7							
	e pPKPbc	Z 02:07:04.0							
TANN	e PKPdf	Z 02:04:59.0	147.4	15.4					
	e PKPbc	Z 02:05:02.2							
	e pPKPbc	Z 02:07:03.6							
ROTZ	e PKPdf	Z 02:05:00.1	148.1	15.3					
	e PKPbc	Z 02:05:04.3							
	e pPKPbc	Z 02:07:06.4							
TNS	e PKPdf	Z 02:05:00.6	148.2	8.4					
	e PKPbc	Z 02:05:04.5							
	e PKPab	Z 02:05:08.1							
	e pPKPbc	Z 02:07:06.0							
GRA1	e PKPdf	Z 02:05:00.8	148.3	13.5					
	e PKPbc	Z 02:05:04.9							
	e PKPab	Z 02:05:09.0							
	e pPKPbc	Z 02:07:06.7							
WET	e PKPdf	Z 02:05:00.9	148.6	16.7					
	e PKPbc	Z 02:05:05.2							
	e PKPab	Z 02:05:09.9							
	e pPKPbc	Z 02:07:06.7							
GEC2	e PKPdf	Z 02:05:00.7	148.7	18.3					
	e PKPbc	Z 02:05:05.3							
	e PKPab	Z 02:05:10.5							
	e pPKPbc	Z 02:07:06.4							
WLF	e PKPdf	Z 02:05:02.2	148.9	4.4					
	e PKPbc	Z 02:05:07.1							
	e pPKPbc	Z 02:07:08.6							
STU	e PKPdf	Z 02:05:02.4	149.5	10.2					
	e PKPbc	Z 02:05:07.8							
	e PKPab	Z 02:05:13.4							
FUR	e PKPdf	Z 02:05:02.6	149.8	14.3					

	e	PKPbc	Z	02:05:08.2					
	e	PKPab	Z	02:05:14.7					
	e	pPKPbc	Z	02:07:10.1					
RJOB	e	PKPbc	Z	02:05:08.1	150.0	17.3			
	e	PKPab	Z	02:05:15.6					
	e	pPKPbc	Z	02:07:10.4					
BFO	e	PKPbc	Z	02:05:08.9	150.1	8.7			
	e	PKPab	Z	02:05:15.9					
	e	pPKPbc	Z	02:07:10.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/20	03:48:37.4	32.838N	74.815E	33.0G	5.5	4.8		SZGRF
Southwestern Kashmir								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z 03:57:10.7	47.3	88.1	0.8	47	5.7		
GEC2	e P	Z 03:57:13.0	47.5	86.0	2.1	58	5.3		
CLL	e P	Z 03:57:14.6	47.8	87.7	1.9	70	5.5		
WET	e P	Z 03:57:17.0	48.0	85.7	2.1	51	5.3		
RJOB	e P	Z 03:57:18.2	48.2	84.4					
TANN	e P	Z 03:57:18.5	48.2	86.5					
ROTZ	e P	Z 03:57:20.8	48.4	85.8					
MOX	e P	Z 03:57:22.5	48.7	86.1	2.0	98	5.5		
GRA1	e P	Z 03:57:26.0	49.1	85.0	1.8	125	5.6		
	e L	Z 04:19:27.6			18.4	862		4.8	
FUR	e P	Z 03:57:26.3	49.2	83.7	1.9	162	5.7		
BSEG	e P	Z 03:57:27.0	49.4	88.0	0.8	87	5.9		
CLZ	e P	Z 03:57:27.8	49.4	86.2	1.0	69	5.5		
NRDL	e P	Z 03:57:28.6	49.6	86.6					
UBBA	e P	Z 03:57:30.7	49.7	85.1					
STU	e P	Z 03:57:36.0	50.5	82.8					
TNS	e P	Z 03:57:38.3	50.8	83.5	0.9	23	5.1		
IBBN	e P	Z 03:57:39.6	51.0	84.7					
BFO	e P	Z 03:57:40.5	51.1	81.9	1.4	28	5.0		
BUG	e P	Z 03:57:42.6	51.4	83.6					
WLF	e P	Z 03:57:50.3	52.3	81.4					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/20	10:02:15.0	39.205N	80.150E	33.0G	5.6	4.8		SZGRF
Southern Xinjiang, China								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z 10:10:43.2	46.6	77.6	1.2	57	5.6		
CLL	e P	Z 10:10:46.5	47.0	77.4	1.0	57	5.6		
GEC2	e P	Z 10:10:48.8	47.2	75.6	1.1	80	5.7		

TANN	e P	Z	10:10:51.4	47.6	76.2					
WET	e P	Z	10:10:52.0	47.6	75.3	1.2	46	5.5		
ROTZ	e P	Z	10:10:54.5	47.9	75.5					
MOX	e P	Z	10:10:54.9	48.0	75.9	1.3	60	5.6		
RJOB	e P	Z	10:10:55.3	48.1	74.1					
BSEG	e P	Z	10:10:55.2	48.1	77.9	1.2	122	5.9		
CLZ	e P	Z	10:10:58.5	48.5	76.1	1.3	46	5.4		
NRDL	e P	Z	10:10:58.7	48.5	76.5					
GRA1	e P	Z	10:10:59.5	48.5	74.8	0.9	103	5.8		
	e L	Z	10:33:59.8			18.3	933		4.8	
FUR	e P	Z	10:11:02.6	48.9	73.5	0.9	87	5.8		
UBBA	e P	Z	10:11:02.8	49.0	75.0					
IBBN	e P	Z	10:11:09.5	49.9	74.8					
STU	e P	Z	10:11:10.8	50.1	72.8	1.1	72	5.5		
TNS	e P	Z	10:11:10.9	50.1	73.5	1.1	26	5.1		
BUG	e P	Z	10:11:13.8	50.5	73.8					
BFO	e P	Z	10:11:15.7	50.7	72.0	1.1	44	5.3		
WLF	e P	Z	10:11:23.3	51.7	71.7					

Date Origin Time Lat Long Depth mb Ms ML Source  
 2009/02/21 00:12:48.9 28.685N 132.686E 36.4 5.9 5.3  
 West of Bonin Islands, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z 00:25:18.6	83.6	48.2	1.2	130	6.0		
	e pP	Z 00:25:29.2							
BRG	e P	Z 00:25:20.1	83.9	50.7	1.5	135	5.9		
CLL	e P	Z 00:25:20.7	84.1	50.0	1.6	265	6.2		
NRDL	e P	Z 00:25:24.0	84.7	47.9					
TANN	e P	Z 00:25:25.3	84.9	49.6					
CLZ	e P	Z 00:25:26.0	85.0	48.1	1.1	212	6.3		
MOX	e P	Z 00:25:26.6	85.2	48.9	1.3	109	5.9		
GEC2	e P	Z 00:25:27.0	85.3	50.4	1.2	73	5.7		
ROTZ	e P	Z 00:25:28.4	85.5	49.3					
WET	e P	Z 00:25:28.5	85.5	49.8	1.3	67	5.6		
UBBA	e P	Z 00:25:30.5	85.8	47.8					
IBBN	e P	Z 00:25:29.8	85.8	46.2					
GRA1	e P	Z 00:25:31.0	86.0	48.6	1.3	247	6.2		
	e L	Z 01:07:10.2			21.5	1399		5.3	
RJOB	e P	Z 00:25:33.3	86.5	49.6					
BUG	e P	Z 00:25:33.7	86.6	45.7					
TNS	e P	Z 00:25:35.7	87.0	46.6	1.4	89	5.7		
FUR	e P	Z 00:25:35.8	87.0	48.6	1.4	188	6.0		
STU	e P	Z 00:25:38.3	87.6	47.1	1.7	80	5.8		
BFO	e P	Z 00:25:41.5	88.3	46.4	2.0	71	5.5		
WLF	e P	Z 00:25:42.8	88.4	44.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/21	15:39:37.7	51.249N	46.104W	10.0G	4.8	4.1		SZGRF

North Atlantic Ocean

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
IBBN	e P	Z	15:46:09.2	32.6	290.1					
BUG	e P	Z	15:46:11.4	32.6	291.1					
WLF	e P	Z	15:46:12.4	32.6	293.3					
NRDL	e P	Z	15:46:23.3	33.8	290.9					
CLZ	e P	Z	15:46:24.5	34.2	291.9	1.6	24	4.9		
UBBA	e P	Z	15:46:26.1	34.4	293.1	1.6	18	4.7		
BFO	e P	Z	15:46:27.4	34.5	295.8	1.1	13	4.8		
MOX	e P	Z	15:46:35.5	35.4	294.0	2.1	61	5.1		
GRA1	e P	Z	15:46:36.4	35.6	295.1	1.4	47	5.1		
	e L	Z	15:56:25.7			21.5	391		4.1	
CLL	e P	Z	15:46:39.2	35.9	293.8	2.0	31	4.8		
TANN	e P	Z	15:46:40.2	36.0	294.7	1.4	24	4.8		
WET	e P	Z	15:46:46.8	36.8	296.4	1.5	26	4.7		
GEC2	e P	Z	15:46:52.7	37.4	297.0	1.8	31	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/21	15:39:15.5	50.821N	50.111W	10.0G	4.8			SZGRF

North Atlantic Ocean

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
IBBN	e P	Z	15:46:08.8	35.0	291.3					
BUG	e P	Z	15:46:11.6	35.1	292.2					
WLF	e P	Z	15:46:12.0	35.1	294.0					
BSEG	e P	Z	15:46:17.6	35.9	290.4					
NRDL	e P	Z	15:46:23.2	36.3	292.1					
BFO	e P	Z	15:46:27.1	37.0	296.5	1.1	13	4.6		
MOX	e P	Z	15:46:34.8	37.9	295.1	2.1	61	5.0		
GRA1	e P	Z	15:46:35.7	38.1	296.0	1.4	47	5.0		
CLL	e P	Z	15:46:38.5	38.4	294.9	2.0	31	4.6		
TANN	e P	Z	15:46:39.1	38.5	295.7					
WET	e P	Z	15:46:47.6	39.3	297.3					
GEC2	e P	Z	15:46:52.7	39.9	297.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/21	16:53:24.8	55.090N	41.630W	10.0G	5.2	4.9		SZGRF

North Atlantic Ocean

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
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IBBN	e P	Z	16:59:21.5	28.8	295.4					
BUG	e P	Z	16:59:22.3	28.9	296.7					
WLF	e P	Z	16:59:24.1	29.1	299.3					
NRDL	e P	Z	16:59:31.2	30.0	295.9					
TNS	e P	Z	16:59:32.4	30.1	298.9					
CLZ	e P	Z	16:59:35.5	30.4	297.0	1.5	49	5.2		
UBBA	e P	Z	16:59:37.9	30.7	298.4					
BFO	e P	Z	16:59:40.0	31.0	301.7	1.5	50	5.2		
STU	e P	Z	16:59:42.3	31.2	301.2					
MOX	e P	Z	16:59:46.4	31.7	299.1	1.6	49	5.2		
GRA1	e P	Z	16:59:49.0	31.9	300.3	1.6	105	5.5		
	e L	Z	17:09:55.8			20.2	2506		4.9	
CLL	e P	Z	16:59:50.1	32.1	298.6	1.6	41	5.1		
TANN	e P	Z	16:59:51.6	32.2	299.7					
ROTZ	e P	Z	16:59:53.4	32.4	300.5					
FUR	e P	Z	16:59:56.0	32.7	302.4	1.2	42	5.2		
BRG	e P	Z	16:59:56.7	32.8	299.4	1.8	37	5.0		
WET	e P	Z	16:59:59.5	33.1	301.5	1.4	46	5.2		
GEC2	e P	Z	17:00:05.1	33.7	302.0	1.5	42	5.1		

Date Origin Time Lat Long Depth mb Ms ML Source  
 2009/02/22 01:09: 0.6 55.394N 161.356E 33.0G 5.4  
 Near east coast of Kamchatka Peninsula, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	01:20:02.2	68.1	17.2	1.1	36	5.5		
NRDL	e P	Z	01:20:10.5	69.5	17.0					
CLZ	e P	Z	01:20:14.7	70.1	17.0	1.1	40	5.5		
IBBN	e P	Z	01:20:14.2	70.1	15.6					
CLL	e P	Z	01:20:13.8	70.1	18.5	1.1	62	5.6		
BRG	e P	Z	01:20:15.3	70.3	19.0	1.3	32	5.3		
MOX	e P	Z	01:20:19.7	71.0	17.6	1.1	34	5.4		
BUG	e P	Z	01:20:19.5	71.0	15.2					
TANN	e P	Z	01:20:20.2	71.1	18.1					
UBBA	e P	Z	01:20:21.2	71.1	16.7					
ROTZ	e P	Z	01:20:24.5	71.7	17.9					
TNS	e P	Z	01:20:25.7	72.0	15.8	1.3	24	5.2		
GRA1	e P	Z	01:20:26.1	72.0	17.3	0.8	49	5.7		
WET	e P	Z	01:20:27.2	72.2	18.2	1.0	35	5.4		
GEC2	e P	Z	01:20:27.6	72.3	18.6	0.9	23	5.3		
WLF	e P	Z	01:20:31.3	72.9	14.4					
STU	e P	Z	01:20:32.9	73.3	16.1					
FUR	e P	Z	01:20:34.3	73.4	17.2	0.9	25	5.3		
BFO	e P	Z	01:20:36.2	73.8	15.6	1.3	24	5.0		

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Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/22	09:00:1.8	16.476S	177.744W	33.0N				SZGRF

Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLZ	e PKPbc	Z 09:19:31.4	144.1	13.3					
CLL	e PKPbc	Z 09:19:31.1	144.1	17.8					
MOX	e PKPbc	Z 09:19:33.8	145.0	15.8					
TANN	e PKPbc	Z 09:19:34.1	145.1	17.3					
ROTZ	e PKPbc	Z 09:19:36.8	145.7	17.1					
TNS	e PKPbc	Z 09:19:37.0	145.9	10.6					
GRA1	e PKPbc	Z 09:19:37.7	146.0	15.5					
WET	e PKPbc	Z 09:19:38.0	146.2	18.5					
GEC2	e PKPbc	Z 09:19:38.0	146.3	20.1					
WLF	e PKPbc	Z 09:19:39.8	146.7	6.8					
STU	e PKPbc	Z 09:19:41.0	147.2	12.4					
FUR	e PKPbc	Z 09:19:41.7	147.5	16.2					
BFO	e PKPbc	Z 09:19:42.4	147.8	11.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/22	10:33:54.1	50.078N	156.894E	33.0G	4.9			SZGRF

Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
NRDL	e P	Z 10:45:28.9	73.7	21.5					
CLL	e P	Z 10:45:31.1	74.1	23.2	0.8	13	5.0		
CLZ	e P	Z 10:45:32.7	74.2	21.6	1.0	22	5.1		
BRG	e P	Z 10:45:32.1	74.2	23.7					
IBBN	e P	Z 10:45:33.2	74.3	20.0					
MOX	e P	Z 10:45:36.9	75.0	22.2	0.8	8	4.8		
TANN	e P	Z 10:45:37.0	75.0	22.7					
UBBA	e P	Z 10:45:38.7	75.2	21.3					
BUG	e P	Z 10:45:38.0	75.3	19.6					
ROTZ	e P	Z 10:45:41.2	75.7	22.5					
GRA1	e P	Z 10:45:42.9	76.0	21.9	0.8	16	5.2		
WET	e P	Z 10:45:43.5	76.1	22.9	0.9	11	5.0		
TNS	e P	Z 10:45:43.2	76.1	20.2	0.9	9	4.9		
GEC2	e P	Z 10:45:43.4	76.2	23.3	0.8	4	4.6		
BFO	e P	Z 10:45:53.3	77.9	20.0	0.8	4	4.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/22	13:50:29.8	26.601N	124.299E	33.0G	5.2	4.5		SZGRF

Northeast of Taiwan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
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BRG	e P	Z	14:02:48.4	81.3	58.0	1.2	18	5.1		
BSEG	e P	Z	14:02:49.3	81.5	55.7	1.3	43	5.4		
CLL	e P	Z	14:02:49.1	81.6	57.4	1.0	21	5.2		
TANN	e P	Z	14:02:53.4	82.3	56.9					
GEC2	e P	Z	14:02:54.5	82.5	57.6	1.2	14	5.1		
CLZ	e P	Z	14:02:55.2	82.6	55.5	1.1	24	5.3		
MOX	e P	Z	14:02:54.8	82.7	56.3	1.2	13	5.0		
WET	e P	Z	14:02:56.2	82.8	57.0	1.6	16	5.0		
ROTZ	e P	Z	14:02:56.6	82.8	56.6					
GRA1	e P	Z	14:02:59.0	83.4	55.9	1.4	30	5.3		
	e L	Z	14:56:22.9			21.3	212		4.5	

Date Origin Time Lat Long Depth mb Ms ML Source  
 2009/02/22 14:24:16.8 42.407N 144.916E 33.0G 5.4 5.5 ML SZGRF  
 Hokkaido, Japan, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	14:35:59.5	76.1	32.8	0.8	63	5.8		
NRDL	e P	Z	14:36:06.4	77.4	32.5					
CLL	e P	Z	14:36:06.0	77.4	34.3	0.8	54	5.8		
BRG	e P	Z	14:36:06.4	77.4	34.8					
CLZ	e P	Z	14:36:09.3	77.9	32.6	0.7	46	5.7		
IBBN	e P	Z	14:36:11.5	78.3	30.8					
TANN	e P	Z	14:36:11.5	78.3	33.8					
MOX	e P	Z	14:36:12.1	78.4	33.3	1.5	49	5.3		
	e L	Z	15:14:42.8			19.2	2111		5.5	
UBBA	e P	Z	14:36:14.8	78.8	32.2					
ROTZ	e P	Z	14:36:15.5	79.0	33.6					
GEC2	e P	Z	14:36:16.1	79.2	34.4	1.1	18	4.9		
BUG	e P	Z	14:36:16.2	79.2	30.4					
WET	e P	Z	14:36:16.8	79.2	33.9	1.0	36	5.3		
GRA1	e P	Z	14:36:17.7	79.4	32.9	0.9	64	5.6		
	e L	Z	15:15:21.0			20.1	2393		5.5	
TNS	e P	Z	14:36:20.0	79.9	31.1	0.9	20	5.0		
FUR	e P	Z	14:36:24.2	80.6	32.8	1.0	64	5.6		
STU	e P	Z	14:36:25.1	80.9	31.5	0.9	41	5.5		
WLF	e P	Z	14:36:26.8	81.1	29.5					
BFO	e P	Z	14:36:28.7	81.5	30.9	1.1	26	5.3		

Date Origin Time Lat Long Depth mb Ms ML Source  
 2009/02/22 17:46: 2.8 11.159N 119.990E 33.0G 5.4 5.8 ML SZGRF  
 Palawan, Philippine Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	17:59:09.5	91.2	70.6	1.1	29	5.5		

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GEC2	e P	Z	17:59:13.3	92.0	70.4	1.2	22	5.4		
BSEG	e P	Z	17:59:14.0	92.2	67.6	1.0	30	5.6		
TANN	e P	Z	17:59:14.2	92.2	69.4					
WET	e P	Z	17:59:15.3	92.4	69.8	1.4	18	5.3		
ROTZ	e P	Z	17:59:16.4	92.6	69.3					
MOX	e P	Z	17:59:16.0	92.7	68.8	1.2	13	5.2		
	e L	Z	18:48:23.3			21.7	2954		5.7	
NRDL	e P	Z	17:59:16.9	92.8	67.5					
CLZ	e P	Z	17:59:17.7	92.9	67.7	1.3	22	5.4		
GRA1	e P	Z	17:59:19.0	93.2	68.5	1.4	22	5.4		
	e L	Z	18:49:52.9			21.0	4485		5.9	
UBBA	e P	Z	17:59:20.7	93.5	67.5					
FUR	e P	Z	17:59:21.1	93.8	68.6	1.0	19	5.4		
TNS	e P	Z	17:59:25.8	94.7	66.3	1.2	10	5.1		
STU	e P	Z	17:59:25.8	94.8	67.0					

Date Origin Time Lat Long Depth mb Ms ML Source  
 2009/02/22 23:22:47.6 46.410N 150.375E 33.0G 4.8  
 Kuril Islands, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e P	Z	23:34:20.4	75.6	28.8	1.1	15	5.0		
CLZ	e P	Z	23:34:22.9	75.9	27.2	1.6	26	5.1		
IBBN	e P	Z	23:34:24.9	76.2	25.5					
MOX	e P	Z	23:34:26.6	76.6	27.9	0.7	4	4.6		
BUG	e P	Z	23:34:29.5	77.1	25.1	1.2	10	4.8		
ROTZ	e P	Z	23:34:30.6	77.2	28.1					
WET	e P	Z	23:34:32.3	77.6	28.5	1.0	10	4.9		
GEC2	e P	Z	23:34:32.0	77.6	29.0	0.8	5	4.7		
GRA1	e P	Z	23:34:32.4	77.6	27.5	0.7	11	5.1		
TNS	e P	Z	23:34:34.1	77.9	25.8	0.7	6	4.8		
STU	e P	Z	23:34:39.7	79.0	26.1					
BFO	e P	Z	23:34:43.5	79.7	25.5	0.9	6	4.5		

Date Origin Time Lat Long Depth mb Ms ML Source  
 2009/02/23 00:04:15.0 58.425N 157.682W 33.0N 4.9  
 Alaska Peninsula, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
NRDL	e P	Z	00:15:15.6	68.6	353.2					
IBBN	e P	Z	00:15:16.0	68.6	351.9					
CLZ	e P	Z	00:15:19.2	69.3	353.3	1.8	48	5.3		
BUG	e P	Z	00:15:19.6	69.5	351.7	1.0	25	5.3		
CLL	e P	Z	00:15:22.3	70.0	354.8	1.0	6	4.6		
UBBA	e P	Z	00:15:25.5	70.3	353.2					

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BRG	e P	Z	00:15:26.6	70.5	355.4	1.3	11	4.8
MOX	e P	Z	00:15:27.3	70.6	354.1	0.9	12	5.1
TNS	e P	Z	00:15:27.9	70.8	352.4	0.8	8	4.9
TANN	e P	Z	00:15:27.9	70.9	354.6			
WLF	e P	Z	00:15:30.3	71.1	351.1			
ROTZ	e P	Z	00:15:32.7	71.5	354.4	1.4	13	4.9
GRA1	e P	Z	00:15:32.8	71.5	353.9	0.8	10	5.0
WET	e P	Z	00:15:36.9	72.2	354.8	1.6	20	5.0
GEC2	e P	Z	00:15:38.9	72.5	355.3	0.9	6	4.7
BFO	e P	Z	00:15:38.7	72.6	352.4	0.9	8	4.8

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/23	05:56:40.0	0.035N	97.392E	38.5	5.7	4.4		SZGRF

Northern Sumatera, Indonesia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z	06:09:10.0	85.8	94.7	1.4	103	5.8		
BRG	e P	Z	06:09:09.8	85.8	95.1	1.9	132	5.7		
WET	e P	Z	06:09:12.5	86.4	94.1	1.0	48	5.6		
CLL	e P	Z	06:09:12.4	86.5	94.4	1.2	46	5.5		
TANN	e P	Z	06:09:14.2	86.7	93.9	1.2	27	5.2		
ROTZ	e P	Z	06:09:15.3	86.9	93.7	1.0	37	5.5		
MOX	e P	Z	06:09:16.9	87.3	93.2	1.6	78	5.6		
	e pP	Z	06:09:28.1							
	e S	N	06:19:57.0							
	e L	Z	06:51:03.3			22.0	186		4.4	
FUR	e P	Z	06:09:17.0	87.4	92.9	1.3	41	5.4		
GRA1	e P	Z	06:09:18.2	87.5	92.9	1.0	62	5.7		
	e pP	Z	06:09:29.5							
	e S	N	06:19:59.9							
	e L	Z	06:51:46.3			21.3	208		4.5	
CLZ	e P	Z	06:09:21.0	88.1	92.3	1.0	117	6.1		
BSEG	e P	Z	06:09:21.4	88.3	92.3	1.0	163	6.3		
NRDL	e P	Z	06:09:22.0	88.3	92.1	1.1	144	6.2		
UBBA	e P	Z	06:09:22.4	88.3	92.0	1.6	59	5.7		
STU	e P	Z	06:09:24.1	88.8	91.3	1.1	38	5.5		
TNS	e P	Z	06:09:26.7	89.3	90.8	1.0	91	6.0		
BFO	e P	Z	06:09:26.4	89.4	90.7	0.9	30	5.5		
IBBN	e P	Z	06:09:28.6	89.7	90.3	1.1	136	6.1		
BUG	e P	Z	06:09:30.0	90.0	89.9	1.0	88	6.0		
WLF	e P	Z	06:09:33.9	90.8	89.0	1.1	66	5.9		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/23	11:10:59.7	26.922N	54.001E	33.0G	4.7	3.8		SZGRF

Southern Iran

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z	11:18:18.5	38.0	110.4	1.5	15	4.5		
RJOB	e P	Z	11:18:21.2	38.2	108.1	2.0	50	4.9		
BRG	e P	Z	11:18:22.8	38.6	113.0	1.7	32	4.7		
WET	e P	Z	11:18:23.3	38.6	109.9	1.6	17	4.4		
ROTZ	e P	Z	11:18:29.0	39.2	109.9					
CLL	e P	Z	11:18:29.4	39.3	112.5	1.1	19	4.7		
GRA1	e P	Z	11:18:34.1	39.8	108.8	1.7	44	4.8		
	e L	Z	11:41:30.0			18.5	133		3.8	
MOX	e P	Z	11:18:34.4	39.9	110.3	1.6	15	4.4		
	e L	Z	11:36:49.3			19.9	132		3.8	
UBBA	e P	Z	11:18:43.7	40.9	108.8					
CLZ	e P	Z	11:18:44.0	41.0	110.3	1.1	42	5.1		
NRDL	e P	Z	11:18:47.0	41.4	110.7					
TNS	e P	Z	11:18:48.8	41.6	106.6	1.5	34	4.9		
BUG	e P	Z	11:18:57.6	42.7	106.8					
WLF	e P	Z	11:18:59.9	42.9	103.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/23	16:24:10.7	20.140S	178.792W	33.0N				SZGRF

Fiji Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPbc	Z	16:43:45.6	145.5	15.2					
NRDL	e PKPbc	Z	16:43:49.6	146.9	15.4					
IBBN	e PKPbc	Z	16:43:52.3	147.4	11.5					
CLL	e PKPbc	Z	16:43:51.4	147.5	20.9					
CLZ	e PKPbc	Z	16:43:51.8	147.5	16.2					
BRG	e PKPbc	Z	16:43:52.2	147.7	22.8					
BUG	e PKPbc	Z	16:43:54.8	148.3	10.9					
MOX	e PKPbc	Z	16:43:54.1	148.4	18.9					
TANN	e PKPbc	Z	16:43:54.3	148.4	20.5					
UBBA	e PKPbc	Z	16:43:56.0	148.5	16.0					
ROTZ	e PKPbc	Z	16:43:56.4	149.1	20.4					
TNS	e PKPbc	Z	16:43:56.6	149.4	13.4					
GEC2	e PKPbc	Z	16:43:57.4	149.6	23.7					
WLF	e PKPbc	Z	16:43:59.3	150.2	9.4					
STU	e PKPbc	Z	16:44:00.0	150.7	15.4					
FUR	e PKPbc	Z	16:44:00.3	150.8	19.7					
RJOB	e PKPbc	Z	16:44:00.3	150.9	22.8					
BFO	e PKPbc	Z	16:44:01.2	151.2	14.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/23	18:23:29.1	21.719S	169.035E	33.0N				SZGRF

## Southeast of Loyalty Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
TANN	e PKPbc	Z	18:43:04.6	145.9	41.3					
MOX	e PKPbc	Z	18:43:04.9	146.1	39.8					
ROTZ	e PKPbc	Z	18:43:07.1	146.5	41.5					
GEC2	e PKPbc	Z	18:43:06.9	146.5	44.7					
UBBA	e PKPbc	Z	18:43:06.9	146.6	37.2					
WET	e PKPbc	Z	18:43:07.4	146.7	43.1					
GRA1	e PKPbc	Z	18:43:08.1	147.0	40.1					
TNS	e PKPbc	Z	18:43:10.5	147.7	35.3					
RJOB	e PKPbc	Z	18:43:10.5	147.7	44.5					
STU	e PKPbc	Z	18:43:11.8	148.5	37.8					
WLF	e PKPbc	Z	18:43:14.3	149.0	32.0					
BFO	e PKPbc	Z	18:43:14.4	149.2	36.9					

Date Origin Time Lat Long Depth mb Ms ML Source  
 2009/02/23 19:49: 8.7 18.450S 176.683W 33.0N  
 Fiji Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPbc	Z	20:08:39.0	144.1	11.4					
NRDL	e PKPbc	Z	20:08:42.9	145.5	11.4					
CLZ	e PKPbc	Z	20:08:44.8	146.1	12.1					
CLL	e PKPbc	Z	20:08:45.7	146.3	16.7					
BRG	e PKPbc	Z	20:08:46.4	146.5	18.5					
BUG	e PKPbc	Z	20:08:48.2	146.9	6.9					
MOX	e PKPbc	Z	20:08:47.7	147.1	14.6					
UBBA	e PKPbc	Z	20:08:48.6	147.2	11.8					
TANN	e PKPbc	Z	20:08:48.2	147.2	16.2					
ROTZ	e PKPbc	Z	20:08:50.3	147.9	16.0					
TNS	e PKPbc	Z	20:08:50.3	148.0	9.2					
GRA1	e PKPbc	Z	20:08:50.7	148.1	14.3					
WET	e PKPbc	Z	20:08:51.1	148.4	17.5					
GEC2	e PKPbc	Z	20:08:51.5	148.5	19.1					
WLF	e PKPbc	Z	20:08:52.6	148.7	5.2					
FUR	e PKPbc	Z	20:08:54.5	149.6	15.0					
BFO	e PKPbc	Z	20:08:54.9	149.8	9.5					

Date Origin Time Lat Long Depth mb Ms ML Source  
 2009/02/24 00:46:41.3 0.949N 19.870W 10.0G 5.4 4.0  
 Central Mid-Atlantic Ridge

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	00:56:17.9	55.5	218.8	2.7	109	5.4		

e L                    Z 01:17:55.7                    21.4                    134                    4.0

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source				
2009/02/24												
	Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML		
	BFO	e P	Z 05:51:35.2									
	CLL	e P	Z 05:51:37.7									
	CLZ	e P	Z 05:51:51.5									
	DREG	e P	Z 05:52:00.4									
	FUR	e P	Z 05:51:17.7									
	GEC2	e P	Z 05:51:11.7									
	GRA1	e P	Z 05:51:31.0				2.6	153				
	GTTG	e P	Z 05:51:51.5									
	MOX	e P	Z 05:51:36.5									
	TANN	e P	Z 05:51:30.8									
	TNS	e P	Z 05:51:48.4									
	WET	e P	Z 05:51:17.7									

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/24	12:13:18.5	2.068N	95.409E	33.0G	5.2	5.2		SZGRF

Off west coast of northern Sumatera, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z 12:25:45.5	83.0	94.9	1.2	32	5.4		
BRG	e P	Z 12:25:45.4	83.0	95.3	1.4	24	5.2		
WET	e P	Z 12:25:48.0	83.6	94.3	1.1	22	5.3		
CLL	e P	Z 12:25:48.3	83.6	94.6	1.1	13	5.1		
TANN	e P	Z 12:25:50.2	83.9	94.1					
ROTZ	e P	Z 12:25:51.0	84.0	93.9					
MOX	e P	Z 12:25:52.4	84.5	93.5	1.2	13	5.0		
	e S	N 12:36:25.0							
	e L	Z 13:11:45.4			20.9	1006		5.2	
GRA1	e P	Z 12:25:53.9	84.7	93.1	1.0	27	5.4		
	e S	N 12:36:27.9							
	e L	Z 13:10:55.6			20.3	1378		5.3	
CLZ	e P	Z 12:25:57.1	85.3	92.6	1.1	19	5.2		
BSEG	e P	Z 12:25:57.6	85.4	92.8	1.1	47	5.6		
NRDL	e P	Z 12:25:58.2	85.5	92.5					
TNS	e P	Z 12:26:02.4	86.5	91.0	1.4	24	5.1		
BFO	e P	Z 12:26:03.0	86.5	90.8	1.0	5	4.6		
IBBN	e P	Z 12:26:05.5	86.9	90.6					
WLF	e P	Z 12:26:10.5	87.9	89.2					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/24	12:39:37.3	24.560S	171.820E	28.0		5.3		SZGRF

Southeast of Loyalty Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPbc	Z	12:59:18.0	147.5	32.5					
BRG	e PKPbc	Z	12:59:21.4	148.7	41.2					
CLL	e PKPbc	Z	12:59:22.0	148.7	39.3					
NRDL	e PKPbc	Z	12:59:21.8	148.8	33.4					
CLZ	e PKPbc	Z	12:59:23.4	149.3	34.5					
TANN	e PKPdf	Z	12:59:20.7	149.6	39.3					
	e PKPbc	Z	12:59:24.2							
IBBN	e PKPdf	Z	12:59:20.9	149.7	29.7					
	e PKPbc	Z	12:59:24.2							
MOX	e PKPdf	Z	12:59:20.8	149.8	37.7					
	e PKPbc	Z	12:59:24.4							
	e pPKPbc	Z	12:59:33.3							
	e L	Z	14:04:08.1			20.9	553		5.3	
ROTZ	e PKPbc	Z	12:59:25.9	150.2	39.6					
UBBA	e PKPdf	Z	12:59:21.8	150.2	34.9					
	e PKPbc	Z	12:59:26.0							
GEC2	e PKPdf	Z	12:59:21.5	150.3	43.1					
	e PKPbc	Z	12:59:25.8							
WET	e PKPdf	Z	12:59:21.4	150.4	41.4					
	e PKPbc	Z	12:59:26.2							
BUG	e PKPbc	Z	12:59:26.5	150.6	29.6					
GRA1	e PKPdf	Z	12:59:22.0	150.7	38.1					
	e PKPbc	Z	12:59:26.8							
	e pPKPbc	Z	12:59:34.7							
	e L	Z	14:04:47.3			20.8	513		5.3	
TNS	e PKPbc	Z	12:59:28.5	151.3	32.8					
RJOB	e PKPbc	Z	12:59:28.3	151.5	43.0					
FUR	e PKPdf	Z	12:59:24.1	151.8	39.9					
	e PKPbc	Z	12:59:29.6							
STU	e PKPbc	Z	12:59:30.5	152.2	35.6					
WLF	e PKPdf	Z	12:59:25.5	152.5	29.2					
	e PKPbc	Z	12:59:31.9							
BFO	e PKPbc	Z	12:59:31.8	152.9	34.6					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/24	17:46:24.0	24.507N	95.997E	33.0G	4.7			SZGRF

Myanmar

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	17:57:14.3	68.3	77.2	1.2	6	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/24	18:29:38.9	16.946S	170.792E	33.0G				SZGRF
Vanuatu Islands region								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPdf	Z 18:49:09.0	140.0	29.8					
NRDL	e PKPdf	Z 18:49:11.6	141.3	30.4					
CLL	e PKPdf	Z 18:49:11.6	141.4	35.4					
BRG	e PKPdf	Z 18:49:11.4	141.4	37.0					
CLZ	e PKPdf	Z 18:49:12.7	141.8	31.2					
TANN	e PKPdf	Z 18:49:13.4	142.3	35.3					
MOX	e PKPdf	Z 18:49:13.5	142.4	33.9					
UBBA	e PKPdf	Z 18:49:14.9	142.8	31.4					
ROTZ	e PKPdf	Z 18:49:14.2	142.9	35.4					
GEC2	e PKPdf	Z 18:49:14.4	143.1	38.3					
BUG	e PKPdf	Z 18:49:14.5	143.1	26.9					
WET	e PKPdf	Z 18:49:14.6	143.2	36.9					
GRA1	e PKPdf	Z 18:49:15.4	143.3	34.0					
TNS	e PKPdf	Z 18:49:16.1	143.8	29.4					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/24								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e PKPbc	Z 20:09:51.0							
BSEG	e PKPbc	Z 20:09:47.1							
CLL	e PKPbc	Z 20:09:51.3							
CLZ	e PKPbc	Z 20:09:53.2							
GRA1	e PKPbc	Z 20:09:58.1							
GTTG	e PKPbc	Z 20:09:54.1							
IBBN	e PKPbc	Z 20:09:54.1							
MOX	e PKPbc	Z 20:09:54.4							
TANN	e PKPbc	Z 20:09:54.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/25	09:19:48.4	23.100S	170.600E	35.0		4.9		NEIC
Southeast of Loyalty Islands								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKP	Z 09:39:24.3	145.8	33.5					
CLL	e PKP	Z 09:39:27.3	146.9	40.0					
CLZ	e PKP	Z 09:39:29.4	147.5	35.4					
GEC2	e PKP	Z 09:39:32.0	148.5	43.6					



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GRA1	e PKP	Z	09:39:33.1	148.9	38.8							
	e L	Z	10:38:29.8				21.6	190		4.9		
TNS	e PKP	Z	09:39:34.6	149.5	33.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/25	10:22:7.6	52.478N	159.803E	33.0N	5.0			SZGRF

Off east coast of Kamchatka Peninsula, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 10:33:42.8	74.4	19.2	1.2	17	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/26	07:51:10.8	38.878N	74.261E	33.0G	5.0			SZGRF

Tajikistan-Xinjiang border region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 07:59:27.2	45.0	78.8	1.1	25	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/26								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 21:27:48.4							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/26								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 21:38:47.8			1.4	14			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/27	02:29:22.7	23.028S	176.289W	33.0N				SZGRF

South of Fiji Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLZ	e PKPbc	Z 02:49:12.0	150.7	12.6					
CLL	e PKPbc	Z 02:49:11.9	150.8	17.7					
BRG	e PKPbc	Z 02:49:12.7	151.0	19.7					
FBE	e PKPbc	Z 02:49:13.6	151.1	18.6					

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MOX	e	PKPbc	Z	02:49:14.3	151.7	15.5
WERD	e	PKPbc	Z	02:49:14.7	151.8	16.9
TANN	e	PKPbc	Z	02:49:14.6	151.8	17.2
GUNZ	e	PKPbc	Z	02:49:14.9	151.8	17.0
WERN	e	PKPbc	Z	02:49:15.1	151.9	17.1
ROHR	e	PKPbc	Z	02:49:15.3	152.0	17.0
GRA1	e	PKPbc	Z	02:49:16.3	152.7	15.2

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/27	05:25:47.9	1.862N	97.807E	33.0N	4.7			SZGRF

Northern Sumatera, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 05:38:27.2	86.4	91.4	1.3	9	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/27	20:52:42.6	34.350N	25.900E	10.0G	4.7			SZGRF

Crete, Greece

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z 20:56:41.2	17.1	143.6	0.9	53	4.7		
FUR	e P	Z 20:56:49.5	17.6	136.4	0.9	83	4.9		
WET	e P	Z 20:56:50.4	17.6	142.1	1.3	100	4.8		
ROTZ	e P	Z 20:56:58.2	18.4	141.8	1.1	24	4.2		
BRG	e P	Z 20:57:01.7	18.7	147.7	1.0	17	4.2		
GRA1	e P	Z 20:57:02.5	18.7	139.4	1.3	136	5.0		
TANN	e P	Z 20:57:03.4	18.8	143.5	0.9	73	4.9		
STU	e P	Z 20:57:04.2	19.0	133.2	1.0	34	4.5		
BFO	e P	Z 20:57:06.3	19.1	130.5	1.2	34	4.4		
MOX	e P	Z 20:57:08.9	19.3	142.0	0.7	18	4.4		
CLL	e P	Z 20:57:09.0	19.4	146.2	0.8	29	4.6		
UBBA	e P	Z 20:57:17.1	20.1	138.9	1.5	31	4.3		
TNS	e P	Z 20:57:19.4	20.4	134.6	0.6	38	4.8		
CLZ	e P	Z 20:57:23.4	20.7	141.4	0.8	34	4.7		
WLF	e P	Z 20:57:27.9	21.1	129.2	1.0	60	4.9		
NRDL	e P	Z 20:57:30.5	21.4	141.9	1.0	31	4.6		
BUG	e P	Z 20:57:34.9	21.7	134.6	1.1	89	5.1		
IBBN	e P	Z 20:57:39.4	22.2	137.0	1.1	97	5.1		
BSEG	e P	Z 20:57:41.1	22.4	144.5	0.6	46	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/28	00:35:56.8	42.900N	142.850E	106.6	5.8			SZGRF

Hokkaido, Japan, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	00:47:28.6	75.0	34.0	1.1	175	6.0		
CLL	e P	Z	00:47:34.9	76.2	35.4	1.0	86	5.8		
	e pP	Z	00:48:01.7							
BRG	e P	Z	00:47:35.3	76.2	35.9	2.1	215	5.9		
	e pP	Z	00:48:02.2							
NRDL	e P	Z	00:47:35.5	76.3	33.6	2.0	207	5.9		
	e pP	Z	00:48:02.4							
CLZ	e P	Z	00:47:38.5	76.7	33.7	1.1	121	6.0		
	e pP	Z	00:48:05.4							
TANN	e P	Z	00:47:40.7	77.2	34.9	2.0	133	5.7		
	e pP	Z	00:48:07.8							
IBBN	e P	Z	00:47:40.8	77.2	32.0	1.1	111	5.9		
	e pP	Z	00:48:07.7							
MOX	e P	Z	00:47:41.3	77.3	34.4	2.2	241	5.9		
	e pP	Z	00:48:08.3							
UBBA	e P	Z	00:47:43.7	77.7	33.3	1.8	115	5.7		
	e pP	Z	00:48:11.1							
ROTZ	e P	Z	00:47:44.6	77.8	34.7	2.3	323	6.0		
	e pP	Z	00:48:11.8							
GEC2	e P	Z	00:47:44.6	78.0	35.5	2.3	169	5.8		
	e pP	Z	00:48:12.3							
WET	e P	Z	00:47:45.2	78.1	35.0	1.2	71	5.7		
	e pP	Z	00:48:13.2							
BUG	e P	Z	00:47:45.6	78.1	31.6	1.1	107	5.9		
	e pP	Z	00:48:12.8							
GRA1	e P	Z	00:47:46.9	78.2	34.0	1.0	120	5.9		
	e pP	Z	00:48:14.1							
TNS	e P	Z	00:47:49.4	78.7	32.3	1.4	96	5.6		
	e pP	Z	00:48:16.7							
FUR	e P	Z	00:47:53.4	79.5	33.9	1.2	135	5.8		
	e pP	Z	00:48:20.9							
STU	e P	Z	00:47:54.5	79.7	32.6	1.1	91	5.6		
	e pP	Z	00:48:21.9							
WLF	e P	Z	00:47:56.3	80.0	30.7	2.0	203	5.7		
	e pP	Z	00:48:22.8							
BFO	e P	Z	00:47:58.1	80.4	32.0	1.5	131	5.7		
	e pP	Z	00:48:25.7							

Date Origin Time Lat Long Depth mb Ms ML Source  
2009/02/28 02:46:56.4 3.800N 126.700E 35.0G  
Talaud Islands, Indonesia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e Pdiff	Z	03:00:43.6	101.1	69.7					
GEC2	e Pdiff	Z	03:00:47.5	101.9	69.8					

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ROTZ	e Pdiff	Z	03:00:51.9	102.5	68.4
MOX	e Pdiff	Z	03:00:51.2	102.5	67.8
CLZ	e Pdiff	Z	03:00:52.0	102.8	66.5

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/28	10:50:22.1	3.800N	126.500E	35.0				NEIC
Talaud Islands, Indonesia								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e Pdiff	Z	11:04:08.4	101.0	69.8					
CLL	e Pdiff	Z	11:04:09.8	101.4	69.0					
GEC2	e Pdiff	Z	11:04:12.0	101.8	70.0					
TANN	e Pdiff	Z	11:04:12.9	102.0	68.7					
WET	e Pdiff	Z	11:04:14.1	102.2	69.3					
ROTZ	e Pdiff	Z	11:04:15.2	102.4	68.6					
CLZ	e Pdiff	Z	11:04:16.5	102.7	66.7					
GRA1	e Pdiff	Z	11:04:17.6	103.0	67.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/28	14:33: 6.0	60.400S	24.900W	10.0		5.9		NEIC
South Sandwich Islands region								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e PP	Z	14:52:24.2	112.0	197.0					
FUR	e PP	Z	14:52:26.9	112.4	198.4					
	e PS	R	15:02:14.5							
STU	e PP	Z	14:52:28.5	112.6	197.5					
	e PS	R	15:02:14.6							
	e SS	R	15:08:04.5							
WLF	e PP	Z	14:52:31.6	112.9	196.1					
	e PS	R	15:02:16.4							
GEC2	e PP	Z	14:52:35.1	113.6	199.7					
	e PS	R	15:02:16.8							
WET	e PP	Z	14:52:36.9	113.7	199.3					
	e PS	R	15:02:18.9							
	e SS	R	15:08:24.9							
TNS	e PP	Z	14:52:37.9	113.8	197.3					
	e PS	R	15:02:22.1							
GRA1	e PP	Z	14:52:36.9	113.9	198.6					
	e PS	R	15:02:21.0							
	e L	Z	15:34:49.6			21.1	3122		5.9	
ROTZ	e PP	Z	14:52:39.8	114.2	199.1					
	e PS	R	15:02:23.8							
UBBA	e PP	Z	14:52:44.8	114.7	198.1					
	e PS	R	15:02:30.8							

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BUG	e PP	Z	14:52:44.8	114.8	196.8
	e PS	R	15:02:30.9		
TANN	e PP	Z	14:52:45.4	114.8	199.3
	e PS	R	15:02:30.8		
MOX	e PP	Z	14:52:44.8	114.9	198.9
	e PS	R	15:02:31.2		
BRG	e PP	Z	14:52:50.4	115.6	200.1
	e PS	R	15:02:37.3		
	e SS	R	15:08:59.6		
IBBN	e PP	Z	14:52:50.7	115.7	197.2
CLZ	e PP	Z	14:52:52.0	115.8	198.5
	e PS	R	15:02:39.9		
CLL	e PP	Z	14:52:50.1	115.8	199.7
	e PS	R	15:02:38.6		
NRDL	e PP	Z	14:52:55.4	116.3	198.4
	e PS	R	15:02:45.2		
BSEG	e PP	Z	14:53:05.7	117.7	198.8
	e PS	R	15:02:57.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/28	17:27:13.7	20.725S	168.770E	33.0N				SZGRF

Loyalty Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e PKPbc	Z 17:46:42.9	144.0	42.6					
CLL	e PKPbc	Z 17:46:42.8	144.0	40.8					
ROHR	e PKPbc	Z 17:46:46.9	145.1	40.8					
ROTZ	e PKPbc	Z 17:46:48.0	145.5	41.1					
GEC2	e PKPbc	Z 17:46:47.9	145.5	44.2					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/28	21:18:33.4	5.605N	32.006W	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 21:28:16.7	57.1	234.3	1.2	6	4.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/02/28	21:18:51.7	17.833S	176.464E	33.0G				SZGRF

Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
TANN	e PKPbc	Z 21:38:24.1	145.0	27.2					

ROTZ	e	PKPbc	Z	21:38:27.6	145.6	27.2
GEC2	e	PKPbc	Z	21:38:27.3	146.0	30.3
WET	e	PKPbc	Z	21:38:28.3	146.0	28.7
GRA1	e	PKPbc	Z	21:38:27.6	146.0	25.7
TNS	e	PKPbc	Z	21:38:29.6	146.2	20.8
WLF	e	PKPbc	Z	21:38:31.6	147.2	17.2
FUR	e	PKPbc	Z	21:38:32.3	147.4	26.8
STU	e	PKPbc	Z	21:38:33.1	147.4	22.9
BFO	e	PKPbc	Z	21:38:33.3	148.0	21.7

## Format description

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(T. Plenefisch, Email: plene@szgrf.bgr.de)

In general all regional and teleseismic events clearly recorded with stations of the Gräfenberg-Array (GRF) and stronger events recorded with stations of the German Regional Seismological Network (GRSN) are included in this bulletin. Each event is reported by an EPICENTER LINE, a REGION LINE and a block of PHASE LINES.

## EPICENTER LINE:

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, SED, MAD)

## REGION LINE:

The region name of the epicenter location.

## 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
	Component where the phase was picked

Time	Arrival time of the reported phase
Dist	Distance from the epicenter location to the station in degree
BAz	Backazimuth from the epicenter location 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