

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

(produced by SZGRF/BGR - HANNOVER)

December 2009 UPDATED 16.JUNE.2010

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
2009/12/01	11:40:40.1	12.579N	93.208E	34.7	5.1			SZGRF

Andaman Islands, India, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z 11:52:09.8	73.5	90.2	0.8	10	4.9		
RUE	e pP	Z 11:52:20.7	73.6	90.6					
GEC2	e P	Z 11:52:10.8	73.7	89.4	0.6	10	5.0		
	e pP	Z 11:52:21.3							
FBE	e P	Z 11:52:12.2	73.9	89.8	0.8	17	5.1		
CLL	e P	Z 11:52:13.1	74.1	89.6	0.7	6	4.7		
	e pP	Z 11:52:23.0							
WET	e pP	Z 11:52:24.4	74.2	88.9					
WERD	e P	Z 11:52:15.8	74.6	88.8	1.0	9	4.8		
GRA1	e pP	Z 11:52:29.8	75.3	87.8					
CLZ	e P	Z 11:52:22.6	75.7	87.7	0.8	12	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/02	06:14:27.9	37.200N	141.400E	42.0	5.1			NEIC

Near east coast of eastern Honshu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z 06:26:37.1	80.6	39.9	1.2	15	4.9		
CLL	e P	Z 06:26:37.1	80.6	39.2	0.9	11	4.9		
ROTZ	e P	Z 06:26:45.8	82.2	38.5	1.9	53	5.3		
WET	e P	Z 06:26:48.1	82.4	39.0	1.9	32	5.2		
RJOB	e P	Z 06:26:52.8	83.5	38.8	1.0	15	5.2		
BFO	e P	Z 06:26:59.0	84.8	35.7					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/02	12:37:54.1	28.700N	53.700E	10.0	4.9			NEIC

Southern Iran

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RJOB	e P	Z	12:45:01.7	36.7	106.3					
WET	e P	Z	12:45:04.7	37.1	108.1	1.5	31	4.8		
ROTZ	e P	Z	12:45:10.3	37.7	108.2	1.5	28	4.8		
CLL	e P	Z	12:45:10.5	37.8	110.9	1.4	22	4.7		
GRA1	e P	Z	12:45:15.3	38.3	107.1	1.5	58	5.1		
CLZ	e P	Z	12:45:25.0	39.5	108.8	0.9	30	4.9		
NRDL	e P	Z	12:45:29.1	39.8	109.3	1.3	52	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/02	21:01:42.5	17.900S	178.600W	553.0				NEIC

Fiji Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKP	Z	21:20:18.2	145.3	19.7					
FBE	e PKP	Z	21:20:19.4	145.6	20.4					
PLN	e PKP	Z	21:20:21.1	146.3	18.7					
GUNZ	e PKP	Z	21:20:21.3	146.4	19.0					
ROTZ	e PKP	Z	21:20:23.1	147.0	19.1					
GEC2	e PKP	Z	21:20:24.4	147.5	22.2					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/03	01:56:37.8	54.680N	166.440W	33.0N	5.4			SZGRF

Fox Islands, Aleutian Islands, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	02:07:57.4	71.4	358.0	1.1	43	5.5		
NRDL	e P	Z	02:08:05.6	72.8	357.9	1.2	41	5.4		
IBBN	e P	Z	02:08:06.5	72.9	356.5	1.2	50	5.5		
CLZ	e P	Z	02:08:09.8	73.4	358.1	1.4	70	5.5		
CLL	e P	Z	02:08:12.5	74.0	359.7	1.4	44	5.3		
BRG	e P	Z	02:08:15.2	74.4	0.2	1.3	26	5.1		
TANN	e P	Z	02:08:18.0	74.9	359.3	1.4	24	5.0		
WLF	e P	Z	02:08:21.8	75.5	355.6	1.4	55	5.5		
ROTZ	e P	Z	02:08:22.0	75.5	359.2	1.3	29	5.3		
GRA1	e P	Z	02:08:22.4	75.6	358.6	1.3	55	5.5		
WET	e P	Z	02:08:25.4	76.2	359.6	1.4	28	5.2		
GEC2	e P	Z	02:08:27.0	76.5	0.1	0.9	12	5.0		
STU	e P	Z	02:08:26.8	76.5	357.4	0.9	20	5.2		

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BFO	e P	Z	02:08:28.9	76.9	356.9	1.7	52	5.4
FUR	e P	Z	02:08:30.8	77.1	358.6	1.5	85	5.7
RJOB	e P	Z	02:08:33.4	77.6	359.5	0.9	17	5.2

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/03	06:12:32.7	56.460S	122.022W	10.0				NEIC

Southern East Pacific Rise

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e PKPbc	Z	06:32:20.6	149.4	235.7					
STU	e PKPbc	Z	06:32:23.6	150.1	236.5					
BUG	e PKPbc	Z	06:32:24.0	150.4	240.1					
FUR	e PKPbc	Z	06:32:24.3	150.9	235.8					
RJOB	e PKPbc	Z	06:32:26.5	151.5	235.2					
CLZ	e PKPbc	Z	06:32:29.4	152.3	241.4					
NRDL	e PKPbc	Z	06:32:30.4	152.5	242.5					
GEC2	e PKPbc	Z	06:32:28.5	152.6	237.0					
PLN	e PKPbc	Z	06:32:29.3	152.6	239.5					
WERD	e PKPbc	Z	06:32:29.3	152.7	239.5					
TANN	e PKPbc	Z	06:32:29.5	152.8	239.4					
NEUB	e PKPbc	Z	06:32:29.9	152.8	240.7					
BSEG	e PKPbc	Z	06:32:31.0	153.2	245.1					
CLL	e PKPbc	Z	06:32:31.7	153.5	241.1					
FBE	e PKPbc	Z	06:32:31.1	153.5	240.4					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/03	23:06:48.5	2.700S	68.100E	10.0	5.7			NEIC

Carlsberg Ridge

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
FUR	e P	Z	23:18:03.3	70.8	117.7	1.4	126	5.9		
WERN	e P	Z	23:18:06.7	71.1	119.3	1.6	75	5.6		
TANN	e P	Z	23:18:06.7	71.2	119.4	2.0	82	5.5		
CLL	e P	Z	23:18:07.1	71.3	120.1	1.5	59	5.5		
GRA1	e P	Z	23:18:08.4	71.5	118.1	1.6	113	5.8		
STU	e P	Z	23:18:12.6	72.3	116.1	1.8	113	5.7		
BFO	e P	Z	23:18:14.8	72.6	115.2	2.1	154	5.8		
UBBA	e P	Z	23:18:15.5	72.7	117.4	1.6	56	5.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/03	23:41:26.1	37.200N	142.200E	30.0				NEIC

Off east coast of Honshu, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 23:53:50.0	82.9	37.3	1.8	45			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/04								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e (Pdiff)	Z 04:10:26.6							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/04	06:02:19.0	37.900N	28.700E	5.0	4.6	3.9		NEIC

Turkey

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 06:06:24.2	17.2	126.7	1.5	68	4.6		
	e pP	Z 06:06:28.2							
	e L	Z 06:13:07.5			19.6	772		3.9	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/04	12:02:49.5	19.600S	169.700E	88.0				NEIC

Vanuatu Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 12:22:16.7	145.4	37.4					
	e pPKP	Z 12:22:27.0							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/04	17:19:49.4	37.400N	29.700E	27.0	3.9	3.2		NEIC

Turkey

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 17:23:59.2	18.1	125.8	1.2	13	3.9		
	e L	Z 17:31:05.0			22.0	152		3.2	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/04								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 20:37:47.0							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/05	00:59:0.9	55.122N	162.014E	33.0N	5.0			SZGRF

Near east coast of Kamchatka Peninsula, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 01:10:20.6	72.4	17.0	1.1	12	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/05	01:25:37.7	28.532N	131.435E	33.0N	4.7			SZGRF

Southeast of Ryukyu Islands, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 01:38:12.7	85.5	49.6	1.0	6	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/05								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 06:23:36.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/05								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 08:07:35.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/05	22:56:13.4	17.900S	178.500W	585.0				NEIC

Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 23:14:52.0	147.3	17.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/06	01:25:40.5	44.429N	10.642E	10.0G			3.0	SZGRF

Northern Italy

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
DAVA	e Pn	Z	01:26:28.2	2.9	169.2					3.1
	e Sn	E	01:27:02.7							
WTTA	e Pn	Z	01:26:29.1	2.9	194.1					3.2
	e Sn	N	01:27:04.6							
OBER	e Pn	Z	01:26:29.4	3.0	175.2					2.8
	e Sn	E	01:27:04.2							
BFO	e Pn	Z	01:26:44.3	4.2	156.9					
	e Sn	N	01:27:28.9							
ARSA	e Pn	Z	01:26:45.9	4.4	232.1					
GEC2	e Pn	Z	01:26:53.0	4.9	206.6					
	e Sn	N	01:27:46.5							
WET	e Pn	Z	01:26:53.7	5.0	198.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/06	04:33:15.3	35.680N	78.010E	93.5	5.6			SZGRF
Eastern Kashmir								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	04:41:41.9	47.4	82.8	1.0	90	5.9		
GEC2	e P	Z	04:41:45.5	47.9	80.8	1.2	57	5.6		
CLL	e P	Z	04:41:45.5	47.9	82.5	1.0	60	5.6		
	e sP	Z	04:42:18.9							
WET	e P	Z	04:41:49.2	48.3	80.5	1.2	51	5.4		
TANN	e P	Z	04:41:49.7	48.4	81.3	1.0	43	5.4		
ROTZ	e P	Z	04:41:52.3	48.7	80.6	1.1	65	5.6		
	e sP	Z	04:42:25.6							
BSEG	e P	Z	04:41:56.2	49.2	82.9	0.9	129	5.9		
GRA1	e P	Z	04:41:57.3	49.3	79.9	1.1	106	5.7		
CLZ	e P	Z	04:41:58.0	49.5	81.1	1.1	106	5.7		
NRDL	e P	Z	04:41:58.7	49.6	81.5	1.0	137	5.8		
FUR	e P	Z	04:41:58.7	49.6	78.6	0.9	165	5.9		
UBBA	e P	Z	04:42:00.6	49.9	80.0	1.7	84	5.4		
	e sP	Z	04:42:34.0							
STU	e P	Z	04:42:07.9	50.8	77.8	1.2	110	5.7		
IBBN	e P	Z	04:42:09.3	51.0	79.7	1.2	112	5.7		
BFO	e P	Z	04:42:12.1	51.4	76.9	1.1	23	5.0		
BUG	e P	Z	04:42:12.7	51.5	78.6	1.1	108	5.7		
WLF	e P	Z	04:42:21.0	52.5	76.5	1.0	81	5.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/06	11:16:29.2	34.373N	88.318E	12.2	4.9			SZGRF
Xizang								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 11:26:12.7	56.6	74.4	1.1	15	4.9		
	e pP	Z 11:26:16.0							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/06	12:57:42.8	45.537N	11.748E	10.0G			2.6	SZGRF

Northern Italy

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WITA	e Pg	Z 12:58:14.7	1.7	177.4					2.7
	e Sn	E 12:58:33.2							
KBA	e Pg	Z 12:58:17.9	1.9	216.2					2.5
OBER	e Pg	Z 12:58:22.0	2.1	151.3					2.6
OBKA	e Pg	Z 12:58:22.8	2.2	244.5					
GRC2	e Pg	Z 12:58:43.9	3.3	175.5					
	e Sn	N 12:59:11.4							
GRC3	e Pg	Z 12:58:44.0	3.4	178.1					
	e Sn	N 12:59:11.0							
GRC1	e Pg	Z 12:58:45.9	3.5	177.4					
	e Sn	N 12:59:14.5							
GRC4	e Pg	Z 12:58:47.5	3.6	177.5					
	e Sn	N 12:59:16.3							
GRB5	e Pg	Z 12:58:48.0	3.6	179.2					
	e Sn	E 12:59:16.1							
GRB2	e Pg	Z 12:58:49.7	3.7	179.2					
	e Sn	Z 12:59:21.6							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/06	13:39:32.0	45.800N	11.900E	10.0G			3.2	INGV

Northern Italy

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
FUR	e Pn	Z 13:40:47.9	2.4	169.5					
GEC2	e Pn	Z 13:40:24.6	3.3	202.5					3.1
	e Pg	Z 13:40:33.6							
WET	e Pn	Z 13:40:26.1	3.4	191.5					3.3
	e Pg	Z 13:40:35.4							
BFO	e Pn	Z 13:41:08.3	3.5	134.8					
GRA1	e Pg	Z 13:40:46.0	3.9	173.1					
	e Sg	N 13:41:36.2							
ROTZ	e Pn	Z 13:40:32.7	4.0	183.1					
	e Pg	Z 13:40:45.8							
	e Sg	N 13:41:37.9							
ROHR	e Pg	Z 13:40:55.8	4.4	183.8					3.2
	e Sn	N 13:41:29.4							

NKC	e Pg	Z	13:40:55.8	4.4	184.9
	e Sg	N	13:41:51.9		
WERN	e Pg	Z	13:40:56.3	4.5	184.2
GUNZ	e Pn	Z	13:40:41.0	4.6	183.8
	e Pg	Z	13:40:57.9		
	e Sg	N	13:41:56.7		
TANN	e Pn	Z	13:40:43.6	4.6	184.9
	e Pg	Z	13:40:59.0		
WERD	e Pn	Z	13:40:41.7	4.7	183.5
	e Pg	Z	13:40:59.5		
	e Sg	N	13:41:59.9		
PLN	e Pg	N	13:41:00.4	4.7	182.2

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/06	17:36:34.4	10.277S	35.192E	33.0N	5.8	4.7		SZGRF

Tanzania

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 17:47:02.0	63.5	153.5	1.4	104	5.8		
	e PP	Z 17:49:19.4							
	e L	Z 18:21:31.9			21.2	600		4.7	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/06	17:40:39.6	8.185S	29.053E	33.0N	5.3			SZGRF

Lake Tanganyika region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 17:50:42.9	59.9	159.5	1.7	50	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/06	17:57:59.8	12.972S	33.791E	33.0N	5.2			SZGRF

Malawi

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 18:08:41.7	65.7	155.8	1.4	20	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/06	17:59:52.3	11.888S	33.228E	33.0N	5.3			SZGRF

Malawi

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
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GRA1	e P	Z	18:10:26.4	64.5	156.0	1.4	31	5.3
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Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/06	18:29:1.9	12.358S	34.272E	33.0N	5.4			SZGRF

Malawi

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 18:39:40.8	65.3	155.1	1.4	33	5.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/06								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e (Pn)	Z 18:47:35.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/06	19:36:40.4	10.433S	34.175E	33.0N	4.8			SZGRF

Malawi

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 19:47:07.1	63.4	154.6	1.3	11	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/06								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e (Pn)	Z 20:35:31.8							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/06	22:31:42.2	52.754N	160.557E	36.7N	4.7			SZGRF

Off east coast of Kamchatka Peninsula, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 22:43:16.2	74.3	18.7	1.1	8	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/07	03:35:18.9	13.878S	33.947E	33.0N	5.0			SZGRF

Malawi

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 03:46:06.7	66.6	155.9	1.4	13	5.0		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/07	09:31:34.2	11.973S	34.032E	33.0N	5.2			SZGRF

Malawi

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 09:42:10.3	64.8	155.2	1.5	26	5.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/07	14:40: 9.5	19.590S	178.350W	33.0N				SZGRF

Fiji Islands region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPbc	Z 14:59:52.1	147.0	19.9					
BRG	e PKPbc	Z 14:59:52.7	147.2	21.8					
NEUB	e PKPbc	Z 14:59:53.1	147.4	17.9					
PLN	e PKPbc	Z 14:59:54.8	148.0	18.9					
TANN	e PKPbc	Z 14:59:55.0	148.0	19.5					
WERD	e PKPbc	Z 14:59:55.0	148.0	19.2					
WERN	e PKPab	Z 14:59:58.4	148.1	19.4					
NKC	e PKPbc	Z 14:59:55.6	148.2	19.6					
ROHR	e PKPbc	Z 14:59:55.5	148.2	19.3					
ROTZ	e PKPbc	Z 14:59:56.8	148.7	19.4					
GRA1	e PKPbc	Z 14:59:57.4	148.9	17.7					
	e PKPab	Z 15:00:01.6							
GRA2	e PKPbc	Z 14:59:57.4	149.0	17.9					
	e PKPab	Z 15:00:01.6							
GRB3	e PKPbc	Z 14:59:57.8	149.2	18.9					
GEC2	e PKPbc	Z 14:59:57.9	149.2	22.6					
GRB2	e PKPbc	Z 14:59:57.9	149.3	18.7					
GRB5	e PKPbc	Z 14:59:58.4	149.4	18.8					
GRC4	e PKPbc	Z 14:59:58.6	149.5	18.5					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/07	19:48:11.2	27.967N	130.366E	31.8	5.3	4.8		SZGRF

Ryukyu Islands, Japan

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 20:00:49.7	85.4	50.7	1.2	29	5.3		

e pP	Z	20:00:59.0								
e L	Z	20:43:52.8	19.0	390	4.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/07	22:06:28.8	3.540N	96.900E	32.5	5.1			SZGRF

Northern Sumatera, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z 22:18:52.0	82.8	93.2	1.2	14	5.1		
	e pP	Z 22:19:01.8							
GEC2	e P	Z 22:18:52.2	82.9	92.8	1.2	19	5.2		
WET	e P	Z 22:18:54.8	83.4	92.2					
	e pP	Z 22:19:04.4							
CLL	e P	Z 22:18:54.7	83.4	92.6	1.2	14	5.1		
TANN	e P	Z 22:18:56.6	83.7	92.0	1.2	8	4.8		
NKC	e P	Z 22:18:56.7	83.7	92.0					
	e pP	Z 22:19:06.0							
GUNZ	e P	Z 22:18:57.0	83.8	91.9	1.2	11	5.0		
ROHR	e P	Z 22:18:57.2	83.8	91.9					
	e pP	Z 22:19:06.3							
WERD	e P	Z 22:18:57.0	83.8	91.9					
ROTZ	e P	Z 22:18:57.6	83.9	91.8					
PLN	e P	Z 22:18:57.5	83.9	91.8					
	e pP	Z 22:19:07.0							
NEUB	e P	Z 22:18:58.7	84.2	91.6					
	e pP	Z 22:19:08.1							
CLZ	e P	Z 22:19:03.2	85.1	90.5	1.3	20	5.2		
BSEG	e P	Z 22:19:03.9	85.1	90.7	1.1	32	5.4		
	e pP	Z 22:19:13.4							
UBBA	e pP	Z 22:19:14.0	85.3	90.2					
IBBN	e pP	Z 22:19:20.9	86.7	88.5					
BUG	e P	Z 22:19:12.7	87.0	88.1	1.5	36	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/08								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 00:24:51.3							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/08	03:09:13.3	7.710S	34.990E	33.0N	5.9	5.3		SZGRF

Tanzania

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RJOB	e P	Z	03:19:07.0	58.8	154.1	1.5	57	5.4		
GEC2	e P	Z	03:19:12.8	59.6	155.3	1.8	385	6.1		
FUR	e P	Z	03:19:13.1	59.7	152.5	2.0	587	6.3		
WET	e P	Z	03:19:15.6	60.1	154.5	1.8	151	5.7		
BFO	e P	Z	03:19:20.6	60.8	149.4	1.7	209	5.7		
ROTZ	e P	Z	03:19:21.1	60.8	153.9	1.8	270	5.8		
STU	e P	Z	03:19:21.5	60.8	150.4	1.3	177	5.7		
GRA1	e P	Z	03:19:22.5	61.0	152.8	1.8	391	5.9		
	e PP	Z	03:21:38.7							
	e L	Z	03:48:12.7			18.7	2120		5.3	
TANN	e P	Z	03:19:24.7	61.3	154.4	1.9	240	5.7		
BRG	e P	Z	03:19:24.3	61.3	156.1	1.7	115	5.4		
CLL	e P	Z	03:19:28.6	62.0	155.1	1.6	134	5.9		
UBBA	e P	Z	03:19:31.8	62.4	151.8	1.6	173	6.0		
WLF	e P	Z	03:19:33.0	62.6	147.4	1.9	241	6.1		
CLZ	e P	Z	03:19:37.2	63.2	152.4	1.6	148	5.9		
BUG	e P	Z	03:19:40.9	63.8	149.1	1.6	288	6.2		
NRDL	e P	Z	03:19:41.7	63.8	152.3	1.7	287	6.2		
IBBN	e P	Z	03:19:45.1	64.4	149.8	1.7	238	6.2		
BSEG	e P	Z	03:19:49.0	65.1	152.9	1.5	232	6.2		

Date Origin Time Lat Long Depth mb Ms ML Source
 2009/12/08

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z	15:19:30.8							

Date Origin Time Lat Long Depth mb Ms ML Source
 2009/12/08 15:43:53.8 45.706N 9.978E 10.0G 2.7 SZGRF
 Northern Italy

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
DAVA	e Pg	Z	15:44:23.9	1.6	177.5					
OBER	e Pg	Z	15:44:25.0	1.7	187.4					2.7
	e Sg	N	15:44:48.1							
RJOB	e Pn	Z	15:44:38.3	2.8	224.6					
	e Sn	N	15:45:11.6							
BFO	e Pn	Z	15:44:38.7	2.9	156.2					
	e Sn	E	15:45:11.3							
WET	e Pn	Z	15:44:53.1	4.0	210.8					
	e Sn	N	15:45:36.4							
GEC2	e Pn	Z	15:44:53.6	4.0	220.2					
	e Sn	N	15:45:38.4							
GRA1	e Pn	Z	15:44:53.8	4.1	192.3					

e Sn N 15:45:40.1

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/08	19:34:35.2	23.829N	104.032W	33.0N	5.3			SZGRF

Central Mexico

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 19:47:03.9	86.8	304.0	2.4	56	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/09	00:30: 5.1	45.122N	150.303E	33.0N				SZGRF

Kuril Islands, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 00:42:21.9	78.7	28.1					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/09								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 00:58:37.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/09	02:26: 3.0	51.214N	176.939W	33.0N	4.6			SZGRF

Andreanof Islands, Aleutian Islands, United States

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 02:38:00.4	78.9	5.2	1.1	7	4.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/09	09:46: 3.2	22.100S	170.900E	45.0		6.2		NEIC

Southeast of Loyalty Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPbc	Z 10:05:34.5	144.9	32.4					
BRG	e PKPbc	Z 10:05:38.5	146.1	40.5					
CLL	e PKPbc	Z 10:05:38.2	146.1	38.7					
NRDL	e PKPbc	Z 10:05:38.7	146.2	33.2					
CLZ	e PKPbc	Z 10:05:40.2	146.7	34.2					

TANN	e	PKPbc	Z	10:05:41.4	147.0	38.7
IBBN	e	PKPbc	Z	10:05:41.5	147.1	29.7
GEC2	e	PKPdf	Z	10:05:40.4	147.7	42.2
WET	e	PKPdf	Z	10:05:40.9	147.8	40.7
	e	PKPbc	Z	10:05:42.8		
BUG	e	PKPbc	Z	10:05:42.7	148.0	29.5
GRA1	e	PKPdf	Z	10:05:41.3	148.1	37.5
	e	L	Z	11:11:42.0		
FUR	e	PKPdf	Z	10:05:44.0	149.3	39.2
STU	e	PKPdf	Z	10:05:44.1	149.6	35.1
WLF	e	PKPdf	Z	10:05:45.5	149.9	29.1
BFO	e	PKPdf	Z	10:05:45.0	150.3	34.1
	e	PKPbc	Z	10:05:49.2		

21.8 4113 6.2

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/09	12:13:47.5	49.343N	25.359W	33.0N	4.5			SZGRF

Northern Mid-Atlantic Ridge

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 12:18:55.0	23.5	283.3	1.1	17	4.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/09	16:00:30.6	1.314S	23.029W	33.0G	5.2	5.8		SZGRF

Central Mid-Atlantic Ridge

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 16:10:30.9	58.9	221.1	1.4	38	5.2		
	e L	Z 16:29:06.3			39.1	15896		5.8	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/09	21:29: 2.4	1.980N	94.950E	19.0	5.6	5.6		SZGRF

Off west coast of northern Sumatera, Indonesia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z 21:41:25.5	82.8	95.3	1.9	199	6.0		
BRG	e P	Z 21:41:25.4	82.8	95.7	1.5	68	5.7		
RJOB	e P	Z 21:41:27.3	83.3	94.5	0.9	25	5.4		
WET	e P	Z 21:41:28.2	83.3	94.7	1.9	128	5.8		
CLL	e P	Z 21:41:28.0	83.4	95.1	1.9	74	5.6		
TANN	e P	Z 21:41:29.9	83.7	94.5	1.7	49	5.5		
ROTZ	e P	Z 21:41:31.0	83.8	94.3	1.9	106	5.7		
FUR	e P	Z 21:41:32.8	84.3	93.4	1.3	52	5.6		
GRA1	e P	Z 21:41:34.1	84.4	93.5	1.1	63	5.7		

	e L	Z	22:23:18.6			21.7	2456		5.6
CLZ	e P	Z	21:41:36.9	85.1	93.0	1.5	50	5.5	
BSEG	e P	Z	21:41:37.6	85.2	93.2	1.4	82	5.8	
UBBA	e P	Z	21:41:37.8	85.3	92.7	1.7	42	5.4	
NRDL	e P	Z	21:41:38.1	85.3	92.9	1.5	88	5.8	
STU	e P	Z	21:41:39.9	85.7	91.9	1.5	43	5.4	
BFO	e P	Z	21:41:42.5	86.3	91.2	1.1	30	5.3	
IBBN	e P	Z	21:41:45.0	86.7	91.0	1.2	62	5.6	
BUG	e P	Z	21:41:46.4	87.0	90.6	1.8	114	5.7	
WLF	e P	Z	21:41:50.4	87.7	89.6	1.9	110	5.9	

Date Origin Time Lat Long Depth mb Ms ML Source
 2009/12/09 23:25:40.5 43.820N 147.060E 44.3 5.5
 Kuril Islands, Russia SZGRF

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	23:37:22.5	75.5	30.7	1.4	94	5.7		
	e pP	Z	23:37:35.3			1.4	94			
NRDL	e P	Z	23:37:29.6	76.8	30.4	1.5	67	5.6		
CLL	e P	Z	23:37:29.6	76.9	32.2	1.2	61	5.6		
	e pP	Z	23:37:41.7							
BRG	e P	Z	23:37:30.2	76.9	32.7	1.8	63	5.5		
	e pP	Z	23:37:42.5							
CLZ	e P	Z	23:37:32.6	77.3	30.5	1.5	146	5.9		
	e pP	Z	23:37:45.4							
IBBN	e P	Z	23:37:34.5	77.7	28.8	1.5	130	5.8		
TANN	e P	Z	23:37:35.4	77.8	31.7	1.8	39	5.2		
UBBA	e P	Z	23:37:37.7	78.3	30.1	1.7	74	5.4		
ROTZ	e P	Z	23:37:39.3	78.5	31.5	1.4	48	5.3		
BUG	e P	Z	23:37:39.3	78.6	28.4	1.7	133	5.7		
	e pP	Z	23:37:52.2							
GEC2	e P	Z	23:37:40.2	78.7	32.3	1.7	46	5.2		
WET	e P	Z	23:37:40.7	78.8	31.8	1.4	70	5.5		
GRA1	e P	Z	23:37:41.3	78.9	30.8	1.4	104	5.7		
	e pP	Z	23:37:54.1							
RJOB	e P	Z	23:37:47.5	80.0	31.6	1.1	32	5.2		
FUR	e P	Z	23:37:48.1	80.2	30.7	1.3	80	5.5		
	e pP	Z	23:38:00.9							
STU	e P	Z	23:37:48.7	80.3	29.4	1.1	48	5.4		
	e pP	Z	23:38:01.8							
WLF	e P	Z	23:37:50.2	80.5	27.5	2.2	123	5.5		
BFO	e P	Z	23:37:52.2	81.0	28.8	1.8	78	5.5		
	e pP	Z	23:38:05.2							

Date Origin Time Lat Long Depth mb Ms ML Source

2009/12/10

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e Pdiff	Z 02:24:25.5							
GRA1	e Pdiff	Z 02:24:27.0							
GUNZ	e Pdiff	Z 02:24:23.5							
MULD	e Pdiff	Z 02:24:23.5							
NKC	e Pdiff	Z 02:24:24.0							
PLN	e Pdiff	Z 02:24:23.4							
ROTZ	e Pdiff	Z 02:24:25.4							
TAUT	e Pdiff	Z 02:24:22.5							
WERD	e Pdiff	Z 02:24:23.4							
WERN	e Pdiff	Z 02:24:24.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/10	02:31: 6.2	55.500N	151.500E	655.6	7.0			SZGRF

Sea of Okhotsk

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z 02:40:52.1	66.0	22.9	1.2	969	6.9		
NRDL	e P	Z 02:41:00.0	67.4	22.5	1.2	852	6.9		
CLL	e P	Z 02:41:01.9	67.8	23.9	1.1	1814	7.2		
	e pP	Z 02:43:13.3							
CLZ	e P	Z 02:41:03.7	67.9	22.6	1.2	2316	7.3		
	e pP	Z 02:43:13.8							
BRG	e P	Z 02:41:02.9	67.9	24.4	1.2	808	6.8		
	e PP	Z 02:43:44.1							
IBBN	e P	Z 02:41:04.3	68.1	21.2	1.2	1472	7.1		
	e PP	Z 02:43:44.4							
TANN	e P	Z 02:41:08.1	68.7	23.5	1.6	1124	6.8		
	e pP	Z 02:43:19.5							
UBBA	e P	Z 02:41:09.3	69.0	22.2	1.5	1428	7.0		
BUG	e P	Z 02:41:09.4	69.0	20.8	1.5	1942	7.1		
	e PP	Z 02:43:53.9							
ROTZ	e P	Z 02:41:12.2	69.4	23.2	1.2	1069	6.9		
GRA1	e P	Z 02:41:14.0	69.7	22.7	1.2	2466	7.2		
	e pP	Z 02:43:26.2							
	e PP	Z 02:43:59.7							
WET	e P	Z 02:41:14.4	69.8	23.5	1.3	1885	7.1		
GEC2	e P	Z 02:41:14.4	69.9	23.9	1.6	1166	6.8		
	e pP	Z 02:43:29.5							
	e PP	Z 02:44:00.9							
WLF	e P	Z 02:41:20.7	70.9	19.9	1.2	815	6.7		
STU	e P	Z 02:41:21.2	71.1	21.5	1.1	1382	7.0		
RJOB	e P	Z 02:41:22.1	71.1	23.3	1.4	691	6.6		
FUR	e P	Z 02:41:21.8	71.1	22.5	1.2	1768	7.1		
BFO	e P	Z 02:41:24.7	71.7	21.0	1.1	1112	6.9		

e pP Z 02:43:36.8

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/10								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 04:54:16.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/10	15:06:44.3	6.600N	126.300E	60.0				NEIC
Mindanao, Philippine Islands								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e Pdiff	Z 15:20:25.5	100.6	66.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/10	21:22:32.0	37.833N	141.165E	37.6	4.7			SZGRF
Near east coast of eastern Honshu, Japan								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 21:34:48.2	82.0	37.7	1.1	7	4.7		
	e pP	Z 21:34:59.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/10								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e Pdiff	Z 23:22:57.0							
CLL	e Pdiff	Z 23:22:55.4							
FBE	e Pdiff	Z 23:22:56.7							
MULD	e Pdiff	Z 23:22:59.3							
NEUB	e Pdiff	Z 23:22:55.8							
PLN	e Pdiff	Z 23:22:58.6							
ROHR	e Pdiff	Z 23:23:00.5							
TAUT	e Pdiff	Z 23:22:56.7							
WERN	e Pdiff	Z 23:23:00.3							
WIMM	e Pdiff	Z 23:22:55.0							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
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2009/12/11 00:10:34.4
Fiji Islands region

18.000S 178.500W 594.0

NEIC

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 00:29:12.7	147.4	17.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/11	01:16:53.3	53.834N	161.616E	33.0N	5.0			SZGRF

Off east coast of Kamchatka Peninsula, Russia

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z 01:27:58.0	69.6	17.6	0.9	15	5.1		
NRDL	e P	Z 01:28:06.3	71.1	17.3	0.9	8	4.9		
CLL	e P	Z 01:28:09.4	71.6	18.9	1.1	36	5.4		
CLZ	e P	Z 01:28:10.4	71.6	17.4	1.0	28	5.4		
TANN	e P	Z 01:28:15.5	72.6	18.5	1.0	8	4.8		
ROTZ	e P	Z 01:28:19.8	73.2	18.3	1.1	14	4.9		
GRA1	e P	Z 01:28:21.5	73.5	17.7	0.9	22	5.2		
WET	e P	Z 01:28:21.8	73.7	18.6	0.9	16	5.0		
GEC2	e P	Z 01:28:22.6	73.8	19.1	0.8	10	4.9		
STU	e P	Z 01:28:28.3	74.8	16.4	0.9	9	4.8		
FUR	e P	Z 01:28:29.6	75.0	17.6	0.9	16	5.0		
BFO	e P	Z 01:28:31.6	75.4	15.9	0.9	7	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/11	04:48:54.1	12.473S	34.693E	33.0N	5.3			SZGRF

Malawi

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 04:59:34.5	65.5	154.7	1.5	28	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/11	12:33:41.6	21.570S	174.390W	33.0G		5.4		SZGRF

Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPdf	Z 12:53:20.3	147.4	8.2					
	e PKPbc	Z 12:53:22.1							
NRDL	e PKPdf	Z 12:53:22.3	148.9	8.1					
	e PKPbc	Z 12:53:25.7							
IBBN	e PKPdf	Z 12:53:23.5	149.2	3.9					
	e PKPbc	Z 12:53:26.7							
CLZ	e PKPdf	Z 12:53:24.0	149.5	8.8					

	e	PKPbc	Z	12:53:27.7							
CLL	e	PKPdf	Z	12:53:23.9	149.7	13.7					
BRG	e	PKPdf	Z	12:53:24.7	150.0	15.6					
	e	PKPbc	Z	12:53:28.9							
BUG	e	PKPdf	Z	12:53:24.7	150.1	3.1					
	e	PKPbc	Z	12:53:28.9							
	e	PKPab	Z	12:53:34.2							
UBBA	e	PKPdf	Z	12:53:25.0	150.5	8.3					
	e	PKPbc	Z	12:53:29.7							
TANN	e	PKPdf	Z	12:53:25.7	150.7	13.1					
	e	PKPbc	Z	12:53:30.5							
ROTZ	e	PKPbc	Z	12:53:32.2	151.3	12.9					
	e	PKPab	Z	12:53:39.7							
GRA1	e	PKPdf	Z	12:53:27.2	151.5	11.0					
	e	PKPbc	Z	12:53:32.7							
	e	L	Z	14:12:43.9			19.4	540		5.4	
WET	e	PKPdf	Z	12:53:26.4	151.8	14.4					
	e	PKPbc	Z	12:53:32.1							
WLF	e	PKPdf	Z	12:53:27.9	151.9	1.1					
	e	PKPbc	Z	12:53:33.8							
GEC2	e	PKPdf	Z	12:53:27.6	152.0	16.2					
	e	PKPbc	Z	12:53:33.5							
FUR	e	PKPbc	Z	12:53:35.9	153.0	11.7					
BFO	e	PKPdf	Z	12:53:29.0	153.2	5.6					
	e	PKPbc	Z	12:53:36.0							
	e	PKPab	Z	12:53:47.0							
RJOB	e	PKPdf	Z	12:53:29.0	153.2	15.0					

Date Origin Time Lat Long Depth mb Ms ML Source
 2009/12/12 02:16:57.3 53.605N 158.305E 33.0G 5.2 4.8
 Near east coast of Kamchatka Peninsula, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	02:27:50.9	69.2	19.7	1.3	26	5.2		
NRDL	e P	Z	02:27:59.0	70.6	19.4	1.6	31	5.2		
CLL	e P	Z	02:28:01.5	71.1	20.9	1.1	20	5.1		
CLZ	e P	Z	02:28:03.0	71.2	19.4	1.4	41	5.4		
BUG	e P	Z	02:28:08.6	72.2	17.6	1.4	46	5.4		
UBBA	e P	Z	02:28:08.3	72.2	19.1	1.7	29	5.1		
ROTZ	e P	Z	02:28:12.0	72.8	20.3	1.5	22	5.1		
GRA1	e P	Z	02:28:13.9	73.0	19.7	1.2	29	5.3		
	e L	Z	03:07:45.0			19.2	445		4.8	
WET	e P	Z	02:28:15.6	73.2	20.6	1.5	35	5.2		
GEC2	e P	Z	02:28:14.4	73.3	21.0	1.5	19	4.9		
STU	e P	Z	02:28:20.8	74.3	18.4	1.0	13	4.9		
FUR	e P	Z	02:28:21.7	74.5	19.6	1.7	80	5.5		
BFO	e P	Z	02:28:24.2	74.9	17.9	1.1	10	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/12	02:27: 5.5	8.814S	35.374E	33.0G	5.5	4.6		SZGRF

Tanzania

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RJOB	e P	Z 02:37:13.0	60.0	154.0	1.2	20	5.0		
GEC2	e P	Z 02:37:18.8	60.7	155.3	1.4	59	5.4		
FUR	e P	Z 02:37:19.0	60.8	152.5	1.8	116	5.4		
WET	e P	Z 02:37:22.9	61.2	154.4	1.5	32	4.9		
BFO	e P	Z 02:37:26.4	61.9	149.4	1.9	77	5.6		
ROTZ	e P	Z 02:37:27.0	62.0	153.9	1.6	52	5.5		
STU	e P	Z 02:37:27.6	62.0	150.4	1.4	67	5.7		
GRA1	e P	Z 02:37:28.6	62.2	152.8	1.4	64	5.7		
	e L	Z 03:07:45.0			19.2	445		4.6	
TANN	e P	Z 02:37:30.6	62.5	154.3	1.6	46	5.5		
CLL	e P	Z 02:37:34.7	63.1	155.1	1.5	34	5.3		
BUG	e P	Z 02:37:46.9	64.9	149.1	1.6	84	5.7		
NRDL	e P	Z 02:37:47.8	65.0	152.3	1.5	68	5.7		
BSEG	e P	Z 02:37:55.1	66.2	152.8	1.5	61	5.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/12	09:08: 9.3	16.522S	173.417W	33.0G		4.6		SZGRF

Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPbc	Z 09:27:41.2	144.8	10.7					
TANN	e PKPbc	Z 09:27:44.1	145.8	10.1					
ROTZ	e PKPbc	Z 09:27:46.7	146.4	9.8					
GRA1	e PKPbc	Z 09:27:47.0	146.6	8.1					
	e L	Z 10:27:16.6			19.8	106		4.6	
WLF	e PKPbc	Z 09:27:48.0	146.9	359.2					
GEC2	e PKPbc	Z 09:27:48.6	147.2	12.7					
STU	e PKPbc	Z 09:27:50.0	147.7	4.7					
FUR	e PKPbc	Z 09:27:51.4	148.1	8.5					
BFO	e PKPbc	Z 09:27:51.2	148.2	3.2					
RJOB	e PKPbc	Z 09:27:51.9	148.4	11.4					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/12	11:51:26.5	16.636N	72.823E	33.0G	4.8			SZGRF

Arabian Sea

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
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GEC2	e P	Z	12:01:15.3	57.4	102.5	1.1	10	4.8
BRG	e P	Z	12:01:18.3	57.7	103.9	1.0	12	4.9
CLL	e P	Z	12:01:22.7	58.4	103.4	1.1	15	4.9
ROTZ	e P	Z	12:01:24.3	58.5	101.8	0.9	7	4.6
GRA1	e P	Z	12:01:28.6	59.1	100.9	1.0	19	5.1
CLZ	e P	Z	12:01:34.1	60.1	101.4	1.1	13	4.9
BSEG	e P	Z	12:01:37.4	60.5	102.5	0.9	11	4.7

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/12								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 12:58:22.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/12	15:23:19.0	36.500N	28.600E	41.0G	4.2			THE
Dodecanese Islands, Greece								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z 15:27:08.8	16.4	133.1	1.0	14	4.1		
GRA1	e P	Z 15:27:27.4	18.2	129.8	1.4	33	4.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/12	16:22:12.9	26.500N	65.259E	33.0G	5.1	3.9		SZGRF
Pakistan								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e P	Z 16:30:28.0	45.4	100.1	1.2	24	5.0		
BRG	e P	Z 16:30:30.0	45.6	102.3	1.3	30	5.2		
CLL	e P	Z 16:30:34.7	46.3	101.9	1.3	10	4.7		
ROTZ	e P	Z 16:30:37.0	46.5	99.7	1.3	18	5.0		
GRA1	e P	Z 16:30:42.3	47.1	98.8	1.2	28	5.3		
	e L	Z 16:51:13.3			19.5	120		3.9	
CLZ	e P	Z 16:30:48.2	48.0	100.0	1.2	24	5.2		
UBBA	e P	Z 16:30:49.0	48.1	98.8	1.8	24	5.0		
NRDL	e P	Z 16:30:50.2	48.3	100.3	1.3	15	5.0		
STU	e P	Z 16:30:50.7	48.3	96.3	1.3	29	5.2		
BSEG	e P	Z 16:30:51.1	48.4	101.8	1.4	24	5.0		
BUG	e P	Z 16:31:02.7	49.9	97.0	1.3	36	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
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2009/12/12 17:05:34.8
Jalisco, Mexico

20.837N 102.058W 33.0N 5.4

SZGRF

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z 17:18:22.7	88.1	300.8	1.2	25	5.4		

Date Origin Time
2009/12/12 18:39: 0.9
Kuril Islands, Russia

Lat Long Depth mb Ms
50.622N 156.050E 33.0G 5.8 5.8

ML Source
SZGRF

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e P	Z 18:50:12.2	70.3	24.1	1.0	355	6.4		
BSEG	e P	Z 18:50:19.5	71.6	22.1	0.9	95	5.9		
RUE	e P	Z 18:50:22.1	72.1	24.1	0.8	201	6.3		
NRDL	e P	Z 18:50:27.2	73.0	21.8	0.9	71	5.8		
CLL	e P	Z 18:50:29.2	73.4	23.5	1.0	172	6.1		
CLZ	e P	Z 18:50:30.8	73.5	21.9	0.9	158	6.0		
BRG	e P	Z 18:50:30.2	73.5	24.0	1.1	64	5.6		
FBE	e P	Z 18:50:31.1	73.6	23.6	0.9	104	5.8		
IBBN	e P	Z 18:50:31.4	73.6	20.3	0.8	100	5.9		
NEUB	e P	Z 18:50:31.7	73.8	22.7	1.0	96	5.8		
TANN	e P	Z 18:50:35.1	74.3	23.0	1.1	45	5.4		
WERD	e P	Z 18:50:35.0	74.3	22.9	1.2	81	5.6		
PLN	e P	Z 18:50:35.3	74.3	22.8	1.1	420	6.4		
GUNZ	e P	Z 18:50:35.6	74.4	22.9	1.1	76	5.7		
WERN	e P	Z 18:50:36.0	74.5	23.0	0.9	96	5.8		
UBBA	e P	Z 18:50:36.1	74.5	21.6	1.2	54	5.4		
BUG	e P	Z 18:50:36.5	74.6	19.9	1.0	75	5.7		
MANZ	e P	Z 18:50:37.8	74.8	22.8	1.1	63	5.6		
ROTZ	e P	Z 18:50:39.2	75.0	22.8	0.9	73	5.7		
GRA1	e P	Z 18:50:41.1	75.3	22.2	0.9	167	6.1		
	e L	Z 19:30:11.7			18.3	4483		5.8	
WET	e P	Z 18:50:42.9	75.4	23.1	1.0	95	5.9		
GEC2	e P	Z 18:50:41.2	75.4	23.6	1.1	54	5.6		
WLF	e P	Z 18:50:47.5	76.5	19.1	1.7	120	5.7		
STU	e P	Z 18:50:48.2	76.6	20.9	1.1	79	5.7		
FUR	e P	Z 18:50:48.7	76.7	22.1	1.2	93	5.8		
RJOB	e P	Z 18:50:48.9	76.7	23.0	1.2	45	5.5		
BFO	e P	Z 18:50:51.4	77.2	20.3	1.0	48	5.6		

Date Origin Time
2009/12/12 20:39: 0.5
Tonga Islands region

Lat Long Depth mb Ms
22.064S 175.088W 33.0G

ML Source
SZGRF

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
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BSEG	e	PKPbc	Z	20:58:41.9	147.9	9.4
NRDL	e	PKPbc	Z	20:58:45.7	149.3	9.5
IBBN	e	PKPbc	Z	20:58:47.0	149.7	5.2
CLZ	e	PKPbc	Z	20:58:47.8	149.9	10.1
CLL	e	PKPbc	Z	20:58:47.7	150.1	15.2
BRG	e	PKPbc	Z	20:58:48.4	150.3	17.1
TANN	e	PKPbc	Z	20:58:50.1	151.0	14.6
ROTZ	e	PKPbc	Z	20:58:51.7	151.7	14.4
GRA1	e	PKPbc	Z	20:58:52.3	151.9	12.5
WET	e	PKPbc	Z	20:58:54.1	152.2	16.0
GEC2	e	PKPbc	Z	20:58:52.8	152.3	17.8
STU	e	PKPbc	Z	20:58:54.8	153.1	8.8
FUR	e	PKPbc	Z	20:58:55.4	153.4	13.3
RJOB	e	PKPbc	Z	20:58:55.2	153.6	16.6

Date Origin Time Lat Long Depth mb Ms ML Source
 2009/12/12 21:37:45.1 26.713N 51.897E 33.0G 4.5
 Eastern Arabian Peninsula SZGRF

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z 21:44:56.0	37.5	115.6	1.5	13	4.4		
FUR	e P	Z 21:45:01.2	38.1	109.4	0.9	15	4.7		
ROTZ	e P	Z 21:45:01.6	38.1	112.3	1.0	5	4.3		
CLL	e P	Z 21:45:02.4	38.2	115.0	1.1	8	4.4		
GRA1	e P	Z 21:45:05.7	38.6	111.2	1.3	22	4.6		
CLZ	e P	Z 21:45:16.4	39.9	112.7	1.0	10	4.4		
NRDL	e P	Z 21:45:20.2	40.4	113.2	1.0	17	4.6		
BSEG	e P	Z 21:45:23.0	40.8	114.9	1.1	14	4.6		

Date Origin Time Lat Long Depth mb Ms ML Source
 2009/12/13

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKP	Z 01:43:21.2							

Date Origin Time Lat Long Depth mb Ms ML Source
 2009/12/13 14:41:52.1 20.823N 92.342E 33.0G 5.4 4.4
 Myanmar SZGRF

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z 14:52:39.7	66.8	85.1	1.0	16	5.2		
GEC2	e P	Z 14:52:42.3	67.1	84.1	1.1	24	5.3		
CLL	e P	Z 14:52:42.9	67.3	84.6	1.4	22	5.2		

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WET	e P	Z	14:52:47.5	67.6	83.6	1.2	21	5.2		
TANN	e P	Z	14:52:46.2	67.8	83.8	1.2	16	5.1		
RJOB	e P	Z	14:52:46.4	67.8	83.0	1.3	22	5.2		
ROTZ	e P	Z	14:52:47.9	68.0	83.4	1.2	35	5.5		
GRA1	e P	Z	14:52:52.4	68.6	82.6	1.5	54	5.5		
	e L	Z	15:26:58.9			18.4	228		4.4	
BSEG	e P	Z	14:52:51.9	68.7	83.6	1.2	44	5.6		
CLZ	e P	Z	14:52:53.6	68.9	82.8	1.2	34	5.5		
NRDL	e P	Z	14:52:54.3	69.0	82.8	1.3	64	5.7		
STU	e P	Z	14:53:00.6	70.1	80.8	0.9	16	5.2		
IBBN	e P	Z	14:53:02.9	70.4	81.0	1.3	51	5.5		
BUG	e P	Z	14:53:05.1	70.9	80.3	1.1	32	5.4		
WLF	e P	Z	14:53:12.3	71.9	78.9	1.3	55	5.5		

Date Origin Time Lat Long Depth mb Ms ML Source
 2009/12/13 16:04:1.4 41.268N 94.986E 33.0G 5.4 4.2
 Southern Xinjiang, China

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	16:13:22.8	54.2	66.3	1.0	31	5.3		
CLL	e P	Z	16:13:25.4	54.5	66.1	1.0	54	5.5		
BSEG	e P	Z	16:13:29.1	55.0	66.1	0.9	58	5.6		
GEC2	e P	Z	16:13:30.2	55.1	64.9	1.3	24	5.1		
TANN	e P	Z	16:13:30.7	55.2	65.2	1.0	27	5.2		
WET	e P	Z	16:13:35.0	55.5	64.6	0.9	26	5.2		
ROTZ	e P	Z	16:13:34.1	55.6	64.6	1.0	32	5.3		
NRDL	e P	Z	16:13:34.3	55.7	65.0	0.9	52	5.6		
CLZ	e P	Z	16:13:35.0	55.8	64.8	0.9	40	5.5		
RJOB	e P	Z	16:13:37.9	56.2	63.7	1.1	35	5.3		
GRA1	e P	Z	16:13:38.7	56.2	64.0	0.9	66	5.7		
	e L	Z	16:38:13.7			18.2	178		4.2	
UBBA	e P	Z	16:13:39.2	56.4	64.0	1.3	18	4.9		
FUR	e P	Z	16:13:43.2	56.9	63.1	1.0	78	5.7		
IBBN	e P	Z	16:13:43.7	57.0	63.5	0.7	39	5.6		
BUG	e P	Z	16:13:48.6	57.7	62.7	1.0	34	5.3		
STU	e P	Z	16:13:49.3	57.8	62.3	1.1	37	5.3		
WLF	e P	Z	16:13:59.2	59.2	61.1	1.0	25	5.2		

Date Origin Time Lat Long Depth mb Ms ML Source
 2009/12/13 18:19:57.0 53.000N 166.200W 17.0 5.1
 Fox Islands, Aleutian Islands, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e P	Z	18:31:49.4	77.3	358.4	1.7	28	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/14	06:40:58.1	31.150N	0.260W	33.0G	4.8	3.8		SZGRF

Northern Algeria

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BFO	e P	Z	06:45:10.2	18.4	203.9	1.8	84	4.6		
RJOB	e P	Z	06:45:20.4	19.4	215.7	0.8	25	4.5		
GRA1	e P	Z	06:45:32.8	20.4	209.2	1.2	65	4.7		
	e L	Z	06:52:06.2			20.3	478		3.8	
WET	e P	Z	06:45:34.5	20.5	213.7	1.1	33	4.6		
GEC2	e P	Z	06:45:34.4	20.6	215.9	1.2	52	4.7		
TANN	e P	Z	06:45:44.3	21.5	211.0	0.9	43	4.8		
IBBN	e P	Z	06:45:49.1	22.0	198.6	0.9	64	5.1		
CLZ	e P	Z	06:45:51.2	22.1	204.8	1.3	48	4.8		
BRG	e P	Z	06:45:54.4	22.4	213.5	0.9	40	4.8		
CLL	e P	Z	06:45:54.3	22.4	211.0	1.0	36	4.8		
NRDL	e P	Z	06:45:56.8	22.6	203.6	1.2	33	4.7		
BSEG	e P	Z	06:46:10.2	24.0	202.7	1.1	73	5.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/15	15:10:47.6	29.500S	177.800W	57.0				NEIC

Kermadec Islands, New Zealand

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPab	Z	15:31:08.1	156.8	24.4					
CLZ	e PKPab	Z	15:31:08.9	156.8	18.3					
BRG	e PKPab	Z	15:31:08.9	156.9	26.8					
FBE	e PKPab	Z	15:31:09.8	157.0	25.5					
TANN	e PKPab	Z	15:31:12.5	157.7	24.1					
WERD	e PKPab	Z	15:31:12.8	157.7	23.7					
GUNZ	e PKPab	Z	15:31:13.1	157.8	23.9					
WERN	e PKPab	Z	15:31:13.5	157.8	24.1					
GEC2	e PKPab	Z	15:31:17.0	158.8	28.6					
RJOB	e PKPab	Z	15:31:23.0	160.0	27.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/15	21:22:47.1	22.320S	177.460W	33.0G				SZGRF

South of Fiji Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPbc	Z	21:42:28.6	147.8	13.6					
NRDL	e PKPbc	Z	21:42:32.3	149.3	13.8					
IBBN	e PKPbc	Z	21:42:33.7	149.7	9.6					

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CLZ	e PKPbc	Z	21:42:34.2	149.9	14.5
	e PKPab	Z	21:42:39.2		
CLL	e PKPbc	Z	21:42:33.8	149.9	19.6
	e PKPab	Z	21:42:38.8		
BUG	e PKPbc	Z	21:42:35.1	150.6	9.0
TANN	e PKPbc	Z	21:42:36.4	150.9	19.1
UBBA	e PKPbc	Z	21:42:36.2	150.9	14.3
ROTZ	e PKPbc	Z	21:42:38.0	151.5	19.0
	e PKPab	Z	21:42:46.3		
WET	e PKPbc	Z	21:42:39.5	152.0	20.7
	e PKPab	Z	21:42:48.8		
GEC2	e PKPbc	Z	21:42:39.0	152.0	22.4
WLF	e PKPbc	Z	21:42:40.9	152.5	7.3
STU	e PKPbc	Z	21:42:41.5	153.0	13.7
FUR	e PKPbc	Z	21:42:41.7	153.2	18.2
	e PKPab	Z	21:42:53.5		
RJOB	e PKPbc	Z	21:42:41.4	153.3	21.5
	e PKPab	Z	21:42:54.0		
BFO	e PKPbc	Z	21:42:42.5	153.6	12.1
	e PKPab	Z	21:42:54.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/16	12:36:38.5	31.700S	177.800W	10.0		5.6		NEIC
Kermadec Islands region								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA2	e PKPab	Z 12:57:19.2	160.8	24.3					
	e L	Z 14:18:38.7			19.2	873		5.6	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/16								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA2	e PKP	Z 18:46:57.9							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/16	18:54:43.7	15.900S	173.500W	10.0				NEIC
Tonga Islands								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WERN	e PKPbc	Z 19:14:21.7	145.3	10.0					
MANZ	e PKPbc	Z 19:14:22.0	145.6	9.6					
ROTZ	e PKPbc	Z 19:14:23.3	145.8	9.8					

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FUR	e	PKPbc	Z	19:14:28.3	147.5	8.6			
RJOB	e	PKPbc	Z	19:14:28.7	147.7	11.4			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/16	20:28:4.2	15.964S	172.889W	33.0N		4.6		SZGRF

Samoa Islands region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
ROTZ	e	PKPbc	Z 20:47:40.0	145.9	8.8					
WLF	e	PKPbc	Z 20:47:41.3	146.3	358.3					
WET	e	PKPbc	Z 20:47:42.0	146.5	10.1					
	e	L	Z 21:55:48.9			18.7	122		4.7	
GEC2	e	PKPbc	Z 20:47:42.0	146.7	11.6					
	e	L	Z 21:56:14.3			19.8	104		4.6	
STU	e	PKPbc	Z 20:47:44.0	147.1	3.7					
BFO	e	PKPbc	Z 20:47:45.1	147.6	2.2					
FUR	e	PKPbc	Z 20:47:45.1	147.6	7.5					
RJOB	e	PKPbc	Z 20:47:45.8	147.9	10.3					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/17	01:38:25.1	38.153N	6.668W	33.0G	5.4	4.6		SZGRF

Spain

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WLF	e	P	Z 01:41:53.3	14.7	223.4	0.8	613			
BFO	e	P	Z 01:41:57.6	14.9	232.4	1.3	128			
	e	L	Z 01:48:47.7			18.7	4060		4.6	
STU	e	P	Z 01:42:06.9	15.6	233.0	1.0	133			
	e	L	Z 01:50:07.6			18.8	3492		4.6	
FUR	e	P	Z 01:42:15.8	16.4	239.0	1.4	189			
	e	L	Z 01:50:49.8			18.8	4847		4.7	
BUG	e	P	Z 01:42:14.4	16.5	221.8	1.1	229			
	e	L	Z 01:50:10.0			20.1	3492		4.6	
RJOB	e	P	Z 01:42:21.7	17.1	243.0	1.1	100			
	e	L	Z 01:49:20.3			20.1	7146		4.9	
UBBA	e	L	Z 01:51:28.6	17.3	229.4	19.5	3644		4.6	
IBBN	e	P	Z 01:42:23.4	17.4	221.1	1.0	263			
	e	L	Z 01:49:36.5			21.9	4280		4.6	
ROTZ	e	P	Z 01:42:29.9	17.8	236.4	1.7	242			
	e	L	Z 01:49:57.1			20.9	3712		4.6	
WET	e	P	Z 01:42:31.8	17.8	239.3	2.0	385			
	e	L	Z 01:52:16.9			18.0	3609		4.7	
GEC2	e	P	Z 01:42:33.7	18.1	241.5	1.3	187			
	e	L	Z 01:49:53.0			20.5	4631		4.7	
CLZ	e	P	Z 01:42:33.2	18.1	227.7	1.6	314			

	e L	Z	01:51:57.8			19.4	4386	4.7
TANN	e P	Z	01:42:36.7	18.3	235.2	1.5	173	
	e L	Z	01:51:35.8			19.1	2397	4.5
NRDL	e P	Z	01:42:36.3	18.5	225.7	1.6	401	
	e L	Z	01:51:22.7			18.8	2714	4.6
CLL	e P	Z	01:42:42.9	19.1	234.1	1.5	181	
	e L	Z	01:51:21.8			21.9	1174	4.2
BSEG	e P	Z	01:42:46.3	19.6	223.2	1.3	220	
	e L	Z	01:52:57.2			18.6	5361	4.9

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/17	14:55:49.6	41.789N	28.953W	33.0N	5.1	4.6		SZGRF
Azores Islands region								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WLF	e P	Z	15:01:13.3	25.5	265.5	0.9	56	5.2		
	e L	Z	15:09:48.2			18.3	1525		4.6	
BUG	e L	Z	15:10:35.3	26.4	262.9	19.2	2353		4.7	
IBBN	e L	Z	15:11:18.8	26.8	261.6	18.8	2838		4.9	
BFO	e P	Z	15:01:26.1	26.8	270.0	1.3	37	5.0		
	e L	Z	15:09:51.6			19.3	802		4.3	
STU	e P	Z	15:01:31.4	27.4	269.8	1.0	50	5.3		
	e L	Z	15:10:21.2			20.8	1274		4.5	
UBBA	e P	Z	15:01:35.9	28.0	266.5	2.0	70	5.1		
	e L	Z	15:10:52.0			18.3	1991		4.7	
NRDL	e P	Z	15:01:37.6	28.2	263.5	1.0	30	5.1		
	e L	Z	15:11:35.1			18.2	2462		4.8	
CLZ	e P	Z	15:01:38.7	28.3	264.9	1.4	37	5.0		
	e L	Z	15:11:57.3			18.0	2275		4.8	
BSEG	e P	Z	15:01:40.1	28.5	261.1	0.9	61	5.4		
	e L	Z	15:12:17.6			18.1	3067		4.9	
FUR	e P	Z	15:01:44.3	28.8	272.4	1.1	66	5.4		
	e L	Z	15:10:23.5			19.2	831		4.4	
ROTZ	e P	Z	15:01:48.8	29.4	270.2	1.0	16	4.8		
	e L	Z	15:13:03.7			18.1	1403		4.6	
TANN	e P	Z	15:01:49.7	29.6	269.3	1.0	15	4.8		
	e L	Z	15:12:13.7			19.3	1547		4.6	
WET	e P	Z	15:01:53.3	29.8	271.8	1.0	36	5.2		
	e L	Z	15:12:38.8			19.0	1095		4.5	
RJOB	e P	Z	15:01:53.4	29.9	274.2	0.9	19	4.9		
	e L	Z	15:11:09.3			20.1	845		4.4	
CLL	e P	Z	15:01:52.6	29.9	268.1	1.1	18	4.8		
	e L	Z	15:11:50.7			20.0	1340		4.6	
GEC2	e P	Z	15:01:57.6	30.4	272.9	0.9	25	5.0		
	e L	Z	15:12:20.2			18.0	840		4.4	
BRG	e P	Z	15:01:58.0	30.5	269.6	1.9	54	5.2		
	e L	Z	15:12:51.7			18.6	1542		4.7	

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/17	20:01:30.9	51.776N	178.034E	67.0	6.5			SZGRF

Rat Islands, Aleutian Islands, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e P	Z	20:12:52.8	72.9	9.8	0.9	1018	6.9		
HLG	e P	Z	20:12:57.2	73.7	6.3	1.3	1286	6.8		
BSEG	e P	Z	20:12:57.7	73.8	7.9	1.0	864	6.8		
	e pP	Z	20:13:16.8							
RUE	e P	Z	20:13:03.9	74.9	10.0	1.1	460	6.4		
NRDL	e P	Z	20:13:05.4	75.2	7.7	1.1	479	6.6		
IBBN	e P	Z	20:13:08.0	75.6	6.2	1.0	1449	7.1		
CLZ	e P	Z	20:13:09.7	75.9	7.8	1.0	699	6.8		
	e pP	Z	20:13:28.5							
CLL	e P	Z	20:13:10.3	76.1	9.5	0.9	181	6.2		
	e pP	Z	20:13:27.7							
NEUB	e P	Z	20:13:12.0	76.4	8.7	1.0	675	6.7		
FBE	e P	Z	20:13:12.6	76.5	9.7	1.0	379	6.5		
BUG	e P	Z	20:13:12.5	76.5	5.9	1.1	575	6.6		
UBBA	e P	Z	20:13:14.7	76.9	7.6	1.7	473	6.3		
TANN	e P	Z	20:13:16.1	77.1	9.1	1.7	401	6.3		
TNS	e P	Z	20:13:19.0	77.6	6.6	0.8	395	6.6		
ROTZ	e P	Z	20:13:20.0	77.7	8.9	1.2	268	6.3		
WET	e P	Z	20:13:23.6	78.3	9.3	1.1	178	6.0		
WLF	e P	Z	20:13:23.0	78.3	5.1	1.0	412	6.4		
GEC2	e P	Z	20:13:24.0	78.5	9.8	1.7	408	6.2		
STU	e P	Z	20:13:26.4	79.0	7.0	1.0	382	6.4		
FUR	e P	Z	20:13:29.0	79.4	8.3	1.1	504	6.4		
BFO	e P	Z	20:13:29.1	79.5	6.5	1.1	260	6.1		
	e pP	Z	20:13:46.6							
RJOB	e P	Z	20:13:30.7	79.7	9.2	0.8	245	6.2		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/17	20:41:26.6	36.344N	141.521E	80.4	5.5			SZGRF

Near east coast of eastern Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	20:53:29.6	80.4	37.9	1.0	40	5.4		
	e pP	Z	20:53:51.1							
BRG	e P	Z	20:53:34.3	81.4	40.2	1.0	22	5.2		
	e pP	Z	20:53:55.8							
CLL	e P	Z	20:53:34.4	81.4	39.6	1.0	41	5.5		
	e pP	Z	20:53:55.9							
CLZ	e P	Z	20:53:38.3	82.0	37.8	1.3	60	5.6		

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	e pP	Z	20:53:59.9						
	e sP	Z	20:54:08.2						
IBBN	e P	Z	20:53:41.0	82.6	35.9	0.9	37	5.6	
	e pP	Z	20:54:02.7						
ROTZ	e P	Z	20:53:43.0	82.9	38.9	1.5	52	5.5	
	e pP	Z	20:54:04.7						
	e sP	Z	20:54:13.0						
GEC2	e P	Z	20:53:42.8	83.0	39.9	1.3	25	5.3	
WET	e P	Z	20:53:44.5	83.2	39.3	1.4	37	5.4	
	e pP	Z	20:54:06.1						
BUG	e P	Z	20:53:45.2	83.5	35.5	1.4	39	5.5	
	e sP	Z	20:54:15.4						
TNS	e P	Z	20:53:48.4	84.1	36.3	1.5	30	5.3	
RJOB	e P	Z	20:53:49.5	84.3	39.2	1.1	28	5.4	
	e pP	Z	20:54:11.3						
FUR	e P	Z	20:53:51.1	84.6	38.1	1.1	51	5.7	
	e pP	Z	20:54:12.9						
STU	e P	Z	20:53:53.0	84.9	36.7	1.1	49	5.6	
	e pP	Z	20:54:14.5						
BFO	e P	Z	20:53:56.2	85.6	36.1	1.5	72	5.6	
	e pP	Z	20:54:17.9						
	e sP	Z	20:54:26.2						

Date Origin Time Lat Long Depth mb Ms ML Source
 2009/12/18 09:45:45.1 20.076S 172.365W 33.0N
 Tonga Islands region SZGRF

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPbc	Z	10:05:22.1	146.1	4.5					
RUE	e PKPbc	Z	10:05:25.4	147.3	10.7					
NRDL	e PKPbc	Z	10:05:26.1	147.5	4.3					
IBBN	e PKPbc	Z	10:05:27.1	147.8	0.2					
CLZ	e PKPbc	Z	10:05:28.2	148.2	4.9					
CLL	e PKPbc	Z	10:05:28.6	148.5	9.7					
BUG	e PKPbc	Z	10:05:29.1	148.6	359.3					
NEUB	e PKPbc	Z	10:05:29.4	148.7	7.5					
BRG	e PKPbc	Z	10:05:29.5	148.8	11.5					
FBE	e PKPbc	Z	10:05:30.0	148.8	10.4					
UBBA	e PKPbc	Z	10:05:30.3	149.2	4.3					
PLN	e PKPbc	Z	10:05:31.2	149.4	8.4					
WERD	e PKPbc	Z	10:05:31.2	149.4	8.6					
TANN	e PKPbc	Z	10:05:31.4	149.4	8.9					
GUNZ	e PKPbc	Z	10:05:31.6	149.5	8.7					
WERN	e PKPbc	Z	10:05:32.0	149.6	8.8					
TNS	e PKPbc	Z	10:05:32.5	149.8	1.5					
MANZ	e PKPbc	Z	10:05:32.4	149.9	8.4					
ROTZ	e PKPbc	Z	10:05:33.0	150.1	8.6					

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WLF	e	PKPbc	Z	10:05:34.4	150.4	357.2
WET	e	PKPbc	Z	10:05:34.6	150.6	10.1
GEC2	e	PKPbc	Z	10:05:34.3	150.8	11.7
BFO	e	PKPbc	Z	10:05:36.6	151.7	1.4
FUR	e	PKPbc	Z	10:05:37.0	151.8	7.2
RJOB	e	PKPbc	Z	10:05:36.9	152.0	10.4

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/18	11:48:43.6	35.697N	141.413E	33.0G	5.3			SZGRF

Near east coast of eastern Honshu, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e P	Z	12:00:46.6	79.4	40.6	1.6	376	6.1		
BSEG	e P	Z	12:00:55.4	80.9	38.3	0.7	8	4.8		
BRG	e P	Z	12:00:59.9	81.9	40.6	1.2	19	5.1		
CLL	e P	Z	12:00:59.9	82.0	40.0					
FBE	e P	Z	12:01:01.2	82.1	40.2	0.8	16	5.2		
NEUB	e P	Z	12:01:03.1	82.5	39.1	1.1	28	5.4		
CLZ	e P	Z	12:01:03.9	82.6	38.2	1.4	28	5.3		
TANN	e P	Z	12:01:04.8	82.9	39.5	2.5	93	5.6		
WERD	e P	Z	12:01:04.9	82.9	39.4	2.5	91	5.6		
PLN	e P	Z	12:01:05.2	82.9	39.3	1.5	122	5.9		
GUNZ	e P	Z	12:01:05.3	82.9	39.4	1.1	14	5.1		
WERN	e P	Z	12:01:05.7	83.0	39.5	0.8	10	5.1		
MANZ	e P	Z	12:01:07.3	83.3	39.2	0.7	7	5.0		
ROTZ	e P	Z	12:01:08.3	83.5	39.3	2.6	138	5.7		
UBBA	e P	Z	12:01:08.0	83.5	37.8	1.4	17	5.1		
GEC2	e P	Z	12:01:07.9	83.5	40.3	0.8	6	4.9		
WET	e P	Z	12:01:09.6	83.7	39.7	1.4	14	5.0		
BUG	e P	Z	12:01:10.6	84.0	35.9	0.9	18	5.3		
TNS	e P	Z	12:01:13.6	84.6	36.7	1.1	14	5.1		
RJOB	e P	Z	12:01:14.4	84.8	39.6	1.8	30	5.2		
WLF	e P	Z	12:01:20.3	85.9	35.0	0.9	6	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/19	11:39:55.3	43.575N	17.415E	10.0G			3.9	SZGRF

Northwestern Balkan Peninsula

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
OBKA	e Pn	Z	11:40:48.5	3.6	144.4					4.0
ARSA	e Pn	Z	11:40:53.7	3.9	159.5					
MOA	e Pn	Z	11:41:06.3	4.8	151.6					
	e Sn	E	11:41:57.9							
RJOB	e Pn	Z	11:41:12.9	5.3	140.5					3.8
	e Sn	N	11:42:08.3							

GEC2	e Pn	Z	11:41:20.2	5.9	152.6
	e Sn	E	11:42:22.5		
WET	e Pn	Z	11:41:27.9	6.4	149.0
	e Sn	N	11:42:33.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/19	13:02:14.3	23.978N	122.356E	33.0G	6.3	6.6		SZGRF

Taiwan region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e P	Z 13:14:25.5	80.9	61.0	1.3	235	6.1		
RUE	e P	Z 13:14:29.4	81.7	61.1	1.1	246	6.3		
BRG	e P	Z 13:14:32.8	82.3	61.0	1.3	156	6.1		
FBE	e P	Z 13:14:34.7	82.7	60.6	1.1	339	6.5		
CLL	e P	Z 13:14:34.0	82.7	60.4	1.1	228	6.3		
BSEG	e P	Z 13:14:35.0	82.7	58.6	1.5	147	6.0		
NEUB	e P	Z 13:14:38.0	83.4	59.4	1.1	386	6.5		
TANN	e P	Z 13:14:38.2	83.4	59.9	1.4	193	6.2		
WERD	e P	Z 13:14:38.5	83.5	59.8	1.1	183	6.2		
GEC2	e P	Z 13:14:38.7	83.5	60.6	1.1	282	6.4		
GUNZ	e P	Z 13:14:38.8	83.5	59.8	1.1	293	6.4		
WERN	e P	Z 13:14:38.9	83.5	59.8	1.1	261	6.4		
PLN	e P	Z 13:14:39.0	83.5	59.7	1.1	829	6.9		
NRDL	e P	Z 13:14:39.5	83.6	58.3	1.4	271	6.3		
CLZ	e P	Z 13:14:40.8	83.8	58.5	1.2	366	6.5		
WET	e P	Z 13:14:41.2	83.8	60.1	1.3	232	6.2		
MANZ	e P	Z 13:14:40.5	83.8	59.6	1.3	225	6.2		
ROTZ	e P	Z 13:14:41.0	83.9	59.6	1.1	291	6.4		
GRA1	e P	Z 13:14:44.0	84.4	58.9	1.3	480	6.6		
	e S	Z 13:25:22.0							
	e L	Z 13:55:55.2			21.7	27590		6.6	
RJOB	e P	Z 13:14:44.0	84.5	59.9	1.3	245	6.3		
IBBN	e P	Z 13:14:46.0	84.9	56.5	1.2	408	6.5		
FUR	e P	Z 13:14:47.8	85.2	58.8	1.1	707	6.8		
BUG	e P	Z 13:14:49.5	85.6	56.1	1.2	501	6.5		
STU	e P	Z 13:14:51.4	86.1	57.4	1.3	198	6.1		
BFO	e P	Z 13:14:54.8	86.8	56.7	1.5	160	5.9		
WLF	e P	Z 13:14:57.7	87.2	55.2	1.1	481	6.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/19	16:52:50.6	17.700S	173.200W	10.0				NEIC

Tonga Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GRA1	e PKPdf	Z 17:12:35.6	147.8	7.9					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/19	23:19:23.5	8.793S	35.461E	33.0N	6.1	5.3		SZGRF
Tanzania								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RJOB	e P	Z	23:29:26.6	60.0	153.9	2.3	219	5.8		
GEC2	e P	Z	23:29:32.4	60.7	155.2	1.8	311	5.8		
FUR	e P	Z	23:29:32.7	60.8	152.4	2.0	446	5.9		
WET	e P	Z	23:29:35.9	61.2	154.3	1.9	158	5.5		
BFO	e P	Z	23:29:40.2	61.9	149.3	2.0	233	6.1		
ROTZ	e P	Z	23:29:40.7	62.0	153.8	1.9	251	6.1		
STU	e P	Z	23:29:41.0	62.0	150.3	1.7	288	6.2		
GRA1	e P	Z	23:29:42.1	62.2	152.7	1.7	285	6.2		
	e L	Z	23:58:41.7			18.7	1836		5.3	
MANZ	e P	Z	23:29:42.1	62.2	153.7	1.8	207	6.1		
WERN	e P	Z	23:29:43.7	62.4	154.1	2.2	289	6.1		
GUNZ	e P	Z	23:29:44.3	62.5	154.0	2.0	299	6.2		
TANN	e P	Z	23:29:44.3	62.5	154.2	2.0	291	6.2		
BRG	e P	Z	23:29:43.9	62.5	155.9	1.9	124	5.8		
WERD	e P	Z	23:29:44.7	62.6	154.0	1.9	262	6.1		
PLN	e P	Z	23:29:45.2	62.6	153.9	2.0	1272	6.8		
FBE	e P	Z	23:29:45.3	62.7	155.3	2.0	109	5.7		
CLL	e P	Z	23:29:48.2	63.2	155.0	1.8	131	5.8		
NEUB	e P	Z	23:29:50.0	63.4	153.6	1.6	123	5.8		
WLF	e P	Z	23:29:52.5	63.8	147.4	2.0	230	6.1		
RUE	e P	Z	23:29:54.3	64.0	156.0	1.9	296	6.2		
CLZ	e P	Z	23:29:56.8	64.4	152.3	1.9	241	6.1		
BUG	e P	Z	23:30:00.4	65.0	149.0	1.6	188	6.1		
NRDL	e P	Z	23:30:01.2	65.0	152.2	1.3	164	6.1		
IBBN	e P	Z	23:30:04.6	65.5	149.7	2.0	419	6.3		
BSEG	e P	Z	23:30:08.6	66.2	152.7	1.3	147	6.1		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/21	05:15:11.1	38.580N	97.440E	12.2	5.1	4.9		SZGRF
Qinghai, China								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z	05:24:57.1	56.8	68.2	0.6	18	5.3		
BRG	e P	Z	05:25:00.4	57.3	67.3	1.0	17	5.0		
	e pP	Z	05:25:03.8							
CLL	e P	Z	05:25:02.8	57.7	67.0	0.9	14	5.0		
TANN	e P	Z	05:25:07.9	58.4	66.1	1.1	12	4.8		
	e pP	Z	05:25:11.1							
NEUB	e P	Z	05:25:08.3	58.5	66.1	1.4	40	5.3		

	e pP	Z	05:25:11.8							
WERD	e P	Z	05:25:08.3	58.5	66.1	1.1	12	4.8		
	e pP	Z	05:25:11.7							
GUNZ	e P	Z	05:25:08.3	58.5	66.0	1.1	21	5.1		
	e pP	Z	05:25:11.9							
WERN	e P	Z	05:25:08.6	58.5	66.0	1.6	44	5.2		
PLN	e P	Z	05:25:08.8	58.5	66.0	1.2	62	5.5		
WET	e P	Z	05:25:10.3	58.7	65.7	1.1	14	4.9		
MANZ	e P	Z	05:25:10.6	58.8	65.7	0.9	6	4.6		
	e pP	Z	05:25:13.9							
ROTZ	e P	Z	05:25:11.0	58.8	65.6	1.1	25	5.2		
CLZ	e P	Z	05:25:12.6	59.0	65.6	1.0	24	5.2		
RJOB	e pP	Z	05:25:17.5	59.3	64.9					
GRA1	e P	Z	05:25:15.3	59.4	65.0	1.0	34	5.3		
	e L	Z	05:51:47.4			19.6	881		4.9	
FUR	e P	Z	05:25:19.5	60.0	64.2	0.9	28	5.3		
	e pP	Z	05:25:22.9							
STU	e P	Z	05:25:25.5	61.0	63.3	0.9	17	4.9		
BFO	e P	Z	05:25:30.1	61.7	62.6	1.5	24	5.2		
	e pP	Z	05:25:33.6							
WLF	e P	Z	05:25:35.6	62.4	61.9	1.1	40	5.5		

Date Origin Time Lat Long Depth mb Ms ML Source
 2009/12/22 06:06: 7.4 34.980N 32.850E 33.0G 5.1 SZGRF
 Cyprus region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RJOB	e P	Z 06:10:33.3	19.6	123.2	0.9	57	4.8		
GEC2	e P	Z 06:10:35.4	19.8	127.4	0.8	91	5.0		
WET	e P	Z 06:10:42.4	20.4	126.5	0.8	85	5.0		
FUR	e P	Z 06:10:44.9	20.7	121.6	0.7	188	5.5		
BRG	e P	Z 06:10:47.9	21.0	132.1	1.0	86	5.0		
ROTZ	e P	Z 06:10:49.4	21.1	126.7	1.4	163	5.2		
FBE	e P	Z 06:10:51.4	21.3	131.1	0.9	57	4.9		
MANZ	e P	Z 06:10:51.4	21.3	126.9	1.1	152	5.2		
WERN	e P	Z 06:10:52.1	21.3	128.0	1.2	88	5.0		
TANN	e P	Z 06:10:52.5	21.4	128.4	1.2	86	5.0		
GUNZ	e P	Z 06:10:53.0	21.4	128.1	0.6	144	5.5		
WERD	e P	Z 06:10:53.4	21.5	128.2	0.7	68	5.1		
PLN	e P	Z 06:10:54.5	21.6	128.0	0.6	58	5.2		
GRA1	e P	Z 06:10:54.2	21.6	124.8	0.7	69	5.2		
CLL	e P	Z 06:10:55.5	21.7	131.2	0.7	39	4.9		
NEUB	e P	Z 06:11:01.2	22.2	128.8	0.6	65	5.2		
STU	e P	Z 06:11:00.9	22.2	119.6	0.7	85	5.3		
BFO	e P	Z 06:11:04.0	22.5	117.3	0.6	111	5.6		
UBBA	e P	Z 06:11:08.0	22.9	125.0	1.3	43	4.8		
CLZ	e P	Z 06:11:11.9	23.3	127.6	0.7	47	5.1		

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TNS	e P	Z	06:11:13.6	23.4	121.4	0.6	71	5.4
WLF	e P	Z	06:11:22.7	24.4	116.9	0.9	44	5.0
BUG	e P	Z	06:11:25.2	24.6	121.9	1.4	83	5.3
BSEG	e P	Z	06:11:25.0	24.6	131.1	1.2	82	5.3
IBBN	e P	Z	06:11:28.0	24.9	124.3	1.5	153	5.5

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/22	08:49:32.2	19.579S	172.254E	33.0G				SZGRF
Vanuatu Islands region								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
HLG	e PKPbc	Z 09:09:00.7	143.4	25.2					
NRDL	e PKPbc	Z 09:09:03.7	144.3	29.7					
CLL	e PKPbc	Z 09:09:03.3	144.3	34.9					
BRG	e PKPbc	Z 09:09:03.5	144.3	36.7					
FBE	e PKPbc	Z 09:09:04.3	144.5	35.8					
CLZ	e PKPbc	Z 09:09:05.5	144.8	30.5					
NEUB	e PKPbc	Z 09:09:05.4	144.8	33.1					
IBBN	e PKPbc	Z 09:09:06.5	145.1	26.1					
TANN	e PKPbc	Z 09:09:06.4	145.3	34.8					
WERD	e PKPbc	Z 09:09:06.5	145.3	34.6					
PLN	e PKPbc	Z 09:09:06.5	145.3	34.3					
GUNZ	e PKPbc	Z 09:09:06.7	145.3	34.7					
WERN	e PKPbc	Z 09:09:07.0	145.4	34.8					
MANZ	e PKPbc	Z 09:09:07.8	145.7	34.6					
UBBA	e PKPbc	Z 09:09:07.8	145.8	30.7					
ROTZ	e PKPbc	Z 09:09:08.2	145.9	35.0					
GEC2	e PKPbc	Z 09:09:08.1	146.0	38.1					
WET	e PKPbc	Z 09:09:09.4	146.1	36.5					
WLF	e PKPbc	Z 09:09:14.6	147.9	25.2					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/22	19:18:52.2	16.797S	174.251W	33.0N				SZGRF
Tonga Islands								

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
NRDL	e PKPbc	Z 19:38:22.0	144.1	7.1					
IBBN	e PKPbc	Z 19:38:23.6	144.5	3.3					
CLZ	e PKPbc	Z 19:38:24.6	144.8	7.7					
CLL	e PKPbc	Z 19:38:24.8	145.0	12.2					
NEUB	e PKPbc	Z 19:38:25.8	145.3	10.2					
BRG	e PKPbc	Z 19:38:25.8	145.3	13.9					
BUG	e PKPbc	Z 19:38:26.2	145.3	2.6					
FBE	e PKPbc	Z 19:38:26.4	145.3	12.9					
PLN	e PKPbc	Z 19:38:27.8	145.9	11.0					

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WERD	e	PKPbc	Z	19:38:27.9	145.9	11.3
TANN	e	PKPbc	Z	19:38:28.0	146.0	11.5
GUNZ	e	PKPbc	Z	19:38:28.3	146.0	11.3
WERN	e	PKPbc	Z	19:38:28.6	146.1	11.4
MANZ	e	PKPbc	Z	19:38:29.5	146.4	11.1
TNS	e	PKPbc	Z	19:38:29.5	146.5	4.7
ROTZ	e	PKPbc	Z	19:38:30.1	146.6	11.3
GRA1	e	PKPbc	Z	19:38:30.5	146.8	9.6
WLF	e	PKPbc	Z	19:38:32.0	147.1	0.7
GEC2	e	PKPbc	Z	19:38:31.6	147.3	14.2
STU	e	PKPbc	Z	19:38:33.6	147.9	6.2
FUR	e	PKPbc	Z	19:38:34.6	148.3	10.1
BFO	e	PKPbc	Z	19:38:34.7	148.4	4.7
RJOB	e	PKPbc	Z	19:38:34.7	148.5	13.0

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/23	00:38:41.3	16.530S	172.720W	40.8				SZGRF
Samoa Islands region								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e	PKPbc	Z 00:58:13.1	144.9	9.6					
NEUB	e	PKPbc	Z 00:58:13.0	145.1	7.6					
MANZ	e	PKPbc	Z 00:58:17.7	146.3	8.4					
ROTZ	e	PKPbc	Z 00:58:17.7	146.5	8.6					
GRA1	e	PKPbc	Z 00:58:18.2	146.7	6.9					
WLF	e	PKPbc	Z 00:58:18.8	146.9	358.0					
GEC2	e	PKPbc	Z 00:58:19.7	147.3	11.4					
	e	pPKPbc	Z 00:58:31.8							
STU	e	PKPbc	Z 00:58:21.3	147.7	3.4					
BFO	e	PKPbc	Z 00:58:22.5	148.2	1.9					
	e	pPKPbc	Z 00:58:34.7							
FUR	e	PKPbc	Z 00:58:22.7	148.2	7.3					
	e	pPKPbc	Z 00:58:34.9							
RJOB	e	PKPbc	Z 00:58:23.4	148.5	10.1					
	e	pPKPbc	Z 00:58:36.1							

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/23	01:11:59.4	1.949S	98.810E	26.2	6.1	5.5		SZGRF
Southern Sumatera, Indonesia								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
GEC2	e	P	Z 01:24:49.1	88.3	95.0	1.5	259	6.3		
BRG	e	P	Z 01:24:49.1	88.3	95.2	1.3	175	6.2		
RUE	e	P	Z 01:24:50.0	88.5	95.1	1.0	498	6.8		
FBE	e	P	Z 01:24:51.0	88.7	94.8	1.3	215	6.2		

RJOB	e P	Z	01:24:50.7	88.8	94.3	1.3	97	5.9
CLL	e P	Z	01:24:51.5	88.9	94.5	1.1	118	6.0
TANN	e P	Z	01:24:53.3	89.2	94.1	1.3	97	5.9
	e pP	Z	01:25:00.7					
WERN	e P	Z	01:24:53.7	89.2	94.0	1.2	90	5.9
GUNZ	e P	Z	01:24:53.7	89.3	94.0	1.3	132	6.0
WERD	e P	Z	01:24:53.7	89.3	93.9	1.2	109	5.9
ROTZ	e P	Z	01:24:54.3	89.3	93.9	1.2	128	6.0
MANZ	e P	Z	01:24:54.7	89.4	93.8	1.0	166	6.2
PLN	e P	Z	01:24:54.3	89.4	93.8	1.2	129	6.0
NEUB	e P	Z	01:24:55.3	89.7	93.5	0.9	211	6.4
FUR	e P	Z	01:24:55.9	89.8	93.1	1.3	146	6.1
GRA1	e P	Z	01:24:57.2	89.9	93.1	1.0	157	6.2
	e L	Z	02:12:53.7			21.8	2042	5.5
CLZ	e P	Z	01:24:59.8	90.6	92.4	1.1	147	6.2
BSEG	e P	Z	01:25:00.3	90.7	92.4	1.4	124	6.1
NRDL	e P	Z	01:25:00.8	90.8	92.2	1.4	199	6.3
	e pP	Z	01:25:08.4					
UBBA	e P	Z	01:25:00.6	90.8	92.2	1.5	97	5.9
STU	e P	Z	01:25:02.6	91.2	91.6	1.3	135	6.1
	e pP	Z	01:25:10.7					
TNS	e P	Z	01:25:05.4	91.7	91.0	1.0	134	6.2
BFO	e P	Z	01:25:05.0	91.8	90.9	1.0	66	5.9
IBBN	e P	Z	01:25:07.3	92.2	90.4	1.5	125	6.0
BUG	e P	Z	01:25:08.6	92.5	90.0	1.5	108	5.9
WLF	e P	Z	01:25:12.3	93.2	89.2	1.5	100	6.0

Date Origin Time Lat Long Depth mb Ms ML Source
 2009/12/23 21:36:12.4 28.030S 147.590E 33.0G
 Queensland, Australia SZGRF

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e PKPdf	Z	21:55:35.0	138.5	74.6					
CLL	e PKPdf	Z	21:55:35.5	139.0	73.2					
GEC2	e PKPdf	Z	21:55:36.3	139.2	76.6					
TANN	e PKPdf	Z	21:55:36.9	139.5	73.7					
BSEG	e PKPdf	Z	21:55:37.5	139.6	67.5					
WET	e PKPdf	Z	21:55:38.0	139.6	75.5					
NEUB	e PKPdf	Z	21:55:37.2	139.7	72.1					
MANZ	e PKPdf	Z	21:55:37.7	139.9	73.8					
NRDL	e PKPdf	Z	21:55:38.4	140.3	68.9					
CLZ	e PKPdf	Z	21:55:38.8	140.3	69.9					
FUR	e PKPdf	Z	21:55:39.6	140.9	75.1					
TNS	e PKPdf	Z	21:55:41.8	142.0	69.8					
STU	e PKPdf	Z	21:55:41.8	142.0	72.3					
BFO	e PKPdf	Z	21:55:42.4	142.7	72.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/24	00:23:46.3	44.940N	134.880E	410.3	6.4	5.2		SZGRF

Primorye, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RGN	e P	Z	00:34:07.4	68.9	40.3	1.0	748	6.9		
RUE	e P	Z	00:34:18.2	70.3	40.1	1.1	614	6.6		
BSEG	e P	Z	00:34:19.7	70.5	38.2	0.9	486	6.6		
BRG	e P	Z	00:34:24.6	71.4	39.8	0.9	256	6.4		
CLL	e P	Z	00:34:24.7	71.5	39.3	1.2	488	6.5		
FBE	e P	Z	00:34:26.1	71.6	39.5	1.0	561	6.7		
NRDL	e P	Z	00:34:26.4	71.7	37.8	1.0	221	6.3		
NEUB	e P	Z	00:34:28.1	72.0	38.6	1.0	508	6.6		
CLZ	e P	Z	00:34:29.0	72.1	37.8	1.1	459	6.5		
TANN	e P	Z	00:34:30.2	72.4	38.8	1.0	151	6.1		
WERD	e P	Z	00:34:30.4	72.4	38.7	1.1	216	6.2		
PLN	e P	Z	00:34:30.7	72.5	38.7	1.2	260	6.3		
	e pP	Z	00:36:00.2							
GUNZ	e P	Z	00:34:30.9	72.5	38.7	1.2	293	6.3		
WERN	e P	Z	00:34:31.1	72.5	38.7	1.1	367	6.4		
IBBN	e P	Z	00:34:32.1	72.7	36.2	1.1	462	6.5		
MANZ	e P	Z	00:34:32.9	72.9	38.5	1.2	303	6.3		
ROTZ	e P	Z	00:34:34.1	73.0	38.5	1.0	268	6.3		
UBBA	e P	Z	00:34:33.7	73.0	37.4	1.0	118	6.0		
GEC2	e P	Z	00:34:33.9	73.1	39.3	1.0	201	6.2		
	e pP	Z	00:36:04.2							
WET	e P	Z	00:34:35.7	73.2	38.8	1.0	340	6.3		
GRA1	e P	Z	00:34:36.7	73.4	37.9	1.0	773	6.7		
	e L	Z	01:10:30.3			21.4	1446		5.2	
BUG	e P	Z	00:34:36.9	73.6	35.8	1.0	430	6.4		
TNS	e P	Z	00:34:40.1	74.1	36.3	1.0	225	6.2		
FUR	e P	Z	00:34:42.9	74.6	37.7	0.9	567	6.6		
STU	e P	Z	00:34:44.7	75.0	36.5	1.3	378	6.3		
WLF	e P	Z	00:34:47.5	75.4	34.8	0.7	158	6.2		
BFO	e P	Z	00:34:48.5	75.7	35.9	1.2	639	6.6		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/24	14:02:17.8	12.600S	71.780W	33.0N	5.1			SZGRF

Central Peru

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
WLF	e P	Z	14:15:19.4	92.0	252.7	0.8	11	5.2		
BUG	e P	Z	14:15:24.6	93.2	253.7	0.9	14	5.4		
TNS	e P	Z	14:15:26.3	93.5	254.5	0.9	10	5.2		
STU	e P	Z	14:15:26.5	93.6	255.0	0.8	8	5.1		

IBBN	e P	Z	14:15:27.0	93.7	254.1	0.8	10	5.2
UBBA	e P	Z	14:15:31.3	94.6	255.7	1.3	9	5.0
FUR	e P	Z	14:15:32.4	94.8	256.5	0.6	11	5.4
CLZ	e P	Z	14:15:34.0	95.1	256.1	0.9	8	5.1
BSEG	e P	Z	14:15:35.8	95.6	256.2	0.8	5	5.0
RJOB	e P	Z	14:15:36.1	95.7	257.5	1.0	5	5.0
MANZ	e P	Z	14:15:36.8	95.8	257.2	0.9	7	5.2
ROTZ	e P	Z	14:15:36.7	95.8	257.3	0.9	7	5.2
WET	e P	Z	14:15:38.4	96.1	257.7	1.0	4	4.9
TANN	e P	Z	14:15:38.4	96.1	257.5	1.0	4	4.9
GEC2	e P	Z	14:15:39.9	96.5	258.3	0.9	2	4.7
CLL	e P	Z	14:15:40.0	96.6	258.1	0.9	4	4.9
BRG	e P	Z	14:15:42.7	97.1	258.7	0.9	4	5.1

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/24	21:01:46.2	49.390N	151.700E	60.0G	4.7			SZGRF
Northwest of Kuril Islands, Russia								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
NRDL	e P	Z	21:13:11.8	73.0	25.0	1.0	4	4.5		
CLL	e P	Z	21:13:13.3	73.3	26.6	1.0	11	4.8		
BRG	e P	Z	21:13:13.8	73.5	27.2	1.1	6	4.5		
CLZ	e P	Z	21:13:15.4	73.6	25.1	1.1	13	4.9		
NEUB	e P	Z	21:13:16.0	73.8	25.9					
IBBN	e P	Z	21:13:16.4	73.8	23.5	1.1	15	4.9		
TANN	e P	Z	21:13:18.6	74.3	26.2	1.1	3	4.3		
BUG	e P	Z	21:13:21.5	74.7	23.1	0.9	8	4.8		
MANZ	e P	Z	21:13:21.8	74.8	25.9	1.0	5	4.5		
ROTZ	e P	Z	21:13:23.2	74.9	26.0	0.9	5	4.5		
GRA1	e P	Z	21:13:25.3	75.3	25.4	0.9	13	5.0		
GEC2	e P	Z	21:13:25.0	75.3	26.8	1.0	2	4.3		
TNS	e P	Z	21:13:26.3	75.5	23.7	1.0	8	4.8		
RJOB	e P	Z	21:13:32.4	76.6	26.1	0.9	4	4.6		
STU	e P	Z	21:13:32.6	76.7	24.0	1.2	17	5.0		
KBA	e P	Z	21:13:35.0	77.0	26.4	0.9	15	5.1		
BFO	e P	Z	21:13:35.7	77.3	23.5	1.0	10	4.9		
DAVA	e P	Z	21:13:39.0	77.8	24.3	0.9	6	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/24	21:01:39.3	48.820N	152.190E	33.0G	4.7			SZGRF
Kuril Islands, Russia								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
NRDL	e P	Z	21:13:11.7	73.7	24.9	1.0	4	4.4		
CLL	e P	Z	21:13:13.1	74.0	26.6	1.0	11	4.8		

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BRG	e P	Z	21:13:13.9	74.1	27.1	1.1	6	4.5
CLZ	e P	Z	21:13:15.3	74.2	25.0	1.1	13	4.9
NEUB	e P	Z	21:13:15.8	74.4	25.8	0.9	8	4.8
IBBN	e P	Z	21:13:16.1	74.4	23.4	1.1	15	4.9
BUG	e P	Z	21:13:21.3	75.4	23.0	0.9	8	4.9
MANZ	e P	Z	21:13:21.9	75.4	25.9	1.0	5	4.6
ROTZ	e P	Z	21:13:23.1	75.6	25.9	0.9	5	4.6
GRA1	e P	Z	21:13:25.1	75.9	25.3	0.9	13	5.1
GEC2	e P	Z	21:13:24.7	76.0	26.7	1.0	2	4.3
TNS	e P	Z	21:13:26.1	76.2	23.6	1.0	8	4.8
RJOB	e P	Z	21:13:32.2	77.2	26.1	0.9	4	4.6
STU	e P	Z	21:13:32.3	77.3	24.0	1.2	17	5.0
BFO	e P	Z	21:13:35.7	78.0	23.4	1.0	10	4.9

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/25	22:04:26.4	16.577S	172.549W	33.0G				SZGRF
Samoa Islands region								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLL	e PKPbc	Z	22:23:57.8	145.0	9.3					
BRG	e PKPbc	Z	22:23:59.9	145.3	11.0					
TANN	e PKPbc	Z	22:24:01.3	145.9	8.6					
TNS	e PKPbc	Z	22:24:02.6	146.3	1.7					
MANZ	e PKPbc	Z	22:24:02.8	146.4	8.1					
ROTZ	e PKPbc	Z	22:24:03.6	146.6	8.3					
GRA1	e PKPbc	Z	22:24:04.5	146.7	6.6					
WLF	e PKPbc	Z	22:24:04.5	146.9	357.7					
WET	e PKPbc	Z	22:24:04.9	147.1	9.6					
GEC2	e PKPbc	Z	22:24:05.5	147.3	11.1					
STU	e PKPbc	Z	22:24:06.9	147.8	3.1					
BFO	e PKPbc	Z	22:24:08.1	148.2	1.6					
RJOB	e PKPbc	Z	22:24:08.8	148.5	9.8					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/26	00:23:35.9	14.030N	93.410E	33.0G	4.7			SZGRF
Andaman Islands, India, region								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	00:35:00.4	72.5	89.1	0.8	6	4.8		
GEC2	e P	Z	00:35:01.5	72.7	88.3	0.8	8	4.9		
CLL	e P	Z	00:35:03.4	73.1	88.5	0.9	5	4.6		
WET	e P	Z	00:35:05.4	73.3	87.7	0.7	4	4.6		
RJOB	e P	Z	00:35:04.7	73.4	87.3	0.7	4	4.6		
ROTZ	e P	Z	00:35:07.6	73.7	87.4	1.0	8	4.7		
MANZ	e P	Z	00:35:07.0	73.7	87.4	0.9	5	4.6		

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GRA1	e P	Z	00:35:10.7	74.3	86.6	0.7	7	4.8
BSEG	e P	Z	00:35:13.2	74.7	87.1	0.9	14	5.0
STU	e P	Z	00:35:18.5	75.7	84.9	0.7	4	4.6
BUG	e P	Z	00:35:23.6	76.7	84.1	0.9	8	4.9

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/26	04:14:30.1	57.590N	160.040E	33.0G	4.7			SZGRF

Kamchatka Peninsula, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
NRDL	e P	Z	04:25:23.0	67.2	16.9	1.0	6	4.7		
CLZ	e P	Z	04:25:27.1	67.8	17.0	1.0	10	5.0		
CLL	e P	Z	04:25:27.3	67.8	18.4	1.1	18	5.2		
BRG	e P	Z	04:25:28.7	68.0	18.8	1.0	4	4.7		
UBBA	e P	Z	04:25:33.9	68.8	16.7	0.6	2	4.5		
MANZ	e P	Z	04:25:36.2	69.2	17.7	1.6	22	5.0		
ROTZ	e P	Z	04:25:37.7	69.4	17.7	1.0	4	4.5		
GRA1	e P	Z	04:25:39.5	69.7	17.2	0.7	6	4.9		
WET	e P	Z	04:25:41.0	69.9	18.0	1.2	8	4.8		
GEC2	e P	Z	04:25:40.7	70.0	18.4	1.1	5	4.6		
MOA	e P	Z	04:25:45.5	70.8	18.6	1.1	5	4.5		
ARSA	e P	Z	04:25:47.5	71.1	19.2	1.2	8	4.7		
FUR	e P	Z	04:25:47.6	71.1	17.1	0.8	3	4.5		
RJOB	e P	Z	04:25:48.2	71.2	17.8	0.9	6	4.7		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/26	08:57: 9.2	11.370S	133.730E	29.0		5.3		SZGRF

Northern Territory, Australia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e PKPdf	Z	09:15:51.5	117.4	73.4					
	e pPKPdf	Z	09:15:59.4							
CLL	e PKPdf	Z	09:15:53.0	117.8	72.4					
	e pPKPdf	Z	09:16:01.8							
GEC2	e pPKPdf	Z	09:16:01.4	118.1	74.2					
TANN	e PKPdf	Z	09:15:54.2	118.4	72.4					
WET	e PKPdf	Z	09:15:54.6	118.6	73.4					
	e pPKPdf	Z	09:16:04.2							
MANZ	e PKPdf	Z	09:15:55.1	118.8	72.3					
RJOB	e PKPdf	Z	09:15:55.1	119.0	74.0					
NRDL	e PKPdf	Z	09:15:55.8	119.1	69.2					
CLZ	e PKPdf	Z	09:15:56.2	119.2	69.8					
GRA1	e PKPdf	Z	09:15:56.2	119.4	71.6					
	e L	Z	10:01:59.3			21.1	714		5.3	
FUR	e PKPdf	Z	09:15:57.1	119.9	72.5					

IBBN	e	PKPdf	Z	09:15:58.3	120.5	67.1
TNS	e	PKPdf	Z	09:15:59.3	120.9	68.9
STU	e	PKPdf	Z	09:15:59.1	121.0	70.4
BUG	e	PKPdf	Z	09:15:59.5	121.2	67.1
BFO	e	PKPdf	Z	09:16:00.7	121.7	69.9
WLF	e	PKPdf	Z	09:16:02.6	122.5	67.1

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/27	03:12:48.2	56.693N	152.809W	25.7	5.5	5.0		SZGRF

Kodiak Island, Alaska, United States, region

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z 03:23:49.9	68.5	350.1	1.3	79	5.8		
IBBN	e P	Z 03:23:57.8	69.8	348.8	1.3	83	5.7		
NRDL	e P	Z 03:23:58.1	69.9	350.1	1.2	70	5.7		
RUE	e P	Z 03:24:00.6	70.3	352.2	1.0	95	5.9		
CLZ	e P	Z 03:24:02.6	70.6	350.3	1.3	78	5.7		
BUG	e P	Z 03:24:02.3	70.6	348.6	1.0	68	5.7		
NEUB	e P	Z 03:24:06.8	71.4	351.1	1.2	69	5.7		
	e pP	Z 03:24:14.2							
CLL	e P	Z 03:24:06.7	71.4	351.8	1.3	48	5.5		
	e pP	Z 03:24:14.0							
UBBA	e P	Z 03:24:07.7	71.6	350.1	2.0	80	5.5		
FBE	e P	Z 03:24:09.6	71.8	352.1	1.3	62	5.6		
BRG	e P	Z 03:24:09.7	71.9	352.4	1.3	48	5.5		
TNS	e P	Z 03:24:10.4	72.0	349.3	1.2	47	5.5		
	e pP	Z 03:24:17.9							
PLN	e P	Z 03:24:11.2	72.1	351.4	1.2	44	5.5		
	e pP	Z 03:24:18.6							
WERD	e P	Z 03:24:11.5	72.2	351.5	1.3	31	5.3		
TANN	e P	Z 03:24:12.0	72.2	351.6	1.3	33	5.3		
	e pP	Z 03:24:19.3							
WLF	e P	Z 03:24:12.0	72.2	348.1	1.5	95	5.7		
GUNZ	e P	Z 03:24:12.1	72.2	351.5	1.2	27	5.3		
WERN	e P	Z 03:24:12.7	72.3	351.5	1.2	38	5.4		
MANZ	e P	Z 03:24:14.2	72.6	351.4	1.2	33	5.3		
GRA1	e P	Z 03:24:15.5	72.8	350.9	1.2	39	5.4		
	e L	Z 04:02:20.2			18.1	732		5.0	
ROTZ	e P	Z 03:24:15.5	72.8	351.5	1.1	32	5.4		
STU	e P	Z 03:24:19.3	73.5	349.8	1.1	23	5.1		
WET	e P	Z 03:24:20.3	73.5	351.9	1.4	36	5.2		
BFO	e P	Z 03:24:21.2	73.8	349.3	1.4	37	5.2		
GEC2	e P	Z 03:24:21.6	73.9	352.3	1.1	20	5.1		
FUR	e P	Z 03:24:24.4	74.3	351.0	1.1	40	5.3		
RJOB	e P	Z 03:24:27.7	74.9	351.9	0.9	28	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/28	04:13:27.6	29.160N	127.970E	33.0G	5.3			SZGRF

Northwest of Ryukyu Islands, Japan

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z	04:25:37.3	80.3	53.9	0.6	22	5.4		
BSEG	e P	Z	04:25:41.2	81.1	51.5	0.9	20	5.2		
BRG	e P	Z	04:25:41.4	81.2	53.8	0.8	8	4.8		
CLL	e P	Z	04:25:42.5	81.4	53.2	0.7	20	5.4		
FBE	e P	Z	04:25:43.3	81.4	53.4	1.0	23	5.2		
NEUB	e P	Z	04:25:46.3	82.1	52.3	0.9	52	5.7		
TANN	e P	Z	04:25:46.8	82.2	52.7	1.2	19	5.1		
WERD	e P	Z	04:25:47.1	82.2	52.6	1.1	15	5.0		
GUNZ	e P	Z	04:25:47.5	82.3	52.6	0.9	26	5.4		
WERN	e P	Z	04:25:47.7	82.3	52.6	1.0	26	5.4		
CLZ	e P	Z	04:25:48.2	82.3	51.3	0.9	61	5.8		
MANZ	e P	Z	04:25:49.3	82.6	52.4	1.0	20	5.3		
ROTZ	e P	Z	04:25:50.0	82.7	52.5	1.0	33	5.5		
RJOB	e P	Z	04:25:54.6	83.6	52.7	1.0	22	5.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/28	08:05:46.5	49.790N	151.270E	33.0G	5.4	4.1		SZGRF

Northwest of Kuril Islands, Russia

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	08:17:05.1	71.2	25.4	1.1	34	5.4		
RUE	e P	Z	08:17:07.2	71.6	27.4	0.8	53	5.7		
CLL	e P	Z	08:17:14.1	72.8	26.7	1.1	68	5.7		
BRG	e P	Z	08:17:14.7	73.0	27.2	1.0	23	5.3		
CLZ	e P	Z	08:17:16.3	73.1	25.2	1.1	64	5.7		
FBE	e P	Z	08:17:16.0	73.1	26.9	0.9	30	5.5		
NEUB	e P	Z	08:17:16.8	73.3	26.0	0.9	45	5.5		
WERD	e P	Z	08:17:20.1	73.8	26.2	1.1	35	5.3		
PLN	e P	Z	08:17:20.2	73.8	26.1	1.3	50	5.4		
GUNZ	e P	Z	08:17:20.5	73.9	26.2	0.9	24	5.2		
WERN	e P	Z	08:17:20.9	73.9	26.2	0.8	27	5.4		
MANZ	e P	Z	08:17:22.5	74.3	26.0	1.1	25	5.1		
ROTZ	e P	Z	08:17:24.0	74.5	26.0	1.4	57	5.4		
GRA1	e P	Z	08:17:26.0	74.8	25.4	0.8	47	5.6		
	e L	Z	08:48:06.3			21.0	98		4.1	
WET	e P	Z	08:17:26.7	74.8	26.4	1.3	61	5.5		
TNS	e P	Z	08:17:27.3	75.1	23.8	0.8	16	5.1		
RJOB	e P	Z	08:17:33.4	76.1	26.2	1.4	26	5.2		
FUR	e P	Z	08:17:33.7	76.2	25.3	1.2	70	5.7		
STU	e P	Z	08:17:33.6	76.2	24.1	1.5	57	5.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/28	13:48: 8.0	19.280S	177.540W	33.0G				SZGRF
Fiji Islands region								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
CLZ	e PKPbc	Z	14:07:46.5	146.9	13.7					
CLL	e PKPbc	Z	14:07:46.6	146.9	18.4					
BRG	e PKPbc	Z	14:07:47.5	147.1	20.3					
FBE	e PKPbc	Z	14:07:48.1	147.2	19.2					
NEUB	e PKPbc	Z	14:07:47.7	147.2	16.4					
WERD	e PKPbc	Z	14:07:49.6	147.9	17.7					
GUNZ	e PKPbc	Z	14:07:50.0	147.9	17.8					
MANZ	e PKPbc	Z	14:07:51.0	148.3	17.5					
ROTZ	e PKPbc	Z	14:07:51.6	148.5	17.8					
TNS	e PKPbc	Z	14:07:51.6	148.7	10.9					
WLF	e PKPbc	Z	14:07:54.1	149.5	6.9					
RJOB	e PKPbc	Z	14:07:55.3	150.3	20.0					

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/29	09:01:49.4	23.633N	95.283E	99.8	5.0			SZGRF
Myanmar								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e P	Z	09:12:27.3	66.5	80.8	0.8	6	4.9		
	e pP	Z	09:12:53.0							
GEC2	e P	Z	09:12:30.9	67.0	79.8	0.8	7	5.0		
CLL	e P	Z	09:12:30.9	67.1	80.3	0.7	4	4.8		
TANN	e P	Z	09:12:33.6	67.5	79.6	0.8	5	4.8		
	e pP	Z	09:12:59.5							
ROTZ	e P	Z	09:12:36.7	67.8	79.1	0.8	13	5.2		
RJOB	e P	Z	09:12:37.4	67.8	78.7	0.8	7	4.9		
BSEG	e P	Z	09:12:38.8	68.2	79.4	0.9	20	5.3		
	e pP	Z	09:13:03.9							
GRA1	e P	Z	09:12:40.7	68.5	78.4	0.7	7	5.0		
CLZ	e P	Z	09:12:40.8	68.6	78.6	0.7	14	5.3		
	e pP	Z	09:13:05.0							
NRDL	e P	Z	09:12:41.0	68.6	78.7	1.0	12	5.1		
OBER	e P	Z	09:12:46.2	69.6	76.9	0.8	13	5.1		
	e pP	Z	09:13:10.8							
STU	e P	Z	09:12:49.6	70.0	76.6	0.9	16	5.2		
TNS	e P	Z	09:12:50.6	70.1	76.6	0.8	15	5.2		
BUG	e P	Z	09:12:52.8	70.5	76.2	0.9	12	5.0		
	e pP	Z	09:13:18.2							
BFO	e P	Z	09:12:53.2	70.6	75.9	0.8	3	4.5		
WLF	e P	Z	09:13:00.3	71.7	74.8	0.9	38	5.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/29	11:08:51.6	32.185N	15.816E	10.0G	4.0			SZGRF

Near coast of Libya

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RJOB	e P	Z	11:12:32.5	15.7	170.5	0.9	10	4.0		
GEC2	e P	Z	11:12:42.8	16.7	173.8	1.0	9	3.8		
BFO	e P	Z	11:12:47.4	17.1	158.0	0.8	8	3.9		
ROTZ	e P	Z	11:12:57.6	17.8	170.0	0.8	5	3.7		
MANZ	e P	Z	11:13:00.1	18.0	169.8	0.9	8	3.8		
WERN	e P	Z	11:13:03.4	18.3	170.7					
TANN	e P	Z	11:13:04.4	18.4	171.0	1.0	7	3.7		
BRG	e P	Z	11:13:08.2	18.7	175.1	0.9	7	3.9		
TNS	e P	Z	11:13:10.1	18.8	160.4	0.8	12	4.2		
WLF	e P	Z	11:13:10.7	18.9	154.0	0.9	20	4.3		
BUG	e P	Z	11:13:26.8	20.2	158.7	0.9	16	4.3		
NRDL	e P	Z	11:13:33.4	20.7	166.2	0.8	5	3.9		
BSEG	e P	Z	11:13:44.6	22.1	167.6	0.9	12	4.3		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/29	19:23: 5.2	42.566N	142.512E	33.0G	5.0			SZGRF

Hokkaido, Japan, region

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z	19:34:44.6	75.2	36.5	1.0	27	5.2		
BSEG	e P	Z	19:34:44.9	75.2	34.4	0.8	21	5.3		
CLL	e P	Z	19:34:51.1	76.4	35.8	0.8	18	5.2		
BRG	e P	Z	19:34:51.2	76.4	36.3	0.8	6	4.7		
NRDL	e P	Z	19:34:51.5	76.5	34.0	0.8	9	4.9		
CLZ	e P	Z	19:34:54.6	76.9	34.1	0.8	20	5.3		
NEUB	e P	Z	19:34:54.3	76.9	35.0	0.8	22	5.3		
TANN	e P	Z	19:34:56.3	77.3	35.3	0.8	3	4.4		
IBBN	e P	Z	19:34:57.0	77.4	32.4	0.8	23	5.3		
MANZ	e P	Z	19:34:59.1	77.8	35.0	0.8	8	4.9		
UBBA	e P	Z	19:34:59.0	77.9	33.7	0.7	3	4.6		
ROTZ	e P	Z	19:35:00.5	78.0	35.1	0.8	9	4.9		
GEC2	e P	Z	19:35:00.6	78.1	35.9	0.8	5	4.7		
BUG	e P	Z	19:35:01.7	78.3	32.0	0.8	20	5.2		
GRA1	e P	Z	19:35:02.8	78.4	34.4	0.8	27	5.3		
TNS	e P	Z	19:35:05.3	78.9	32.6	0.8	6	4.7		
RJOB	e P	Z	19:35:08.2	79.4	35.2	0.8	16	5.0		
FUR	e P	Z	19:35:09.4	79.6	34.3	0.8	26	5.2		
STU	e P	Z	19:35:10.4	79.9	33.0	0.8	20	5.1		
BFO	e P	Z	19:35:14.0	80.6	32.4	0.8	9	4.8		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/29	22:14:46.7	12.904N	124.401E	33.0G	5.0			SZGRF

Samar, Philippine Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z	22:27:51.8	91.8	65.9	1.1	20	5.3		
BRG	e P	Z	22:27:54.6	92.4	66.1	0.9	4	4.8		
CLL	e P	Z	22:27:56.1	92.8	65.3	0.8	3	4.7		
BSEG	e P	Z	22:27:57.9	93.1	63.0	0.9	7	5.1		
GEC2	e P	Z	22:27:59.3	93.4	66.0	0.8	3	4.7		
TANN	e P	Z	22:27:59.3	93.4	64.9	1.0	2	4.5		
NRDL	e P	Z	22:28:01.6	93.8	62.9	0.9	4	4.8		
CLZ	e P	Z	22:28:01.9	94.0	63.2	0.9	8	5.0		
RJOB	e P	Z	22:28:03.5	94.4	65.4	1.0	6	5.0		
UBBA	e P	Z	22:28:04.6	94.7	63.0	1.3	8	5.0		
TNS	e P	Z	22:28:10.3	95.8	61.8	0.8	3	4.9		
BUG	e P	Z	22:28:10.5	95.9	60.7	0.9	8	5.2		
WLF	e P	Z	22:28:17.4	97.4	60.0	0.9	9	5.5		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/29	23:12:17.9	51.716N	173.527W	33.0G	4.6			SZGRF

Andreanof Islands, Aleutian Islands, United States

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
IBBN	e P	Z	23:24:02.1	76.0	0.8	0.7	10	5.1		
CLZ	e P	Z	23:24:04.1	76.4	2.5	0.9	5	4.7		
CLL	e P	Z	23:24:05.7	76.8	4.1	0.9	4	4.5		
NEUB	e P	Z	23:24:07.2	77.0	3.4	0.9	8	4.9		
BRG	e P	Z	23:24:08.2	77.2	4.7	0.9	5	4.6		
TNS	e P	Z	23:24:13.1	78.0	1.3	1.0	5	4.5		
MANZ	e P	Z	23:24:14.0	78.2	3.6	0.8	3	4.4		
ROTZ	e P	Z	23:24:15.4	78.4	3.6	0.8	2	4.3		
GRA1	e P	Z	23:24:16.3	78.5	3.0	0.8	8	4.8		
GEC2	e P	Z	23:24:19.7	79.2	4.6	0.9	3	4.2		
BFO	e P	Z	23:24:22.9	79.9	1.2	0.9	2	4.1		
RJOB	e P	Z	23:24:25.9	80.4	4.0	0.8	3	4.4		

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/30	07:23: 2.3	22.510S	177.340W	33.0G				SZGRF

South of Fiji Islands

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
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BSEG	e	PKPbc	Z	07:42:44.5	148.0	13.4
RUE	e	PKPbc	Z	07:42:46.5	148.8	20.1
	e	PKPab	Z	07:42:50.3		
NRDL	e	PKPbc	Z	07:42:48.0	149.5	13.6
CLZ	e	PKPbc	Z	07:42:49.9	150.1	14.4
CLL	e	PKPbc	Z	07:42:49.6	150.1	19.4
	e	PKPab	Z	07:42:55.1		
BRG	e	PKPbc	Z	07:42:50.2	150.3	21.4
	e	PKPab	Z	07:42:56.2		
FBE	e	PKPbc	Z	07:42:50.7	150.4	20.3
	e	PKPab	Z	07:42:57.0		
NEUB	e	PKPbc	Z	07:42:50.6	150.4	17.3
	e	PKPab	Z	07:42:56.8		
BUG	e	PKPbc	Z	07:42:51.3	150.8	8.8
PLN	e	PKPbc	Z	07:42:52.1	151.1	18.4
TANN	e	PKPbc	Z	07:42:52.2	151.1	19.0
WERD	e	PKPbc	Z	07:42:52.1	151.1	18.7
UBBA	e	PKPbc	Z	07:42:51.8	151.1	14.1
GUNZ	e	PKPbc	Z	07:42:52.5	151.1	18.8
	e	PKPab	Z	07:43:00.1		
WERN	e	PKPbc	Z	07:42:52.6	151.2	18.9
	e	PKPab	Z	07:43:00.4		
MANZ	e	PKPbc	Z	07:42:53.3	151.5	18.6
ROTZ	e	PKPbc	Z	07:42:53.7	151.7	18.9
TNS	e	PKPbc	Z	07:42:54.2	151.9	11.4
	e	PKPab	Z	07:43:03.2		
GRA1	e	PKPbc	Z	07:42:54.3	152.0	17.0
	e	PKPab	Z	07:43:03.8		
GEC2	e	PKPbc	Z	07:42:54.6	152.2	22.3
	e	PKPab	Z	07:43:04.3		
WLF	e	PKPbc	Z	07:42:56.5	152.7	7.0
FUR	e	PKPab	Z	07:43:09.8	153.4	18.0
RJOB	e	PKPbc	Z	07:42:57.2	153.5	21.4
	e	PKPab	Z	07:43:10.5		
BFO	e	PKPbc	Z	07:42:58.0	153.8	11.9
	e	PKPab	Z	07:43:11.0		

Date 2009/12/30 Origin Time 11:17:52.0 Lat 6.500N Long 126.300E Depth 48.0 mb Ms ML Source NEIC
Mindanao, Philippine Islands

Sta	Phase	Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BRG	e Pdiff	Z 11:31:26.3	98.7	68.4					
CLL	e Pdiff	Z 11:31:27.8	99.1	67.5					
TANN	e Pdiff	Z 11:31:30.3	99.7	67.2					
NEUB	e Pdiff	Z 11:31:31.7	99.8	66.5					
ROTZ	e Pdiff	Z 11:31:33.4	100.1	67.1					

NRDL	e Pdiff	Z	11:31:33.6	100.2	64.9
CLZ	e Pdiff	Z	11:31:34.2	100.3	65.3
RJOB	e Pdiff	Z	11:31:35.2	100.5	67.9
UBBA	e Pdiff	Z	11:31:38.0	101.0	65.1

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/30	18:48:57.5	31.958N	115.638W	47.3	5.9	6.1		SZGRF

Baja California, Mexico

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e P	Z	19:01:21.0	82.3	316.1	2.5	375	6.2		
	e sP	Z	19:01:39.9							
IBBN	e P	Z	19:01:21.0	82.3	314.4	2.1	278	6.1		
	e sP	Z	19:01:40.1							
BUG	e P	Z	19:01:22.7	82.7	314.1	3.0	517	6.2		
	e sP	Z	19:01:41.9							
NRDL	e P	Z	19:01:25.5	83.2	316.1	1.5	81	5.7		
	e sP	Z	19:01:44.7							
WLF	e P	Z	19:01:26.7	83.4	313.5	2.2	214	6.0		
	e sP	Z	19:01:46.1							
CLZ	e P	Z	19:01:28.8	83.8	316.3	2.4	398	6.2		
	e sP	Z	19:01:48.0							
TNS	e P	Z	19:01:29.8	84.1	315.1	2.7	247	6.0		
UBBA	e P	Z	19:01:31.1	84.4	316.1	2.5	287	6.1		
	e sP	Z	19:01:50.6							
RUE	e P	Z	19:01:32.8	84.7	318.8	2.5	334	6.1		
	e sP	Z	19:01:52.3							
NEUB	e P	Z	19:01:33.7	84.9	317.4	2.2	264	6.1		
	e sP	Z	19:01:53.0							
CLL	e P	Z	19:01:35.6	85.3	318.3	2.5	178	5.8		
	e sP	Z	19:01:54.9							
BFO	e P	Z	19:01:35.9	85.4	315.1	2.2	153	5.7		
STU	e P	Z	19:01:36.8	85.5	315.7	2.6	238	5.9		
WERD	e P	Z	19:01:37.4	85.6	317.9	1.8	64	5.4		
	e sP	Z	19:01:56.7							
GUNZ	e P	Z	19:01:37.8	85.7	317.9	2.7	236	5.8		
	e sP	Z	19:01:57.2							
GRA1	e P	Z	19:01:38.4	85.7	317.1	2.2	232	5.9		
	e L	Z	19:40:26.4			18.9	8116		6.1	
FBE	e P	Z	19:01:38.2	85.7	318.6	2.3	163	5.8		
	e sP	Z	19:01:57.4							
TANN	e P	Z	19:01:38.0	85.7	318.0	2.3	124	5.6		
	e sP	Z	19:01:57.3							
WERN	e P	Z	19:01:38.3	85.8	317.9	2.8	344	6.0		
	e sP	Z	19:01:57.8							
MANZ	e P	Z	19:01:38.8	85.9	317.7	2.7	150	5.6		
	e sP	Z	19:01:58.0							

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BRG	e P	Z	19:01:39.4	86.0	319.0	1.9	69	5.5
	e sP	Z	19:01:58.8					
ROTZ	e P	Z	19:01:40.0	86.1	317.8	2.5	123	5.6
	e sP	Z	19:01:59.3					
GEC2	e P	Z	19:01:46.5	87.4	318.9			

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/31	09:57:34.3	27.276N	91.591E	23.4	5.6	5.3		SZGRF
Bhutan								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
RUE	e P	Z	10:07:47.3	61.5	81.5	1.4	86	5.8		
	e pP	Z	10:07:53.7							
BRG	e P	Z	10:07:48.5	61.6	80.7	1.3	41	5.5		
	e pP	Z	10:07:55.0							
FBE	e P	Z	10:07:51.2	62.0	80.3	1.2	61	5.7		
	e pP	Z	10:07:57.7							
GEC2	e P	Z	10:07:52.2	62.1	79.5	0.9	56	5.8		
CLL	e P	Z	10:07:51.4	62.1	80.3	1.2	22	5.3		
	e pP	Z	10:07:58.2							
TANN	e P	Z	10:07:55.3	62.6	79.4	0.9	22	5.3		
	e pP	Z	10:08:02.0							
WERN	e P	Z	10:07:55.9	62.7	79.3	1.2	32	5.3		
GUNZ	e P	Z	10:07:55.9	62.7	79.3	1.2	48	5.5		
	e pP	Z	10:08:02.7							
WERD	e P	Z	10:07:55.8	62.7	79.3	1.4	41	5.4		
	e pP	Z	10:08:02.5							
PLN	e pP	Z	10:08:03.1	62.8	79.3					
NEUB	e P	Z	10:07:57.1	62.9	79.3	1.2	62	5.6		
	e pP	Z	10:08:03.7							
ROTZ	e P	Z	10:07:57.8	62.9	78.9	1.2	70	5.7		
	e pP	Z	10:08:04.5							
RJOB	e P	Z	10:07:57.1	62.9	78.3	1.2	27	5.3		
MANZ	e P	Z	10:07:57.6	62.9	79.0	1.5	70	5.6		
	e pP	Z	10:08:04.4							
BSEG	e P	Z	10:07:59.8	63.3	79.6	1.5	85	5.7		
	e pP	Z	10:08:06.3							
GRA1	e P	Z	10:08:01.8	63.5	78.2	1.4	83	5.8		
	e L	Z	11:04:54.4			20.1	2199		5.3	
CLZ	e P	Z	10:08:02.2	63.6	78.6	1.0	58	5.8		
	e pP	Z	10:08:08.8							
NRDL	e P	Z	10:08:02.5	63.7	78.8	1.3	99	5.9		
	e pP	Z	10:08:09.5							
FUR	e P	Z	10:08:03.5	63.8	77.5	1.1	84	5.9		
	e pP	Z	10:08:10.1							
UBBA	e P	Z	10:08:04.5	64.1	77.9	1.6	49	5.5		
STU	e P	Z	10:08:11.1	65.0	76.4	1.1	76	5.8		

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IBBN	e P	Z	10:08:11.7	65.1	77.0	1.4	57	5.6
	e pP	Z	10:08:16.6					
TNS	e P	Z	10:08:12.1	65.2	76.5	1.1	35	5.5
BUG	e P	Z	10:08:14.8	65.6	76.2	1.3	43	5.5
WLF	e P	Z	10:08:22.7	66.7	74.7	1.3	100	5.9

Date	Origin Time	Lat	Long	Depth	mb	Ms	ML	Source
2009/12/31	17:42:17.5	19.615S	177.855W	395.5				SZGRF
Fiji Islands region								

Sta	Phase		Time	Dist	BAz	T[s]	A[nm]	mb	MS	ML
BSEG	e PKPbc	Z	18:01:09.0	145.1	13.5					
NRDL	e PKPbc	Z	18:01:12.8	146.5	13.7					
	e pPKPbc	Z	18:02:48.5							
IBBN	e pPKPbc	Z	18:02:50.1	147.0	9.7					
CLZ	e pPKPbc	Z	18:02:50.6	147.1	14.4					
CLL	e PKPbc	Z	18:01:14.8	147.2	19.1					
	e pPKPbc	Z	18:02:50.5							
BRG	e PKPbc	Z	18:01:15.6	147.4	20.9					
FBE	e PKPbc	Z	18:01:16.1	147.5	19.9					
NEUB	e PKPbc	Z	18:01:15.8	147.5	17.1					
TANN	e PKPbc	Z	18:01:17.6	148.1	18.6					
WERD	e PKPbc	Z	18:01:17.6	148.1	18.3					
GUNZ	e PKPbc	Z	18:01:17.9	148.2	18.4					
WERN	e PKPbc	Z	18:01:18.1	148.3	18.5					
MANZ	e PKPbc	Z	18:01:18.9	148.6	18.2					
ROTZ	e PKPbc	Z	18:01:19.5	148.8	18.5					
TNS	e PKPbc	Z	18:01:19.8	149.0	11.6					
GEC2	e PKPbc	Z	18:01:20.4	149.3	21.7					
WLF	e PKPbc	Z	18:01:22.2	149.8	7.5					
STU	e PKPbc	Z	18:01:22.9	150.3	13.5					
FUR	e PKPbc	Z	18:01:23.2	150.5	17.7					
RJOB	e PKPbc	Z	18:01:23.1	150.6	20.8					
BFO	e PKPbc	Z	18:01:23.9	150.9	12.0					

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