Australian Government
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Australian Seismological Report 2009

D.H. Glanville

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2011/03

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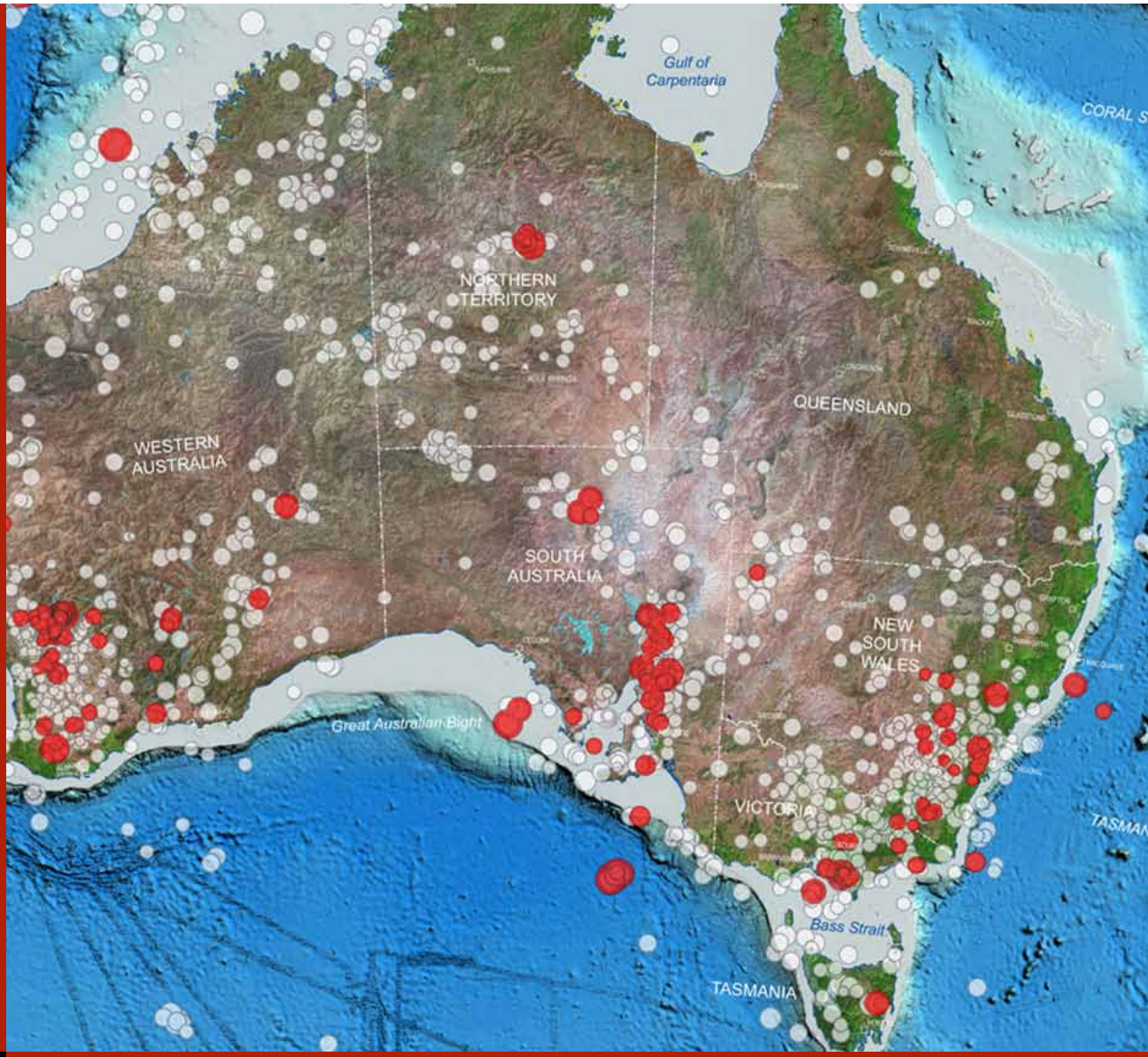

Australian Seismological Report 2009

GEOSCIENCE AUSTRALIA
RECORD 2011/03

Compiled by

D.H. Glanville[1]

Australian Government
Geoscience Australia

Government of South Australia
Primary Industries and Resources SA

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Geoscience Australia
Chief Executive Officer: Dr Chris Pigram

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Introduction

This report details earthquakes detected and located by Geoscience Australia in 2009. Detailed summaries of earthquakes occurring or felt in Australia are provided, along with earthquakes detected within the Australian region and the world, which are recorded as part of earthquake monitoring conducted in the operation of the Joint Australian Tsunami Warning Centre (JATWC). Individual State and Territory earthquake summaries are included for more detailed information regarding earthquakes in that State/Territory. Tables are also provided detailing the largest earthquakes ever recorded in that State/Territory and largest earthquakes (e.g. Top 10) for that State/Territory in 2009, where appropriate. The date and time of the earthquake is provided in Universal Time (UTC).

Earthquakes are located at Geoscience Australia using the following procedures:

- An automated system using Antelope® software, generates seismic event solutions. These are evaluated by the seismologist on duty to determine validity, size and location.
- Blasts are differentiated when possible and are usually not located, and (generally) not included in the earthquake database.
- Earthquakes that are determined to have a magnitude (Mb or MWp) of 6.0 or higher by the duty seismologist are entered into the Geoscience Australia earthquakes database as a preliminary solution.
- Earthquakes that are located within the Australian Region, encompassing Latitude 10°N to -65°S and Longitude 90°E to -170°W, and are determined to have a magnitude of 5.0 or higher by the duty seismologist are entered into the Geoscience Australia earthquakes database as a preliminary solution.
- Earthquakes that are within Australia and are determined to have a magnitude of 4.5 or higher by the duty seismologist are entered onto the Geoscience Australia earthquakes database as a preliminary solution.
- Earthquakes that are within Australia and are determined to have a magnitude of 3.5 or higher by the duty seismologist and are located near a populated area are entered into the Geoscience Australia earthquakes database as a preliminary solution.
- Earthquakes that are felt within Australia are located by the duty seismologist and entered into the Geoscience Australia earthquakes database as a preliminary solution.
- All preliminary solutions are reviewed by Seismic Analysts using the Antelope® software tool DBloc2. Arrivals and stations used in the solution are reviewed and location and magnitudes of the earthquake are updated and the solution finalised.
- Seismic Analysts then analyse Australian seismic station records for smaller local events that are then located and a magnitude is determined and the event is entered into the Geoscience Australia earthquakes database as a final solution. This requires a clear signal on 3 seismic stations.
- For events outside Australia, locations are determined using the IASPEI-91 velocity model and Mb, Msx and MWp are calculated whenever suitable.
- For events inside Australia, both IASPEI-91, and local Australian velocity models are used to determine location, the model which has the best fit to arrivals taking precedence. Magnitudes are calculated using the amplitude of maximum displacement on the Vertical component of the seismogram that's converted to a Wood-Anderson seismometer response, using the following 3 formula:
    - For WA & NT: Gaull and Gregson (1991)
    - For SA: Greenhalgh and Singh (1986)
    - For Eastern Australia: Michael-Leiba and Malafant (1992)

More information can be accessed at the Geoscience Australia Recent Earthquakes Website:
http://www.ga.gov.au/earthquakes/

The South Australia Seismicity Report has been provided by David Love and Alison Wallace, Department of Primary Industries and Resources SA (PIRSA).
More earthquake and seismic information for South Australia can be found at:
http://www.pir.sa.gov.au/minerals/earthquakes

More information about the Joint Australian Tsunami Warning System can be accessed at:
http://www.bom.gov.au/tsunami/

If you have felt an earthquake you can lodge a felt report on our website. We use this information to construct isoseismal maps detailing intensity and felt radius for Australian earthquakes near population centres, and to gain a better understanding of the ground shaking characteristics for Australian earthquakes.
http://www.ga.gov.au/hazards/earthquake/feltreport.jsp
or follow the link from:
http://www.ga.gov.au/earthquakes

More earthquake and seismic information for New South Wales, Queensland, Tasmania and Victoria are available on the Environmental Systems and Services website at:
http://www.esands.com

Australia

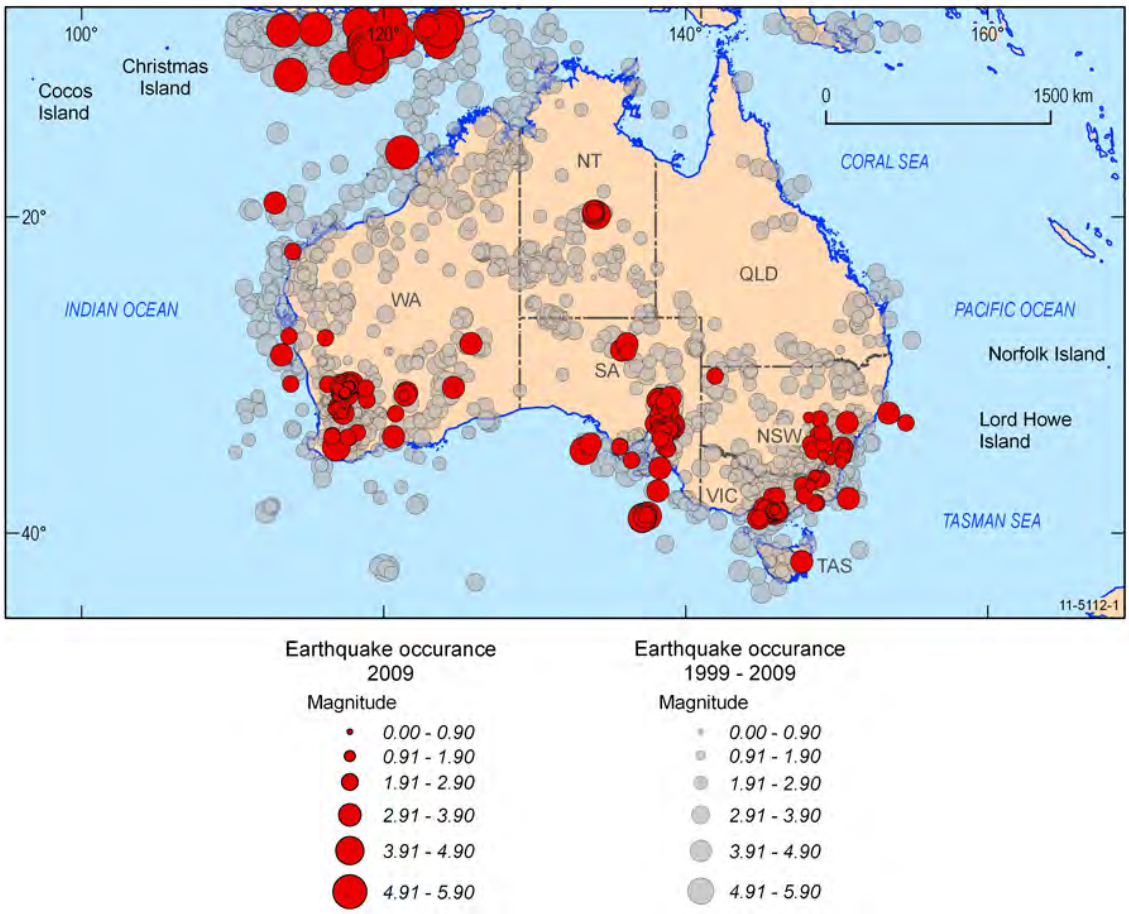

Figure 1: *Map of 2009 Australian Earthquakes (magnitude sized circles with subdued historical seismicity).*

Table 1: Largest Australian Earthquakes in 2009 (Recorded by Geoscience Australia)

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
5.1	6-Mar-09	1:35:59	-16.314	121.252	0	Northwest of Broome, WA.
4.8	5-Aug-09	21:43:25	-38.945	137.222	30	Off South Coast of Australia.
4.6	18-Mar-09	5:28:17	-38.425	145.822	15	Korumburra, VIC.
4.6	31-Jan-09	8:47:03	-30.23	117.784	2	North of Beacon, WA.
4.6	6-Mar-09	9:55:36	-38.445	145.839	14	North of Korumburra, VIC.
4.5	26-Jan-09	0:29:19	-32.757	139.029	10	Northeast of Peterborough, SA.
4.5	12-Aug-09	4:56:54	-38.799	137.469	10	Off South Coast of Australia.
4.5	5-Mar-09	12:53:51	-30.208	117.774	0	North of Beacon, WA.
4.4	31-Jan-09	11:55:21	-30.215	117.798	0	North of Beacon, WA.
4.3	18-Jan-09	14:13:53	-19.908	134.11	12	South of Tennant Creek, NT.

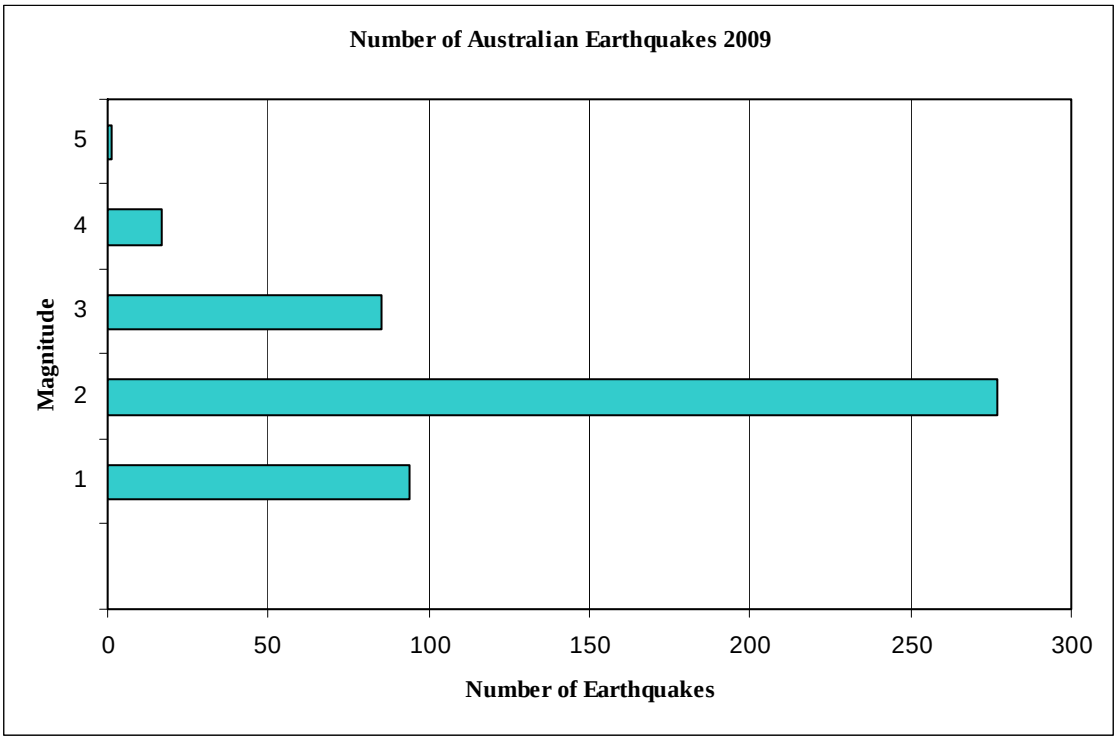

Figure 2: *Number of Australian Earthquakes by Magnitude 2009 located by Geoscience Australia*

Table 2: Largest Australian Earthquakes

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
7.3	29-Apr-1941	01:35:39	-26.920	115.800	0	Meeberrie WA.
6.9	26-Jan-1892	16:48:00	-40.400	149.500	0	Tasman Sea NE TAS.
6.9	14-Oct-1968	02:58:50	-31.620	116.980	10	Meckering WA.
6.8	12-May-1885	23:37:00	-39.900	148.900	0	Tasman Sea NE TAS.
6.7	24-Mar-1970	10:35:17	-22.050	126.610	8	L Mckay WA.
6.7	22-Jan-1988	12:05:00	-19.838	133.994	5	Tennant Creek NT.
6.6	16-Aug-1929	21:28:23	-16.990	120.660	33	Broome WA.
6.6	23-Apr-1979	05:45:10	-16.660	120.270	26	Broome WA.
6.5	10-May-1897	05:26:00	-37.333	139.750	0	Beachport SA.
6.5	27-Jun-1941	07:55:49	-25.950	137.340	0	Simpson Desert NT.

Table 3: Time since last Magnitude 5, 6, and 7 in Australia as of end 2009.

MAGNITUDE	DATE	TIME (UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS	TIME SINCE
5.1	15-Feb-2007	15:38:36	-25.967	113.276	18	Shark Bay WA.	9 Mths
6.3	10-Aug-1997	09:20:31	-16.050	124.423	10	Collier Bay WA.	12 yrs
7.3	29-Apr-1941	01:35:39	-26.920	115.800	0	Meeberrie WA.	68 yrs

Table 4: Australian Earthquakes 2009 (Recorded by Geoscience Australia)

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
3.3	2-Jan-09	12:51:16	-33.021	138.941	5	Southeast of Peterborough, SA.
2.2	2-Jan-09	12:56:20	-33.008	138.933	4	Southeast of Peterborough, SA.
2.2	2-Jan-09	13:29:05	-33.021	138.933	5	Southeast of Peterborough, SA.
2.2	4-Jan-09	12:51:15	-33.081	138.28	10	East of Port Pirie, SA.
2.1	4-Jan-09	17:53:00	-34.762	150.378	7	Southeast of Bundanoon, NSW.
3.5	12-Jan-09	8:48:42	-38.442	145.851	4	Near Korumburra, VIC.
2.3	13-Jan-09	8:07:20	-33.011	138.392	11	Appila, SA.
3.1	15-Jan-09	10:15:19	-32.018	138.404	15	South of Hawker, SA.
2.6	17-Jan-09	2:31:53	-32.906	138.228	10	South of Melrose, SA.
4.3	18-Jan-09	14:13:53	-19.908	134.11	12	South of Tennant Creek, NT.
1.8	18-Jan-09	15:57:09	-34.065	150.488	9	West of Camden, NSW.
2.1	19-Jan-09	9:33:20	-30.111	116.324	0	Southwest of Buntine, WA.
4.5	26-Jan-09	0:29:19	-32.757	139.029	10	Northeast of Peterborough, SA.
2.7	29-Jan-09	19:34:26	-32.796	138.99	10	Northeast of Peterborough, SA.
2.7	30-Jan-09	5:49:59	-30.252	117.81	0	North of Beacon, WA.
3.4	30-Jan-09	5:50:54	-30.293	117.663	0	Northwest of Beacon, WA.
2.7	30-Jan-09	7:27:06	-30.22	117.819	3	North of Beacon, WA.
3	30-Jan-09	8:17:34	-30.954	138.985	20	East of Blinman, SA.
1.9	30-Jan-09	11:17:06	-30.253	117.743	0	Northwest of Beacon, WA.
2.2	30-Jan-09	11:21:24	-30.246	117.736	0	Northwest of Beacon, WA.
2.1	30-Jan-09	11:23:47	-30.241	117.738	0	Northwest of Beacon, WA.
2.2	30-Jan-09	11:25:51	-30.252	117.728	3	Northwest of Beacon, WA.
2.4	30-Jan-09	12:35:25	-30.274	117.71	5	Northwest of Beacon, WA.
2.1	30-Jan-09	12:42:30	-30.265	117.711	3	Northwest of Beacon, WA.
2.1	30-Jan-09	13:04:34	-30.27	117.71	3	Northwest of Beacon, WA.
2.3	30-Jan-09	13:07:11	-30.267	117.714	3	Northwest of Beacon, WA.
2	30-Jan-09	13:09:58	-30.193	117.795	0	North of Beacon, WA.
2.1	30-Jan-09	13:13:46	-30.27	117.713	3	Northwest of Beacon, WA.
3.8	30-Jan-09	17:25:23	-30.214	117.784	0	North of Beacon, WA.
4.1	30-Jan-09	17:33:11	-30.212	117.774	0	North of Beacon, WA.
3	30-Jan-09	18:05:12	-30.214	117.786	0	Northwest of Beacon, WA.
2.5	30-Jan-09	18:16:40	-30.268	117.714	5	Northwest of Beacon, WA.
3.2	30-Jan-09	18:27:10	-30.248	117.766	5	Northwest of Beacon, WA.
2.3	30-Jan-09	18:32:53	-30.273	117.714	4	Northwest of Beacon, WA.
2.2	30-Jan-09	18:36:14	-30.267	117.682	5	Northwest of Beacon, WA.
1.7	30-Jan-09	18:47:24	-30.278	117.686	5	Northwest of Beacon, WA.
1.9	30-Jan-09	18:55:28	-30.221	117.772	0	North of Beacon, WA.

2.7	30-Jan-09	19:08:07	-30.232	117.749	0	Northwest of Beacon, WA.
2.3	30-Jan-09	19:13:30	-30.272	117.686	7	Northwest of Beacon, WA.
2.9	30-Jan-09	19:21:20	-30.27	117.745	5	Northwest of Beacon, WA.
2.4	30-Jan-09	19:26:41	-30.267	117.725	5	Northwest of Beacon, WA.
2	30-Jan-09	19:34:15	-30.253	117.728	2	Northwest of Beacon, WA.
1.6	30-Jan-09	19:43:11	-30.269	117.701	5	Northwest of Beacon, WA.
2.2	30-Jan-09	20:02:56	-30.237	117.726	0	Northwest of Beacon, WA.
2.4	30-Jan-09	20:07:36	-30.289	117.677	5	Northwest of Beacon, WA.
2.4	30-Jan-09	20:10:36	-30.252	117.732	5	Northwest of Beacon, WA.
2.9	30-Jan-09	20:22:15	-30.244	117.721	0	Northwest of Beacon, WA.
3.3	30-Jan-09	20:31:12	-30.235	117.753	2	Northwest of Beacon, WA.
1.8	30-Jan-09	20:37:59	-30.25	117.727	0	Northwest of Beacon, WA.
2.2	30-Jan-09	20:39:49	-30.244	117.763	2	Northwest of Beacon, WA.
2.4	30-Jan-09	20:43:58	-30.254	117.728	0	Northwest of Beacon, WA.
2.7	30-Jan-09	20:53:28	-30.237	117.753	0	Northwest of Beacon, WA.
2.7	30-Jan-09	21:00:10	-30.222	117.742	1	Northwest of Beacon, WA.
2.6	30-Jan-09	21:05:08	-30.23	117.737	0	Northwest of Beacon, WA.
3.5	30-Jan-09	21:50:22	-30.218	117.759	0	Northwest of Beacon, WA.
3.2	30-Jan-09	22:10:11	-30.234	117.766	0	Northwest of Beacon, WA.
2.7	30-Jan-09	23:02:16	-30.233	117.722	0	Northwest of Beacon, WA.
2.7	30-Jan-09	23:40:58	-30.237	117.739	0	Northwest of Beacon, WA.
2.1	31-Jan-09	0:20:36	-30.256	117.725	2	Northwest of Beacon, WA.
2.4	31-Jan-09	1:16:08	-30.262	117.715	3	Northwest of Beacon, WA.
1.8	31-Jan-09	1:22:37	-30.284	117.717	4	Northwest of Beacon, WA.
2.2	31-Jan-09	1:34:06	-30.271	117.707	3	Northwest of Beacon, WA.
1.8	31-Jan-09	1:50:43	-30.248	117.721	0	Northwest of Beacon, WA.
3.2	31-Jan-09	3:14:02	-30.217	117.755	0	Northwest of Beacon, WA.
3.2	31-Jan-09	4:11:45	-30.22	117.752	0	Northwest of Beacon, WA.
2.8	31-Jan-09	4:19:37	-30.215	117.759	0	Northwest of Beacon, WA.
2.6	31-Jan-09	4:52:00	-30.262	117.715	0	Northwest of Beacon, WA.
2.5	31-Jan-09	5:05:55	-30.259	117.716	2	Northwest of Beacon, WA.
2.6	31-Jan-09	6:13:55	-30.278	117.698	5	Northwest of Beacon, WA.
2.5	31-Jan-09	6:25:51	-30.273	117.692	4	Northwest of Beacon, WA.
2.9	31-Jan-09	6:54:28	-30.251	117.727	1	Northwest of Beacon, WA.
2.3	31-Jan-09	7:33:03	-30.265	117.728	2	Northwest of Beacon, WA.
2.6	31-Jan-09	8:39:12	-30.277	117.699	4	Northwest of Beacon, WA.
4.6	31-Jan-09	8:47:03	-30.23	117.784	2	North of Beacon, WA.
3	31-Jan-09	8:59:15	-30.322	117.637	8	Northwest of Beacon, WA.
3.1	31-Jan-09	9:03:27	-30.243	117.702	3	Northwest of Beacon, WA.
3.1	31-Jan-09	9:51:55	-30.222	117.791	0	North of Beacon, WA.
4.4	31-Jan-09	11:55:21	-30.215	117.798	0	North of Beacon, WA.
2.1	31-Jan-09	12:12:16	-30.257	117.723	4	Northwest of Beacon, WA.
2.2	31-Jan-09	12:27:22	-30.26	117.684	5	Northwest of Beacon, WA.
3.5	31-Jan-09	13:02:44	-30.211	117.752	0	Northwest of Beacon, WA.
2.5	31-Jan-09	13:11:02	-30.283	117.68	5	Northwest of Beacon, WA.
2.3	31-Jan-09	13:31:08	-30.281	117.687	5	Northwest of Beacon, WA.

3.3	31-Jan-09	13:49:41	-30.264	117.726	5	Northwest of Beacon, WA.
2.3	31-Jan-09	13:57:17	-30.211	117.762	0	North of Beacon, WA.
2.7	31-Jan-09	15:07:16	-30.27	117.698	4	Northwest of Beacon, WA.
2.8	31-Jan-09	15:34:34	-30.282	117.689	4	Northwest of Beacon, WA.
2.3	31-Jan-09	15:41:05	-30.263	117.714	1	Northwest of Beacon, WA.
2.3	31-Jan-09	15:54:10	-30.238	117.722	0	Northwest of Beacon, WA.
2.5	31-Jan-09	16:17:01	-30.232	117.725	0	Northwest of Beacon, WA.
3.8	31-Jan-09	16:18:56	-30.202	117.781	0	North of Beacon, WA.
2.5	31-Jan-09	16:24:20	-30.264	117.7	3	Northwest of Beacon, WA.
2.1	31-Jan-09	17:09:12	-30.235	117.746	0	Northwest of Beacon, WA.
2.5	31-Jan-09	17:10:07	-30.266	117.687	5	Northwest of Beacon, WA.
1.9	31-Jan-09	17:54:12	-30.282	117.711	4	Northwest of Beacon, WA.
2.5	31-Jan-09	19:03:55	-30.237	117.73	0	Northwest of Beacon, WA.
2.6	31-Jan-09	20:21:15	-30.281	117.711	3	Northwest of Beacon, WA.
2.9	31-Jan-09	20:25:27	-30.232	117.765	0	Northwest of Beacon, WA.
2.2	31-Jan-09	21:43:56	-30.247	117.723	1	Northwest of Beacon, WA.
2.2	31-Jan-09	21:51:22	-30.217	117.715	5	Northwest of Beacon, WA.
2.9	31-Jan-09	21:56:18	-30.245	117.752	0	Northwest of Beacon, WA.
1.6	31-Jan-09	22:01:03	-30.277	117.685	3	Northwest of Beacon, WA.
1.8	31-Jan-09	22:08:58	-30.267	117.7	3	Northwest of Beacon, WA.
4	1-Feb-09	0:42:40	-30.209	117.819	0	North of Beacon, WA.
2.3	1-Feb-09	3:32:01	-30.266	117.682	5	Northwest of Beacon, WA.
2.8	1-Feb-09	4:05:53	-30.268	117.746	5	Northwest of Beacon, WA.
3.5	1-Feb-09	4:25:17	-30.233	117.767	1	Northwest of Beacon, WA.
2.9	1-Feb-09	5:14:27	-30.217	117.748	0	Northwest of Beacon, WA.
2.9	1-Feb-09	6:15:10	-30.248	117.729	4	Northwest of Beacon, WA.
2.6	1-Feb-09	6:55:40	-30.265	117.715	2	Northwest of Beacon, WA.
1.8	1-Feb-09	7:24:23	-30.271	117.697	5	Northwest of Beacon, WA.
1.6	1-Feb-09	7:42:57	-30.209	117.747	0	Northwest of Beacon, WA.
2.7	1-Feb-09	8:46:39	-30.238	117.737	0	Northwest of Beacon, WA.
2.8	1-Feb-09	17:58:13	-30.232	117.74	0	Northwest of Beacon, WA.
3.7	1-Feb-09	18:59:23	-30.233	117.761	0	Northwest of Beacon, WA.
2.5	1-Feb-09	19:15:11	-30.221	117.741	5	Northwest of Beacon, WA.
3	1-Feb-09	19:22:29	-30.204	117.761	0	North of Beacon, WA.
2.2	1-Feb-09	19:44:25	-30.218	117.742	0	Northwest of Beacon, WA.
2.2	1-Feb-09	19:48:48	-30.266	117.667	5	Northwest of Beacon, WA.
4	1-Feb-09	21:57:40	-30.214	117.795	0	North of Beacon, WA.
3.2	1-Feb-09	23:39:46	-30.256	117.709	2	Northwest of Beacon, WA.
2.3	2-Feb-09	1:05:16	-30.28	117.704	5	Northwest of Beacon, WA.
1.8	2-Feb-09	1:23:01	-30.262	117.706	4	Northwest of Beacon, WA.
1.5	2-Feb-09	2:04:54	-30.281	117.715	5	Northwest of Beacon, WA.
1.7	2-Feb-09	2:06:09	-30.284	117.709	5	Northwest of Beacon, WA.
2.3	2-Feb-09	2:44:25	-30.275	117.728	5	Northwest of Beacon, WA.
2.2	2-Feb-09	5:29:28	-30.232	117.729	3	Northwest of Beacon, WA.
2	2-Feb-09	12:35:38	-30.268	117.731	2	Northwest of Beacon, WA.
1.8	2-Feb-09	12:43:47	-30.251	117.707	2	Northwest of Beacon, WA.

2.5	2-Feb-09	18:24:22	-30.241	117.686	0	Northwest of Beacon, WA.
1.9	3-Feb-09	6:33:59	-30.284	117.685	4	Northwest of Beacon, WA.
2	3-Feb-09	7:26:25	-30.278	117.696	5	Northwest of Beacon, WA.
1.7	3-Feb-09	8:30:52	-30.243	117.736	0	Northwest of Beacon, WA.
2.5	3-Feb-09	8:54:16	-30.267	117.679	4	Northwest of Beacon, WA.
2.8	3-Feb-09	14:24:26	-30.259	117.738	0	Northwest of Beacon, WA.
2.1	3-Feb-09	21:12:23	-30.262	117.699	3	Northwest of Beacon, WA.
3	3-Feb-09	21:42:11	-30.214	117.776	0	North of Beacon, WA.
2.4	4-Feb-09	14:31:36	-37.405	147.853	10	South of Ensay, VIC.
1.9	4-Feb-09	21:14:23	-30.262	117.722	3	Northwest of Beacon, WA.
2.6	4-Feb-09	23:10:03	-30.261	117.698	5	Northwest of Beacon, WA.
1.8	5-Feb-09	0:53:29	-30.213	117.177	5	North of Kalannie, WA.
3.5	5-Feb-09	4:04:58	-38.991	144.838	0	Bass Strait.
1.9	5-Feb-09	8:21:56	-31.7	116.68	11	Northwest of York, WA.
2.3	6-Feb-09	4:22:38	-30.232	117.738	0	Northwest of Beacon, WA.
2.7	6-Feb-09	8:20:09	-38.977	144.861	0	Bass Strait.
2.3	6-Feb-09	13:16:38	-30.26	117.735	4	Northwest of Beacon, WA.
2.7	7-Feb-09	8:01:27	-30.24	117.728	0	Northwest of Beacon, WA.
3.3	7-Feb-09	16:48:25	-30.231	117.745	0	Northwest of Beacon, WA.
3.2	7-Feb-09	21:36:59	-30.258	117.696	2	Northwest of Beacon, WA.
2.6	7-Feb-09	22:46:01	-30.284	117.665	4	Northwest of Beacon, WA.
2.9	7-Feb-09	22:57:37	-30.252	117.714	0	Northwest of Beacon, WA.
2.6	8-Feb-09	3:13:08	-30.23	117.754	0	Northwest of Beacon, WA.
2.9	8-Feb-09	10:28:22	-30.288	117.69	5	Northwest of Beacon, WA.
2.4	9-Feb-09	0:57:07	-30.222	117.749	0	Northwest of Beacon, WA.
2.9	9-Feb-09	1:02:06	-30.217	117.759	0	Northwest of Beacon, WA.
2	9-Feb-09	10:35:50	-30.281	117.694	5	Northwest of Beacon, WA.
2.1	9-Feb-09	17:55:04	-30.257	117.718	1	Northwest of Beacon, WA.
2.8	9-Feb-09	18:07:04	-30.219	117.736	2	Northwest of Beacon, WA.
2.1	9-Feb-09	19:15:10	-30.273	117.716	4	Northwest of Beacon, WA.
3.5	10-Feb-09	12:24:01	-30.231	117.759	0	Northwest of Beacon, WA.
2.1	10-Feb-09	18:20:23	-30.243	117.756	0	Northwest of Beacon, WA.
3.1	10-Feb-09	19:13:31	-30.247	117.762	0	Northwest of Beacon, WA.
2.1	10-Feb-09	22:31:33	-30.237	117.705	0	Northwest of Beacon, WA.
2.2	10-Feb-09	22:58:24	-30.267	117.721	4	Northwest of Beacon, WA.
2.2	10-Feb-09	23:03:24	-30.271	117.725	3	Northwest of Beacon, WA.
2.1	10-Feb-09	23:06:54	-30.255	117.732	2	Northwest of Beacon, WA.
2	10-Feb-09	23:24:29	-30.284	117.716	5	Northwest of Beacon, WA.
2.6	11-Feb-09	8:02:38	-33.39	116.64	10	Southwest of Darkan, WA.
3	11-Feb-09	10:41:31	-30.214	117.738	0	Northwest of Beacon, WA.
3.4	11-Feb-09	15:13:46	-30.232	117.778	3	Northwest of Beacon, WA.
2.7	11-Feb-09	15:18:51	-30.269	117.726	3	Northwest of Beacon, WA.
2	11-Feb-09	15:23:41	-30.285	117.758	5	Northwest of Beacon, WA.
2.3	11-Feb-09	15:24:40	-30.274	117.728	4	Northwest of Beacon, WA.
1.8	11-Feb-09	15:37:52	-30.252	117.723	0	Northwest of Beacon, WA.
1.8	11-Feb-09	17:04:47	-30.304	117.666	5	Northwest of Beacon, WA.

3.2	11-Feb-09	23:21:00	-30.277	117.726	4	Northwest of Beacon, WA.
3.1	12-Feb-09	4:58:57	-30.241	117.73	0	Northwest of Beacon, WA.
2.3	12-Feb-09	5:24:38	-30.276	117.715	5	Northwest of Beacon, WA.
2.7	12-Feb-09	6:03:08	-30.253	117.744	2	Northwest of Beacon, WA.
2.2	13-Feb-09	7:34:35	-30.246	117.732	0	Northwest of Beacon, WA.
3.1	13-Feb-09	16:19:26	-30.24	117.735	0	Northwest of Beacon, WA.
3.3	13-Feb-09	17:02:26	-30.215	117.754	0	Northwest of Beacon, WA.
2.9	14-Feb-09	2:59:13	-30.276	117.711	5	Northwest of Beacon, WA.
2.2	14-Feb-09	14:37:16	-30.229	117.741	0	Northwest of Beacon, WA.
2.2	15-Feb-09	3:44:09	-30.266	117.717	4	Northwest of Beacon, WA.
3	15-Feb-09	4:19:58	-30.238	117.738	1	Northwest of Beacon, WA.
2.8	15-Feb-09	4:30:21	-30.263	117.727	3	Northwest of Beacon, WA.
2.7	15-Feb-09	16:28:52	-30.217	117.751	0	Northwest of Beacon, WA.
2.3	15-Feb-09	17:02:07	-30.237	117.742	0	Northwest of Beacon, WA.
2.6	15-Feb-09	17:11:45	-30.249	117.734	0	Northwest of Beacon, WA.
2.9	15-Feb-09	18:59:18	-30.234	117.76	0	Northwest of Beacon, WA.
2.2	15-Feb-09	19:16:12	-30.227	117.773	0	North of Beacon, WA.
2	16-Feb-09	23:01:54	-30.256	117.71	4	Northwest of Beacon, WA.
2.7	16-Feb-09	23:39:57	-30.249	117.699	4	Northwest of Beacon, WA.
2.4	17-Feb-09	1:35:20	-30.238	117.731	0	Northwest of Beacon, WA.
1.9	17-Feb-09	11:16:06	-30.268	117.685	5	Northwest of Beacon, WA.
2	18-Feb-09	3:25:59	-31.213	138.559	21	South of Hawker, SA.
2.1	18-Feb-09	18:57:50	-30.227	117.749	0	Northwest of Beacon, WA.
3.8	19-Feb-09	22:28:34	-30.233	117.795	2	North of Beacon, WA.
2.2	19-Feb-09	23:02:09	-30.272	117.668	5	Northwest of Beacon, WA.
2	19-Feb-09	23:10:45	-30.271	117.688	3	Northwest of Beacon, WA.
2.5	19-Feb-09	23:28:17	-30.277	117.708	5	Northwest of Beacon, WA.
3.3	20-Feb-09	19:08:05	-30.242	117.77	1	Northwest of Beacon, WA.
2.4	21-Feb-09	12:42:38	-30.251	117.737	1	Northwest of Beacon, WA.
2	21-Feb-09	16:35:47	-30.252	117.722	5	Northwest of Beacon, WA.
2.1	21-Feb-09	17:12:12	-30.223	117.763	0	Northwest of Beacon, WA.
2.4	21-Feb-09	22:40:12	-30.24	117.761	0	Northwest of Beacon, WA.
2.4	22-Feb-09	9:00:24	-30.286	117.711	5	Northwest of Beacon, WA.
2.7	23-Feb-09	1:05:40	-30.254	117.715	5	Northwest of Beacon, WA.
2.9	23-Feb-09	1:06:41	-30.253	117.737	1	Northwest of Beacon, WA.
3	23-Feb-09	8:31:57	-30.243	117.702	0	Northwest of Beacon, WA.
3.5	24-Feb-09	17:03:31	-30.229	117.774	0	North of Beacon, WA.
2.4	25-Feb-09	6:55:47	-30.239	117.74	0	Northwest of Beacon, WA.
2.5	25-Feb-09	8:36:22	-30.281	117.709	5	Northwest of Beacon, WA.
3	25-Feb-09	15:14:06	-30.241	117.751	1	Northwest of Beacon, WA.
2.8	25-Feb-09	22:49:41	-30.273	117.71	5	Northwest of Beacon, WA.
2.1	26-Feb-09	22:20:10	-31.633	138.741	10	East of Wilpena Pound, SA.
1.5	27-Feb-09	9:14:09	-30.257	117.738	1	Northwest of Beacon, WA.
1.8	27-Feb-09	21:34:35	-30.242	117.714	3	Northwest of Beacon, WA.
2.3	27-Feb-09	23:28:44	-30.258	117.708	5	Northwest of Beacon, WA.
2.9	28-Feb-09	1:49:13	-30.213	117.779	0	North of Beacon, WA.

2.1	28-Feb-09	14:42:26	-30.256	117.716	4	Northwest of Beacon, WA.
2.1	28-Feb-09	15:55:02	-30.224	117.749	3	Northwest of Beacon, WA.
2.1	28-Feb-09	22:34:50	-30.246	117.742	1	Northwest of Beacon, WA.
2.2	2-Mar-09	16:40:59	-37.423	146.04	12	Southwest of Jamieson, VIC.
2.3	2-Mar-09	23:20:09	-30.277	117.724	5	Northwest of Beacon, WA.
2.7	3-Mar-09	2:07:04	-30.249	117.737	0	Northwest of Beacon, WA.
2.5	4-Mar-09	15:10:44	-30.233	117.73	0	Northwest of Beacon, WA.
3.5	4-Mar-09	23:20:05	-32.635	138.066	10	Southeast of Point Augusta, SA.
2.1	5-Mar-09	8:43:16	-30.273	117.715	2	Northwest of Beacon, WA.
4.5	5-Mar-09	12:53:51	-30.208	117.774	0	North of Beacon, WA.
3.5	5-Mar-09	13:02:55	-30.209	117.767	0	North of Beacon, WA.
2.3	5-Mar-09	13:15:35	-30.306	117.646	10	Northwest of Beacon, WA.
3	5-Mar-09	13:19:04	-30.214	117.749	0	Northwest of Beacon, WA.
3.8	5-Mar-09	13:31:52	-30.211	117.745	0	Northwest of Beacon, WA.
3.3	5-Mar-09	13:35:29	-30.247	117.68	8	Northwest of Beacon, WA.
2.7	5-Mar-09	14:34:52	-30.227	117.77	1	North of Beacon, WA.
3.2	5-Mar-09	14:48:59	-30.229	117.763	0	Northwest of Beacon, WA.
2.7	5-Mar-09	14:58:49	-30.22	117.722	0	Northwest of Beacon, WA.
2.8	5-Mar-09	15:35:10	-30.227	117.727	2	Northwest of Beacon, WA.
2.3	5-Mar-09	15:38:35	-30.248	117.732	0	Northwest of Beacon, WA.
2.7	5-Mar-09	16:18:29	-30.222	117.732	0	Northwest of Beacon, WA.
2.4	5-Mar-09	17:14:25	-30.234	117.728	2	Northwest of Beacon, WA.
2.3	5-Mar-09	17:19:25	-30.251	117.711	2	Northwest of Beacon, WA.
3.4	5-Mar-09	18:55:16	-30.199	117.769	0	North of Beacon, WA.
2.1	5-Mar-09	19:52:36	-30.265	117.699	3	Northwest of Beacon, WA.
3.3	5-Mar-09	20:13:09	-31.492	138.527	10	Northeast of Hawker, SA.
2.3	5-Mar-09	21:03:36	-30.271	117.685	8	Northwest of Beacon, WA.
2.9	5-Mar-09	22:30:15	-30.228	117.727	0	Northwest of Beacon, WA.
5.1	6-Mar-09	1:35:59	-16.314	121.252	0	Northwest of Broome, WA.
2.6	6-Mar-09	4:19:13	-30.205	117.783	0	North of Beacon, WA.
2.5	6-Mar-09	5:27:17	-30.26	117.716	8	Northwest of Beacon, WA.
4.6	6-Mar-09	9:55:36	-38.445	145.839	14	North of Korumburra, VIC.
2.6	6-Mar-09	11:02:52	-30.231	117.756	0	Northwest of Beacon, WA.
2.9	6-Mar-09	11:49:42	-38.466	145.829	6	Korumburra, VIC.
2.6	6-Mar-09	15:52:27	-34.381	148.413	3	Young, NSW.
3.2	6-Mar-09	15:53:12	-38.515	145.771	12	Korumburra, VIC.
2.1	6-Mar-09	22:51:05	-36.323	148.785	15	Northwest of Berridale, NSW.
3.2	6-Mar-09	23:14:36	-38.443	145.833	12	Korumburra, VIC.
2.2	6-Mar-09	23:35:45	-30.268	117.725	9	Northwest of Beacon, WA.
2	7-Mar-09	11:59:24	-30.275	117.739	2	Northwest of Beacon, WA.
1.9	8-Mar-09	10:40:43	-30.038	117.143	7	North of Kalannie, WA.
2.5	8-Mar-09	13:25:26	-30.045	117.143	7	North of Kalannie, WA.
3.3	9-Mar-09	6:39:05	-38.426	145.829	14	Korumburra, VIC.
3.6	11-Mar-09	13:25:40	-32.555	150.688	0	South of Denman, NSW.
2.8	13-Mar-09	4:08:12	-30.288	117.69	11	Northwest of Beacon, WA.

2.8	13-Mar-09	17:47:09	-38.423	145.892	10	Korumburra, VIC.
2.9	13-Mar-09	19:43:43	-30.236	117.749	0	Northwest of Beacon, WA.
2.6	14-Mar-09	10:50:47	-30.241	117.752	0	Northwest of Beacon, WA.
2.4	14-Mar-09	23:49:09	-30.263	117.725	3	Northwest of Beacon, WA.
2.2	15-Mar-09	3:26:36	-33.061	138.983	5	Southeast of Peterborough, SA.
2.5	15-Mar-09	10:25:30	-33.109	138.689	5	Southwest of Peterborough, SA.
3	16-Mar-09	7:26:00	-31.597	117.086	1	Northeast of Meckering, WA.
2.4	17-Mar-09	4:20:00	-30.269	117.708	3	Northwest of Beacon, WA.
2.6	17-Mar-09	5:43:37	-30.262	117.709	2	Northwest of Beacon, WA.
2.4	17-Mar-09	9:51:30	-30.249	117.715	0	Northwest of Beacon, WA.
3	17-Mar-09	10:37:28	-30.218	117.771	0	North of Beacon, WA.
2.5	17-Mar-09	12:19:11	-30.241	117.749	1	Northwest of Beacon, WA.
2.1	17-Mar-09	16:22:08	-30.286	117.691	6	Northwest of Beacon, WA.
2.1	17-Mar-09	16:46:17	-30.264	117.718	3	Northwest of Beacon, WA.
4.6	18-Mar-09	5:28:17	-38.425	145.822	15	Korumburra, VIC.
2.7	18-Mar-09	8:57:54	-38.456	145.838	10	Korumburra, VIC.
3.1	18-Mar-09	11:05:58	-38.409	145.857	19	Korumburra, VIC.
2.7	18-Mar-09	19:03:32	-38.443	145.84	16	Korumburra, VIC.
3	19-Mar-09	6:09:08	-30.239	117.747	1	Northwest of Beacon, WA.
2.5	20-Mar-09	10:46:38	-38.45	145.826	7	Korumburra, VIC.
2	20-Mar-09	19:51:16	-30.277	117.691	5	Northwest of Beacon, WA.
2.6	24-Mar-09	4:43:47	-30.243	117.743	3	Northwest of Beacon, WA.
1.6	24-Mar-09	15:18:58	-30.261	117.71	6	Northwest of Beacon, WA.
1.8	25-Mar-09	23:13:56	-30.282	117.705	8	Northwest of Beacon, WA.
2.1	27-Mar-09	16:34:33	-38.458	145.887	3	Korumburra, VIC.
2.2	29-Mar-09	2:50:13	-30.035	117.133	6	North of Kalannie, WA.
2.3	29-Mar-09	10:12:01	-30.26	117.722	1	Northwest of Beacon, WA.
1.9	31-Mar-09	22:52:32	-30.889	116.967	5	West of Manmanning, WA.
1.6	1-Apr-09	0:18:18	-30.301	116.822	10	East of Dalwallinu, WA.
2.4	2-Apr-09	21:51:34	-34.283	138.781	10	Northwest of Kapunda, SA.
1.5	3-Apr-09	14:02:49	-30.289	117.649	12	Northwest of Beacon, WA.
2.6	3-Apr-09	15:31:39	-31.973	120.822	0	West of Norseman, WA.
3.9	4-Apr-09	12:40:49	-33.946	133.704	33	Northwest of Port Lincoln, SA.
1.5	4-Apr-09	17:32:21	-30.308	117.686	7	Northwest of Beacon, WA.
1.7	4-Apr-09	19:17:05	-30.295	117.703	6	Northwest of Beacon, WA.
2.8	5-Apr-09	3:26:29	-37.451	145.708	1	Northwest of Marysville, VIC.
1.8	5-Apr-09	6:13:55	-30.234	117.799	1	North of Beacon, WA.
1.6	6-Apr-09	14:07:47	-30.284	117.703	5	Northwest of Beacon, WA.
1.9	6-Apr-09	20:23:31	-30.81	117.043	7	Northwest of Manmanning, WA.
3	6-Apr-09	20:50:42	-31.943	117.33	9	Northwest of Quairading, WA.
1.9	7-Apr-09	8:23:01	-30.283	117.704	5	Northwest of Beacon, WA.
1.6	7-Apr-09	8:43:28	-30.248	117.746	1	Northwest of Beacon, WA.
1.7	7-Apr-09	13:11:44	-30.287	117.71	10	Northwest of Beacon, WA.
3.1	7-Apr-09	21:26:33	-30.785	121.461	0	Kalgoorlie, WA.

4.1	8-Apr-09	5:31:50	-34.148	116.881	0	Northwest of Rocky Gully, WA.
1.8	8-Apr-09	7:16:08	-30.232	117.746	0	Northwest of Beacon, WA.
2.8	9-Apr-09	3:04:39	-32.333	148.863	0	Near Dubbo, NSW.
2.4	12-Apr-09	16:36:06	-33.054	138.269	10	South of Melrose, SA.
1.6	12-Apr-09	18:48:13	-30.27	117.716	1	Northwest of Beacon, WA.
1.8	12-Apr-09	18:55:44	-30.256	117.741	0	Northwest of Beacon, WA.
3.7	14-Apr-09	1:40:26	-27.982	135.757	10	Southeast of Oodnadatta, SA.
1.8	16-Apr-09	2:57:43	-38.38	145.92	5	Korumburra, VIC.
3.4	17-Apr-09	23:12:56	-19.197	112.843	59	Northwest of Exmouth, WA.
2.9	18-Apr-09	15:35:07	-34.532	150.486	10	Southeast of Bowral, NSW.
2.3	18-Apr-09	17:08:20	-30.249	117.76	2	Northwest of Beacon, WA.
1.5	18-Apr-09	18:17:13	-30.226	117.745	0	Northwest of Beacon, WA.
2.1	18-Apr-09	20:20:00	-30.22	117.771	0	North of Beacon, WA.
2.5	21-Apr-09	8:43:45	-30.227	117.754	0	Northwest of Beacon, WA.
1.4	22-Apr-09	20:41:00	-31.952	117.265	2	South of Cunderdin, WA.
3.1	28-Apr-09	19:06:18	-30.644	121.553	3	Northeast of Kalgoorlie, WA.
2.3	1-May-09	4:30:02	-38.436	145.834	10	Korumburra, VIC.
1.5	2-May-09	16:29:59	-35.188	150.263	8	Northwest of Ulladulla, NSW.
3	3-May-09	3:04:09	-38.416	145.786	15	Korumburra, VIC.
1.8	4-May-09	4:19:08	-38.369	145.931	9	Korumburra, VIC.
2.5	6-May-09	9:33:07	-38.515	145.847	7	Korumburra, VIC.
1.6	6-May-09	21:35:19	-30.257	117.736	0	Northwest of Beacon, WA.
2.8	6-May-09	22:59:38	-30.244	117.761	0	Northwest of Beacon, WA.
3	8-May-09	11:13:35	-37.08	138.167	8	West of Robe, SA.
3.1	12-May-09	3:55:13	-30.23	117.761	0	Northwest of Beacon, WA.
1.7	12-May-09	8:11:57	-30.279	117.692	6	Northwest of Beacon, WA.
1.5	12-May-09	20:33:14	-30.515	117.057	0	West of Burakin, WA.
1.3	15-May-09	13:05:25	-30.251	117.728	0	Northwest of Beacon, WA.
1.8	17-May-09	21:57:37	-38.419	145.885	10	Near Korumburra, VIC.
1.7	18-May-09	17:12:56	-30.235	117.769	0	Northwest of Beacon, WA.
2	18-May-09	17:20:46	-30.24	117.763	2	Northwest of Beacon, WA.
1.9	18-May-09	17:50:40	-30.256	117.738	2	Northwest of Beacon, WA.
1.8	18-May-09	18:09:31	-30.276	117.73	5	Northwest of Beacon, WA.
1.9	18-May-09	18:41:00	-30.251	117.722	2	Northwest of Beacon, WA.
2.1	18-May-09	20:48:00	-30.233	117.764	0	Northwest of Beacon, WA.
3.4	19-May-09	6:16:00	-38.413	145.87	0	Near Korumburra, VIC.
2.7	19-May-09	22:06:28	-30.244	117.772	2	Northwest of Beacon, WA.
1.6	20-May-09	22:05:10	-30.856	121.39	0	Southwest of Kalgoorlie, WA.
1.5	24-May-09	11:26:16	-30.402	117.312	4	East of Kalannie, WA.
1.5	24-May-09	11:31:52	-30.855	117.007	3	West of Manmanning, WA.
2.2	26-May-09	5:09:26	-33.47	116.6	0	Southwest of Darkan, WA.
1.6	26-May-09	8:13:03	-30.432	117.266	5	Northeast of Burakin, WA.
2.1	28-May-09	12:01:21	-33.193	138.486	10	Near Jamestown, SA.
2.5	28-May-09	13:29:56	-37.921	148.555	5	South of Marlo, VIC.
1.5	29-May-09	3:59:48	-30.392	117.318	0	East of Kalannie, WA.

2.9	29-May-09	11:21:35	-31.082	138.166	10	Northwest of Parachilna, SA.
3.3	29-May-09	12:20:52	-31.092	138.164	10	Northwest of Parachilna, SA.
3.7	29-May-09	14:45:11	-31.051	138.211	10	Northwest of Parachilna, SA.
1.7	29-May-09	18:37:37	-37.14	148.057	10	Omeo, VIC.
2.3	31-May-09	5:47:33	-33.524	117.637	10	Northeast of Katanning, WA.
2.6	2-Jun-09	19:38:37	-32.502	138.199	20	East of Port Augusta, SA.
1.8	5-Jun-09	19:37:44	-30.42	117.322	10	Northeast of Burakin, WA.
3.4	6-Jun-09	18:26:43	-28.278	113.267	0	West of Geraldton, WA.
3.3	10-Jun-09	0:57:45	-37.604	150.756	46	East of Mallacoota, VIC.
2.8	13-Jun-09	14:36:13	-36.689	147.722	6	North of Omeo, VIC.
1.9	15-Jun-09	13:06:04	-32.218	148.121	10	Near Narromine, NSW.
3.1	21-Jun-09	6:08:44	-30.308	124.631	10	Great Victoria Desert, WA.
2	24-Jun-09	5:58:39	-31.38	117.231	2	Southeast of Dowerin, WA.
2.7	25-Jun-09	8:13:14	-33.944	148.265	5	Southeast of Grenfell, NSW.
4.2	25-Jun-09	15:16:49	-30.619	117.468	0	Southwest of Beacon, WA.
2.6	26-Jun-09	7:26:51	-30.262	117.726	1	Northwest of Beacon, WA.
2.5	27-Jun-09	5:59:24	-38.41	145.873	10	Korumburra, VIC.
1.5	28-Jun-09	13:31:33	-36.05	148.55	10	Northwest of Eucumbene, NSW.
2.8	4-Jul-09	18:24:59	-38.449	145.757	15	West of Korumburra, VIC.
1.6	4-Jul-09	21:04:24	-30.698	117.379	8	Northwest of Koorda, WA.
1.3	4-Jul-09	23:54:22	-30.652	117.439	2	North of Koorda, WA.
2.2	8-Jul-09	18:02:59	-30.227	117.779	1	North of Beacon, WA.
2.3	9-Jul-09	19:25:17	-32.773	138.746	1	Southeast of Orroroo, SA.
2.7	9-Jul-09	22:16:59	-34.188	138.572	10	Southeast of Balaklava, SA.
2.6	10-Jul-09	12:20:34	-31.645	138.644	20	Northeast Hawker, SA.
1.6	10-Jul-09	14:29:49	-30.716	117.363	11	Northwest of Koorda, WA.
2.3	12-Jul-09	0:57:36	-30.085	113.883	10	Southwest of Geraldton, WA.
2	12-Jul-09	1:00:19	-30.248	117.711	0	Northwest of Beacon, WA.
2.4	12-Jul-09	17:46:42	-38.451	145.856	10	Korumburra, VIC.
1.9	13-Jul-09	18:14:26	-38.372	145.853	10	Korumburra, VIC.
2.8	14-Jul-09	16:40:21	-31.392	117.224	4	North of Cunderdin, WA.
1.6	14-Jul-09	22:48:13	-31.408	117.205	1	North of Cunderdin, WA.
2.4	18-Jul-09	15:14:28	-30.21	117.731	0	Northwest of Beacon, WA.
1.4	26-Jul-09	7:40:52	-34.721	149.136	2	West of Dalton, NSW.
4.1	30-Jul-09	18:00:57	-38.915	137.145	10	Off South Coast of Australia.
2.6	31-Jul-09	14:59:30	-29.601	141.946	0	South of Tibooburra, NSW.
2	31-Jul-09	19:17:51	-30.876	117.75	10	Southwest of Bencubbin, WA.
4	5-Aug-09	19:10:41	-38.97	137.119	30	Off South Coast of Australia.
4.8	5-Aug-09	21:43:25	-38.945	137.222	30	Off South Coast of Australia.
4.2	5-Aug-09	22:27:51	-38.996	137.133	30	Off South Coast of Australia.
1.6	7-Aug-09	15:48:40	-30.233	117.736	1	Northwest of Beacon, WA.
3.8	8-Aug-09	1:55:19	-31.939	153.417	0	East of Taree, NSW.
1.2	8-Aug-09	12:57:22	-30.629	117.447	2	North of Koorda, WA.
2.7	9-Aug-09	21:17:31	-30.234	117.734	3	Northwest of Beacon, WA.
2.9	10-Aug-09	7:05:24	-38.765	137.379	111	South of Kangaroo Island.

4.5	12-Aug-09	4:56:54	-38.799	137.469	10	Off South Coast of Australia.
3	12-Aug-09	5:46:43	-38.879	137.288	75	Off South Coast of Australia.
3.5	12-Aug-09	5:51:13	-38.716	137.339	10	Off South Coast of Australia.
2.7	12-Aug-09	16:11:19	-31.583	117.135	3	South of Meckering, WA.
1.2	13-Aug-09	12:39:27	-30.614	117.484	0	North of Koorda, WA.
1.5	14-Aug-09	12:26:30	-30.668	117.418	7	North of Koorda, WA.
1.8	14-Aug-09	13:56:13	-30.221	117.76	0	Northwest of Beacon, WA.
2	14-Aug-09	16:55:57	-30.256	117.786	6	North of Beacon, WA.
3.3	15-Aug-09	19:54:26	-31.772	138.806	18	East of Hawker, SA.
1.7	19-Aug-09	18:22:54	-36.74	148.301	10	East of The Pilot, NSW.
2.7	19-Aug-09	22:07:48	-34.149	135.65	5	North of Cummins, SA.
2.8	20-Aug-09	11:57:09	-34.119	135.668	7	North of Cummins, SA.
2.9	24-Aug-09	8:14:43	-38.522	145.878	0	Korumburra, VIC.
1.6	26-Aug-09	16:15:16	-34.977	149.545	8	Southeast of Collector, NSW.
3.4	28-Aug-09	22:20:06	-34.217	150.338	3	West of Picton, NSW.
2.4	30-Aug-09	2:05:19	-36.225	148.619	10	South of Lake Eucumbene, NSW.
2.2	31-Aug-09	6:14:53	-36.273	149.008	10	West of Cooma, NSW.
2.3	3-Sep-09	8:13:55	-37.635	147.01	10	Castle Hill, VIC.
3.7	5-Sep-09	3:00:56	-19.804	133.908	12	Southwest of Tennant Creek, NT.
2.5	6-Sep-09	0:35:47	-33.521	117.769	1	South of Dumbleyung, WA.
2.7	10-Sep-09	14:17:24	-32.574	154.561	20	Off Forster, NSW.
2.5	12-Sep-09	8:40:42	-34.024	149.196	9	Wyangala Dam, NSW.
2.1	12-Sep-09	13:36:48	-30.159	116.849	10	Dalwallinu, WA.
1.4	17-Sep-09	2:02:35	-30.694	117.403	7	Northwest of Koorda, WA.
1.4	17-Sep-09	14:54:01	-30.609	117.491	0	North of Koorda, WA.
2.4	17-Sep-09	23:10:41	-30.629	117.406	7	Northwest of Koorda, WA.
1.5	17-Sep-09	23:28:05	-30.682	117.411	5	North of Koorda, WA.
2.2	18-Sep-09	16:19:50	-30.636	117.452	0	North of Koorda, WA.
1.4	18-Sep-09	20:32:36	-30.711	117.387	6	Northwest of Koorda, WA.
2	19-Sep-09	19:17:08	-30.676	117.425	5	North of Koorda, WA.
3.4	20-Sep-09	20:57:59	-27.583	136.12	10	North of William Creek, SA.
2.3	20-Sep-09	22:08:36	-30.133	116.935	0	Northeast of Dalwallinu, WA.
2.4	22-Sep-09	8:20:28	-38.28	145.25	0	Pearcedale, VIC.
2.7	22-Sep-09	8:20:32	-38.28	145.25	0	Pearcedale, VIC.
3.1	22-Sep-09	8:20:41	-38.28	145.25	0	Pearcedale, VIC.
2	22-Sep-09	14:13:00	-38.28	145.25	0	Pearcedale, VIC.
2.7	25-Sep-09	13:56:05	-31.409	117.2	1	North of Cunderdin, WA.
2.3	26-Sep-09	14:11:11	-35.015	136.418	0	East of Port Lincoln, SA.
3.2	28-Sep-09	8:53:06	-33.442	148.953	0	Southwest of Orange, NSW. Mine Blast.
2.9	1-Oct-09	8:21:36	-19.691	133.932	0	Near Tennant Creek, NT.
1.9	3-Oct-09	12:32:51	-31.542	117.158	11	Northeast of Meckering, WA.
1.6	4-Oct-09	0:50:24	-31.567	116.914	10	Northwest of Meckering, WA.
1.8	4-Oct-09	3:15:13	-30.723	117.347	0	Northwest of Koorda, WA.
1.8	5-Oct-09	3:15:13	-30.724	117.347	0	Northwest of Koorda, WA.

1.8	5-Oct-09	3:17:48	-30.731	117.404	11	Northwest of Koorda, WA.
1.9	5-Oct-09	10:45:35	-30.722	117.355	10	East of Cadoux, WA.
2.3	5-Oct-09	11:15:31	-30.625	117.471	0	North of Koorda, WA.
1.7	5-Oct-09	18:32:33	-30.75	117.342	17	Northwest of Koorda, WA.
2.4	9-Oct-09	16:21:13	-19.737	133.99	0	Tennant Creek, NT.
1.9	10-Oct-09	9:21:49	-38.476	146.195	10	North of Foster, VIC.
2.6	12-Oct-09	6:58:48	-19.542	133.978	16	Near Tennant Creek, NT.
4.2	16-Oct-09	2:24:01	-34.382	133.276	10	West of Port Lincoln, SA.
3.3	24-Oct-09	16:26:41	-33.468	120.659	10	Northeast of Ravensthorpe, WA.
3.5	26-Oct-09	22:41:14	-32.74	139.06	6	Northeast of Peterborough, SA.
2.2	30-Oct-09	14:36:03	-31.108	118.92	13	East of Westonia, WA.
2.3	1-Nov-09	22:50:07	-30.668	117.399	10	Northwest of Koorda, WA.
3.2	3-Nov-09	6:03:58	-35.55	138.316	4	Near Normanville, SA.
3.4	3-Nov-09	6:54:14	-27.579	125.792	9	South of Warburton, WA.
2.1	6-Nov-09	22:49:28	-30.358	118.844	10	Northeast of Bonnie Rock, WA.
2.1	7-Nov-09	16:55:09	-33.225	149.046	2	Northwest of Orange, NSW.
2	12-Nov-09	20:12:42	-33.728	138.606	0	East of Brinkworth, SA.
2.3	14-Nov-09	21:24:13	-33.213	118.291	16	Southwest of Lake Grace WA.
2.5	17-Nov-09	12:27:16	-28.1	136.157	10	Southeast of Oodnadatta, SA.
1.3	20-Nov-09	20:00:37	-30.396	117.021	0	Southwest of Kalannie, WA.
2	22-Nov-09	12:05:44	-27.216	116.185	10	Southeast of Meeberrie, WA.
2.8	23-Nov-09	8:15:48	-19.732	134.035	0	Tennant Creek, NT.
2.8	26-Nov-09	12:38:54	-33.55	138.362	8	Near Brinkworth, SA.
1.9	26-Nov-09	13:35:23	-33.623	138.342	0	East of Brinkworth, SA.
2.1	1-Dec-09	3:33:06	-30.401	117.036	0	Southwest of Kalannie, WA.
2.9	5-Dec-09	15:40:36	-22.036	114.013	21	Southwest of Exmouth, WA.
3.4	7-Dec-09	13:30:02	-42.07	147.67	10	Near Swansea, TAS.
2.4	12-Dec-09	12:16:01	-27.127	113.752	10	Northwest of Kalbarri, WA.
2.1	14-Dec-09	21:35:56	-42.084	145.552	0	Queenstown, TAS.
2.7	18-Dec-09	10:05:17	-37.905	148.649	0	Southeast of Orbost, VIC.
2.7	19-Dec-09	16:05:44	-34.243	138.793	18	Tarlee, SA.
2	19-Dec-09	19:11:39	-30.246	117.718	0	Northwest of Beacon, WA.
1.8	20-Dec-09	22:35:26	-30.316	117.629	5	Northwest of Beacon, WA.
2.2	25-Dec-09	13:55:35	-33.496	138.635	10	Spalding, SA.

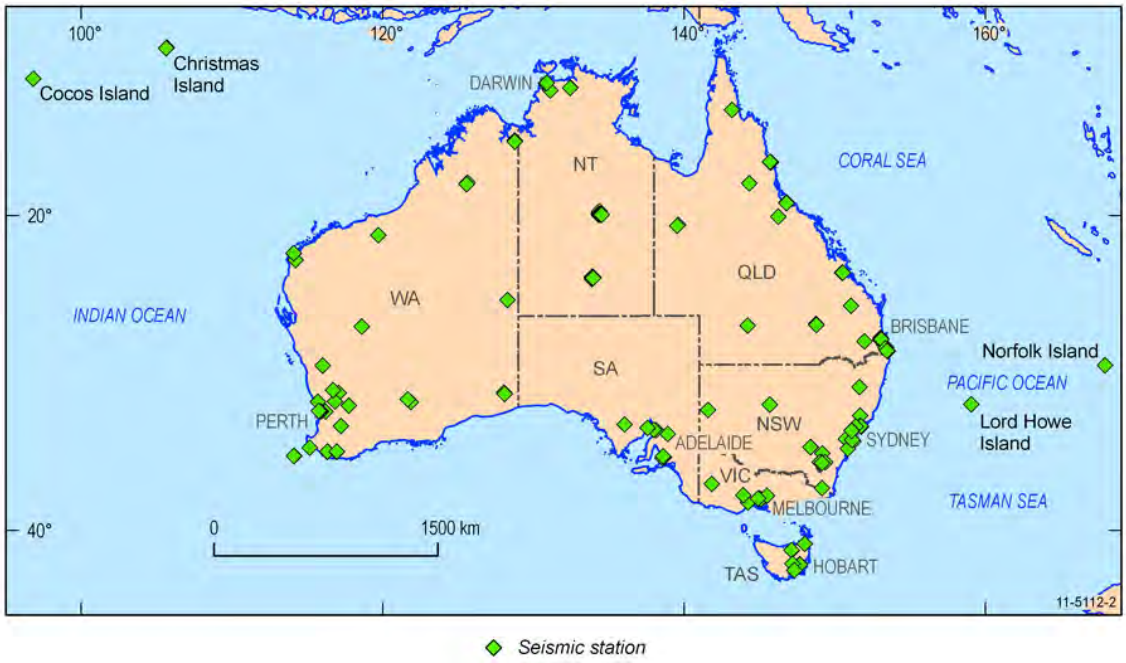

Figure 3: *Map of Australian Seismic Stations (stations that are operated by Geoscience Australia, includes triggered stations).*

Table 5: Australian ANSN Station List current to 25th November 2009

Station Code	Station Name	Data Availability
ARMA	Armidale, New South Wales	Available from SEEDLINK
ARPS	Mount Arapiles, Victoria	Available from SEEDLINK
AS01	Alice Springs Array Element 01, Northern Territory	Available from SEEDLINK
AS02	Alice Springs Array Element 02, Northern Territory	Available from SEEDLINK
AS03	Alice Springs Array Element 03, Northern Territory	Available from SEEDLINK
AS04	Alice Springs Array Element 04, Northern Territory	Available from SEEDLINK
AS05	Alice Springs Array Element 05, Northern Territory	Available from SEEDLINK
AS06	Alice Springs Array Element 06, Northern Territory	Available from SEEDLINK
AS07	Alice Springs Array Element 07, Northern Territory	Available from SEEDLINK
AS08	Alice Springs Array Element 08, Northern Territory	Available from SEEDLINK
AS09	Alice Springs Array Element 09, Northern Territory	Available from SEEDLINK
AS10	Alice Springs Array Element 10, Northern Territory	Available from SEEDLINK
AS11	Alice Springs Array Element 11, Northern Territory	Available from SEEDLINK
AS12	Alice Springs Array Element 12, Northern Territory	Available from SEEDLINK
AS13	Alice Springs Array Element 13, Northern Territory	Available from SEEDLINK
AS14	Alice Springs Array Element 14, Northern Territory	Available from SEEDLINK
AS15	Alice Springs Array Element 15, Northern Territory	Available from SEEDLINK
AS16	Alice Springs Array Element 16, Northern Territory	Available from SEEDLINK
AS17	Alice Springs Array Element 17, Northern Territory	Available from SEEDLINK
AS18	Alice Springs Array Element 18, Northern Territory	Available from SEEDLINK
AS19	Alice Springs Array Element 19, Northern Territory	Available from SEEDLINK

AS31	Alice Springs Broadband 31, Northern Territory	Available from SEEDLINK
BBOO	Buckleboo Station, South Australia	Available from SEEDLINK
BLDU	Ballidu, Western Australia	Available from SEEDLINK
CMSA	Cobar, New South Wales	Available from SEEDLINK
CNB	Kowen Forest, Australian Capital Territory	Available from SEEDLINK
COEN	Coen, Queensland	Available from SEEDLINK
CTA	Charters Towers, Queensland	Available from SEEDLINK
EIDS	Eidsvold Station, Queensland	Available from SEEDLINK
FITZ	Fitzroy Crossing, Western Australia	Available from SEEDLINK
FORT	Forrest, Western Australia	Available from SEEDLINK
CAN	Mt Stromlo, Australian Capital Territory	Available from SEEDLINK
GIRL	Giralia, Western Australia	Available from SEEDLINK
HTT	Hallett, South Australia	Available from SEEDLINK
INKA	Innamincka, South Australia	Not yet available
KDU	Kakadu, Northern Territory	Available from SEEDLINK
KLBR	Kellerberrin, Western Australia	Available from SEEDLINK
KMBL	Kambalda, Western Australia	Available from SEEDLINK
KNRA	Kununurra, Western Australia	Available from SEEDLINK
LCRK	Leigh Creek, South Australia	Not yet available
LHI	Lord Howe Island	Available from SEEDLINK
MANU	Manus Island, Papua New Guinea	Available from SEEDLINK
MAW	Mawson, Antarctica	Available from SEEDLINK
MCQ	Macquarie Island	Available from SEEDLINK
MEEK	Meekatharra, Western Australia	Available from SEEDLINK
MGCD	Mangrove Creek Dam, New South Wales	Available from SEEDLINK
MILA	Mila, New South Wales	Available from SEEDLINK
MOO	Moorlands, Tasmania	Available from SEEDLINK
MORW	Morawa, Western Australia	Available from SEEDLINK
MTN	Manton Dan, Northern Territory	Available from SEEDLINK
MTSU	Mount Surprise, Queensland	Available from SEEDLINK
MULG	Mulgathing, South Australia	Not yet available
NFK	Norfolk Island	Available from SEEDLINK
NIUE	Niue	Available from SEEDLINK
OOD	Oodnadatta, South Australia	Not yet available
RABL	Rabaul, Papua New Guinea	Available from SEEDLINK
RIV	Riverview, New South Wales	Available from SEEDLINK
RKGY	Rocky Gully, Western Australia	Available from SEEDLINK
RMQ	Roma, Queensland	Available from SEEDLINK
STKA	Stephens Creek Reservoir, New South Wales	Available from SEEDLINK
TOO	Toolangi, Victoria	Available from SEEDLINK
WB0	Warramunga Array Element B0, Northern Territory	Available from SEEDLINK
WB1	Warramunga Array Element B1, Northern Territory	Available from SEEDLINK
WB2	Warramunga Array Element B2, Northern Territory	Available from SEEDLINK
WB3	Warramunga Array Element B3, Northern Territory	Available from SEEDLINK
WB4	Warramunga Array Element B4, Northern Territory	Available from SEEDLINK
WB5	Warramunga Array Element B5, Northern Territory	Available from SEEDLINK
WB6	Warramunga Array Element B6, Northern Territory	Available from SEEDLINK
WB7	Warramunga Array Element B7, Northern Territory	Available from SEEDLINK
WB8	Warramunga Array Element B8, Northern Territory	Available from SEEDLINK
WB9	Warramunga Array Element B9, Northern Territory	Available from SEEDLINK
WC1	Warramunga Array Element C1, Northern Territory	Available from SEEDLINK
WC2	Warramunga Array Element C2, Northern Territory	Available from SEEDLINK

WC3	Warramunga Array Element C3, Northern Territory	Available from SEEDLINK
WC4	Warramunga Array Element C4, Northern Territory	Available from SEEDLINK
WR0	Warramunga Array Element R0, Northern Territory	Available from SEEDLINK
WR1	Warramunga Array Element R1, Northern Territory	Available from SEEDLINK
WR2	Warramunga Array Element R2, Northern Territory	Available from SEEDLINK
WR3	Warramunga Array Element R3, Northern Territory	Available from SEEDLINK
WR4	Warramunga Array Element R4, Northern Territory	Available from SEEDLINK
WR5	Warramunga Array Element R5, Northern Territory	Available from SEEDLINK
WR6	Warramunga Array Element R6, Northern Territory	Available from SEEDLINK
WR7	Warramunga Array Element R7, Northern Territory	Available from SEEDLINK
WR8	Warramunga Array Element R8, Northern Territory	Available from SEEDLINK
WR9	Warramunga Array Element R9, Northern Territory	Available from SEEDLINK
XMI	Christmas Island Airport	Available from SEEDLINK
XMIS	Christmas Island Grants Well	Available from SEEDLINK
YNG	Young, New South Wales	Available from SEEDLINK

Table 6: Australian Triggered (JUMP) Station List current to 25th November 2009

Station Code	Station Name	Data Availability
BN1H	Brisbane Hard Rock, Queensland	Not yet available
BN2S	Brisbane Soft Rock, Queensland	Available from SEEDLINK
CARL	Carlisle, Perth, Western Australia	Available from SEEDLINK
CN1H	Cairns Hard Rock, Queensland	Not yet available
CN2S	Cairns Soft Rock, Queensland	Not yet available
CORO	Coronation Park, Launceston, Tasmania	Available from SEEDLINK
DPH	Darwin Parliament House, Northern Territory	Available from SEEDLINK
DRS	Darwin Rock Store, Northern Territory	Available from SEEDLINK
GC1S	Gold Coast Soft Rock, Queensland	Available from SEEDLINK
GC2F	Gold Coast Fill, Queensland	Available from SEEDLINK
GEES	Gees Lookout, Launceston, Tasmania	Available from SEEDLINK
GHSS	Government House, Adelaide, South Australia	Available from SEEDLINK
GLAD	Gladstone, Tasmania	Available from SEEDLINK
MTKN	Mount Kenneth, Perth, Western Australia	Available from SEEDLINK
NAPP	Napperby, South Australia	Available from SEEDLINK
PTPS	Port Pirie, South Australia	Available from SEEDLINK
RK1H	Rockhampton Hard Rock, Queensland	Not yet available
RK2S	Rockhampton Soft Rock, Queensland	Available from SEEDLINK
TV1H	Townsville Hard Rock, Queensland	Not yet available
TV2S	Townsville Soft Rock, Queensland	Not yet available
TW1H	Toowoomba Hard Rock, Queensland	Available from SEEDLINK
TWOA	Flinders University, Adelaide, South Australia	Available from SEEDLINK
WHYH	Whyalla, South Australia	Available from SEEDLINK

Australian Capital Territory

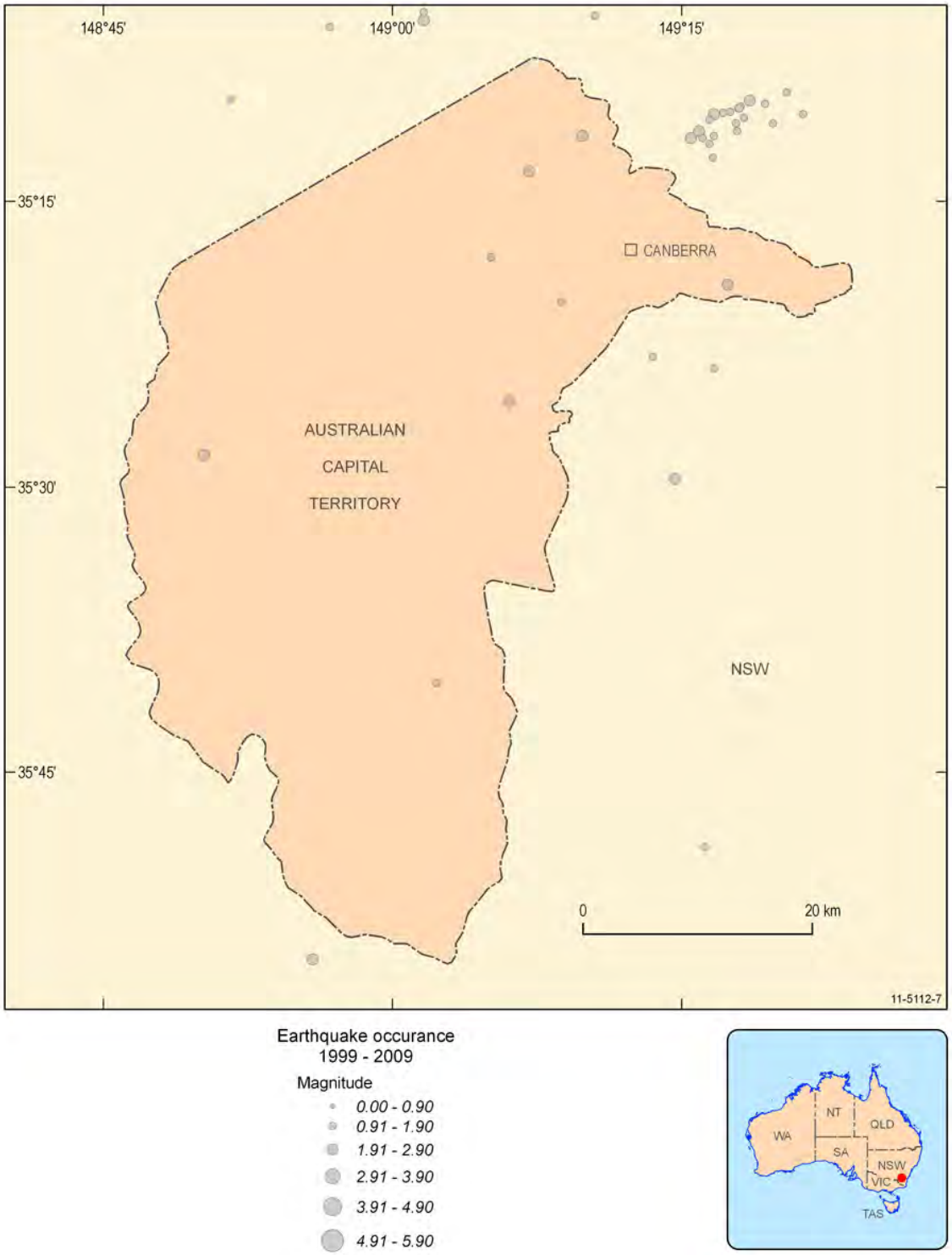

Figure 4: *Map of 2009 Australian Capital Territory Earthquakes (magnitude sized circles with subdued historical seismicity).*

Table 7: Largest Australian Capital Territory Earthquakes

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
3.0.	19-Aug-1998	11:12:44	-35.654	148.951	0	ACT
2.9	23-Oct-2000	1:20:25	-35.472	148.837	1	ACT
2.8	10-Jan-1976	1:27:46	-35.610	149.030	13	ACT
2.5	21-Jun-1999	13:59:35	-35.193	149.164	7	ACT
2.5	19-Feb-1972	5:18:49	-35.360	149.010	4	ACT
2.5	7-Dec-1975	10:31:26	-35.340	149.090	0	ACT
2.5	12-Feb-1977	11:56:46	-35.540	148.850	13	ACT
2.5	19-Sep-1976	2:04:52	-35.900	149.000	20	ACT

New South Wales

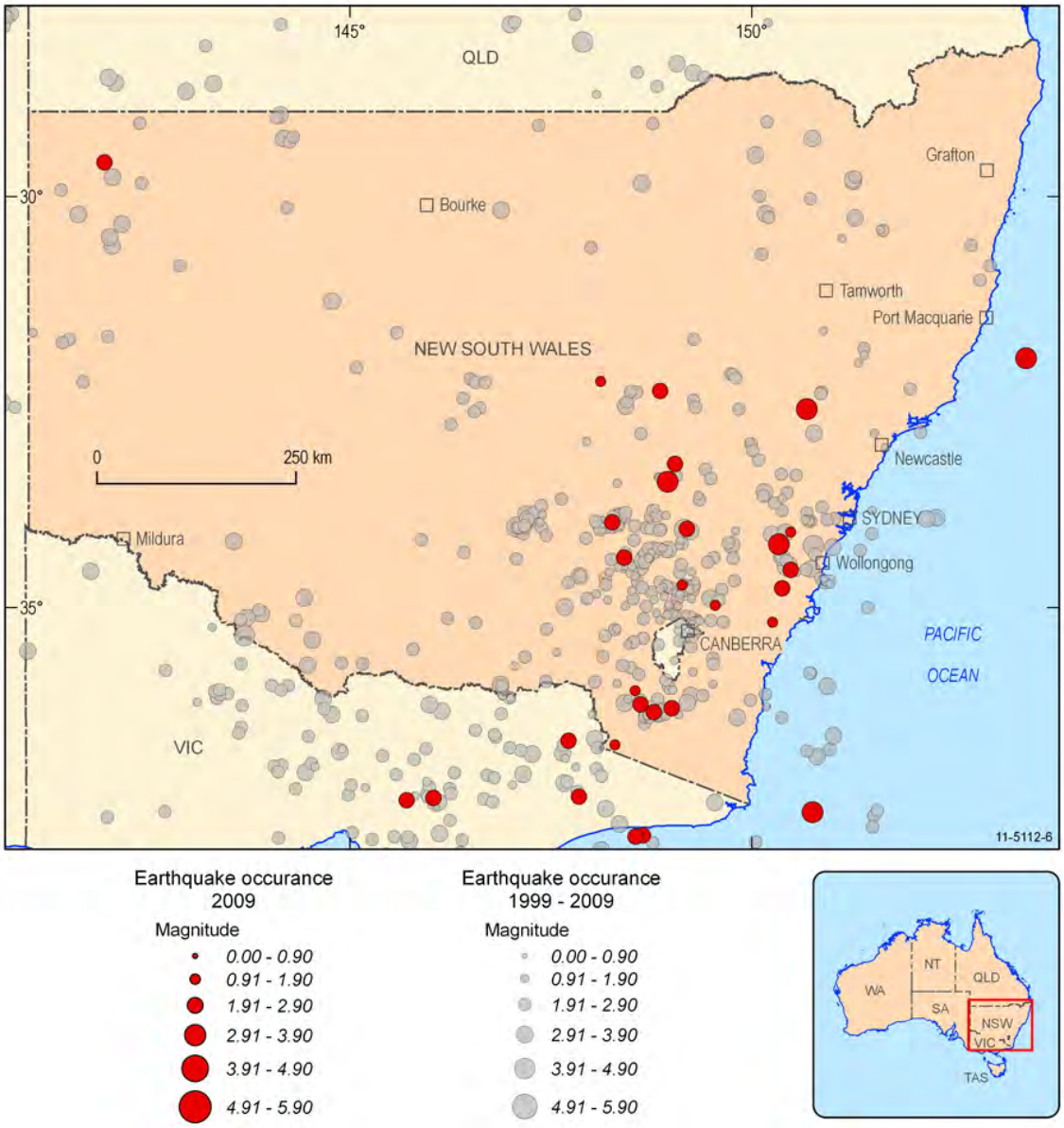

Figure 5: *Map of 2009 New South Wales Earthquakes (magnitude sized circles with subdued historical seismicity).*

Table 8: Largest New South Wales Earthquakes

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
5.8	21-May-1961	21:40:03	-34.547	150.503	19	Bowral NSW.
5.6	27-Dec-1989	23:26:57	-32.946	151.607	11	Newcastle NSW.
5.6	18-Nov-1934	21:58:41	-34.800	149.200	10	Gunning NSW.
5.5	29-Nov-1886	17:00:00	-34.750	148.800	0	Magnitude from Isoseismal Map.
5.5	30-May-1921	14:51:59	-35.000	145.000	0	Hay NSW.
5.5	10-Mar-1949	22:30:33	-34.740	149.200	0	Dalton NSW.
5.5	9-Mar-1973	19:09:14	-34.170	150.320	21	Picton NSW.

Table 9: New South Wales Earthquakes 2009

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
2.1	4-Jan-09	17:53:00	-34.762	150.378	7	Southeast of Bundanoon, NSW.
1.8	18-Jan-09	15:57:09	-34.065	150.488	9	West of Camden, NSW.
2.6	6-Mar-09	15:52:27	-34.381	148.413	3	Young, NSW.
2.1	6-Mar-09	22:51:05	-36.323	148.785	15	Northwest of Berridale, NSW.
3.6	11-Mar-09	13:25:40	-32.555	150.688	0	South of Denman, NSW.
2.8	9-Apr-09	3:04:39	-32.333	148.863	0	Near Dubbo, NSW.
2.9	18-Apr-09	15:35:07	-34.532	150.486	10	Southeast of Bowral, NSW.
1.5	2-May-09	16:29:59	-35.188	150.263	8	Northwest of Ulladulla, NSW.
1.9	15-Jun-09	13:06:04	-32.218	148.121	10	Near Narromine, NSW.
2.7	25-Jun-09	8:13:14	-33.944	148.265	5	Southeast of Grenfell, NSW.
1.5	28-Jun-09	13:31:33	-36.05	148.55	10	Northwest of Eucumbene, NSW.
1.4	26-Jul-09	7:40:52	-34.721	149.136	2	West of Dalton, NSW.
2.6	31-Jul-09	14:59:30	-29.601	141.946	0	South of Tibooburra, NSW.
3.8	8-Aug-09	1:55:19	-31.939	153.417	0	East of Taree, NSW.
1.7	19-Aug-09	18:22:54	-36.74	148.301	10	East of The Pilot, NSW.
1.6	26-Aug-09	16:15:16	-34.977	149.545	8	Southeast of Collector, NSW.
3.4	28-Aug-09	22:20:06	-34.217	150.338	3	West of Picton, NSW.
2.4	30-Aug-09	2:05:19	-36.225	148.619	10	South of Lake Eucumbene, NSW.
2.2	31-Aug-09	6:14:53	-36.273	149.008	10	West of Cooma, NSW.
2.7	10-Sep-09	14:17:24	-32.574	154.561	20	Off Forster, NSW.
2.5	12-Sep-09	8:40:42	-34.024	149.196	9	Wyangala Dam, NSW.
2.1	7-Nov-09	16:55:09	-33.225	149.046	2	Northwest of Orange, NSW.

Northern Territory

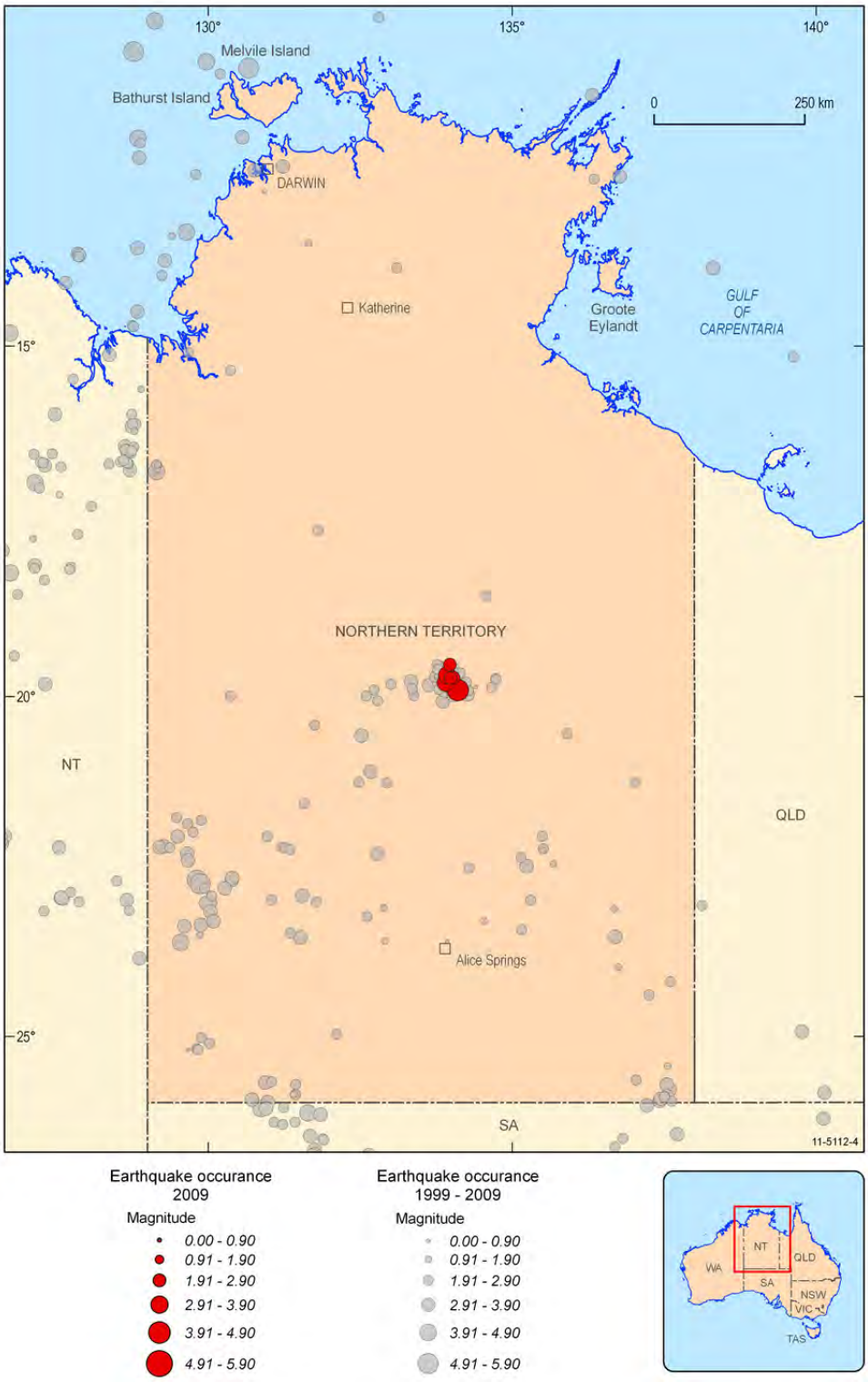

Figure 6: *Map of 2009 Northern Territory Earthquakes (magnitude sized circles with subdued historical seismicity).*

Table 10: Largest Northern Territory Earthquakes

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
6.7	22-Jan-1988	12:05:00	-19.838	133.994	5	Tennant Creek NT.
6.5	27-Jun-1941	7:55:49	-25.950	137.340	0	Simpson Desert NT.
6.4	22-Jan-1988	3:57:28	-19.826	133.984	4	Tennant Creek NT.
6.3	22-Jan-1988	0:36:01	-19.812	133.975	6	Tennant Creek NT.
6.0	15-Dec-1873	4:00:00	-26.250	127.500	0	This earthquake strongly felt by explorer Giles estimated intensity of MM 7 and nearby epicentre.
6.0	20-Dec-1937	22:35:02	-25.400	136.500	33	Simpson Desert NT.
5.9	17-Apr-1938	8:56:22	-25.500	137.200	0	Simpson Desert NT.
5.8	22-Jan-1988	20:54:05	-19.887	134.084	3	Tennant Creek NT.

Table 11: Northern Territory Earthquakes 2009

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
4.3	18-Jan-09	14:13:53	-19.908	134.11	12	South of Tennant Creek, NT.
3.7	5-Sep-09	3:00:56	-19.804	133.908	12	Southwest of Tennant Creek, NT.
2.9	1-Oct-09	8:21:36	-19.691	133.932	0	Near Tennant Creek, NT.
2.4	9-Oct-09	16:21:13	-19.737	133.99	0	Tennant Creek, NT.
2.6	12-Oct-09	6:58:48	-19.542	133.978	16	Near Tennant Creek, NT.
2.8	23-Nov-09	8:15:48	-19.732	134.035	0	Tennant Creek, NT.

Queensland

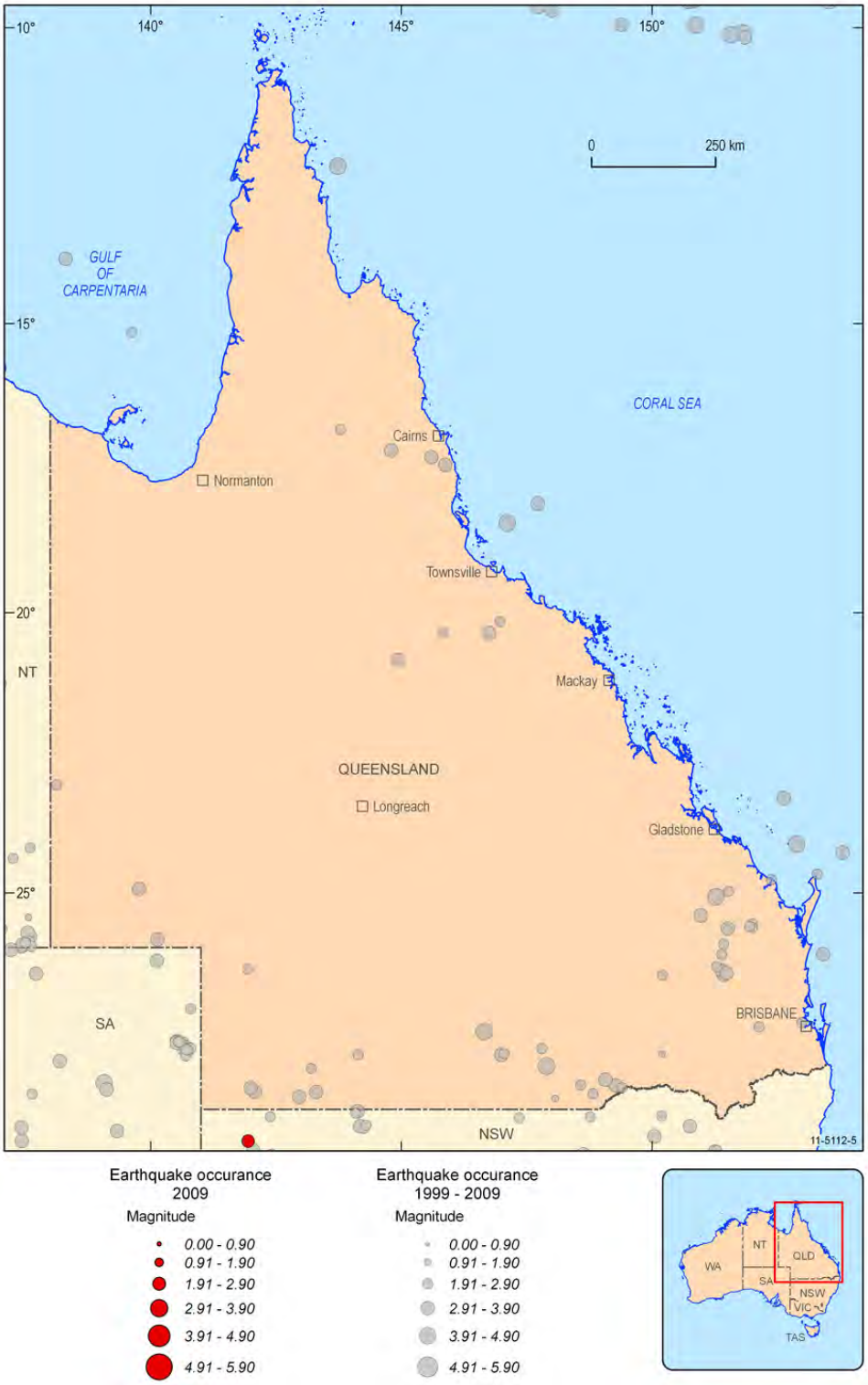

Figure 9: *Map of 2009 Queensland Earthquakes (magnitude sized circles with subdued historical seismicity).*

Table 12: Largest Queensland Earthquakes

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
6.0	06-Jun-1918	18:14:24	-23.500	152.500	15	East of Rockhampton, QLD.
5.7	18-Dec-1913	13:54:00	-20.000	147.000	33	Charters Towers QLD.
5.7	06-Jun-1918	19:20:00	-23.500	152.500	0	East of Rockhampton, QLD.
5.7	14-May-1928	02:46:55	-15.000	144.000	10	Lakefield National Park, QLD.
5.6	28-Aug-1883	16:55:00	-25.500	151.670	20	Gayndah QLD.
5.5	06-Jun-1918	18:23:00	-23.500	152.500	0	East of Rockhampton, QLD.
5.5	04-May-1925	11:28:48	-16.000	140.000	10	NE of Mornington Island, QLD
5.5	12-Apr-1935	01:32:24	-25.500	151.670	10	Gayndah QLD.

South Australia

Authors: David Love and Alison Wallace (Department of Primary Industries and Resources SA [PIRSA]).

Seismicity Report

308 earthquakes were located during the year, including 13 far offshore events south of Kangaroo Island, and 1 in NSW. There were 7 events over magnitude 4, with the largest being magnitude 4.5, but 5 of these were in the far offshore sequence, resulting in about an average year for the state. There were 28 events over magnitude 3, but 12 of these were offshore, resulting again in a close to average year. The largest onshore event was magnitude 4.5, 30km north-east of Peterborough on the 26th January.

There were 17 events reported felt, mostly in the South Flinders Ranges area. An offshore event was felt at Streaky Bay, an unusual occurrence that far west. The most notable felt event was a magnitude 3.4 slightly offshore from Normanville on 3rd November, the closest magnitude 3 to Adelaide since 1973. The event was even weakly felt in the Adelaide CBD. No isoseismal maps were produced.

There were very few earthquakes that occurred outside the usual areas. An unusual sequence occurred 300 km south of Kangaroo Island. This was reported in MESA Journal V54 p19. The events could not be associated with any major structure, and timing seemed to be associated with a 7 day sequence. One earthquake was located far west of Coober Pedy. No earthquakes were located within 40 km of Adelaide, mirroring the low activity of recent decades. A number of events were located on Fleurieu Peninsula well south of Adelaide. This is probably due to the addition of an extra privately owned station HMV1.

Network Changes

There were a number of changes to the seismograph network. Geoscience Australia (GA) installed new equipment at 4 existing sites (GHSS, NAPP, PTPS, WHYH), and 1 new site (TWOA), and took over operation of these sites from PIRSA. These stations were established in the early 1990s as part of the Joint Urban Monitoring Program (JUMP). GA also installed equipment at HTT vault in March, including a satellite dish. In July, PIRSA turned off the analogue equipment, which had operated since 1963. A digital recorder continued to send realtime data to PIRSA also.

- GA and PIRSA examined various remote locations, and chose 4 where GA plan to install equipment in coming years.

- STR2 installation was completed and began continuous realtime transmission in October, finalising the new Adelaide network (National Disaster Mitigation Program).

- The station HMV1 near Victor Harbor began continuous realtime transmission to PIRSA in March. This station was funded and established by a private individual, Paul Hutchinson. His interest has led to an increase of earthquakes being located in the area.

- There is another private station running at Mount Torrens, which sends data to a collection centre at the Australian Centre for Geomechanics in Perth.

- Realtime data is also sent to PIRSA from 2 private stations interstate.

The PIRSA network now comprises 10 analogue stations, 5 dial-up stations, 11 continuous realtime stations, and 1 visit and download station (suburban)

Earthquake location procedures

Standard procedure for earthquake location is:

- Blasts are usually not located, and are not included in the catalogue
- Overseas events are not located
- Interstate events are occasionally located
- Local events triggering the central system are reviewed as soon as possible, sometimes including GA or dial-up station data.
- Reviewed events are put on the PIRSA website as soon as possible
- Final locations are calculated using the old software Eqlocl, one to two months after actual date, using all available data, including data from GA and Environmental Systems and Services.
- Final locations are uploaded overnight to the PIRSA spatial data library and is publicly available on SARIG website.

Some GA data is collected via Seedlink. The most common method is AutoDRM.

Initial magnitudes are calculated using the Richter formula. Final magnitudes are calculated using the Greenhalgh formula.

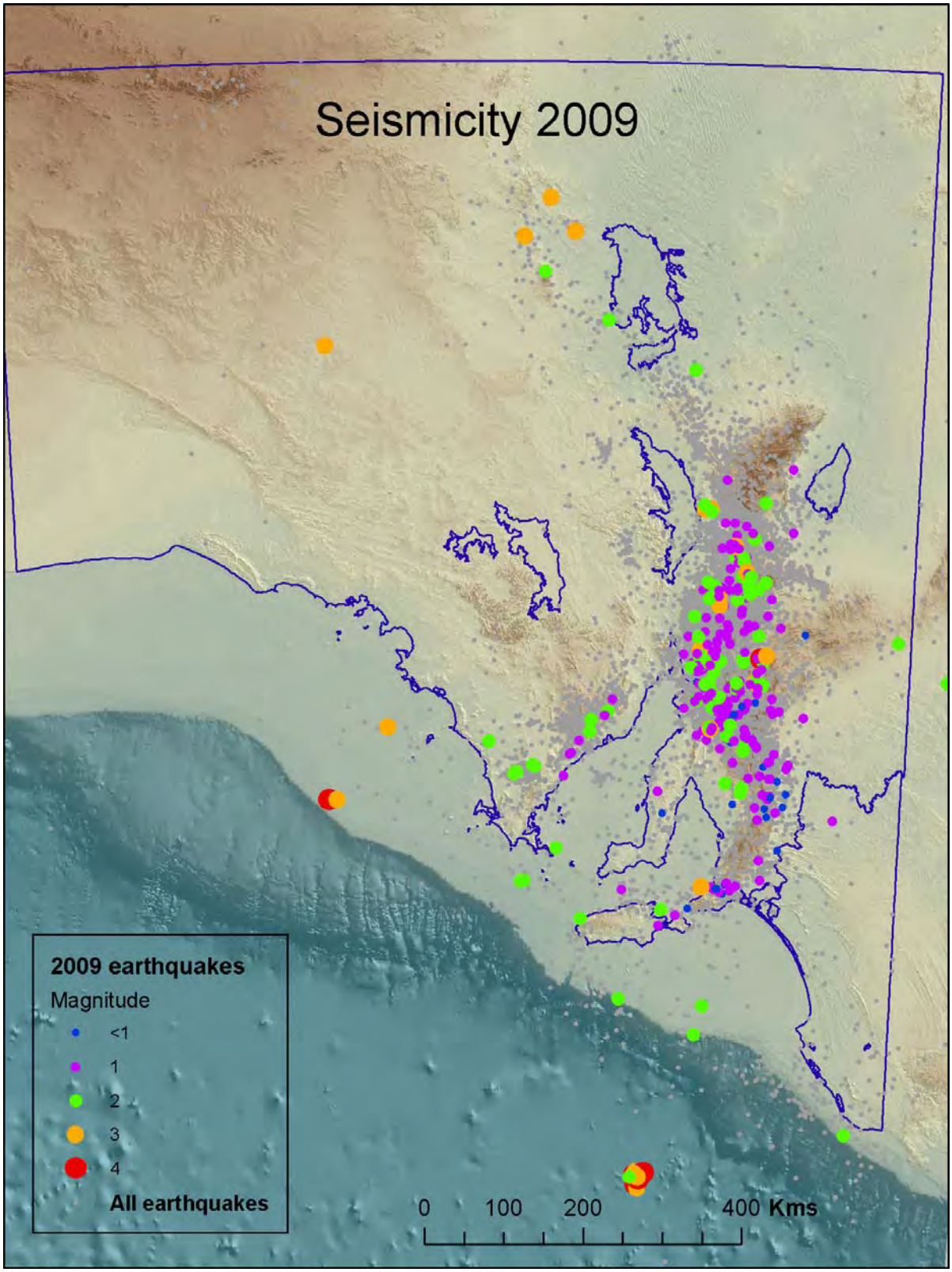

Figure 10: *Seismicity for 2009. 2009 Seismicity shown in colour, and historical earthquakes (from 1840) shown in grey.*

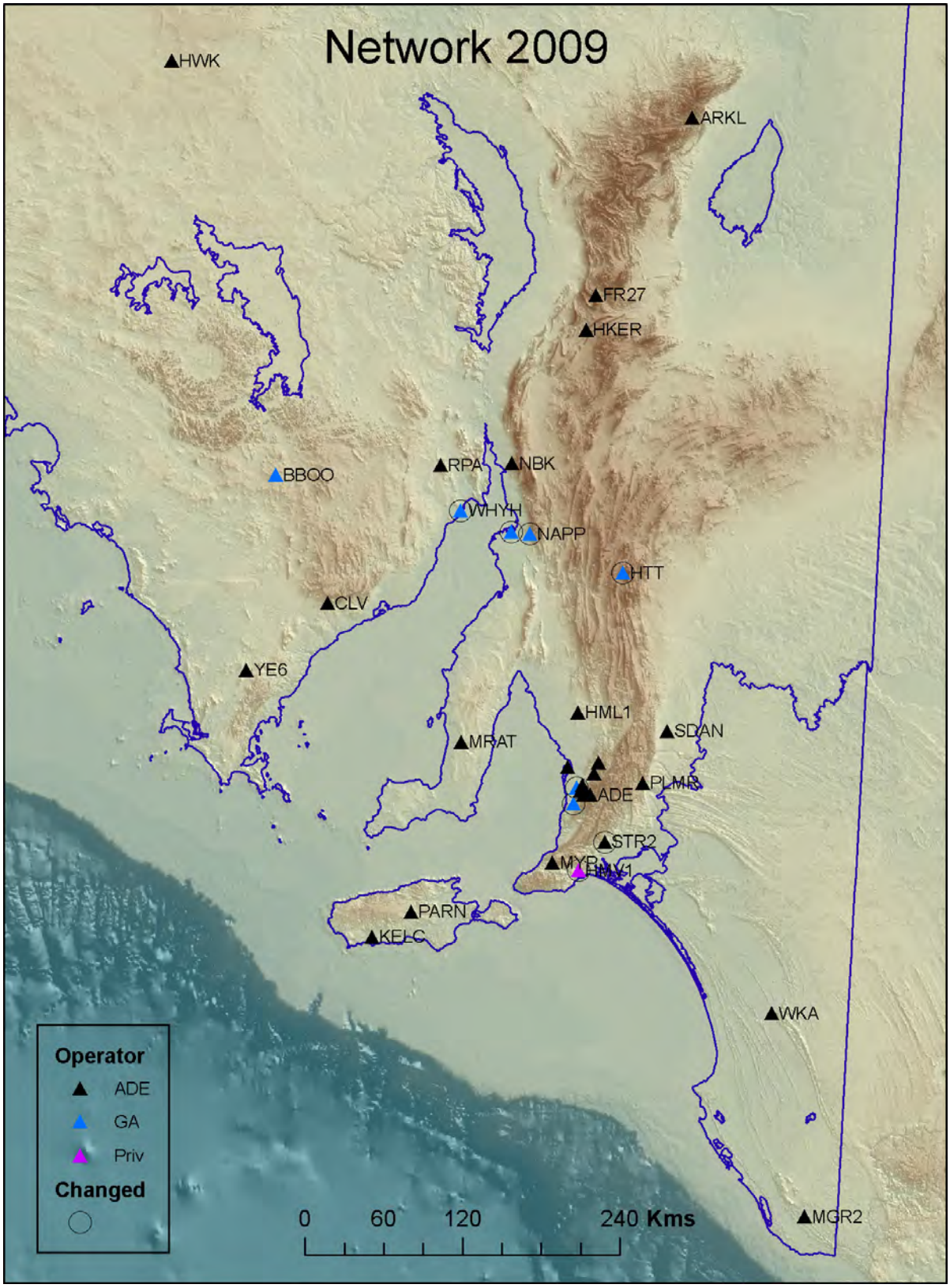

Figure 11: *South Australian seismographs in 2009. Also showing those where changes occurred.*

Table 12: Magnitude 2.5+ Seismicity located by PIRSA.

Date	Time UTC	Longitude	Latitude	Depth km	Place	Mag	MMI	Acc A-F	Stns
2009-01-02	1251	138.921	-33.030	5.7	PETERBOROUGH 10KM SE	3.1	4	C	21
2009-01-14	2257	133.172	-29.228	12.5	COOBER PEDY 155KM W	3.0		D	7
2009-01-15	1015	138.399	-32.045	13.8	HAWKER 17KM S	3.0		C	17
2009-01-17	0231	138.321	-32.872	16.2	PORT PIRIE 47KM NE	2.5	3	C	16
2009-01-19	0435	138.933	-31.960	16.7	HAWKER 48KM E	2.6	3	C	13
2009-01-26	0029	138.988	-32.763	8.3	PETERBOROUGH 28KM NE	4.5	4	C	23
2009-01-30	0817	138.983	-30.977	17.7	LEIGH CREEK 77KM SE	2.9		C	16
2009-02-18	0325	138.415	-32.163	19.9	HAWKER 30KM S	3.1		C	21
2009-02-27	1713	138.009	-29.488	38.0	LEIGH CREEK 117KM N	2.8		D	9
2009-03-04	2320	138.170	-32.672	20.4	PT AUGUSTA 43KM SE	3.3		C	17
2009-03-05	2013	138.604	-31.482	11.9	HAWKER 48KM N	3.2		C	16
2009-03-14	1309	136.032	-28.391	28.4	OODNADATTA 111KM SE	2.9		E	8
2009-04-04	1240	133.943	-33.593	8.7	STREAKY BAY 122KM S	3.8	3	C	23
2009-04-07	0728	135.769	-35.351	9.9	PORT LINCOLN 69KM S	2.7		C	15
2009-04-14	0140	135.762	-27.990	10.3	OODNADATTA 59KM SE	3.6		D	16
2009-05-08	1113	138.229	-37.060	7.2	ROBE 137KM W	2.9		D	18
2009-05-29	1445	138.189	-31.070	9.9	PARACHILNA 21KM W	3.5		C	18
2009-05-29	1220	138.258	-31.065	14.3	PARACHILNA 15KM NW	3.2		C	19
2009-05-29	1121	138.267	-31.096	19.3	PARACHILNA 13KM W	2.9		C	14
2009-07-09	2216	138.564	-34.188	10.1	CLARE 39KM S	2.6		C	18
2009-07-10	1220	138.720	-31.652	22.2	HAWKER 38KM NE	2.5		C	14
2009-07-26	2013	138.270	-32.084	10.0	HAWKER 26KM SW	2.6		C	15
2009-07-30	1801	137.427	-38.678	15.2	KANGAROO ISLAND 330KM S	4.1		D	28
2009-07-30	1808	137.455	-38.631	12.3	KANGAROO ISLAND 330KM S	3.3		D	15
2009-07-30	1815	137.457	-38.743	4.8	KANGAROO ISLAND 330KM S	2.6		E	14
2009-08-05	2143	137.555	-38.643	9.4	KANGAROO ISLAND 330KM S	4.5		D	29
2009-08-05	2227	137.447	-38.779	25.2	KANGAROO ISLAND 330KM S	4.3		D	24
2009-08-05	1910	137.487	-38.700	7.7	KANGAROO ISLAND 330KM S	4.1		D	26
2009-08-06	1351	137.481	-38.811	14.5	KANGAROO ISLAND 330KM S	3.1		D	17
2009-08-10	0705	137.401	-38.703	7.0	KANGAROO ISLAND 330KM S	2.9		D	20
2009-08-11	1039	137.511	-38.675	8.7	KANGAROO ISLAND 330KM S	2.7		D	15
2009-08-12	0456	137.488	-38.721	6.8	KANGAROO ISLAND 330KM S	4.5		D	31
2009-08-12	0551	137.482	-38.688	4.7	KANGAROO ISLAND 330KM S	3.5		D	21
2009-08-12	0546	137.438	-38.655	12.7	KANGAROO ISLAND 330KM S	3.0		D	17
2009-08-15	1954	138.765	-31.774	19.9	HAWKER 34KM E	3.3	3	C	20
2009-08-17	1846	137.361	-38.691	10.0	KANGAROO ISLAND 330KM S	2.7		E	12
2009-08-19	2207	135.699	-34.103	6.8	CUMMINS 18KM N	2.7		C	19
2009-08-20	1157	135.676	-34.113	6.7	CUMMINS 17KM N	2.8		C	18
2009-08-25	0947	138.174	-32.741	10.3	PORT AUGUSTA 47KM SE	2.5		C	15
2009-09-20	2058	136.101	-27.550	17.4	OODNADATTA 65KM E	3.3		D	17
2009-10-16	0224	133.119	-34.419	32.3	PORT LINCOLN 250KM W	4.1		C	25
2009-10-16	0733	133.238	-34.411	4.6	PORT LINCOLN 250KM W	3.1		D	13
2009-10-26	2241	139.070	-32.719	1.8	PETERBOROUGH 36KM NE	3.5		C	25
2009-11-03	0604	138.278	-35.375	10.3	VICTOR HARBOR 36KM NW	3.4	4	C	23
2009-11-17	1227	136.415	-27.935	33.0	OODNADATTA 106KM SE	3.1		E	13
2009-11-26	1238	138.331	-33.571	9.7	CLARE 39KM NW	3.1		C	24

2009-12-19	1605	138.793	-34.238	10.4	CLARE 48KM S	2.7	3	C	17

Table 13: Largest South Australian Earthquakes

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
6.5	10-May-1897	05:26:00	-37.333	139.750	0	Beachport SA.
6.0	19-Sep-1902	10:35:00	-35.000	138.000	14	Warooka SA.
5.8	26-Mar-1939	03:56:00	-32.000	138.000	0	Motpena SA.
5.8	04-May-1941	22:07:30	-26.300	136.900	33	Simpson Desert SA.
5.7	16-Apr-1887	22:10:00	-34.300	135.800	10	Eyre Peninsula SA.
5.6	04-May-1941	22:23:57	-26.300	136.900	33	Simpson Desert SA.
5.6	06-Aug-1948	03:29:23	-37.360	139.680	18	Robe SA.
5.5	26-Oct-1911	10:00:00	-33.667	136.417	0	Cleve SA.
5.5	18-Apr-1972	22:20:39	-31.580	138.620	12	Wilpena SA.
6.0	30-Mar-1986	08:53:48	-26.333	132.517	5	Marryat Creek SA.

Table 14: South Australian Earthquakes 2009 Recorded by Geoscience Australia

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
3.3	2-Jan-09	12:51:16	-33.021	138.941	5	Southeast of Peterborough, SA.
2.2	2-Jan-09	12:56:20	-33.008	138.933	4	Southeast of Peterborough, SA.
2.2	2-Jan-09	13:29:05	-33.021	138.933	5	Southeast of Peterborough, SA.
2.2	4-Jan-09	12:51:15	-33.081	138.28	10	East of Port Pirie, SA.
2.3	13-Jan-09	8:07:20	-33.011	138.392	11	Appila, SA.
3.1	15-Jan-09	10:15:19	-32.018	138.404	15	South of Hawker, SA.
2.6	17-Jan-09	2:31:53	-32.906	138.228	10	South of Melrose, SA.
4.5	26-Jan-09	0:29:19	-32.757	139.029	10	Northeast of Peterborough, SA.
2.7	29-Jan-09	19:34:26	-32.796	138.99	10	Northeast of Peterborough, SA.
3	30-Jan-09	8:17:34	-30.954	138.985	20	East of Blinman, SA.
2	18-Feb-09	3:25:59	-31.213	138.559	21	South of Hawker, SA.
2.1	26-Feb-09	22:20:10	-31.633	138.741	10	East of Wilpena Pound, SA.
3.5	4-Mar-09	23:20:05	-32.635	138.066	10	Southeast of Point Augusta, SA.
3.3	5-Mar-09	20:13:09	-31.492	138.527	10	Northeast of Hawker, SA.
2.2	15-Mar-09	3:26:36	-33.061	138.983	5	Southeast of Peterborough, SA.
2.5	15-Mar-09	10:25:30	-33.109	138.689	5	Southwest of Peterborough, SA.
2.4	2-Apr-09	21:51:34	-34.283	138.781	10	Northwest of Kapunda, SA.
3.9	4-Apr-09	12:40:49	-33.946	133.704	33	Northwest of Port Lincoln, SA.
2.4	12-Apr-09	16:36:06	-33.054	138.269	10	South of Melrose, SA.
3.7	14-Apr-09	1:40:26	-27.982	135.757	10	Southeast of Oodnadatta, SA.
3	8-May-09	11:13:35	-37.08	138.167	8	West of Robe, SA.
2.1	28-May-09	12:01:21	-33.193	138.486	10	Near Jamestown, SA.
2.9	29-May-09	11:21:35	-31.082	138.166	10	Northwest of Parachilna, SA.
3.3	29-May-09	12:20:52	-31.092	138.164	10	Northwest of Parachilna, SA.
3.7	29-May-09	14:45:11	-31.051	138.211	10	Northwest of Parachilna, SA.
2.6	2-Jun-09	19:38:37	-32.502	138.199	20	East of Port Augusta, SA.
2.3	9-Jul-09	19:25:17	-32.773	138.746	1	Southeast of Orroroo, SA.
2.7	9-Jul-09	22:16:59	-34.188	138.572	10	Southeast of Balaklava, SA.

2.6	10-Jul-09	12:20:34	-31.645	138.644	20	Northeast Hawker, SA.
4.1	30-Jul-09	18:00:57	-38.915	137.145	10	Off South Coast of Australia.
4	5-Aug-09	19:10:41	-38.97	137.119	30	Off South Coast of Australia.
4.8	5-Aug-09	21:43:25	-38.945	137.222	30	Off South Coast of Australia.
4.2	5-Aug-09	22:27:51	-38.996	137.133	30	Off South Coast of Australia.
2.9	10-Aug-09	7:05:24	-38.765	137.379	111	South of Kangaroo Island.
4.5	12-Aug-09	4:56:54	-38.799	137.469	10	Off South Coast of Australia.
3	12-Aug-09	5:46:43	-38.879	137.288	75	Off South Coast of Australia.
3.5	12-Aug-09	5:51:13	-38.716	137.339	10	Off South Coast of Australia.
3.3	15-Aug-09	19:54:26	-31.772	138.806	18	East of Hawker, SA.
2.7	19-Aug-09	22:07:48	-34.149	135.65	5	North of Cummins, SA.
2.8	20-Aug-09	11:57:09	-34.119	135.668	7	North of Cummins, SA.
3.4	20-Sep-09	20:57:59	-27.583	136.12	10	North of William Creek, SA.
2.3	26-Sep-09	14:11:11	-35.015	136.418	0	East of Port Lincoln, SA.
4.2	16-Oct-09	2:24:01	-34.382	133.276	10	West of Port Lincoln, SA.
3.5	26-Oct-09	22:41:14	-32.74	139.06	6	Northeast of Peterborough, SA.
3.2	3-Nov-09	6:03:58	-35.55	138.316	4	Near Normanville, SA.
2	12-Nov-09	20:12:42	-33.728	138.606	0	East of Brinkworth, SA.
2.5	17-Nov-09	12:27:16	-28.1	136.157	10	Southeast of Oodnadatta, SA.
2.8	26-Nov-09	12:38:54	-33.55	138.362	8	Near Brinkworth, SA.
1.9	26-Nov-09	13:35:23	-33.623	138.342	0	East of Brinkworth, SA.
2.7	19-Dec-09	16:05:44	-34.243	138.793	18	Tarlee, SA.
2.2	25-Dec-09	13:55:35	-33.496	138.635	10	Spalding, SA.

Tasmania

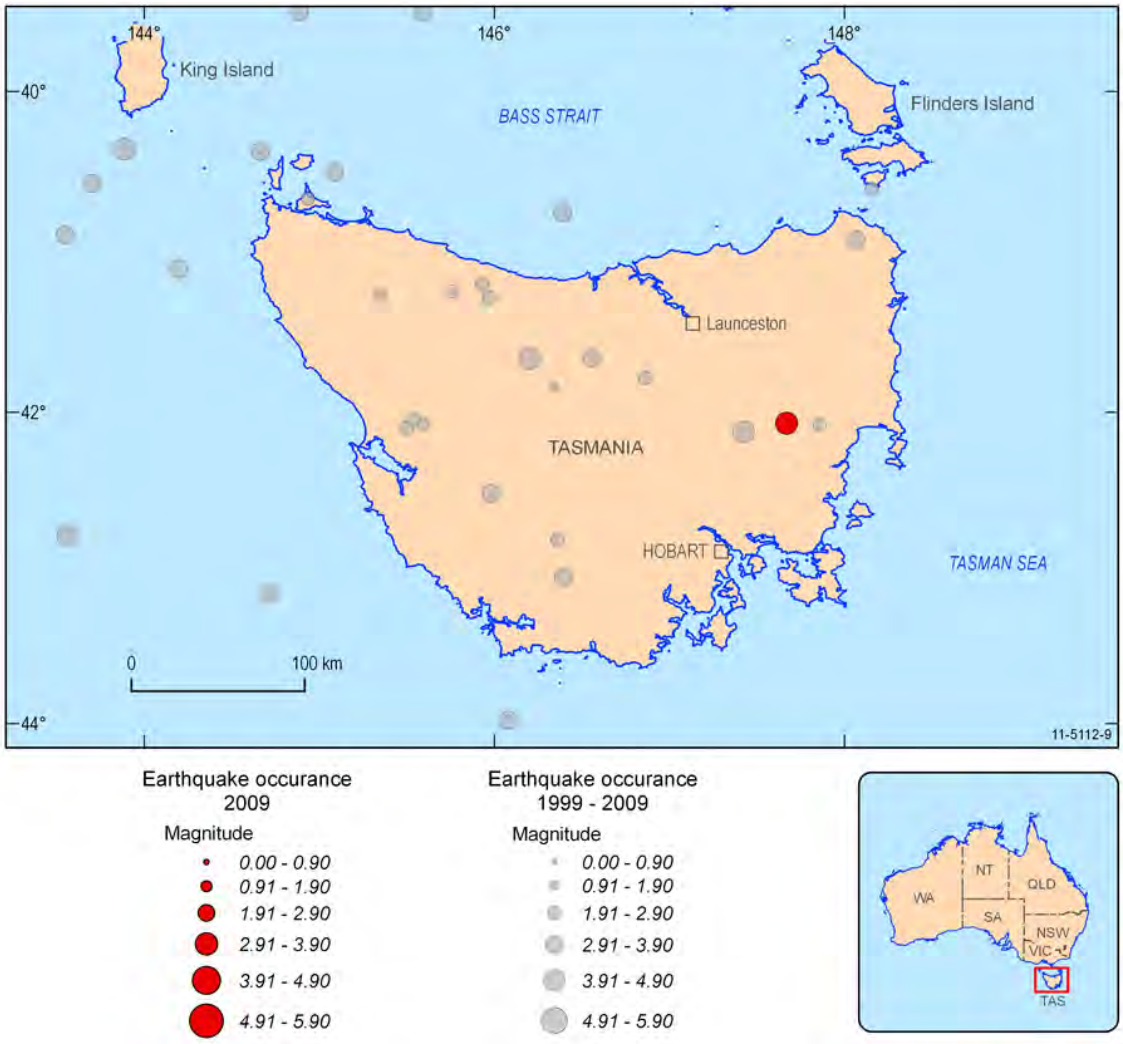

Figure 12: *Map of 2009 Tasmanian Earthquakes (magnitude sized circles with subdued historical seismicity).*

Table 15: Largest Tasmanian Earthquakes

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
6.9	26-Jan-1892	16:48:00	-40.400	149.500	0	Tasman Sea NE TAS.
6.8	23-Apr-1946	4:55:56	-50.000	140.000	0	Antarctic-Australian Ridge
6.5	14-Jun-1927	17:16:55	-50.000	140.000	0	Antarctic-Australian Ridge
6.4	13-Jul-1884	3:55:00	-40.500	148.500	0	Cape Barren Island NE TAS.
6.4	19-Sep-1884	10:27:00	-40.800	149.500	0	NE of Gladstone, TAS.
5.9	28-Mar-1884	13:12:00	-41.200	148.900	0	E of Bay of Fires, TAS.
5.9	10-May-1884	21:30:00	-41.200	148.900	0	E of Bay of Fires, TAS.
5.9	09-Jun-1884	9:20:00	-40.800	149.500	0	NE of Gladstone, TAS.
5.9	20-Mar-1885	23:03:00	-40.500	149.500	0	E of Cape Barren Isl, TAS.

Table 16: Tasmanian Earthquakes 2009

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
3.4	7-Dec-09	13:30:02	-42.07	147.67	10	Near Swansea, TAS.
2.1	14-Dec-09	21:35:56	-42.084	145.552	0	Queenstown, TAS.

Victoria

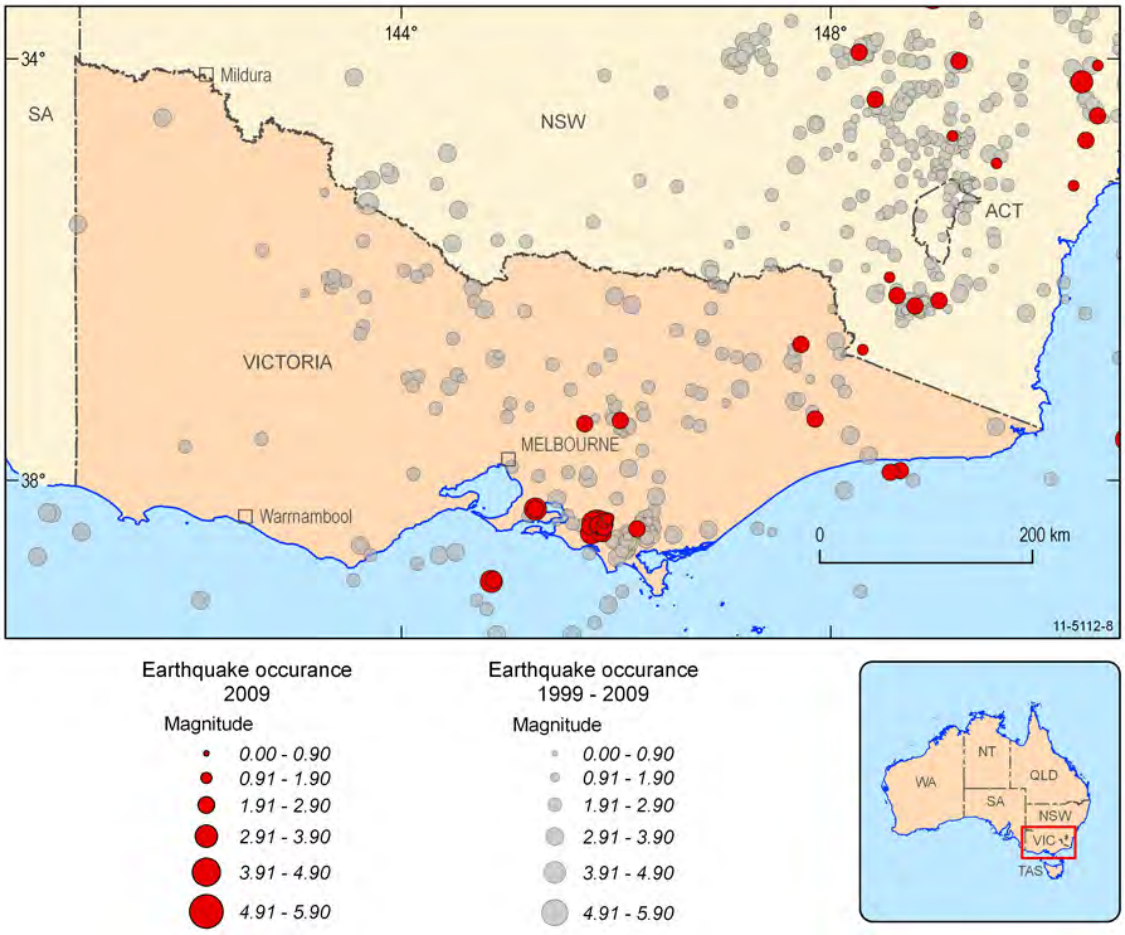

Figure 14: *Map of 2009 Victorian Earthquakes and surrounding region (magnitude sized circles with subdued historical seismicity).*

Table 16: Largest Victorian Earthquakes

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
5.7	02-Jul-1885	16:03:00	-39.000	146.000	0	Cape Liptrap, VIC.
5.7	14-Sep-65	12:53:13	-38.700	144.300	10	Second shock of doublet off Otway Ranges in Bass Strait Victoria.
5.7	3-May-66	19:07:54	-37.100	147.170	24	Mt Hotham, VIC.
5.4	21-Nov-82	11:34:18	-37.205	146.956	17	NW of Dargo, VIC.
5.3	14-Jul-03	10:29:00	-38.430	142.530	0	Warrnambool / Otway Basin, VIC.
5.3	24-Dec-60	16:42:10	-38.880	143.590	0	Cape Otway, VIC.
5.3	20-Jun-69	11:15:28	-38.470	146.300	19	Boolarra, VIC.

Table 17: Victorian Earthquakes 2009

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
3.5	12-Jan-09	8:48:42	-38.442	145.851	4	Near Korumburra, VIC.
2.4	4-Feb-09	14:31:36	-37.405	147.853	10	South of Ensay, VIC.
3.5	5-Feb-09	4:04:58	-38.991	144.838	0	Bass Strait.
2.7	6-Feb-09	8:20:09	-38.977	144.861	0	Bass Strait.
2.2	2-Mar-09	16:40:59	-37.423	146.04	12	Southwest of Jamieson, VIC.
4.6	6-Mar-09	9:55:36	-38.445	145.839	14	North of Korumburra, VIC.
2.9	6-Mar-09	11:49:42	-38.466	145.829	6	Korumburra, VIC.
3.2	6-Mar-09	15:53:12	-38.515	145.771	12	Korumburra, VIC.
3.2	6-Mar-09	23:14:36	-38.443	145.833	12	Korumburra, VIC.
3.3	9-Mar-09	6:39:05	-38.426	145.829	14	Korumburra, VIC.
2.8	13-Mar-09	17:47:09	-38.423	145.892	10	Korumburra, VIC.
4.6	18-Mar-09	5:28:17	-38.425	145.822	15	Korumburra, VIC.
2.7	18-Mar-09	8:57:54	-38.456	145.838	10	Korumburra, VIC.
3.1	18-Mar-09	11:05:58	-38.409	145.857	19	Korumburra, VIC.
2.7	18-Mar-09	19:03:32	-38.443	145.84	16	Korumburra, VIC.
2.5	20-Mar-09	10:46:38	-38.45	145.826	7	Korumburra, VIC.
2.1	27-Mar-09	16:34:33	-38.458	145.887	3	Korumburra, VIC.
2.8	5-Apr-09	3:26:29	-37.451	145.708	1	Northwest of Marysville, VIC.
1.8	16-Apr-09	2:57:43	-38.38	145.92	5	Korumburra, VIC.
2.3	1-May-09	4:30:02	-38.436	145.834	10	Korumburra, VIC.
3	3-May-09	3:04:09	-38.416	145.786	15	Korumburra, VIC.
1.8	4-May-09	4:19:08	-38.369	145.931	9	Korumburra, VIC.
2.5	6-May-09	9:33:07	-38.515	145.847	7	Korumburra, VIC.
1.8	17-May-09	21:57:37	-38.419	145.885	10	Near Korumburra, VIC.
3.4	19-May-09	6:16:00	-38.413	145.87	0	Near Korumburra, VIC.
2.5	28-May-09	13:29:56	-37.921	148.555	5	South of Marlo, VIC.
1.7	29-May-09	18:37:37	-37.14	148.057	10	Omeo, VIC.
3.3	10-Jun-09	0:57:45	-37.604	150.756	46	East of Mallacoota, VIC.
2.8	13-Jun-09	14:36:13	-36.689	147.722	6	North of Omeo, VIC.
2.5	27-Jun-09	5:59:24	-38.41	145.873	10	Korumburra, VIC.
2.8	4-Jul-09	18:24:59	-38.449	145.757	15	West of Korumburra, VIC.

2.4	12-Jul-09	17:46:42	-38.451	145.856	10	Korumburra, VIC.
1.9	13-Jul-09	18:14:26	-38.372	145.853	10	Korumburra, VIC.
2.9	24-Aug-09	8:14:43	-38.522	145.878	0	Korumburra, VIC.
2.3	3-Sep-09	8:13:55	-37.635	147.01	10	Castle Hill, VIC.
2.4	22-Sep-09	8:20:28	-38.28	145.25	0	Pearcedale, VIC.
2.7	22-Sep-09	8:20:32	-38.28	145.25	0	Pearcedale, VIC.
3.1	22-Sep-09	8:20:41	-38.28	145.25	0	Pearcedale, VIC.
2	22-Sep-09	14:13:00	-38.28	145.25	0	Pearcedale, VIC.
1.9	10-Oct-09	9:21:49	-38.476	146.195	10	North of Foster, VIC.
2.7	18-Dec-09	10:05:17	-37.905	148.649	0	Southeast of Orbost, VIC.

Korumburra Earthquake Summary

A magnitude 4.6 earthquake occurred near Korumburra, Victoria (Figure 16), on the 6th of March 2009, and aftershocks were felt widely throughout the south-east of the state. An automatic earthquake solution was determined within seven minutes of the origin time and immediately sent to emergency managers. A reviewed solution was available via the Geoscience Australia (GA) web site within 10 minutes. GA responded to many requests for information from emergency managers, government agencies and the media. Within 3 hours following the main event GA received in excess of 600 reports of the earthquake.

Within three days of the event six temporary stations were deployed in the epicentral region (GA; 4, Environmental Systems and Services (ES&S); 1, Gary Gibson; 1 [Figure 16]). These recorded aftershocks, and a second magnitude 4.6 earthquake on the 18th of March. Felt reports were compiled and used to produce an isoseismal map. Results show that the main shock was felt in a radius of over 200km from the epicentre, well outside the expected felt radius for an event of this magnitude. More than 200 aftershocks have been recorded with 5 having magnitude equal to, or above 3.

Isoseismal Map

Following the first magnitude 4.6 earthquake over 1000 felt reports were submitted via felt report forms on the GA and the ES&S websites. Where possible, a Modified Mercalli Intensity was determined for each report and the distribution of intensities were then contoured to produce an Isoseismal map (Figure 15). It shows the distribution of ground shaking, and illustrates the degree of attenuation of seismic energy with distance from the epicentre. The felt reports demonstrate that the earthquake was felt as far west as Ballarat (~200km from the epicentre) and as far North as Benalla (~208km from the epicentre). This distance is somewhat greater than the average felt radius for an earthquake of this size.

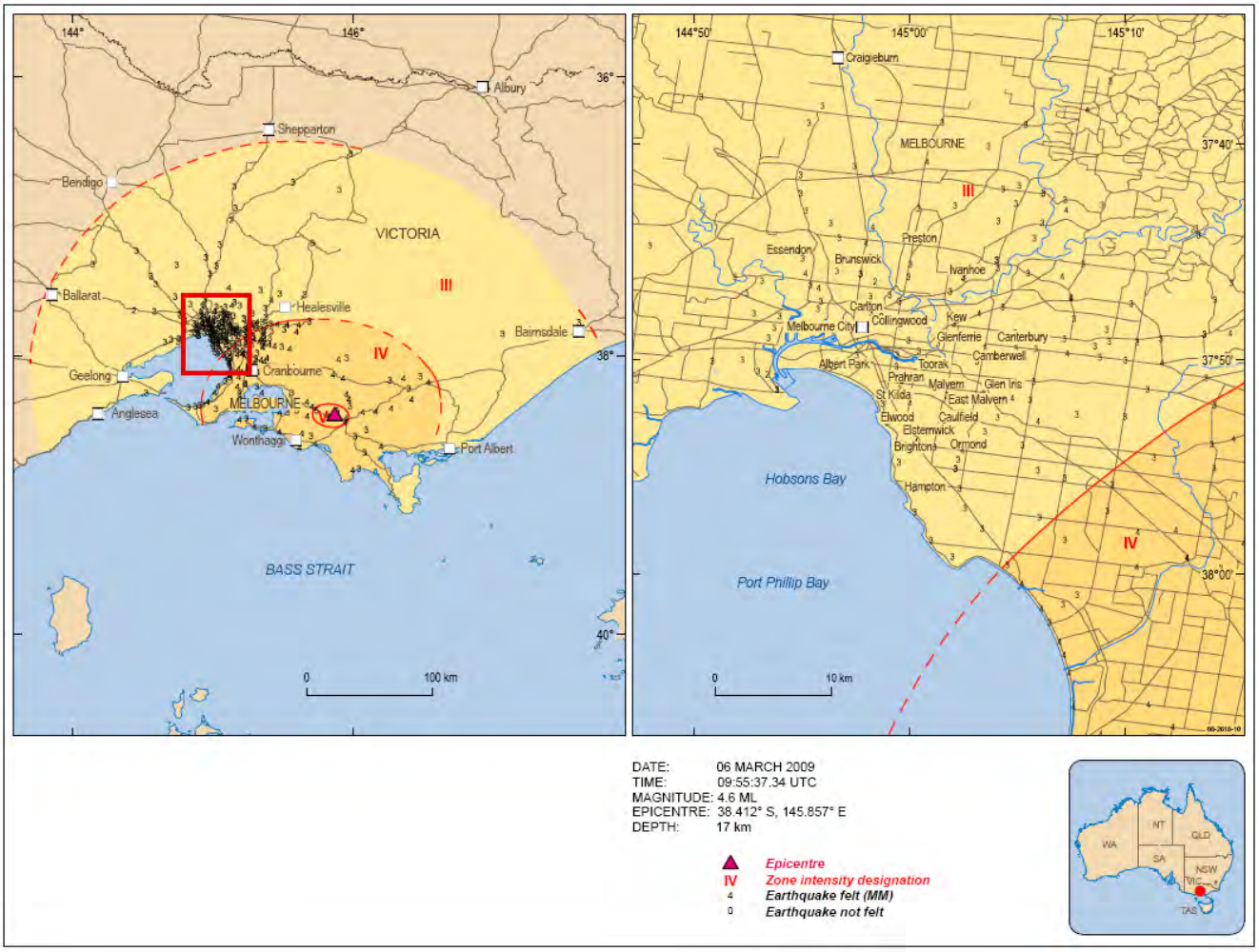

Figure 15: *Isoseismal Map of the magnitude 4.6 2009 Korumburra earthquake (Felt intensity).*

Figure 16: *Location of the Korumburra Mainshock and temporary station locations (Yellow circles are temporary station locations, Red circles indicate epicentres of earthquakes).*

Western Australia

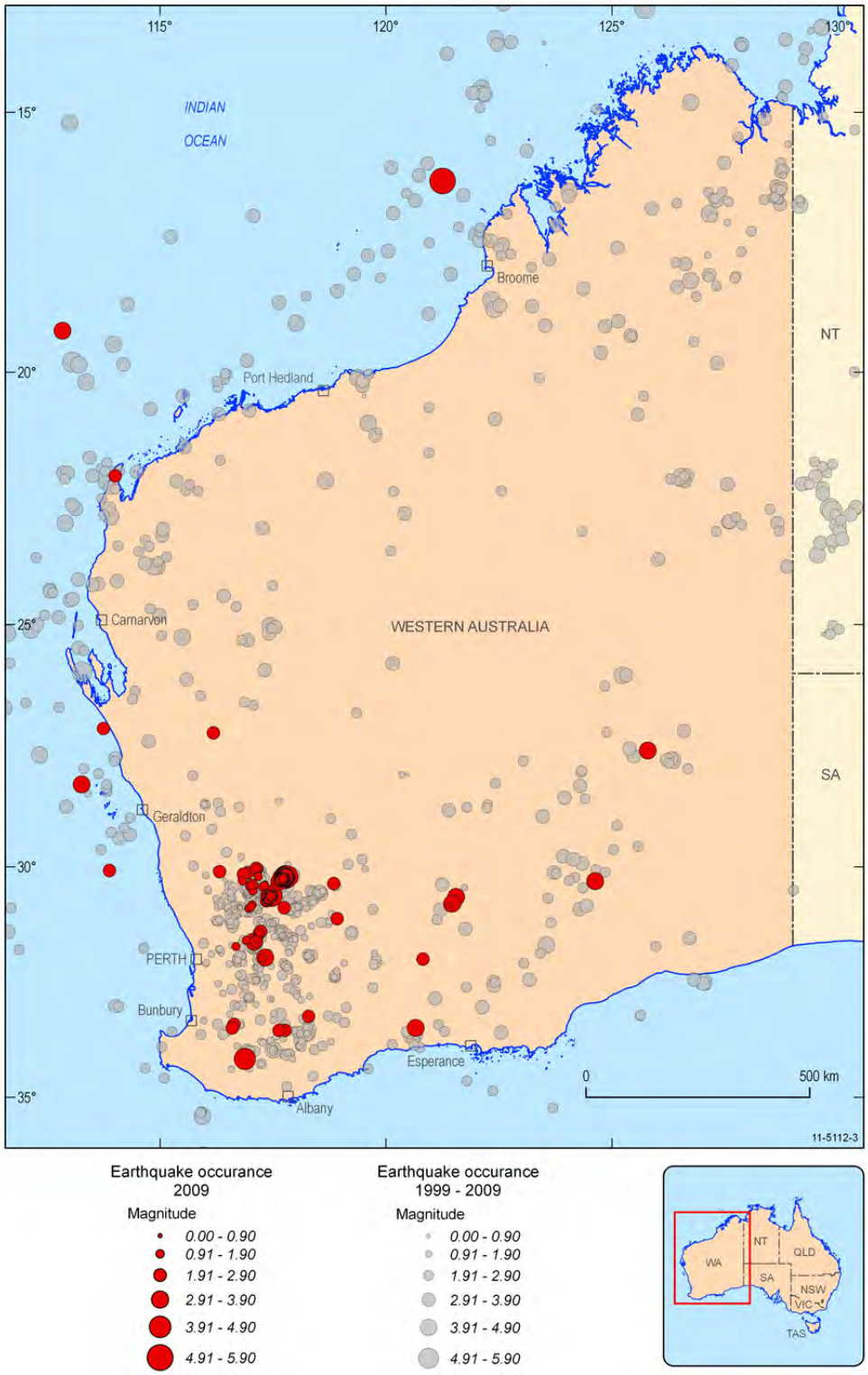

Figure 17: *Map of 2009 Western Australian Earthquakes and surrounding areas (magnitude sized circles with subdued historical seismicity).*

Table 18: Western Australian Largest 9 Earthquakes in 2009

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
5.1	6-Mar-09	1:35:59	-16.314	121.252	0	Northwest of Broome, WA.
4.6	31-Jan-09	8:47:03	-30.23	117.784	2	North of Beacon, WA.
4.5	5-Mar-09	12:53:51	-30.208	117.774	0	North of Beacon, WA.
4.4	31-Jan-09	11:55:21	-30.215	117.798	0	North of Beacon, WA.
4.2	25-Jun-09	15:16:49	-30.619	117.468	0	Southwest of Beacon, WA.
4.1	8-Apr-09	5:31:50	-34.148	116.881	0	Northwest of Rocky Gully, WA.
4.1	30-Jan-09	17:33:11	-30.212	117.774	0	North of Beacon, WA.
4	1-Feb-09	0:42:40	-30.209	117.819	0	North of Beacon, WA.
4	1-Feb-09	21:57:40	-30.214	117.795	0	North of Beacon, WA.

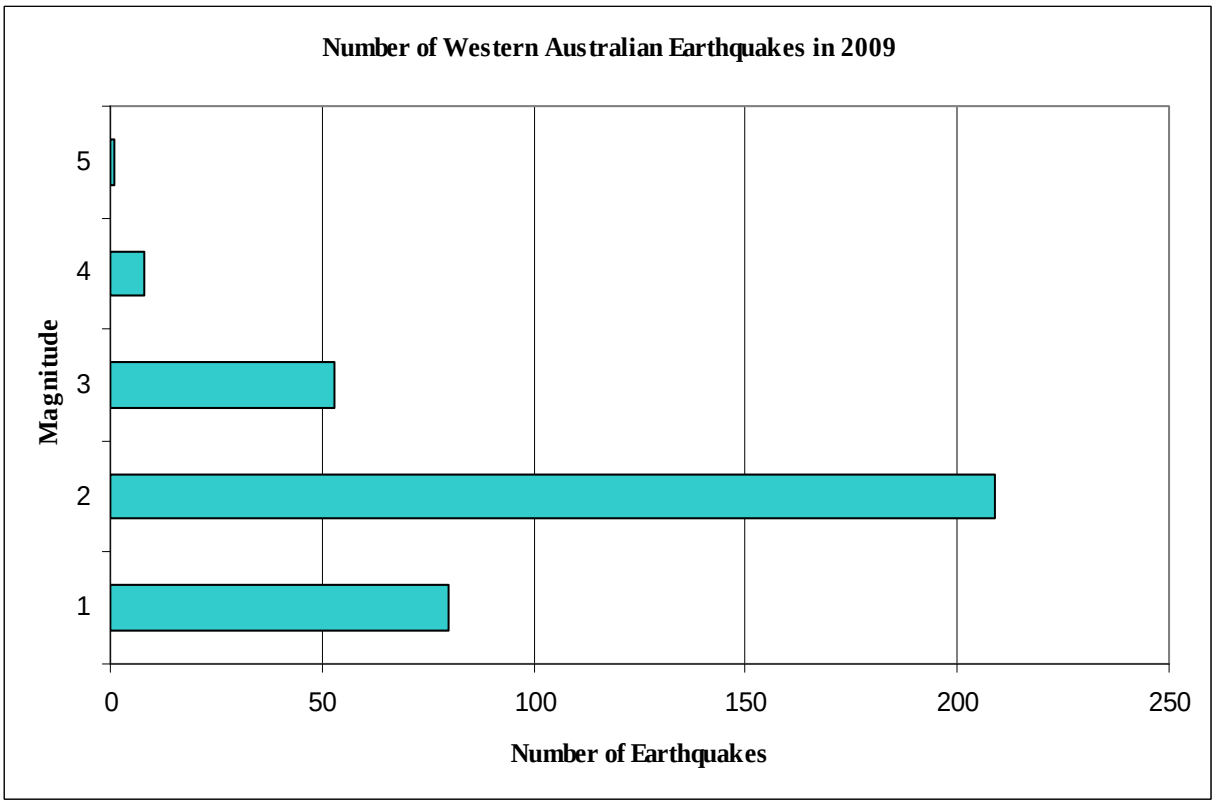

***Figure 17**: Number of Western Australian earthquakes by magnitude 2009*

There were a large number of earthquakes in Western Australia in 2009, predominantly occurring near Beacon in WA. The cause of this earthquake 'swarm' isn't explicitly known, but these many earthquakes result from the release of the internal stresses on the Australian Plate.

Table 19: Largest Western Australian Earthquakes

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
7.3	29-Apr-1941	1:35:39	-26.920	115.800	0	Meeberrie WA.
6.9	14-Oct-1968	2:58:50	-31.620	116.980	10	Meckering WA.
6.7	24-Mar-1970	10:35:17	-22.050	126.610	8	L Mckay WA.
6.6	16-Aug-1929	21:28:23	-16.990	120.660	33	Broome WA.
6.6	23-Apr-1979	5:45:10	-16.660	120.270	26	Broome WA.
6.5	05-Jan-1885	14:25:00	-29.000	114.000	0	ET-Everingham estimated the intensity and epicentre from felt reports at Geraldton, MM6 .
6.3	10-Aug-1997	9:20:31	-16.050	124.423	10	Collier Bay WA Epicentre offshore near Cockatoo Is WA.
6.2	8-Feb-1920	5:24:30	-35.000	111.000	33	Offshore WA.
6.2	6-May-1978	19:52:19	-19.550	126.560	17	L Mckay WA.
6.2	2-Jun-1979	9:47:59	-30.827	117.179	3	Cadoux WA.

Table 20: Western Australian Earthquakes 2009

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
2.1	19-Jan-09	9:33:20	-30.111	116.324	0	Southwest of Buntine, WA.
2.7	30-Jan-09	5:49:59	-30.252	117.81	0	North of Beacon, WA.
3.4	30-Jan-09	5:50:54	-30.293	117.663	0	Northwest of Beacon, WA.
2.7	30-Jan-09	7:27:06	-30.22	117.819	3	North of Beacon, WA.
1.9	30-Jan-09	11:17:06	-30.253	117.743	0	Northwest of Beacon, WA.
2.2	30-Jan-09	11:21:24	-30.246	117.736	0	Northwest of Beacon, WA.
2.1	30-Jan-09	11:23:47	-30.241	117.738	0	Northwest of Beacon, WA.
2.2	30-Jan-09	11:25:51	-30.252	117.728	3	Northwest of Beacon, WA.
2.4	30-Jan-09	12:35:25	-30.274	117.71	5	Northwest of Beacon, WA.
2.1	30-Jan-09	12:42:30	-30.265	117.711	3	Northwest of Beacon, WA.
2.1	30-Jan-09	13:04:34	-30.27	117.71	3	Northwest of Beacon, WA.
2.3	30-Jan-09	13:07:11	-30.267	117.714	3	Northwest of Beacon, WA.
2	30-Jan-09	13:09:58	-30.193	117.795	0	North of Beacon, WA.
2.1	30-Jan-09	13:13:46	-30.27	117.713	3	Northwest of Beacon, WA.
3.8	30-Jan-09	17:25:23	-30.214	117.784	0	North of Beacon, WA.
4.1	30-Jan-09	17:33:11	-30.212	117.774	0	North of Beacon, WA.
3	30-Jan-09	18:05:12	-30.214	117.786	0	Northwest of Beacon, WA.
2.5	30-Jan-09	18:16:40	-30.268	117.714	5	Northwest of Beacon, WA.
3.2	30-Jan-09	18:27:10	-30.248	117.766	5	Northwest of Beacon, WA.
2.3	30-Jan-09	18:32:53	-30.273	117.714	4	Northwest of Beacon, WA.
2.2	30-Jan-09	18:36:14	-30.267	117.682	5	Northwest of Beacon, WA.
1.7	30-Jan-09	18:47:24	-30.278	117.686	5	Northwest of Beacon, WA.
1.9	30-Jan-09	18:55:28	-30.221	117.772	0	North of Beacon, WA.
2.7	30-Jan-09	19:08:07	-30.232	117.749	0	Northwest of Beacon, WA.
2.3	30-Jan-09	19:13:30	-30.272	117.686	7	Northwest of Beacon, WA.
2.9	30-Jan-09	19:21:20	-30.27	117.745	5	Northwest of Beacon, WA.

2.4	30-Jan-09	19:26:41	-30.267	117.725	5	Northwest of Beacon, WA.
2	30-Jan-09	19:34:15	-30.253	117.728	2	Northwest of Beacon, WA.
1.6	30-Jan-09	19:43:11	-30.269	117.701	5	Northwest of Beacon, WA.
2.2	30-Jan-09	20:02:56	-30.237	117.726	0	Northwest of Beacon, WA.
2.4	30-Jan-09	20:07:36	-30.289	117.677	5	Northwest of Beacon, WA.
2.4	30-Jan-09	20:10:36	-30.252	117.732	5	Northwest of Beacon, WA.
2.9	30-Jan-09	20:22:15	-30.244	117.721	0	Northwest of Beacon, WA.
3.3	30-Jan-09	20:31:12	-30.235	117.753	2	Northwest of Beacon, WA.
1.8	30-Jan-09	20:37:59	-30.25	117.727	0	Northwest of Beacon, WA.
2.2	30-Jan-09	20:39:49	-30.244	117.763	2	Northwest of Beacon, WA.
2.4	30-Jan-09	20:43:58	-30.254	117.728	0	Northwest of Beacon, WA.
2.7	30-Jan-09	20:53:28	-30.237	117.753	0	Northwest of Beacon, WA.
2.7	30-Jan-09	21:00:10	-30.222	117.742	1	Northwest of Beacon, WA.
2.6	30-Jan-09	21:05:08	-30.23	117.737	0	Northwest of Beacon, WA.
3.5	30-Jan-09	21:50:22	-30.218	117.759	0	Northwest of Beacon, WA.
3.2	30-Jan-09	22:10:11	-30.234	117.766	0	Northwest of Beacon, WA.
2.7	30-Jan-09	23:02:16	-30.233	117.722	0	Northwest of Beacon, WA.
2.7	30-Jan-09	23:40:58	-30.237	117.739	0	Northwest of Beacon, WA.
2.1	31-Jan-09	0:20:36	-30.256	117.725	2	Northwest of Beacon, WA.
2.4	31-Jan-09	1:16:08	-30.262	117.715	3	Northwest of Beacon, WA.
1.8	31-Jan-09	1:22:37	-30.284	117.717	4	Northwest of Beacon, WA.
2.2	31-Jan-09	1:34:06	-30.271	117.707	3	Northwest of Beacon, WA.
1.8	31-Jan-09	1:50:43	-30.248	117.721	0	Northwest of Beacon, WA.
3.2	31-Jan-09	3:14:02	-30.217	117.755	0	Northwest of Beacon, WA.
3.2	31-Jan-09	4:11:45	-30.22	117.752	0	Northwest of Beacon, WA.
2.8	31-Jan-09	4:19:37	-30.215	117.759	0	Northwest of Beacon, WA.
2.6	31-Jan-09	4:52:00	-30.262	117.715	0	Northwest of Beacon, WA.
2.5	31-Jan-09	5:05:55	-30.259	117.716	2	Northwest of Beacon, WA.
2.6	31-Jan-09	6:13:55	-30.278	117.698	5	Northwest of Beacon, WA.
2.5	31-Jan-09	6:25:51	-30.273	117.692	4	Northwest of Beacon, WA.
2.9	31-Jan-09	6:54:28	-30.251	117.727	1	Northwest of Beacon, WA.
2.3	31-Jan-09	7:33:03	-30.265	117.728	2	Northwest of Beacon, WA.
2.6	31-Jan-09	8:39:12	-30.277	117.699	4	Northwest of Beacon, WA.
4.6	31-Jan-09	8:47:03	-30.23	117.784	2	North of Beacon, WA.
3	31-Jan-09	8:59:15	-30.322	117.637	8	Northwest of Beacon, WA.
3.1	31-Jan-09	9:03:27	-30.243	117.702	3	Northwest of Beacon, WA.
3.1	31-Jan-09	9:51:55	-30.222	117.791	0	North of Beacon, WA.
4.4	31-Jan-09	11:55:21	-30.215	117.798	0	North of Beacon, WA.
2.1	31-Jan-09	12:12:16	-30.257	117.723	4	Northwest of Beacon, WA.
2.2	31-Jan-09	12:27:22	-30.26	117.684	5	Northwest of Beacon, WA.
3.5	31-Jan-09	13:02:44	-30.211	117.752	0	Northwest of Beacon, WA.
2.5	31-Jan-09	13:11:02	-30.283	117.68	5	Northwest of Beacon, WA.
2.3	31-Jan-09	13:31:08	-30.281	117.687	5	Northwest of Beacon, WA.
3.3	31-Jan-09	13:49:41	-30.264	117.726	5	Northwest of Beacon, WA.
2.3	31-Jan-09	13:57:17	-30.211	117.762	0	North of Beacon, WA.
2.7	31-Jan-09	15:07:16	-30.27	117.698	4	Northwest of Beacon, WA.
2.8	31-Jan-09	15:34:34	-30.282	117.689	4	Northwest of Beacon, WA.
2.3	31-Jan-09	15:41:05	-30.263	117.714	1	Northwest of Beacon, WA.
2.3	31-Jan-09	15:54:10	-30.238	117.722	0	Northwest of Beacon, WA.

2.5	31-Jan-09	16:17:01	-30.232	117.725	0	Northwest of Beacon, WA.
3.8	31-Jan-09	16:18:56	-30.202	117.781	0	North of Beacon, WA.
2.5	31-Jan-09	16:24:20	-30.264	117.7	3	Northwest of Beacon, WA.
2.1	31-Jan-09	17:09:12	-30.235	117.746	0	Northwest of Beacon, WA.
2.5	31-Jan-09	17:10:07	-30.266	117.687	5	Northwest of Beacon, WA.
1.9	31-Jan-09	17:54:12	-30.282	117.711	4	Northwest of Beacon, WA.
2.5	31-Jan-09	19:03:55	-30.237	117.73	0	Northwest of Beacon, WA.
2.6	31-Jan-09	20:21:15	-30.281	117.711	3	Northwest of Beacon, WA.
2.9	31-Jan-09	20:25:27	-30.232	117.765	0	Northwest of Beacon, WA.
2.2	31-Jan-09	21:43:56	-30.247	117.723	1	Northwest of Beacon, WA.
2.2	31-Jan-09	21:51:22	-30.217	117.715	5	Northwest of Beacon, WA.
2.9	31-Jan-09	21:56:18	-30.245	117.752	0	Northwest of Beacon, WA.
1.6	31-Jan-09	22:01:03	-30.277	117.685	3	Northwest of Beacon, WA.
1.8	31-Jan-09	22:08:58	-30.267	117.7	3	Northwest of Beacon, WA.
4	1-Feb-09	0:42:40	-30.209	117.819	0	North of Beacon, WA.
2.3	1-Feb-09	3:32:01	-30.266	117.682	5	Northwest of Beacon, WA.
2.8	1-Feb-09	4:05:53	-30.268	117.746	5	Northwest of Beacon, WA.
3.5	1-Feb-09	4:25:17	-30.233	117.767	1	Northwest of Beacon, WA.
2.9	1-Feb-09	5:14:27	-30.217	117.748	0	Northwest of Beacon, WA.
2.9	1-Feb-09	6:15:10	-30.248	117.729	4	Northwest of Beacon, WA.
2.6	1-Feb-09	6:55:40	-30.265	117.715	2	Northwest of Beacon, WA.
1.8	1-Feb-09	7:24:23	-30.271	117.697	5	Northwest of Beacon, WA.
1.6	1-Feb-09	7:42:57	-30.209	117.747	0	Northwest of Beacon, WA.
2.7	1-Feb-09	8:46:39	-30.238	117.737	0	Northwest of Beacon, WA.
2.8	1-Feb-09	17:58:13	-30.232	117.74	0	Northwest of Beacon, WA.
3.7	1-Feb-09	18:59:23	-30.233	117.761	0	Northwest of Beacon, WA.
2.5	1-Feb-09	19:15:11	-30.221	117.741	5	Northwest of Beacon, WA.
3	1-Feb-09	19:22:29	-30.204	117.761	0	North of Beacon, WA.
2.2	1-Feb-09	19:44:25	-30.218	117.742	0	Northwest of Beacon, WA.
2.2	1-Feb-09	19:48:48	-30.266	117.667	5	Northwest of Beacon, WA.
4	1-Feb-09	21:57:40	-30.214	117.795	0	North of Beacon, WA.
3.2	1-Feb-09	23:39:46	-30.256	117.709	2	Northwest of Beacon, WA.
2.3	2-Feb-09	1:05:16	-30.28	117.704	5	Northwest of Beacon, WA.
1.8	2-Feb-09	1:23:01	-30.262	117.706	4	Northwest of Beacon, WA.
1.5	2-Feb-09	2:04:54	-30.281	117.715	5	Northwest of Beacon, WA.
1.7	2-Feb-09	2:06:09	-30.284	117.709	5	Northwest of Beacon, WA.
2.3	2-Feb-09	2:44:25	-30.275	117.728	5	Northwest of Beacon, WA.
2.2	2-Feb-09	5:29:28	-30.232	117.729	3	Northwest of Beacon, WA.
2	2-Feb-09	12:35:38	-30.268	117.731	2	Northwest of Beacon, WA.
1.8	2-Feb-09	12:43:47	-30.251	117.707	2	Northwest of Beacon, WA.
2.5	2-Feb-09	18:24:22	-30.241	117.686	0	Northwest of Beacon, WA.
1.9	3-Feb-09	6:33:59	-30.284	117.685	4	Northwest of Beacon, WA.
2	3-Feb-09	7:26:25	-30.278	117.696	5	Northwest of Beacon, WA.
1.7	3-Feb-09	8:30:52	-30.243	117.736	0	Northwest of Beacon, WA.
2.5	3-Feb-09	8:54:16	-30.267	117.679	4	Northwest of Beacon, WA.
2.8	3-Feb-09	14:24:26	-30.259	117.738	0	Northwest of Beacon, WA.
2.1	3-Feb-09	21:12:23	-30.262	117.699	3	Northwest of Beacon, WA.
3	3-Feb-09	21:42:11	-30.214	117.776	0	North of Beacon, WA.
1.9	4-Feb-09	21:14:23	-30.262	117.722	3	Northwest of Beacon, WA.

2.6	4-Feb-09	23:10:03	-30.261	117.698	5	Northwest of Beacon, WA.
1.8	5-Feb-09	0:53:29	-30.213	117.177	5	North of Kalannie, WA.
1.9	5-Feb-09	8:21:56	-31.7	116.68	11	Northwest of York, WA.
2.3	6-Feb-09	4:22:38	-30.232	117.738	0	Northwest of Beacon, WA.
2.3	6-Feb-09	13:16:38	-30.26	117.735	4	Northwest of Beacon, WA.
2.7	7-Feb-09	8:01:27	-30.24	117.728	0	Northwest of Beacon, WA.
3.3	7-Feb-09	16:48:25	-30.231	117.745	0	Northwest of Beacon, WA.
3.2	7-Feb-09	21:36:59	-30.258	117.696	2	Northwest of Beacon, WA.
2.6	7-Feb-09	22:46:01	-30.284	117.665	4	Northwest of Beacon, WA.
2.9	7-Feb-09	22:57:37	-30.252	117.714	0	Northwest of Beacon, WA.
2.6	8-Feb-09	3:13:08	-30.23	117.754	0	Northwest of Beacon, WA.
2.9	8-Feb-09	10:28:22	-30.288	117.69	5	Northwest of Beacon, WA.
2.4	9-Feb-09	0:57:07	-30.222	117.749	0	Northwest of Beacon, WA.
2.9	9-Feb-09	1:02:06	-30.217	117.759	0	Northwest of Beacon, WA.
2	9-Feb-09	10:35:50	-30.281	117.694	5	Northwest of Beacon, WA.
2.1	9-Feb-09	17:55:04	-30.257	117.718	1	Northwest of Beacon, WA.
2.8	9-Feb-09	18:07:04	-30.219	117.736	2	Northwest of Beacon, WA.
2.1	9-Feb-09	19:15:10	-30.273	117.716	4	Northwest of Beacon, WA.
3.5	10-Feb-09	12:24:01	-30.231	117.759	0	Northwest of Beacon, WA.
2.1	10-Feb-09	18:20:23	-30.243	117.756	0	Northwest of Beacon, WA.
3.1	10-Feb-09	19:13:31	-30.247	117.762	0	Northwest of Beacon, WA.
2.1	10-Feb-09	22:31:33	-30.237	117.705	0	Northwest of Beacon, WA.
2.2	10-Feb-09	22:58:24	-30.267	117.721	4	Northwest of Beacon, WA.
2.2	10-Feb-09	23:03:24	-30.271	117.725	3	Northwest of Beacon, WA.
2.1	10-Feb-09	23:06:54	-30.255	117.732	2	Northwest of Beacon, WA.
2	10-Feb-09	23:24:29	-30.284	117.716	5	Northwest of Beacon, WA.
2.6	11-Feb-09	8:02:38	-33.39	116.64	10	Southwest of Darkan, WA.
3	11-Feb-09	10:41:31	-30.214	117.738	0	Northwest of Beacon, WA.
3.4	11-Feb-09	15:13:46	-30.232	117.778	3	Northwest of Beacon, WA.
2.7	11-Feb-09	15:18:51	-30.269	117.726	3	Northwest of Beacon, WA.
2	11-Feb-09	15:23:41	-30.285	117.758	5	Northwest of Beacon, WA.
2.3	11-Feb-09	15:24:40	-30.274	117.728	4	Northwest of Beacon, WA.
1.8	11-Feb-09	15:37:52	-30.252	117.723	0	Northwest of Beacon, WA.
1.8	11-Feb-09	17:04:47	-30.304	117.666	5	Northwest of Beacon, WA.
3.2	11-Feb-09	23:21:00	-30.277	117.726	4	Northwest of Beacon, WA.
3.1	12-Feb-09	4:58:57	-30.241	117.73	0	Northwest of Beacon, WA.
2.3	12-Feb-09	5:24:38	-30.276	117.715	5	Northwest of Beacon, WA.
2.7	12-Feb-09	6:03:08	-30.253	117.744	2	Northwest of Beacon, WA.
2.2	13-Feb-09	7:34:35	-30.246	117.732	0	Northwest of Beacon, WA.
3.1	13-Feb-09	16:19:26	-30.24	117.735	0	Northwest of Beacon, WA.
3.3	13-Feb-09	17:02:26	-30.215	117.754	0	Northwest of Beacon, WA.
2.9	14-Feb-09	2:59:13	-30.276	117.711	5	Northwest of Beacon, WA.
2.2	14-Feb-09	14:37:16	-30.229	117.741	0	Northwest of Beacon, WA.
2.2	15-Feb-09	3:44:09	-30.266	117.717	4	Northwest of Beacon, WA.
3	15-Feb-09	4:19:58	-30.238	117.738	1	Northwest of Beacon, WA.
2.8	15-Feb-09	4:30:21	-30.263	117.727	3	Northwest of Beacon, WA.
2.7	15-Feb-09	16:28:52	-30.217	117.751	0	Northwest of Beacon, WA.
2.3	15-Feb-09	17:02:07	-30.237	117.742	0	Northwest of Beacon, WA.
2.6	15-Feb-09	17:11:45	-30.249	117.734	0	Northwest of Beacon, WA.

2.9	15-Feb-09	18:59:18	-30.234	117.76	0	Northwest of Beacon, WA.
2.2	15-Feb-09	19:16:12	-30.227	117.773	0	North of Beacon, WA.
2	16-Feb-09	23:01:54	-30.256	117.71	4	Northwest of Beacon, WA.
2.7	16-Feb-09	23:39:57	-30.249	117.699	4	Northwest of Beacon, WA.
2.4	17-Feb-09	1:35:20	-30.238	117.731	0	Northwest of Beacon, WA.
1.9	17-Feb-09	11:16:06	-30.268	117.685	5	Northwest of Beacon, WA.
2.1	18-Feb-09	18:57:50	-30.227	117.749	0	Northwest of Beacon, WA.
3.8	19-Feb-09	22:28:34	-30.233	117.795	2	North of Beacon, WA.
2.2	19-Feb-09	23:02:09	-30.272	117.668	5	Northwest of Beacon, WA.
2	19-Feb-09	23:10:45	-30.271	117.688	3	Northwest of Beacon, WA.
2.5	19-Feb-09	23:28:17	-30.277	117.708	5	Northwest of Beacon, WA.
3.3	20-Feb-09	19:08:05	-30.242	117.77	1	Northwest of Beacon, WA.
2.4	21-Feb-09	12:42:38	-30.251	117.737	1	Northwest of Beacon, WA.
2	21-Feb-09	16:35:47	-30.252	117.722	5	Northwest of Beacon, WA.
2.1	21-Feb-09	17:12:12	-30.223	117.763	0	Northwest of Beacon, WA.
2.4	21-Feb-09	22:40:12	-30.24	117.761	0	Northwest of Beacon, WA.
2.4	22-Feb-09	9:00:24	-30.286	117.711	5	Northwest of Beacon, WA.
2.7	23-Feb-09	1:05:40	-30.254	117.715	5	Northwest of Beacon, WA.
2.9	23-Feb-09	1:06:41	-30.253	117.737	1	Northwest of Beacon, WA.
3	23-Feb-09	8:31:57	-30.243	117.702	0	Northwest of Beacon, WA.
3.5	24-Feb-09	17:03:31	-30.229	117.774	0	North of Beacon, WA.
2.4	25-Feb-09	6:55:47	-30.239	117.74	0	Northwest of Beacon, WA.
2.5	25-Feb-09	8:36:22	-30.281	117.709	5	Northwest of Beacon, WA.
3	25-Feb-09	15:14:06	-30.241	117.751	1	Northwest of Beacon, WA.
2.8	25-Feb-09	22:49:41	-30.273	117.71	5	Northwest of Beacon, WA.
1.5	27-Feb-09	9:14:09	-30.257	117.738	1	Northwest of Beacon, WA.
1.8	27-Feb-09	21:34:35	-30.242	117.714	3	Northwest of Beacon, WA.
2.3	27-Feb-09	23:28:44	-30.258	117.708	5	Northwest of Beacon, WA.
2.9	28-Feb-09	1:49:13	-30.213	117.779	0	North of Beacon, WA.
2.1	28-Feb-09	14:42:26	-30.256	117.716	4	Northwest of Beacon, WA.
2.1	28-Feb-09	15:55:02	-30.224	117.749	3	Northwest of Beacon, WA.
2.1	28-Feb-09	22:34:50	-30.246	117.742	1	Northwest of Beacon, WA.
2.3	2-Mar-09	23:20:09	-30.277	117.724	5	Northwest of Beacon, WA.
2.7	3-Mar-09	2:07:04	-30.249	117.737	0	Northwest of Beacon, WA.
2.5	4-Mar-09	15:10:44	-30.233	117.73	0	Northwest of Beacon, WA.
2.1	5-Mar-09	8:43:16	-30.273	117.715	2	Northwest of Beacon, WA.
4.5	5-Mar-09	12:53:51	-30.208	117.774	0	North of Beacon, WA.
3.5	5-Mar-09	13:02:55	-30.209	117.767	0	North of Beacon, WA.
2.3	5-Mar-09	13:15:35	-30.306	117.646	10	Northwest of Beacon, WA.
3	5-Mar-09	13:19:04	-30.214	117.749	0	Northwest of Beacon, WA.
3.8	5-Mar-09	13:31:52	-30.211	117.745	0	Northwest of Beacon, WA.
3.3	5-Mar-09	13:35:29	-30.247	117.68	8	Northwest of Beacon, WA.
2.7	5-Mar-09	14:34:52	-30.227	117.77	1	North of Beacon, WA.
3.2	5-Mar-09	14:48:59	-30.229	117.763	0	Northwest of Beacon, WA.
2.7	5-Mar-09	14:58:49	-30.22	117.722	0	Northwest of Beacon, WA.
2.8	5-Mar-09	15:35:10	-30.227	117.727	2	Northwest of Beacon, WA.
2.3	5-Mar-09	15:38:35	-30.248	117.732	0	Northwest of Beacon, WA.
2.7	5-Mar-09	16:18:29	-30.222	117.732	0	Northwest of Beacon, WA.
2.4	5-Mar-09	17:14:25	-30.234	117.728	2	Northwest of Beacon, WA.

2.3	5-Mar-09	17:19:25	-30.251	117.711	2	Northwest of Beacon, WA.
3.4	5-Mar-09	18:55:16	-30.199	117.769	0	North of Beacon, WA.
2.1	5-Mar-09	19:52:36	-30.265	117.699	3	Northwest of Beacon, WA.
2.3	5-Mar-09	21:03:36	-30.271	117.685	8	Northwest of Beacon, WA.
2.9	5-Mar-09	22:30:15	-30.228	117.727	0	Northwest of Beacon, WA.
5.1	6-Mar-09	1:35:59	-16.314	121.252	0	Northwest of Broome, WA.
2.6	6-Mar-09	4:19:13	-30.205	117.783	0	North of Beacon, WA.
2.5	6-Mar-09	5:27:17	-30.26	117.716	8	Northwest of Beacon, WA.
2.6	6-Mar-09	11:02:52	-30.231	117.756	0	Northwest of Beacon, WA.
2.2	6-Mar-09	23:35:45	-30.268	117.725	9	Northwest of Beacon, WA.
2	7-Mar-09	11:59:24	-30.275	117.739	2	Northwest of Beacon, WA.
1.9	8-Mar-09	10:40:43	-30.038	117.143	7	North of Kalannie, WA.
2.5	8-Mar-09	13:25:26	-30.045	117.143	7	North of Kalannie, WA.
2.8	13-Mar-09	4:08:12	-30.288	117.69	11	Northwest of Beacon, WA.
2.9	13-Mar-09	19:43:43	-30.236	117.749	0	Northwest of Beacon, WA.
2.6	14-Mar-09	10:50:47	-30.241	117.752	0	Northwest of Beacon, WA.
2.4	14-Mar-09	23:49:09	-30.263	117.725	3	Northwest of Beacon, WA.
3	16-Mar-09	7:26:00	-31.597	117.086	1	Northeast of Meckering, WA.
2.4	17-Mar-09	4:20:00	-30.269	117.708	3	Northwest of Beacon, WA.
2.6	17-Mar-09	5:43:37	-30.262	117.709	2	Northwest of Beacon, WA.
2.4	17-Mar-09	9:51:30	-30.249	117.715	0	Northwest of Beacon, WA.
3	17-Mar-09	10:37:28	-30.218	117.771	0	North of Beacon, WA.
2.5	17-Mar-09	12:19:11	-30.241	117.749	1	Northwest of Beacon, WA.
2.1	17-Mar-09	16:22:08	-30.286	117.691	6	Northwest of Beacon, WA.
2.1	17-Mar-09	16:46:17	-30.264	117.718	3	Northwest of Beacon, WA.
3	19-Mar-09	6:09:08	-30.239	117.747	1	Northwest of Beacon, WA.
2	20-Mar-09	19:51:16	-30.277	117.691	5	Northwest of Beacon, WA.
2.6	24-Mar-09	4:43:47	-30.243	117.743	3	Northwest of Beacon, WA.
1.6	24-Mar-09	15:18:58	-30.261	117.71	6	Northwest of Beacon, WA.
1.8	25-Mar-09	23:13:56	-30.282	117.705	8	Northwest of Beacon, WA.
2.2	29-Mar-09	2:50:13	-30.035	117.133	6	North of Kalannie, WA.
2.3	29-Mar-09	10:12:01	-30.26	117.722	1	Northwest of Beacon, WA.
1.9	31-Mar-09	22:52:32	-30.889	116.967	5	West of Manmanning, WA.
1.6	1-Apr-09	0:18:18	-30.301	116.822	10	East of Dalwallinu, WA.
1.5	3-Apr-09	14:02:49	-30.289	117.649	12	Northwest of Beacon, WA.
2.6	3-Apr-09	15:31:39	-31.973	120.822	0	West of Norseman, WA.
1.5	4-Apr-09	17:32:21	-30.308	117.686	7	Northwest of Beacon, WA.
1.7	4-Apr-09	19:17:05	-30.295	117.703	6	Northwest of Beacon, WA.
1.8	5-Apr-09	6:13:55	-30.234	117.799	1	North of Beacon, WA.
1.6	6-Apr-09	14:07:47	-30.284	117.703	5	Northwest of Beacon, WA.
1.9	6-Apr-09	20:23:31	-30.81	117.043	7	Northwest of Manmanning, WA.
3	6-Apr-09	20:50:42	-31.943	117.33	9	Northwest of Quairading, WA.
1.9	7-Apr-09	8:23:01	-30.283	117.704	5	Northwest of Beacon, WA.
1.6	7-Apr-09	8:43:28	-30.248	117.746	1	Northwest of Beacon, WA.
1.7	7-Apr-09	13:11:44	-30.287	117.71	10	Northwest of Beacon, WA.
3.1	7-Apr-09	21:26:33	-30.785	121.461	0	Kalgoorlie, WA.
4.1	8-Apr-09	5:31:50	-34.148	116.881	0	Northwest of Rocky Gully, WA.
1.8	8-Apr-09	7:16:08	-30.232	117.746	0	Northwest of Beacon, WA.
1.6	12-Apr-09	18:48:13	-30.27	117.716	1	Northwest of Beacon, WA.

1.8	12-Apr-09	18:55:44	-30.256	117.741	0	Northwest of Beacon, WA.
3.4	17-Apr-09	23:12:56	-19.197	112.843	59	Northwest of Exmouth, WA.
2.3	18-Apr-09	17:08:20	-30.249	117.76	2	Northwest of Beacon, WA.
1.5	18-Apr-09	18:17:13	-30.226	117.745	0	Northwest of Beacon, WA.
2.1	18-Apr-09	20:20:00	-30.22	117.771	0	North of Beacon, WA.
2.5	21-Apr-09	8:43:45	-30.227	117.754	0	Northwest of Beacon, WA.
1.4	22-Apr-09	20:41:00	-31.952	117.265	2	South of Cunderdin, WA.
3.1	28-Apr-09	19:06:18	-30.644	121.553	3	Northeast of Kalgoorlie, WA.
1.6	6-May-09	21:35:19	-30.257	117.736	0	Northwest of Beacon, WA.
2.8	6-May-09	22:59:38	-30.244	117.761	0	Northwest of Beacon, WA.
3.1	12-May-09	3:55:13	-30.23	117.761	0	Northwest of Beacon, WA.
1.7	12-May-09	8:11:57	-30.279	117.692	6	Northwest of Beacon, WA.
1.5	12-May-09	20:33:14	-30.515	117.057	0	West of Burakin, WA.
1.3	15-May-09	13:05:25	-30.251	117.728	0	Northwest of Beacon, WA.
1.7	18-May-09	17:12:56	-30.235	117.769	0	Northwest of Beacon, WA.
2	18-May-09	17:20:46	-30.24	117.763	2	Northwest of Beacon, WA.
1.9	18-May-09	17:50:40	-30.256	117.738	2	Northwest of Beacon, WA.
1.8	18-May-09	18:09:31	-30.276	117.73	5	Northwest of Beacon, WA.
1.9	18-May-09	18:41:00	-30.251	117.722	2	Northwest of Beacon, WA.
2.1	18-May-09	20:48:00	-30.233	117.764	0	Northwest of Beacon, WA.
2.7	19-May-09	22:06:28	-30.244	117.772	2	Northwest of Beacon, WA.
1.6	20-May-09	22:05:10	-30.856	121.39	0	Southwest of Kalgoorlie, WA.
1.5	24-May-09	11:26:16	-30.402	117.312	4	East of Kalannie, WA.
1.5	24-May-09	11:31:52	-30.855	117.007	3	West of Manmanning, WA.
2.2	26-May-09	5:09:26	-33.47	116.6	0	Southwest of Darkan, WA.
1.6	26-May-09	8:13:03	-30.432	117.266	5	Northeast of Burakin, WA.
1.5	29-May-09	3:59:48	-30.392	117.318	0	East of Kalannie, WA.
2.3	31-May-09	5:47:33	-33.524	117.637	10	Northeast of Katanning, WA.
1.8	5-Jun-09	19:37:44	-30.42	117.322	10	Northeast of Burakin, WA.
3.4	6-Jun-09	18:26:43	-28.278	113.267	0	West of Geraldton, WA.
3.1	21-Jun-09	6:08:44	-30.308	124.631	10	Great Victoria Desert, WA.
2	24-Jun-09	5:58:39	-31.38	117.231	2	Southeast of Dowerin, WA.
4.2	25-Jun-09	15:16:49	-30.619	117.468	0	Southwest of Beacon, WA.
2.6	26-Jun-09	7:26:51	-30.262	117.726	1	Northwest of Beacon, WA.
1.6	4-Jul-09	21:04:24	-30.698	117.379	8	Northwest of Koorda, WA.
1.3	4-Jul-09	23:54:22	-30.652	117.439	2	North of Koorda, WA.
2.2	8-Jul-09	18:02:59	-30.227	117.779	1	North of Beacon, WA.
1.6	10-Jul-09	14:29:49	-30.716	117.363	11	Northwest of Koorda, WA.
2.3	12-Jul-09	0:57:36	-30.085	113.883	10	Southwest of Geraldton, WA.
2	12-Jul-09	1:00:19	-30.248	117.711	0	Northwest of Beacon, WA.
2.8	14-Jul-09	16:40:21	-31.392	117.224	4	North of Cunderdin, WA.
1.6	14-Jul-09	22:48:13	-31.408	117.205	1	North of Cunderdin, WA.
2.4	18-Jul-09	15:14:28	-30.21	117.731	0	Northwest of Beacon, WA.
2	31-Jul-09	19:17:51	-30.876	117.75	10	Southwest of Bencubbin, WA.
1.6	7-Aug-09	15:48:40	-30.233	117.736	1	Northwest of Beacon, WA.
1.2	8-Aug-09	12:57:22	-30.629	117.447	2	North of Koorda, WA.
2.7	9-Aug-09	21:17:31	-30.234	117.734	3	Northwest of Beacon, WA.
2.7	12-Aug-09	16:11:19	-31.583	117.135	3	South of Meckering, WA.
1.2	13-Aug-09	12:39:27	-30.614	117.484	0	North of Koorda, WA.

1.5	14-Aug-09	12:26:30	-30.668	117.418	7	North of Koorda, WA.
1.8	14-Aug-09	13:56:13	-30.221	117.76	0	Northwest of Beacon, WA.
2	14-Aug-09	16:55:57	-30.256	117.786	6	North of Beacon, WA.
2.5	6-Sep-09	0:35:47	-33.521	117.769	1	South of Dumbleyung, WA.
2.1	12-Sep-09	13:36:48	-30.159	116.849	10	Dalwallinu, WA.
1.4	17-Sep-09	2:02:35	-30.694	117.403	7	Northwest of Koorda, WA.
1.4	17-Sep-09	14:54:01	-30.609	117.491	0	North of Koorda, WA.
2.4	17-Sep-09	23:10:41	-30.629	117.406	7	Northwest of Koorda, WA.
1.5	17-Sep-09	23:28:05	-30.682	117.411	5	North of Koorda, WA.
2.2	18-Sep-09	16:19:50	-30.636	117.452	0	North of Koorda, WA.
1.4	18-Sep-09	20:32:36	-30.711	117.387	6	Northwest of Koorda, WA.
2	19-Sep-09	19:17:08	-30.676	117.425	5	North of Koorda, WA.
2.3	20-Sep-09	22:08:36	-30.133	116.935	0	Northeast of Dalwallinu, WA.
2.7	25-Sep-09	13:56:05	-31.409	117.2	1	North of Cunderdin, WA.
1.9	3-Oct-09	12:32:51	-31.542	117.158	11	Northeast of Meckering, WA.
1.6	4-Oct-09	0:50:24	-31.567	116.914	10	Northwest of Meckering, WA.
1.8	4-Oct-09	3:15:13	-30.723	117.347	0	Northwest of Koorda, WA.
1.8	5-Oct-09	3:15:13	-30.724	117.347	0	Northwest of Koorda, WA.
1.8	5-Oct-09	3:17:48	-30.731	117.404	11	Northwest of Koorda, WA.
1.9	5-Oct-09	10:45:35	-30.722	117.355	10	East of Cadoux, WA.
2.3	5-Oct-09	11:15:31	-30.625	117.471	0	North of Koorda, WA.
1.7	5-Oct-09	18:32:33	-30.75	117.342	17	Northwest of Koorda, WA.
3.3	24-Oct-09	16:26:41	-33.468	120.659	10	Northeast of Ravensthorpe, WA.
2.2	30-Oct-09	14:36:03	-31.108	118.92	13	East of Westonia, WA.
2.3	1-Nov-09	22:50:07	-30.668	117.399	10	Northwest of Koorda, WA.
3.4	3-Nov-09	6:54:14	-27.579	125.792	9	South of Warburton, WA.
2.1	6-Nov-09	22:49:28	-30.358	118.844	10	Northeast of Bonnie Rock, WA.
2.3	14-Nov-09	21:24:13	-33.213	118.291	16	Southwest of Lake Grace WA.
1.3	20-Nov-09	20:00:37	-30.396	117.021	0	Southwest of Kalannie, WA.
2	22-Nov-09	12:05:44	-27.216	116.185	10	Southeast of Meeberrie, WA.
2.1	1-Dec-09	3:33:06	-30.401	117.036	0	Southwest of Kalannie, WA.
2.9	5-Dec-09	15:40:36	-22.036	114.013	21	Southwest of Exmouth, WA.
2.4	12-Dec-09	12:16:01	-27.127	113.752	10	Northwest of Kalbarri, WA.
2	19-Dec-09	19:11:39	-30.246	117.718	0	Northwest of Beacon, WA.
1.8	20-Dec-09	22:35:26	-30.316	117.629	5	Northwest of Beacon, WA.

Australian Region

Geoscience Australia detects and locates earthquakes of magnitude 5 or higher in the Australian region, which emcompasses an area of Latitude 10° to -65° and Longitude 90° to -170°. As shown in Figure 18 below, these large earthquakes predominantly occur along plate margins in the region.

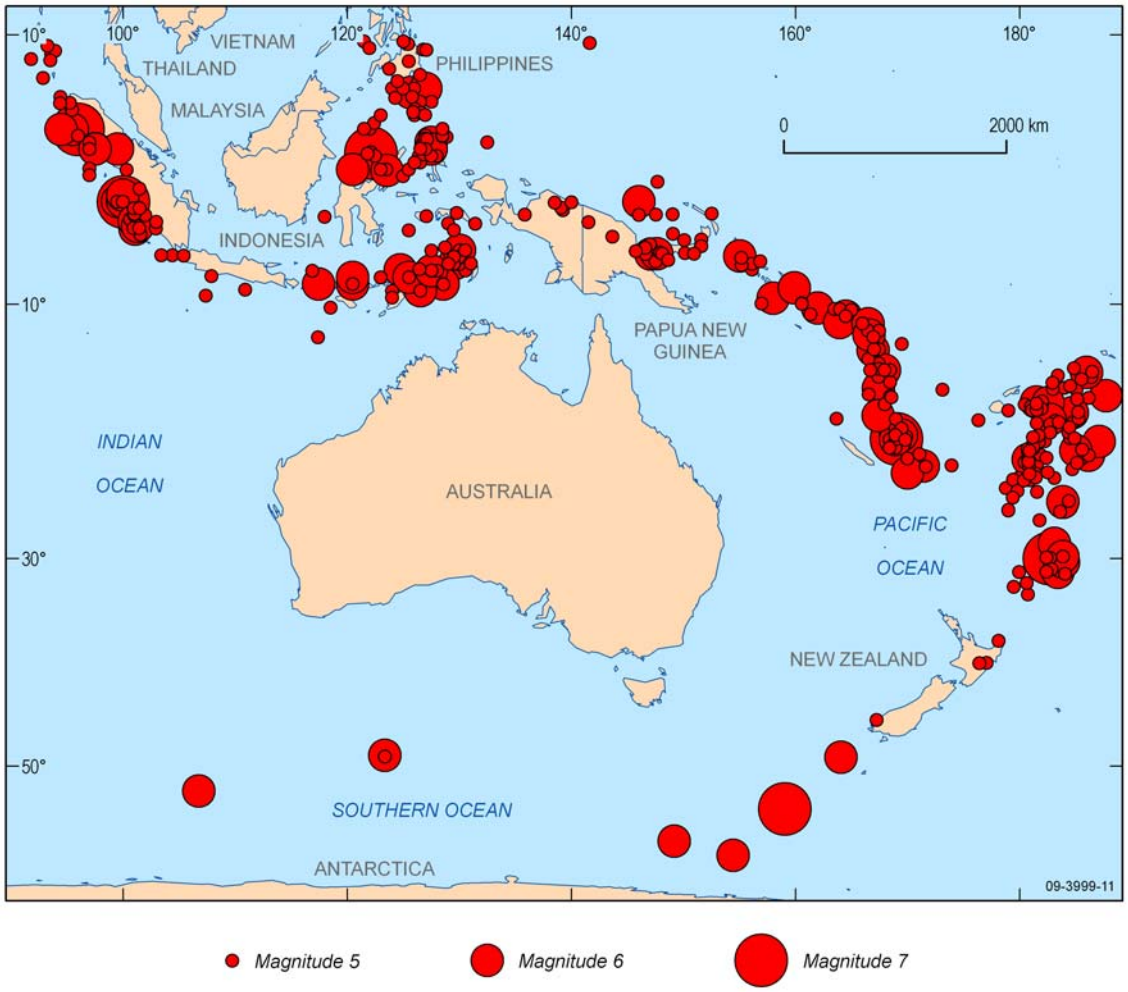

Figure 18: *Map of all Magnitude 5+ earthquakes that occurred in the Australian Region in 2009.*

Table 21: Largest 10 earthquakes that occurred in the Australian Region in 2009

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
8.1	29-Sep-09	17:48:10	-15.702	-171.91	5	Samoa Islands Region.
7.9	15-Jul-09	9:22:28	-45.96	166.47	10	Off West Coast of South Island, New Zealand.
7.9	7-Oct-09	22:03:15	-13.169	166.234	24	Vanuatu Islands Region.
7.7	3-Jan-09	19:43:49	-0.51	132.86	0	West Irian Region, New Guinea.
7.6	19-Mar-09	18:17:34	-22.96	-174.33	28	Tonga Islands Region.
7.5	30-Sep-09	10:16:09	-0.854	99.919	67	Southern Sumatra, Indonesia.
7.4	7-Oct-09	22:18:26	-12.353	166.319	35	Vanuatu Islands Region.
7.3	3-Jan-09	22:33:42	-0.695	133.279	35	Near North Coast of Papua, Indonesia.
7.2	11-Feb-09	17:34:54	3.768	126.704	55	Talaud Islands, Borneo-Celebes.
7.2	18-Feb-09	21:53:50	-27.45	-176.37	63	Kermadec Islands Region.

Table 22: Australian Region Earthquakes (Magnitude 5+) 2009

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
5.3	1-Jan-09	10:35:35	1.34	121.85	56	Minahassa Peninsula, Borneo-Celebes.
5.5	1-Jan-09	16:57:53	-4.39	101.02	33	Southern Sumatra, Sunda Arc.
5.2	1-Jan-09	18:37:19	-4.42	100.98	1	Southwest of Sumatra, Sunda Arc.
5.1	2-Jan-09	10:54:52	-6.66	128.36	2	Banda Sea, Sunda Arc.
5.5	3-Jan-09	8:22:55	-24.85	-175.27	9	South of Tonga Islands.
5.5	3-Jan-09	16:30:45	-7.57	128.34	102	Banda Sea, Sunda Arc.
5.5	3-Jan-09	16:49:27	-12.42	166.78	124	Santa Cruz Islands, New Hebrides Islands.
7.7	3-Jan-09	19:43:49	-0.51	132.86	0	West Irian Region, New Guinea.
7.3	3-Jan-09	22:33:42	-0.695	133.279	35	Near North Coast of Papua, Indonesia.
6.1	4-Jan-09	7:14:02	-0.49	132.5	35	West Irian Region, New Guinea.
5.1	4-Jan-09	7:33:00	-0.819	133.615	35	Near North Coast of Papua, Indonesia.
5	4-Jan-09	11:49:49	-0.659	133.827	35	Near North Coast of Papua, Indonesia.
5.3	4-Jan-09	20:22:57	6.306	94.133	67	Nicobar Islands, India Region.
5.2	5-Jan-09	15:28:17	-0.79	133.68	0	Near North Coast of Papua, Indonesia.
5.3	5-Jan-09	16:54:47	-3.19	101.04	43	Southern Sumatra, Sunda Arc.
5.5	5-Jan-09	19:24:03	-0.98	133.5	30	Near North Coast of Papua, Indonesia.
5.2	5-Jan-09	22:27:08	-27.402	-175.87	46	Kermadec Islands Region.
5.6	6-Jan-09	19:56:33	-1.211	132.834	40	Papua, Indonesia.
6	6-Jan-09	22:48:27	-0.692	133.543	14	Near North Coast of Papua,

						Indonesia.
5.5	7-Jan-09	3:43:10	1.714	127.293	123	Halmahera, Indonesia.
5.2	7-Jan-09	4:43:57	-9.487	123.772	46	Timor.
5.3	7-Jan-09	8:40:36	-32.1	-179.38	200	South of Kermadec Islands.
5.5	7-Jan-09	16:25:31	-20.61	-179.33	600	Fiji Islands.
5.5	8-Jan-09	16:18:48	-0.61	133.04	0	West Irian Region, New Guinea.
5.6	8-Jan-09	21:47:04	-4.68	153.08	60	New Ireland Region, Bismarck and Solomon Islands.
5.4	9-Jan-09	3:54:35	-31.8	-171.71	0	Kermadec Islands Region.
5.2	9-Jan-09	6:54:54	-1.41	100.49	60	Southern Sumatera, Sunda Arc.
5.3	9-Jan-09	14:35:16	-0.66	133.85	0	West Irian Region, New Guinea.
5.2	9-Jan-09	17:43:50	-1.13	126.93	26	Molucca Sea, Borneo-Celebes.
5.2	10-Jan-09	2:16:18	-0.99	132.5	25	West Irian Region, New Guinea.
5	10-Jan-09	4:29:54	-21.6	-179.25	600	Fiji Islands Region.
5	10-Jan-09	11:53:02	-34.96	-178.95	107	South of Kermadec Islands.
5	10-Jan-09	21:47:23	-13.99	167.96	50	Vanuatu Islands.
5.2	10-Jan-09	22:17:55	-0.44	132.93	34	West Irian Region, New Guinea.
5.3	11-Jan-09	15:53:00	6.5	127.01	100	Philippine Islands Region.
5.2	11-Jan-09	18:13:00	-0.59	132.89	24	West Irian Region, New Guinea.
5.4	11-Jan-09	18:29:05	-26.62	-175.14	35	South of Tonga Islands.
5	11-Jan-09	19:50:47	-1.656	99.496	50	Southern Sumatra.
5.1	12-Jan-09	20:29:38	-0.52	133.357	33	West Irian Region, New Guinea.
5	13-Jan-09	10:38:09	-22.47	-174.85	0	Tonga Islands Region.
5	13-Jan-09	14:46:35	-0.98	133.5	60	West Irian Region, New Guinea.
5.4	14-Jan-09	4:49:02	-6.52	155.67	200	Solomon Islands.
6.8	15-Jan-09	7:27:20	-22.32	170.5	7	Vanuatu Islands Region.
5.7	15-Jan-09	13:02:32	-22.48	170.67	43	Loyalty Islands Region.
5	15-Jan-09	14:06:05	-0.88	132.98	60	West Irian Region, New Guinea.
5	15-Jan-09	15:44:55	-21.55	-173.38	37	Tonga Islands Region.
5.8	15-Jan-09	16:14:59	-10.26	161.55	102	Solomon Islands.
5.1	15-Jan-09	20:48:41	-0.91	133.02	70	West Irian Region, New Guinea.
5.3	15-Jan-09	23:38:03	-0.49	133	35	West Irian Region, New Guinea.
5.1	15-Jan-09	23:52:39	-0.49	132.5	60	West Irian Region, New Guinea.
5.3	15-Jan-09	23:58:48	-0.48	133.05	36	West Irian Region, New Guinea.
5	16-Jan-09	6:48:01	-15.17	168.08	103	Vanuatu Islands.
5.2	16-Jan-09	14:28:32	-11.22	167.47	88	Santa Cruz Islands, New Hebrides Islands.
5	16-Jan-09	19:11:05	-22.5	171.08	100	Loyalty Islands Region, New Hebrides Islands.
5.4	16-Jan-09	19:55:30	-22.42	170.62	103	Loyalty Islands Region, New Hebrides Islands.
5	18-Jan-09	8:11:38	1.32	126.35	87	Molucca Passage, Borneo-Celebes.
6.4	18-Jan-09	14:11:44	-30.37	-176.65	35	Kermadec Islands, New Zealand.
6.8	19-Jan-09	3:35:18	-22.68	170.88	35	Southeast of the Loyalty Islands.
5.2	19-Jan-09	13:49:19	-4.57	129.35	0	Banda Sea, Sunda Arc.
5.5	19-Jan-09	17:29:00	7.65	127.2	50	Philippine Islands Region.
5.6	19-Jan-09	22:26:53	-22.481	171.272	30	Southeast of the Loyalty Islands.
5	20-Jan-09	9:53:37	-0.9	133.16	66	West Irian Region, New Guinea.

5.5	20-Jan-09	10:46:55	-4.98	130.02	200	Banda Sea, Sunda Arc.
5	21-Jan-09	2:19:13	-22.385	171.833	70	Loyalty Islands Region.
6.2	21-Jan-09	17:08:40	-22.64	171.1	1	Loyalty Islands Region.
5	21-Jan-09	22:22:19	-6.58	131.52	11	Tanimbar Islands Region, Sunda Arc.
5.7	22-Jan-09	3:01:53	-0.5	127.42	107	Halmahera, Borneo - Celebes.
5.1	22-Jan-09	7:20:26	-1	132.66	89	West Irian Region, New Guinea.
6.2	22-Jan-09	13:40:29	-6.15	148.56	55	New Britain Region, Bismarck and Solomon Islands.
6.1	22-Jan-09	20:16:31	-7.56	128.53	100	Banda Sea, Sunda Arc.
5.2	23-Jan-09	1:50:13	-14.49	168.46	60	Vanuatu Islands, New Hebrides Islands.
5.3	23-Jan-09	2:48:10	-6.54	155.17	35	Solomon Islands, Bismarck and Solomon Islands.
5	23-Jan-09	21:27:54	-30.37	-176.65	35	Kermadec Islands Region.
5.1	24-Jan-09	0:36:10	0.03	97.04	0	Northern Sumatra.
6.1	24-Jan-09	1:28:40	-28.35	-175.51	61	Kermadec Islands Region.
5.9	24-Jan-09	9:01:55	-19.5	-178.87	648	Fiji Islands Region.
5.2	24-Jan-09	13:41:08	-0.48	132.99	36	West Irian Region, New Guinea.
5.5	24-Jan-09	13:52:29	-8.59	125.03	19	Timor, Sunda Arc.
5.5	24-Jan-09	22:43:08	5.33	126.37	136	Mindanao, Philippine Islands.
5.2	25-Jan-09	9:15:33	-29.941	-176.56	37	Kermadec Islands Region.
5	25-Jan-09	19:13:52	-7.088	130.324	85	Banda Sea.
5.8	26-Jan-09	11:54:41	-17.845	-178.39	603	Fiji Islands Region.
5.1	26-Jan-09	22:30:31	0	124	100	Minahssa Peninsula, Indonesia.
5.5	27-Jan-09	0:57:34	-11.57	117.51	7	South of Sumbawa Island, Sunda Arc.
5.7	27-Jan-09	6:29:13	-17.85	-178	677	Fiji Islands Region.
5.8	28-Jan-09	0:01:06	-0.43	97.54	0	Northern Sumatra, Andaman Islands.
5.6	28-Jan-09	1:24:38	-3.07	136.55	60	West Irian Region, New Guinea.
5.8	28-Jan-09	7:53:31	-9.11	124.23	2	Timor, Sunda Arc.
5.2	28-Jan-09	10:18:29	7.5	127.02	100	Philippine Islands Region.
5.7	28-Jan-09	12:39:40	-16.87	-171.76	0	Samoa Islands Region.
5.4	29-Jan-09	4:45:05	-9.33	124.19	55	Timor, Sunda Arc.
5.2	29-Jan-09	11:22:51	-7.16	125.6	467	Banda Sea.
5	30-Jan-09	16:49:52	-8.41	120.03	34	Flores Island Region, Sunda Arc.
5.4	31-Jan-09	3:18:11	-1.07	133.05	83	West Irian Region, New Guinea.
5.7	31-Jan-09	4:33:45	-60.93	154.02	15	West of Macquarie Island.
5.4	1-Feb-09	1:50:17	4.719	127.713	118	Talaud Islands, Indonesia.
5.3	2-Feb-09	14:43:57	-21.35	-179.44	576	Fiji Islands Region.
5	2-Feb-09	18:12:44	5.14	125.3	123	Mindanao, Philippine Islands.
5.1	3-Feb-09	0:06:42	-18.5	170	10	Vanuatu Islands.
5.1	3-Feb-09	13:57:21	-6.46	130.13	96	Banda Sea.
5.1	3-Feb-09	15:06:02	-24.58	-179.06	585	South of Fiji Islands.
5.5	3-Feb-09	16:55:40	-5.95	128.9	280	Banda Sea.
5	6-Feb-09	4:55:50	-7.45	119.98	570	Flores Sea, Sunda Arc.
5.2	6-Feb-09	9:59:43	-6.91	123.23	635	Banda Sea, Sunda Arc.
5.4	7-Feb-09	21:51:57	-20.49	-177.92	575	Fiji Islands.

5.6	8-Feb-09	15:34:40	-6.33	147.81	63	Eastern Papua New Guinea.
5.4	9-Feb-09	10:47:59	0.91	123.38	96	Minahassa Peninsula, Borneo-Celebes.
5	10-Feb-09	13:40:21	-18.09	-178.99	100	Fiji Islands Region.
5	10-Feb-09	19:40:05	-5.83	162.63	10	North of Solomon Islands.
5.2	10-Feb-09	20:38:38	-0.69	133.35	0	West Irian Region, New Guinea.
5	10-Feb-09	22:33:09	2	121.5	60	Celebes Sea, Borneo-Celebes.
5.4	11-Feb-09	1:50:10	-0.49	133.5	30	West Irian Region, New Guinea.
5	11-Feb-09	4:36:32	-5.78	146.5	200	East Papua New Guinea Region.
5.8	11-Feb-09	9:31:06	-19.94	-177.25	25	Fiji Islands Region.
5.6	11-Feb-09	10:01:59	3.85	126.81	80	Talaud Islands, Indonesia.
5.4	11-Feb-09	13:52:47	-16	178.38	36	Fiji Islands.
5	11-Feb-09	16:02:04	-5.66	152.11	35	New Britain Region, Bismarck and Solomon Islands.
7.2	11-Feb-09	17:34:54	3.768	126.704	55	Talaud Islands, Borneo-Celebes.
5.4	11-Feb-09	17:47:22	3.79	126.77	59	Talaud Islands, Borneo-Celebes.
5.6	11-Feb-09	17:49:23	4	127	100	Talaud Islands, Borneo-Celebes.
5.4	11-Feb-09	17:53:57	3.79	126.63	99	Talaud Islands, Borneo-Celebes.
5.3	11-Feb-09	18:22:06	3.92	126.9	58	Talaud Islands, Indonesia.
5.8	11-Feb-09	18:25:13	3.94	126.91	58	Talaud Islands, Indonesia.
5.3	11-Feb-09	18:47:28	3.62	126.52	43	Talaud Islands, Indonesia.
5.2	11-Feb-09	18:54:08	3.89	126.85	89	Talaud Islands, Indonesia.
5.9	11-Feb-09	22:14:30	3.6	127	64	Talaud Islands, Indonesia.
5.2	11-Feb-09	23:43:32	-5.55	151.7	29	New Britain Region.
5.5	12-Feb-09	0:03:00	3.97	126.658	35	Talaud Islands, Indonesia.
5.8	12-Feb-09	1:25:28	4.07	126.8	35	Talaud Islands, Indonesia.
5.4	12-Feb-09	1:42:09	4.04	126.75	35	Talaud Islands, Indonesia.
5.9	12-Feb-09	3:49:44	3.9	126.8	81	Talaud Islands, Indonesia.
5.3	12-Feb-09	4:27:11	4	127	100	Talaud Islands, Indonesia.
5.5	12-Feb-09	7:38:06	3.5	127	15	Talaud Islands, Indonesia.
5.8	12-Feb-09	8:30:17	3.82	126.9	26	Talaud Islands, Indonesia.
6.3	12-Feb-09	13:15:10	3.96	126.77	59	Talaud Islands, Indonesia.
5.6	12-Feb-09	17:46:06	3.95	126.75	51	Talaud Islands, Indonesia.
5.9	12-Feb-09	18:54:25	-31.11	-177.42	20	Kermadec Islands.
5.5	12-Feb-09	20:25:02	-8.38	121.33	192	Off Flores Island, Indonesia.
5.5	13-Feb-09	12:37:53	3.68	126.92	59	Talaud Islands, Indonesia.
5.4	13-Feb-09	14:38:33	4	127	60	Talaud Islands, Indonesia.
5.6	13-Feb-09	21:26:40	3.5	126.5	60	Talaud Islands, Indonesia.
5.7	14-Feb-09	2:06:52	-21.5	170.54	100	Loyalty Islands Region.
5.5	14-Feb-09	5:30:16	3.94	126.84	85	Talaud Islands, Borneo-Celebes.
5.7	14-Feb-09	6:00:19	-17.25	-177.77	587	Fiji Islands Region.
5.8	14-Feb-09	20:29:19	-5.67	151.61	100	New Britain Region, Bismarck and Solomon Islands.
5.3	15-Feb-09	21:10:10	-21.48	172.68	60	Loyalty Islands Region, New Hebrides Islands.
5	15-Feb-09	21:14:16	-33.04	-178.67	200	South of Kermadec Islands, Kermadec-Tonga-Samoa Area.
5.2	16-Feb-09	3:35:00	-7.5	125.01	600	Banda Sea.
5.3	16-Feb-09	5:04:31	4	127	60	Talaud Islands, Borneo-Celebes.

5.2	16-Feb-09	5:54:38	-7.01	155.19	100	Solomon Islands.
5.2	16-Feb-09	5:59:19	-6.77	155.18	0	Solomon Islands.
5.2	16-Feb-09	6:50:56	-1.5	127.5	15	Halmahera, Borneo-Celebes.
5.3	16-Feb-09	14:14:00	3.46	127.13	85	Talaud Islands, Indonesia.
5.1	16-Feb-09	17:13:16	4.03	126.94	66	Talaud Islands, Indonesia.
6.4	17-Feb-09	3:30:49	-30.96	-177.74	5	Kermadec Islands, Kermadec-Tonga-Samoa Area.
5.3	17-Feb-09	6:16:33	-7.79	127.84	103	Banda Sea.
5.1	17-Feb-09	7:01:56	2	128	100	Halmahera, Borneo-Celebes.
5.2	17-Feb-09	8:23:53	3.56	126.77	64	Talaud Islands, Borneo-Celebes.
5.2	17-Feb-09	15:16:58	3.82	126.84	20	Talaud Islands, Borneo-Celebes.
5.3	17-Feb-09	19:21:31	-18.79	168.96	104	Vanuatu Islands, New Hebrides Islands.
5.5	18-Feb-09	3:30:35	-61.7	154.17	15	Balleny Islands Region, Macquarie Loop.
5.4	18-Feb-09	11:44:18	3.78	126.89	70	Talaud Islands, Borneo-Celebes.
7.2	18-Feb-09	21:53:50	-27.45	-176.37	63	Kermadec Islands Region.
5.5	19-Feb-09	9:03:21	-7.439	120.588	582	Flores Sea, Sunda Arc.
5.4	20-Feb-09	1:46:13	-18.09	-178.99	450	Fiji Islands Region.
5.2	21-Feb-09	10:50:28	5.789	126.778	111	Philippine Islands Region.
5.5	21-Feb-09	13:35:34	-0.351	132.794	22	West Irian Region, New Guinea.
5.4	22-Feb-09	3:52:50	3.76	126.88	78	Talaud Islands, Indonesia.
5.5	22-Feb-09	12:15:46	-0.565	133.177	9	West Irian Region, New Guinea.
5.8	22-Feb-09	17:45:26	3.568	126.658	64	Talaud Islands, Indonesia.
5.3	23-Feb-09	4:05:17	3.8	126.75	87	Talaud Islands, Borneo-Celebes.
5.5	23-Feb-09	5:56:31	0.47	98.4	32	Northern Sumatra, Andaman Islands to Sumatra.
5.1	23-Feb-09	12:17:58	-0.93	133.15	66	West Irian Region, New Guinea.
5.2	23-Feb-09	17:34:03	3.67	126.89	65	Talaud Islands, Borneo-Celebes.
5	23-Feb-09	18:07:59	3.66	126.92	76	Talaud Islands, Borneo-Celebes.
5	23-Feb-09	19:49:21	-18.73	-175.1	160	Tonga Islands.
5.2	24-Feb-09	10:35:46	-1.85	120.24	105	Sulawesi, Indonesia.
5.9	24-Feb-09	12:39:45	-22.26	170.61	66	Loyalty Islands Region.
5.6	24-Feb-09	13:13:10	1.56	97.36	61	Northern Sumatra, Indonesia.
5.2	24-Feb-09	18:30:23	-13.16	167.15	305	Vanuatu Islands Region.
5.2	25-Feb-09	7:51:33	9.14	126.61	0	Mindanao, Philippine Islands.
5.4	25-Feb-09	9:19:50	-23.5	170.93	42	Loyalty Islands Region.
5.3	26-Feb-09	16:15:53	3.59	126.85	49	Talaud Islands, Indonesia.
5.6	26-Feb-09	21:09:32	-7.56	127.75	159	Banda Sea.
5.2	27-Feb-09	2:57:44	-11.886	166.259	74	Santa Cruz Islands.
5.2	28-Feb-09	1:43:35	3.635	126.857	69	Talaud Islands, Indonesia.
5	28-Feb-09	20:35:07	-0.49	133	10	West Irian Region, New Guinea.
5	28-Feb-09	21:37:44	3.58	126.9	63	Talaud Islands, Borneo-Celebes.
5.5	1-Mar-09	8:17:30	-27.24	-175.35	35	Kermadec Islands Region.
5.4	1-Mar-09	15:42:17	-21.69	-176.52	202	Fiji Islands Region.
5.2	1-Mar-09	19:11:54	-35.07	-179.02	20	East of North Island, New Zealand.
5.9	2-Mar-09	0:03:40	-1.17	119.91	9	Sulawesi, Borneo-Celebes.
5.1	2-Mar-09	7:56:21	-5.27	153.3	127	New Ireland Region.

5	3-Mar-09	18:08:04	-6.341	147.438	75	East Papua New Guinea.
5.2	4-Mar-09	17:06:17	-13.256	167.733	43	Vanuatu Islands.
5	5-Mar-09	8:07:51	-24.58	-179.81	539	South of Fiji Islands.
5.3	5-Mar-09	8:30:30	-19.16	-177.31	577	Fiji Islands Region.
5.2	5-Mar-09	9:32:59	-5.22	150.59	60	New Britain Region, Bismarck and Solomon Islands.
5.1	5-Mar-09	14:34:43	-30.84	-177.88	17	Kermadec Islands.
5.1	5-Mar-09	18:20:36	-13.09	167.78	58	Vanuatu Islands.
6	5-Mar-09	19:33:16	-17.6	-178.81	563	Fiji Islands Region.
5.1	6-Mar-09	1:35:59	-16.314	121.252	0	Northwest of Broome WA.
5.2	6-Mar-09	11:30:48	-0.75	127.85	209	Halmahera, Borneo-Celebes.
5.2	6-Mar-09	19:19:33	-10.76	162.44	104	Solomon Islands.
5.6	7-Mar-09	16:27:22	-8.5	123.5	193	Flores Island Region, Sunda Arc.
5.2	8-Mar-09	16:27:04	-0.98	133	60	West Irian Region, New Guinea.
5	9-Mar-09	19:42:18	-22.014	-174.23	64	Tonga Islands Region.
5.2	10-Mar-09	1:21:57	-4.966	144.577	83	Papua New Guinea.
5.8	10-Mar-09	17:42:12	-1.94	139.22	10	West Irian Region, New Guinea.
5.1	10-Mar-09	20:22:53	3.51	126.89	98	Talaud Islands, Borneo-Celebes.
5.6	12-Mar-09	15:13:21	-9.83	160.15	15	Solomon Islands.
5.5	13-Mar-09	2:03:13	-7.22	129.38	121	Banda Sea, Sunda Arc.
5	15-Mar-09	12:51:30	-6.25	147.11	60	East Papua New Guinea Region.
5.4	15-Mar-09	18:08:33	-29.94	-177.76	62	Kermadec Islands, Kermadec-Tonga-Samoa area.
6.3	16-Mar-09	14:15:51	3.63	126.89	0	Talaud Islands, Borneo-Celebes.
5.6	16-Mar-09	17:44:57	3.48	126.72	58	Talaud Islands, Borneo-Celebes.
5.5	18-Mar-09	9:03:12	3.556	126.936	52	Talaud Islands, Borneo-Celebes.
5.1	18-Mar-09	16:23:49	-33.24	179.915	235	South of Kermadec Islands.
5.1	18-Mar-09	17:08:48	0.021	123.556	150	Minahassa, Borneo-Celebes.
5.5	19-Mar-09	1:35:10	-2.09	139.01	15	West Irian, New Guinea.
5.3	19-Mar-09	7:03:29	-2	139.1	0	Near North Coast of West Irian, New Guinea.
5	19-Mar-09	8:11:41	-1.95	139.51	5	Near North Coast of West Irian, New Guinea.
5.2	19-Mar-09	14:59:20	-2.44	139.01	100	Near North Coast of West Irian, New Guinea.
7.6	19-Mar-09	18:17:34	-22.96	-174.33	28	Tonga Islands Region.
5.4	19-Mar-09	20:33:52	-23.02	-174.27	0	Tonga Islands Region.
5.2	20-Mar-09	11:23:33	-22.83	-174.41	40	Tonga Islands Region.
5.8	20-Mar-09	12:26:02	-21.38	-179.11	622	Fiji Islands Region.
5	20-Mar-09	14:21:58	-17.49	167.91	200	Vanuatu Islands.
5.2	20-Mar-09	19:16:59	5.83	127.45	77	Philippine Islands Region.
5.1	21-Mar-09	20:28:11	-37.72	176.93	99	North Island, New Zealand.
5.1	22-Mar-09	0:46:04	-0.49	133	25	West Irian Region, New Guinea.
5.1	22-Mar-09	20:01:25	-33.45	-178.36	32	South of Kermadec Islands.
5.2	22-Mar-09	20:17:02	-6.48	130	60	Banda Sea, Sunda Arc.
5	23-Mar-09	1:04:26	-22.31	-175.94	100	Tonga Islands Region.
5.2	23-Mar-09	4:43:25	-22.39	-174.79	0	Tonga Islands Region.
5.2	23-Mar-09	6:14:08	3.49	128.61	5	North of Halmahera, Borneo-Celebes.

5.3	24-Mar-09	4:35:42	5.23	94.27	29	Northern Sumatra, Andaman Islands to Sumatra.
5.8	24-Mar-09	23:28:29	-5.177	152.001	55	New Britain Region.
5.2	25-Mar-09	6:31:36	-17.338	-171.74	32	Tonga Region.
5.2	25-Mar-09	18:27:32	0.66	98.46	65	Northern Sumatra, Indonesia.
5	25-Mar-09	21:45:50	-23.391	-175.21	0	Tonga Region.
5.3	26-Mar-09	10:00:23	-23.13	-174.21	20	Tonga Islands Region.
5.1	26-Mar-09	11:23:09	-1.95	139.01	15	West Irian Region, New Guinea.
5.1	27-Mar-09	10:41:23	-23.92	179.67	560	South of Fiji Islands, Kermadec-Tonga Region.
5	27-Mar-09	20:20:40	-0.6	133.53	0	West Irian Region, New Guinea.
5	27-Mar-09	20:53:26	-7.36	105.89	35	Java, Sunda Arc.
5	28-Mar-09	5:06:57	-23.13	-174.21	60	Tonga Islands Region.
5.9	28-Mar-09	17:59:29	-2.96	139.63	64	Near North Coast of West Irian, New Guinea.
5.6	30-Mar-09	19:33:23	0.35	132.95	46	West Irian Region, New Guinea.
5.2	31-Mar-09	1:20:58	-2.01	139	0	Near North Coast of West Irian, New Guinea.
5	31-Mar-09	2:33:09	-7.08	154.78	111	Solomon Islands.
5.5	31-Mar-09	11:31:25	3.79	126.92	86	Talaud Islands, Borneo-Celebes.
6.3	1-Apr-09	3:54:59	-3.46	143.94	0	Near North Coast of Papua New Guinea.
5.5	1-Apr-09	6:29:38	-6.1	101.7	33	Southwest of Sumatra, Sunda Arc.
5.1	1-Apr-09	14:27:56	-2.62	101.63	69	Southern Sumatra, Sunda Arc.
5.2	2-Apr-09	8:59:49	6.26	127.4	39	Philippine Islands Region.
5.7	3-Apr-09	13:37:54	-8.08	130.33	2	Tanimbar Islands Region, Sunda Arc.
5.4	3-Apr-09	14:37:50	-31.54	-177.59	46	Kermadec Islands Region, Kermadec-Tonga-Samoa area.
6.2	4-Apr-09	5:31:56	5.05	127.26	60	Philippine Islands Region, Philippines.
5.1	4-Apr-09	6:09:32	-0.98	133	60	West Irian Region, New Guinea.
5.3	4-Apr-09	7:19:37	-61.33	154.69	50	Balleny Islands Region.
5.5	4-Apr-09	9:29:49	-3.02	126.55	65	Buru, Borneo.
5.9	4-Apr-09	11:07:05	-22.25	-174.25	0	Tonga Islands Region.
5.2	5-Apr-09	8:14:29	-21.43	-174.7	50	Tonga Islands Region.
5.6	5-Apr-09	19:45:31	-9.49	124.1	32	Timor, Sunda Arc.
5.7	6-Apr-09	12:16:06	-22.22	-174.28	45	Tonga Islands Region.
5.3	7-Apr-09	13:29:52	-7.116	129.384	106	Banda Sea.
5.2	8-Apr-09	11:12:58	-38.76	178.29	5	Off East Coast of North Island, New Zealand.
5.2	8-Apr-09	23:46:45	-6.14	147.09	199	East Papua New Guinea Region.
5.5	9-Apr-09	4:13:07	-21.99	170.27	35	Loyalty Islands Region, New Hebrides Islands.
5	9-Apr-09	7:29:22	-19.98	172.12	0	Vanuatu Islands Region.
5.6	9-Apr-09	8:10:50	6.31	94.4	60	Nicobar Islands Region, Andaman Islands to Sumatra.
5.2	9-Apr-09	8:18:37	-10.08	120.45	25	Sumba Island Region, Sunda Arc.
5.1	9-Apr-09	22:10:31	3.54	126.65	61	Talaud Islands, Borneo-Celebes.
5.4	10-Apr-09	5:40:23	-3.06	127.58	0	Ceram, Borneo-Celebes.
5.1	10-Apr-09	20:00:21	-5.8	145.59	100	East Papua New Guinea.

5.3	10-Apr-09	22:44:54	-7.49	126.52	200	Banda Sea, Sunda Arc.
5.5	11-Apr-09	21:45:22	4.297	125.658	159	Talaud Islands, Borneo-Celebes.
5.4	12-Apr-09	5:20:02	1.84	122	85	Minahassa Peninsula, Borneo-Celebes.
5.2	13-Apr-09	5:30:43	-17.89	-178.54	576	Fiji Islands Region.
5	13-Apr-09	6:45:58	-3.016	139.664	37	Irian Jaya, Indonesia.
5.4	13-Apr-09	13:36:45	-6.84	125.02	544	Banda Sea, Sunda Arc.
5.2	14-Apr-09	7:02:17	6.5	124	35	Mindanao, Philippine Islands.
5.8	14-Apr-09	12:48:57	-30.86	-176.58	60	Kermadec Islands Region, Kermadec-Tonga-Samoa Area.
5.2	14-Apr-09	18:02:48	6.02	125.63	77	Mindanao, Philippine Islands.
5.5	14-Apr-09	23:29:24	-15.89	-176.55	0	Fiji Islands Region, Fiji Islands Area.
5.5	15-Apr-09	17:47:27	-2.91	100.75	5	Southern Sumatra, Sunda Arc.
5.4	15-Apr-09	18:26:31	-5.9	154.13	15	Solomon Islands.
6.3	15-Apr-09	20:01:35	-3.21	100.49	20	Southern Sumatra, Sunda Arc.
6.1	16-Apr-09	0:43:31	-6.57	154.16	100	Solomon Islands.
5.3	16-Apr-09	19:55:32	-3.4	100.3	0	Southern Sumatra, Sunda Arc.
5.3	16-Apr-09	20:51:44	-3.33	100.29	27	Southern Sumatra, Sunda Arc.
5.9	17-Apr-09	4:09:57	-7.47	128.29	106	Banda Sea, Sunda Arc.
5.7	17-Apr-09	15:35:58	-49.6	125.77	23	Western Indian-Antarctic Ridge.
5.8	17-Apr-09	16:12:00	-9.12	159.3	600	Solomon Islands, Bismark and Solomon Islands.
6.2	18-Apr-09	2:03:50	-28.88	-176.84	60	Kermadec Islands, Tonga-Samoa Area.
5.5	18-Apr-09	17:49:41	-20.57	-178.41	578	Fiji Islands Region.
6.4	19-Apr-09	5:23:29	4	127	60	Talaud Islands, Borneo.
5.3	19-Apr-09	6:15:02	3.5	126.2	56	Talaud Islands, Borneo.
5.5	19-Apr-09	11:09:51	2.48	98.49	100	Northern Sumatra.
5.4	19-Apr-09	15:23:48	3.976	126.973	65	Talaud Islands, Borneo - Celebes.
5.4	20-Apr-09	12:21:21	-4.4	129.55	1	Banda Sea, Sunda Arc.
5.8	21-Apr-09	0:53:15	-19.68	170.1	55	Vanuatu Islands, New Hebrides Islands.
5.9	21-Apr-09	5:33:18	-4.3	129.62	0	Banda Sea, Sunda Arc.
5.3	21-Apr-09	16:32:19	-5.98	147.5	50	East Papua New Guinea Region.
5.4	21-Apr-09	21:10:03	-10.88	165.96	59	Santa Cruz Islands, New Hebrides Islands.
5.5	22-Apr-09	1:48:29	-13.66	167.22	216	Vanuatu Islands, New Hebrides Islands.
5.2	22-Apr-09	15:18:15	-17.19	-174.12	167	Tonga Islands, Kermadec Region.
5.3	22-Apr-09	16:48:04	-19.58	-177.58	556	Fiji Islands Region.
5.5	23-Apr-09	12:16:19	4.43	126.95	58	Talaud Islands, Indonesia.
5.2	25-Apr-09	7:11:08	-10.49	119.46	10	Sumba Island Region, Sunda Arc.
6.1	26-Apr-09	0:06:51	-30.11	-178.26	113	Kermadec Islands.
5.4	26-Apr-09	18:11:05	-5.58	147.43	203	East Papua New Guinea.
5.9	1-May-09	6:03:09	-10.82	162.46	60	Solomon Islands.
5	2-May-09	10:55:39	3.73	126.84	71	Talaud Islands, Borneo - Celebes.
5.2	2-May-09	14:58:28	-24.85	-176.71	107	South of Fiji Islands.
5	3-May-09	14:01:10	-30.87	-177.96	50	Kermadec Islands.
5.4	4-May-09	0:33:46	-3.62	135	0	West Irian Region, New Guinea.

5.2	4-May-09	15:50:46	-10	120.98	15	Sumba Island Region, Sunda Arc.
5.2	4-May-09	17:59:52	5.36	94.43	60	Northern Sumatra.
5.7	5-May-09	22:26:08	-4.81	151.91	116	New Britain Region, Bismarck and Solomon Islands.
5.8	7-May-09	2:07:37	-17.55	-178.5	600	Fiji Islands Region.
5.4	7-May-09	7:03:33	-8.39	108.93	39	Tanimbar Islands Region, Sunda Arc.
5.4	8-May-09	13:19:05	3.4	97.84	51	Northern Sumatra, Indonesia.
5.3	10-May-09	8:58:24	-5.32	101.43	0	Southwest of Sumatra, Sunda Arc.
6.1	12-May-09	1:26:27	-5.75	149.57	97	New Britain Region.
5.4	13-May-09	1:15:20	-6.29	155.06	80	Solomon Islands.
5.7	13-May-09	8:54:56	4.41	127.17	55	Talaud Islands, Borneo.
5	13-May-09	21:31:38	-16	-173.94	253	Tonga Islands Region, Kermadec-Tonga-Samoa Area.
5.1	13-May-09	21:58:37	-21.5	170	200	Loyalty Islands Region, New Hebrides Islands.
5.5	14-May-09	9:24:56	-0.34	125.08	71	Molucca Sea, Borneo-Celebes.
5.1	14-May-09	19:58:23	-18.95	-177.34	0	Fiji Islands Region.
6.7	16-May-09	0:53:52	-31.5	-178.28	31	Kermadec Islands Region.
5.7	16-May-09	1:05:08	-9	120.48	600	Sumba Island Region.
5.1	16-May-09	11:59:01	-21.75	-174.65	50	Tonga Islands, Kermadec-Tonga-Samoa Area.
5.1	16-May-09	13:02:39	-31.38	-177.09	37	South of Kermadec Islands, Kermadec-Tonga-Samoa Area.
5.5	17-May-09	6:23:03	-17	-172.8	100	Tonga Islands Region.
5.2	17-May-09	23:23:04	2.41	126.85	56	Molucca Passage.
5.1	18-May-09	10:09:42	-4.34	100.95	15	Southwest of Sumatra, Sunda Arc.
5.1	18-May-09	19:40:44	-3.36	142.48	57	Near North Coast of Papua New Guinea.
5.4	20-May-09	9:40:20	-22.64	-174.27	60	Tonga Islands Region.
5.2	21-May-09	1:52:54	-20.77	-178.98	649	Fiji Islands Area.
5.9	21-May-09	5:53:58	7.82	127.23	52	Philippine Islands Area.
5.1	21-May-09	7:35:25	7.99	127.53	35	Philippine Islands Region.
5	21-May-09	14:49:30	7.49	127.52	60	Philippine Islands Region.
5.2	22-May-09	0:45:02	-15.91	-172.99	94	Samoa Islands Region.
5.3	22-May-09	7:19:10	-20.57	-178.8	50	Fiji Islands Region.
5.6	23-May-09	2:59:27	-24.4	179.37	600	South of Fiji Islands.
5.2	23-May-09	16:06:44	-21.41	-178.93	450	Fiji Islands Region.
5.2	23-May-09	18:04:33	-0.98	133	30	Irian Jaya Region, Indonesia.
5.7	24-May-09	0:58:05	-31.535	-177.45	10	Kermadec Islands Region.
5.3	24-May-09	5:14:33	-7.12	151.17	20	New Britain Region.
5.3	24-May-09	15:48:29	-8.13	159.08	200	Solomon Islands.
5.2	25-May-09	11:42:16	-5.2	148.87	5	New Britain Region, Bismarck and Solomon Islands.
5	26-May-09	1:23:45	-9.45	113.4	35	South of Java, Sunda Arc.
5.2	26-May-09	5:31:22	-6.85	150.48	41	New Britain Region, Bismarck and Solomon Islands.
5.2	27-May-09	2:08:40	-18.89	-172.87	0	Tonga Islands Region.
5.5	27-May-09	3:45:27	-21.4	-172.36	92	Tonga Islands Region, Kermadec-Tonga-Samoa Area.

5.8	29-May-09	0:58:36	-3.983	127.686	22	Ceram, Indonesia.
5.8	29-May-09	0:58:37	-3.994	127.509	35	Ceram, Indonesia.
5.8	29-May-09	6:20:17	-17.143	168.413	17	Vanuatu Islands.
5.8	29-May-09	6:20:21	-17.19	168.555	59	Vanuatu Islands.
5.2	29-May-09	7:47:56	-22.086	-179.39	583	South of Fiji Islands.
5.1	29-May-09	14:48:42	-16.678	-174.4	300	Tonga Islands Region.
5.1	29-May-09	19:12:40	0.65	126.12	109	Molucca Sea.
5.7	29-May-09	19:51:21	5.8	125.96	189	Mindanao, Philippine Islands Region.
5.5	30-May-09	19:56:42	-6.67	150.144	25	New Britain Region, Bismark and Solomon Islands.
5	31-May-09	3:34:31	1.609	125.993	108	Molucca Sea.
5.6	1-Jun-09	5:31:14	-0.141	126.088	50	Molucca Sea, Borneo-Celebes.
6.6	2-Jun-09	2:17:07	-17.485	167.913	25	Vanuatu Islands.
5.6	2-Jun-09	2:26:54	-17.855	167.656	0	Vanuatu Islands.
5.1	2-Jun-09	2:55:35	-18.485	167.899	200	New Caledonia Region.
5	2-Jun-09	16:01:33	-17.485	167.913	0	Vanuatu Islands.
5.8	3-Jun-09	18:54:45	-49.827	120.533	34	South of Australia, Indian Ocean.
5.4	4-Jun-09	1:03:46	-6.263	146.611	60	East Papua New Guinea.
5.5	4-Jun-09	17:10:19	-17.519	166.68	50	Vanuatu Islands, New Hebrides Islands.
6.1	5-Jun-09	21:17:02	-17.424	167.156	82	Vanuatu Islands, Hebrides Islands.
5.2	6-Jun-09	11:17:25	-14.745	168.041	13	Vanuatu Islands.
5.2	7-Jun-09	5:25:24	-9.159	118.419	84	Sumbawa Island Region, Sunda Arc.
5.2	7-Jun-09	5:25:24	-8.581	118.422	122	Sumbawa Island Region, Sunda Arc.
5.3	7-Jun-09	11:32:30	-2.677	141.422	0	Near North Coast of Papua New Guinea.
5.8	7-Jun-09	12:46:30	-22.042	-179.1	612	South of Fiji Islands.
5.2	7-Jun-09	13:36:59	-2.474	141.256	0	Near North Coast of Papua New Guinea.
5.1	7-Jun-09	17:24:59	-14.996	171.028	60	Vanuatu Islands Region.
5.1	8-Jun-09	3:31:45	-22.636	-174.27	35	Tonga Islands Region.
5.2	8-Jun-09	3:31:51	-22.313	-174.45	92	Tonga Islands Region.
5.6	8-Jun-09	4:33:10	-21.702	-178.44	593	South of Fiji Islands.
5.6	8-Jun-09	4:33:17	-22.12	-179.4	588	South of Fiji Islands.
5	8-Jun-09	14:49:36	-20.744	-176.8	288	Fiji Islands Region.
5.1	9-Jun-09	2:24:53	-21.215	-178.97	645	Fiji Islands Region.
5.4	9-Jun-09	5:11:08	-22.91	171.592	32	Loyalty Islands Region.
5.5	10-Jun-09	23:09:08	-16.99	168.44	300	Vanuatu Islands.
5.5	11-Jun-09	3:37:48	-24.007	-176.57	76	South of Fiji Islands.
5.1	11-Jun-09	14:49:00	1.643	96.936	11	Northern Sumatra, Indonesia.
5.2	12-Jun-09	8:47:43	-17.485	167.913	60	Vanuatu Islands.
5.1	12-Jun-09	9:24:46	-17.477	167.391	35	Vanuatu Islands.
6.2	12-Jun-09	9:44:17	-17.521	167.759	15	Vanuatu Islands.
6.2	12-Jun-09	9:44:20	-17.507	167.792	44	Vanuatu Islands.
5.2	12-Jun-09	14:32:50	-17.492	168.434	0	Vanuatu Islands.
5.8	12-Jun-09	20:46:54	-5.336	128.015	318	Banda Sea.

5.7	14-Jun-09	3:36:01	-7.755	117.29	11	Bali Sea, Sunda Arc.
6	14-Jun-09	5:58:46	5.14	126.621	41	Mindanao, Philippine Islands.
5.3	14-Jun-09	8:15:55	5.49	126.9	6	Mindanao, Philippine Islands.
5.6	15-Jun-09	12:05:25	8.892	94.64	250	Nicobar Islands, India Region.
5.3	18-Jun-09	16:38:55	-11.942	113.856	30	South of Java, Sunda Arc.
5	19-Jun-09	4:14:50	7.994	127.526	10	Philippine Islands Region.
5.9	20-Jun-09	9:21:27	-5.074	103.086	65	Southern Sumatra, Sunda Arc.
5	20-Jun-09	11:43:46	2.195	125.892	46	Talaud Islands, Borneo - Celebes.
5.7	22-Jun-09	16:59:44	-19.508	-177.9	650	Fiji Islands Region.
5.1	22-Jun-09	22:05:32	-3.974	146.109	174	Bismark Sea, Papua New Guinea.
5.7	22-Jun-09	22:24:11	-23.788	-179.7	548	South of Fiji Islands.
6.9	23-Jun-09	14:19:19	-5.151	153.601	60	New Ireland Region, Papua New Guinea.
5	24-Jun-09	16:00:27	-7.304	104.511	0	Southwest of Sumatra, Sunda Arc.
5.2	25-Jun-09	6:43:40	-19	170	0	Vanuatu Islands.
5	26-Jun-09	7:42:13	-14.968	166.917	100	Vanuatu Islands.
5.4	26-Jun-09	15:30:15	-15.744	-171.98	25	Samoa Islands Region.
5.6	28-Jun-09	14:19:41	0.637	122.118	105	Minahassa Peninsula, Sulawesi.
5.1	28-Jun-09	17:41:49	-5.421	133.602	10	Aru Islands Region, Indonesia.
5	28-Jun-09	22:17:38	-8.196	105.377	0	South of Java, Sunda Arc.
5.3	29-Jun-09	11:56:28	-21.499	170.537	100	Loyalty Islands Region.
5.1	29-Jun-09	13:00:20	-6.022	151.577	63	New Britain Region.
5.4	30-Jun-09	4:14:46	-32.476	-177.71	1	South of Kermadec Islands, Kermadec-Tonga-Samoa Area.
5	30-Jun-09	7:43:02	-7.977	119.828	195	Banda Sea Region.
5	30-Jun-09	23:52:55	-19.125	-179.12	635	Fiji Islands Region.
5.3	1-Jul-09	18:58:00	0.239	96.931	15	Off West Coast of Northern Sumatra.
5.6	1-Jul-09	21:10:41	1	126	5	Molucca Passage, Borneo-Celebes.
5.2	2-Jul-09	8:51:59	-1.04	100.272	48	Southern Sumatra, Sunda Arc.
5.1	2-Jul-09	11:29:42	4.523	124.616	45	Celebes Sea.
5.1	3-Jul-09	10:26:37	-2.498	102.35	170	Southern Sumatra, Indonesia.
5	3-Jul-09	10:26:38	-2.455	102.404	179	Southern Sumatra, Indonesia.
5.1	3-Jul-09	13:27:05	-3.533	130.975	41	Seram, Indonesia.
5.2	3-Jul-09	14:02:13	-2.387	139.12	25	Near North Coast of Irian Jaya, New Guinea.
5.1	4-Jul-09	7:06:25	-23.186	-174.75	100	Tonga Islands Region.
5	6-Jul-09	11:24:26	-0.988	132.001	60	West Irian Region, New Guinea.
5.4	6-Jul-09	11:36:13	-26.085	-179.28	540	South of Fiji Islands, Kermadec-Tonga-Samoa Area.
5.2	6-Jul-09	16:00:44	2.955	93.484	60	Off the coast of Northern Sumatra.
5.2	7-Jul-09	19:14:11	-5.662	152.115	60	New Britain Region, Papua New Guinea.
5	8-Jul-09	5:58:30	-6.16	147.043	102	Eastern Papaua New Guinea.
5.7	10-Jul-09	3:48:11	-0.002	123.465	298	Minahassa Peninsula, Borneo-Celebes.
5.4	10-Jul-09	20:52:50	4.998	126.507	35	Mindanao, Philippine Islands.
5.4	11-Jul-09	12:35:16	-20.451	-173.94	3	Tonga Islands.
5	11-Jul-09	15:19:42	9.5	121.992	100	Sulu Sea, Philippines.

5.3	12-Jul-09	2:58:23	-4.957	134.033	35	West Irian Region, New Guinea.
5.1	12-Jul-09	15:25:08	-3.818	101.035	31	Southern Sumatra, Indonesia.
5	12-Jul-09	23:01:09	-36.814	178.314	57	Off East Coast of North Island, New Zealand.
5.8	13-Jul-09	10:52:19	-9.391	119.34	45	Sumba Island Region, Indonesia.
5.2	14-Jul-09	18:02:06	-17.354	167.755	61	Vanuatu Islands Region.
7.9	15-Jul-09	9:22:28	-45.96	166.47	10	Off West Coast of South Island, New Zealand.
5.7	15-Jul-09	9:42:00	-45.957	166.468	60	Off West Coast of South Island, New Zealand.
5.5	15-Jul-09	12:55:57	-4.314	149.892	85	New Ireland Region, Papua New Guinea.
5.4	15-Jul-09	13:50:40	-45.458	166.496	0	Off West Coast of South Island, New Zealand.
6.2	15-Jul-09	20:10:43	-3.249	150.921	40	New Ireland Region, Papua New Guinea.
5.2	15-Jul-09	23:41:20	-45.473	167.197	60	South Island, New Zealand.
5.3	16-Jul-09	0:24:08	-46.008	166.021	14	Off West Coast Of South Island, New Zealand.
5.2	16-Jul-09	0:44:46	-46.35	166.306	0	Off West Coast Of South Island, New Zealand.
6	16-Jul-09	17:59:42	-17.485	167.913	35	Vanuatu Islands.
6	16-Jul-09	22:18:24	-46.06	165.973	29	Off West Coast Of South Island, New Zealand.
5.5	16-Jul-09	23:52:04	4.998	126.507	60	Mindanao, Philippine Islands.
5.4	17-Jul-09	0:59:54	-21.645	-174.3	66	Tonga Islands.
5.4	17-Jul-09	3:20:28	-21.976	-174.32	34	Tonga Islands.
5.3	17-Jul-09	4:08:46	-6.503	145.697	121	Papua New Guinea, New Guinea.
5.3	17-Jul-09	7:11:56	2.113	126.984	101	Northern Molucca Sea, Borneo-Celebes.
5.2	17-Jul-09	23:19:00	-18.047	-178.47	600	Fiji Islands Region.
5.1	18-Jul-09	4:22:27	-5.452	145.96	80	Eastern Papua New Guinea Region.
5.1	18-Jul-09	14:00:14	-15.862	-175.13	288	Tonga Islands Region.
5.2	18-Jul-09	15:33:45	-45.548	166.553	0	Off West Coast of South Island, New Zealand.
5	19-Jul-09	5:11:37	-45.458	166.496	10	Off West Coast of South Island, New Zealand.
5.2	19-Jul-09	11:39:46	-8.844	95.366	0	Northwest of Cocos Islands.
5.1	20-Jul-09	3:37:33	-8.986	117.775	0	Sumbawa Island Region, Indonesia.
5.3	20-Jul-09	15:19:49	2.377	126.998	57	Molucca Sea.
5	21-Jul-09	2:09:41	-6.592	153.167	0	New Ireland Region, Bismarck and Solomon Islands.
5.4	21-Jul-09	7:13:28	5.998	126.51	100	Mindanao, Philippines Islands.
5	24-Jul-09	21:45:58	-59.384	149.528	39	West of Macquarie Island.
6.3	25-Jul-09	1:42:27	-6.548	155.048	48	Bougainville Region, Papua New Guinea.
5.1	25-Jul-09	11:16:40	-14.554	167.238	181	Vanuatu Islands.
5.3	25-Jul-09	18:42:00	1.917	97.089	54	Off West Coast of Northern Sumatra.
5.4	25-Jul-09	19:03:20	-29.672	-177.4	17	Kermadec Islands Region.
5.2	26-Jul-09	3:07:49	1.439	124.76	199	Minahassa Peninsula, Sulawesi.
5.5	26-Jul-09	6:06:52	-0.988	132.001	60	Irian Jaya Region, Indonesia.
5.6	26-Jul-09	23:01:38	-17.846	167.991	55	Vanuatu.

5.6	26-Jul-09	23:10:27	-4.741	103.037	58	Southern Sumatra, Sunda Arc.
5.2	27-Jul-09	12:34:20	-5.662	152.115	60	New Britain Region, Bismarck and Solomon Islands.
5	27-Jul-09	13:04:27	-22.996	171.086	60	Loyalty Islands Region, New Hebrides Islands.
5.4	27-Jul-09	15:54:51	-8.749	161.42	93	Solomon Islands.
5.5	28-Jul-09	8:43:43	-5.666	101.595	0	Southwest of Sumatra, Sunda Arc.
5.6	28-Jul-09	13:52:43	-8.938	112.404	35	Java, Sunda Arc.
5.1	29-Jul-09	8:40:37	-6.096	130.44	92	Banda Sea, Sunda Arc.
5.5	29-Jul-09	9:31:06	-5.813	101.412	0	Southwest of Sumatra, Sunda Arc.
5	29-Jul-09	13:07:48	6.997	126.515	100	Mindanao, Philippine Islands Region.
5.3	29-Jul-09	15:40:09	-4.985	129.52	200	Banda Sea, Sunda Arc.
5	29-Jul-09	19:59:45	-46.055	166.262	24	Off West Coast of South Island, New Zealand.
5.1	29-Jul-09	20:42:58	-46.336	165.902	11	Off West Coast of South Island, New Zealand.
5	29-Jul-09	21:33:06	-5.173	152.599	30	New Britain Region, Papua New Guinea.
5.9	30-Jul-09	20:05:36	-21.042	-173.38	35	Tonga Islands Region.
5.2	31-Jul-09	0:05:28	-10.187	118.784	27	Sumba Island Region, Indonesia.
5.4	31-Jul-09	8:07:18	-20.583	-173.9	60	Tonga Islands Region.
5.1	31-Jul-09	14:09:52	-4.934	134.002	0	Irian Jaya Region, Indonesia.
5.2	31-Jul-09	14:56:18	-9.024	108.712	20	South of Java, Indonesia.
5.1	1-Aug-09	3:03:00	-18.675	-174.84	166	Tonga Islands Region.
5.6	1-Aug-09	22:00:50	-9.381	123.096	102	Timor, Sunda Arc.
5.4	2-Aug-09	6:36:29	-4.837	144.562	100	Near North Coast of Papua New Guinea.
6.2	2-Aug-09	8:54:35	-0.487	133	100	West Irian Region, New Guinea.
5.2	3-Aug-09	1:31:05	-8.574	159.226	111	Solomon Islands.
5.3	3-Aug-09	6:18:04	-7.596	128.69	161	Banda Sea, Sunda Arc.
5	4-Aug-09	1:07:04	-24.76	178.263	600	South of Fiji Islands.
6.2	5-Aug-09	8:31:40	-45.456	166.339	0	Off West Coast of South Island, New Zealand.
5.1	5-Aug-09	10:48:17	-5.921	146.988	80	East Papua New Guinea.
5.5	6-Aug-09	0:31:14	-11.489	118.941	100	South of Sumbawa Island, Sunda Arc.
5.1	6-Aug-09	8:13:50	-6.674	130.506	86	Banda Sea, Sunda Arc.
5.5	7-Aug-09	17:34:15	-16.477	-177.54	0	Fiji Islands Region.
5.5	7-Aug-09	20:28:54	-7.938	156.608	35	Solomon Islands.
5.2	8-Aug-09	4:27:22	-8.43	120.054	176	Flores Island Region, Sunda Arc.
5.4	8-Aug-09	21:53:04	-22.704	179.212	600	South of Fiji Islands, Kerdamec.
5.7	9-Aug-09	7:09:03	-4.503	153.135	74	New Ireland Region, Bismarck and Solomon Islands.
6.6	10-Aug-09	4:06:31	-11.742	166.085	19	Santa Cruz Islands Region.
5	10-Aug-09	5:28:24	-11.656	165.896	89	Santa Cruz Islands Region.
5.4	10-Aug-09	14:23:12	-32.692	-178.67	85	South of Kermadec Islands.
5.9	10-Aug-09	17:46:24	-3.255	143.228	0	Near North Coast of Papua New Guinea.
5.1	12-Aug-09	17:22:21	5.498	126.509	100	Mindanao, Philippine Islands.
6.1	12-Aug-09	20:04:26	5.998	126.51	100	Mindanao, Philippine Islands.

5.7	13-Aug-09	11:17:05	-21.8	-174.7	33	Tonga Islands, Kermadec.
5.8	14-Aug-09	8:20:05	-13.881	166.466	63	Vanuatu.
5.1	15-Aug-09	4:04:32	4.411	96.46	35	Northern Sumatra.
5.4	15-Aug-09	12:30:13	0.013	123.551	157	Minahassa, Borneo-Celebes.
5.3	15-Aug-09	16:28:16	4.974	127.673	95	Talaud Islands, Borneo-Celebes.
5.1	15-Aug-09	20:26:05	-6.294	152.16	15	New Britain Region, Bismarck and Solomon Islands.
5.5	15-Aug-09	23:30:17	-19.882	-177.93	586	Fiji Islands Region.
5.3	16-Aug-09	7:26:42	-35.117	-179.63	15	East of North Island, New Zealand.
6.8	16-Aug-09	7:38:23	-1.49	99.56	16	Southern Sumatra, Sunda Arc.
5.1	16-Aug-09	10:21:47	-1.403	99.493	35	Southern Sumatra, Sunda Arc.
5.4	16-Aug-09	10:45:30	-1.403	99.493	25	Southern Sumatra, Sunda Arc.
5.1	16-Aug-09	11:27:08	-1.403	99.493	60	Southern Sumatra, Sunda Arc.
5.8	16-Aug-09	12:48:58	-1.403	99.493	5	Southern Sumatra, Sunda Arc.
5.4	16-Aug-09	17:29:41	4.998	127.008	100	Philippine Islands Region.
5.3	16-Aug-09	18:42:26	-1.694	99.252	24	Southern Sumatra, Sunda Arc.
5.3	16-Aug-09	18:50:16	-1.544	99.386	35	Southern Sumatra, Sunda Arc.
5.1	16-Aug-09	20:15:56	-1.675	99.312	16	Southern Sumatra, Sunda Arc.
5.3	16-Aug-09	21:53:14	-1.614	99.409	18	Southern Sumatra, Sunda Arc.
5.6	16-Aug-09	22:03:09	-17.923	-179.21	625	Fiji Islands Region.
5.1	17-Aug-09	0:33:51	-1.584	99.436	41	Southern Sumatra, Sunda Arc.
5.1	17-Aug-09	13:55:42	-1.403	99.493	35	Southern Sumatra, Sunda Arc.
5.2	17-Aug-09	15:21:06	-6.633	154.84	60	Solomon Islands.
5.5	18-Aug-09	1:31:11	1.933	127.458	99	Halmahera, Indonesia.
5.1	18-Aug-09	9:28:53	-1.792	99.142	0	Southern Sumatra, Sunda Arc.
5.1	18-Aug-09	14:12:38	-16.958	168.529	207	Vanuatu Islands Region.
5.3	18-Aug-09	16:26:47	-1.028	97.956	6	Southern Sumatra, Sunda Arc.
5.7	18-Aug-09	17:50:36	-0.906	97.997	20	Southern Sumatra, Sunda Arc.
5.3	18-Aug-09	17:59:19	-6.552	154.665	100	Bougainville Island Region.
6	18-Aug-09	21:20:51	-26.017	-178.3	300	South of Fiji Islands.
5.4	19-Aug-09	2:55:14	-1.858	99.54	29	Southern Sumatra, Sunda Arc.
5.2	19-Aug-09	5:43:08	4.719	127.511	102	South of Talaud Island, Indonesia.
5.2	19-Aug-09	11:35:20	-1.54	99.39	0	Southern Sumatra, Sunda Arc.
5	19-Aug-09	13:07:29	-15.03	-173.01	100	Tonga Islands Region.
5.3	20-Aug-09	6:50:54	2.362	126.997	49	Molucca Passage, Borneo-Celebes.
5.3	20-Aug-09	12:12:52	3.591	126.768	81	Talaud Islands, Borneo-Celebes.
5.2	20-Aug-09	12:51:48	-1.48	99.515	36	Southern Sumatra, Sunda Arc.
5.3	21-Aug-09	11:15:47	-22.996	171.086	60	Loyalty Islands Region, New Hebrides Islands.
5.1	21-Aug-09	17:24:28	-36.195	179.265	60	Off East Coast of North Island, New Zealand.
5.2	21-Aug-09	18:48:48	-1.514	99.461	35	Southern Sumatra, Sunda Arc.
5.2	22-Aug-09	22:00:29	-7.987	128.036	100	Banda Sea, Sunda Arc.
5.1	23-Aug-09	4:38:26	-6.177	150.628	300	New Britain Region, Bismark and Solomon Islands.
5.5	23-Aug-09	7:20:18	0.255	97.124	36	Northern Sumatra, Indonesia.
5.6	23-Aug-09	11:44:37	2.5	127.502	100	Molucca Passage, Borneo-Celebes.

5.6	23-Aug-09	17:38:26	-1.889	99.488	60	Southern Sumatra, Sunda Arc.
5.5	24-Aug-09	15:20:03	-6.991	129.518	188	Banda Sea.
5.3	25-Aug-09	11:32:16	-15.076	-171.92	5	Samoa Islands Region.
5	26-Aug-09	7:30:42	-15.311	-172.6	54	Samoa Islands Region.
5.2	26-Aug-09	15:12:06	-24.973	178.614	626	South of Fiji Islands.
5.6	26-Aug-09	22:20:56	9.018	123.979	599	Negros, Philippine Islands.
5.4	26-Aug-09	23:27:53	-0.015	123.589	126	Minahassa Peninsula, Borneo-Celebes.
5.1	27-Aug-09	5:05:30	-10.268	161.836	92	Solomon Islands.
5.2	27-Aug-09	10:47:55	0.357	98.446	58	Northern Sumatra, Indonesia.
6.7	28-Aug-09	1:51:20	-7.233	123.467	617	Banda Sea, Sunda Arc.
5	28-Aug-09	16:45:19	5.356	94.432	60	Northern Sumatra, Indonesia.
6.7	30-Aug-09	14:51:34	-15.351	-172.59	0	Samoa Islands Region.
5.3	30-Aug-09	22:03:12	2.007	128.55	88	Halmahera, Indonesia.
5.4	30-Aug-09	22:04:39	2.07	128.54	101	Halmahera, Indonesia.
5.1	1-Sep-09	17:33:42	-19.756	-177.75	596	Fiji Islands.
5.3	1-Sep-09	23:47:49	-1.403	99.493	60	Southern Sumatra, Indonesia.
7.1	2-Sep-09	7:55:02	-8.045	107.279	60	Java, Indonesia.
6	2-Sep-09	18:00:07	-29.165	-178.73	225	Kermadec Islands.
5.4	3-Sep-09	16:58:06	-4.872	134.061	5	Irian Jaya Region, Indonesia.
5.2	3-Sep-09	20:19:11	-19.788	-177.33	555	Fiji Islands Region.
5.3	4-Sep-09	0:27:16	-6.354	130.424	124	Banda Sea, Sunda Arc.
5.4	4-Sep-09	0:52:05	-6.711	104.537	20	Sunda Strait, Indonesia.
5.5	4-Sep-09	7:07:31	-6.346	130.783	103	Banda Sea, Sunda Arc.
5.1	6-Sep-09	21:13:31	-22.996	171.086	35	Southeast of the Loyalty Islands.
6.3	7-Sep-09	16:12:19	-10.4	110.347	0	South of Java, Indonesia.
5.3	8-Sep-09	3:39:52	5.138	94.284	53	Northern Sumatra, Indonesia.
5.2	8-Sep-09	15:18:18	-7.983	117.416	263	Sumbawa Region, Indonesia.
6.2	8-Sep-09	18:51:28	1.036	120.828	63	Minahassa Peninsula, Sulawesi.
5.4	9-Sep-09	4:02:14	-5.599	103.568	62	Southern Sumatra, Indonesia.
5.1	9-Sep-09	7:18:00	-2.768	153.532	0	New Ireland Region, Papua New Guinea Region.
5.9	9-Sep-09	8:06:32	2.392	126.101	93	Northern Molucca Sea, Borneo-Celebes.
5.2	9-Sep-09	10:33:04	-32.141	-179.96	300	South of Kerdamec Islands.
5.3	13-Sep-09	5:14:41	-14.58	167.3	186	Vanuatu Islands, New Hebrides Islands.
5.1	13-Sep-09	21:43:03	-23.17	179.79	600	South of Fiji Islands.
5.1	15-Sep-09	7:28:15	-13.697	98.042	61	Southeast of Cocos Islands.
5.3	16-Sep-09	17:33:34	-1.577	99.463	8	Southern Sumatra, Indonesia.
5.2	16-Sep-09	23:46:59	-4.689	102.542	50	Southern Sumatra, Indonesia.
5.3	17-Sep-09	4:52:28	1.596	128.311	104	Halmahera, Indonesia.
5.6	18-Sep-09	11:53:54	6.5	124.505	60	Mindanao, Philippines.
5.8	18-Sep-09	18:34:25	1.5	127	100	Halmahera, Indonesia.
5.8	18-Sep-09	23:06:57	-9.398	115.517	62	South of Bali, Indonesia.
5.2	19-Sep-09	7:49:31	3.499	126.503	100	Talaud Islands, Indonesia.
5.6	22-Sep-09	4:38:10	-3.841	141.953	37	Near North Coast of Papua New Guinea.
5.9	23-Sep-09	2:59:27	-53.728	161.25	33	Macquarie Island Region.

5	24-Sep-09	18:40:10	-23.431	169.466	100	Southeast of Loyalty Isands.
5.5	25-Sep-09	9:06:11	-6.479	130.034	100	Banda Sea.
5.3	27-Sep-09	15:16:52	2.583	125.938	103	Talaud Islands, Indonesia.
5.1	28-Sep-09	0:26:24	-8.371	107.375	35	Java, Indonesia.
5.3	28-Sep-09	4:13:20	-6.114	112.952	580	Java, Indonesia.
5.1	28-Sep-09	7:14:32	-3.545	142.044	50	Near North Coast of Papua New Guinea.
5.4	28-Sep-09	14:38:51	-6.165	152.633	0	New Britain Region, Papua New Guinea.
5.2	29-Sep-09	9:14:07	-6.981	129.537	200	Banda Sea, Sunda Arc.
8.1	29-Sep-09	17:48:10	-15.702	-171.91	5	Samoa Islands Region.
5.4	29-Sep-09	18:19:39	-15.662	-171.7	15	Samoa Islands Region.
5.6	29-Sep-09	18:21:55	-16.506	-172.85	100	Samoa Islands Region.
5.9	29-Sep-09	18:22:11	-15.525	-172.96	0	Samoa Islands Region.
5.5	29-Sep-09	18:40:12	-15.525	-172.96	15	Samoa Islands Region.
5.2	29-Sep-09	18:58:02	-16.289	-172.62	39	Samoa Islands Region.
5.2	29-Sep-09	23:11:54	-15.525	-172.96	35	Samoa Islands Region.
6.1	29-Sep-09	23:45:02	-16.007	-172.14	11	Samoa Islands Region.
5.5	30-Sep-09	1:39:38	4.928	126.962	27	Talaud Islands, Indonesia.
5	30-Sep-09	2:21:34	4.985	126.88	59	Talaud Islands, Indonesia.
5.2	30-Sep-09	2:29:36	-16.557	-172.68	49	Samoa Islands Region.
7.5	30-Sep-09	10:16:09	-0.854	99.919	67	Southern Sumatra, Indonesia.
5.4	30-Sep-09	10:38:53	-0.847	100.095	92	Southern Sumatra, Indonesia.
5.2	30-Sep-09	12:47:59	-6.243	151.655	49	New Britain Region Papua New Guinea.
5.4	30-Sep-09	13:57:15	-16.936	-172.28	35	Samoa Islands Region.
5.4	30-Sep-09	17:20:42	-22.97	169.635	49	Southeast of Loyalty Islands.
5.1	30-Sep-09	17:47:11	-14.684	-172.39	20	Samoa Islands Region.
5	30-Sep-09	18:05:20	-16.596	-178.09	197	Fiji Islands Region.
5	30-Sep-09	21:23:08	-17.487	-172.74	100	Tonga Islands.
6.5	1-Oct-09	1:52:26	-2.627	101.593	0	Southern Sumatra, Indonesia.
5.3	1-Oct-09	2:20:36	-2.3	101.721	58	Southern Sumatra, Indonesia.
5.8	1-Oct-09	6:13:29	-15.203	-172.97	0	Samoa Islands Region.
5.5	1-Oct-09	10:51:07	-17.205	-173.07	0	Kermadec-Tonga-Samoa Region.
5.7	1-Oct-09	20:55:46	-12.206	166.481	100	Santa Cruz Islands.
6.3	2-Oct-09	1:07:37	-16.247	-173.46	0	Samoa Islands Region.
5.4	2-Oct-09	9:57:17	-6.15	151.648	45	New Britain Region, Papua New Guinea.
5.5	2-Oct-09	12:08:28	-16.536	-172.43	0	Samoa Islands Region.
5.4	2-Oct-09	12:26:34	1.998	128.812	58	Halmahera, Indonesia.
5.6	2-Oct-09	15:47:12	-17.145	174.937	40	Fiji Islands Region.
5.3	2-Oct-09	15:53:58	-0.699	122.203	70	Minahassa Peninsula, Sulawesi.
5	2-Oct-09	22:38:32	-17.59	-172.29	0	Tonga Islands Region.
5.2	3-Oct-09	7:16:59	-16.688	-172.43	46	Tonga Islands Region.
5.9	4-Oct-09	3:35:59	-0.499	133.025	37	Irian Jaya Region, Indonesia.
5.6	4-Oct-09	9:10:26	-16.244	-172.9	0	Samoa Islands Region.
6.5	4-Oct-09	10:58:00	6.701	123.528	631	Mindanao, Philippines.
5.3	4-Oct-09	14:43:14	-5.607	148.483	178	New Britain Region.

5.2	4-Oct-09	17:09:55	-16.561	-173.26	10	Tonga Islands Region.
5.2	4-Oct-09	17:51:52	-5.853	147.562	62	Eastern Papua New Guinea.
5.5	6-Oct-09	15:23:30	-5.033	145.657	71	Eastern Papua New Guinea.
5.4	7-Oct-09	13:02:10	-0.346	133.066	38	Irian Jaya Region, Indonesia-New Guinea.
5.4	7-Oct-09	15:48:32	-8.57	127.678	0	Timor Region, Sunda Arc.
6.5	7-Oct-09	21:41:14	3.887	122.512	580	Celebes Sea, Indonesia.
7.9	7-Oct-09	22:03:15	-13.169	166.234	24	Vanuatu Islands Region.
7.4	7-Oct-09	22:18:26	-12.353	166.319	35	Vanuatu Islands Region.
6.7	7-Oct-09	23:13:50	-13.118	166.419	35	Vanuatu Islands Region.
5.4	7-Oct-09	23:38:13	-17.114	-173.19	0	Samoa Islands Region.
6.1	7-Oct-09	23:48:50	-13.513	166.518	14	Vanuatu Islands Region.
6.1	7-Oct-09	23:54:14	-13.427	166.032	0	Vanuatu Islands Region.
5.2	8-Oct-09	0:22:18	-13.633	165.704	129	Vanuatu Islands Region.
5.9	8-Oct-09	1:59:16	-11.892	166.457	25	Vanuatu Islands Region.
5.6	8-Oct-09	2:02:42	-11.955	165.917	56	Vanuatu Islands Region.
6.4	8-Oct-09	2:12:45	-11.772	166.021	74	Vanuatu Islands Region.
5.4	8-Oct-09	4:17:57	-13.047	166.002	72	Vanuatu Islands Region.
5.1	8-Oct-09	4:38:58	-12.978	165.937	99	Vanuatu Islands Region.
5.1	8-Oct-09	6:44:51	-12.445	166.518	72	Vanuatu Islands Region.
6.9	8-Oct-09	8:28:44	-13.169	166.624	35	Vanuatu Islands Region.
6.2	8-Oct-09	8:34:39	-12.353	166.319	35	Vanuatu Islands Region.
5.3	8-Oct-09	10:11:07	-11.641	165.152	0	Vanuatu Islands Region.
5.1	8-Oct-09	18:56:29	-8.176	107.259	44	Java, Indonesia.
5.2	8-Oct-09	19:42:46	-15.903	168.352	302	Vanuatu Islands Region.
6.1	8-Oct-09	21:16:17	-12.807	166.159	42	Vanuatu Islands Region.
5.8	8-Oct-09	23:36:01	-13.023	166.711	180	Vanuatu Islands Region.
5.2	9-Oct-09	7:33:28	-13.105	166.254	35	Vanuatu Islands Region.
5.3	9-Oct-09	9:14:45	-11.8	165.829	51	Vanuatu Islands Region.
5.9	9-Oct-09	13:12:37	-13.394	166.559	76	Vanuatu Islands Region.
5.4	9-Oct-09	20:18:17	-11.703	165.192	37	Vanuatu Islands Region.
5.8	9-Oct-09	22:49:52	-9.084	158.535	0	Solomon Islands.
5.4	10-Oct-09	9:01:00	3.775	122.299	592	Celebes Sea, Borneo.
5.2	10-Oct-09	11:11:17	-13.614	166.464	77	Vanuatu Islands Region.
6.1	10-Oct-09	14:25:21	-14.276	166.525	59	Vanuatu Islands Region.
5	10-Oct-09	15:35:05	-14.117	166.618	79	Vanuatu Islands Region.
5.3	10-Oct-09	16:49:04	-13.752	166.42	0	Vanuatu Islands Region.
6	10-Oct-09	19:41:22	-15.786	-171.88	18	Samoa Islands Region.
5.3	10-Oct-09	21:44:56	-11.802	166.62	91	Vanuatu Islands Region.
6	11-Oct-09	3:12:13	-22	170.234	4	Southeast of Loyalty Islands.
5.9	11-Oct-09	4:47:58	-13.14	165.921	100	Vanuatu Islands Region.
5.2	11-Oct-09	18:42:11	-12.949	165.898	60	Vanuatu Islands Region.
6.3	12-Oct-09	9:37:30	-12.612	166.504	124	Solomon Islands Region.
5.1	12-Oct-09	11:02:57	-11.89	167.351	140	Solomon Islands Region.
5.2	12-Oct-09	12:44:46	-11.814	166.438	119	Solomon Islands Region.
5.9	12-Oct-09	20:59:37	-14.002	166.483	40	Vanuatu Islands Region.
6.2	13-Oct-09	11:38:08	2.8	128.195	63	Halmahera, Indonesia.

5.5	14-Oct-09	0:55:11	-12.626	166.487	40	Vanuatu Islands Region.
5.9	14-Oct-09	18:00:21	-15.306	-174.63	10	Samoa Islands Region.
5	15-Oct-09	9:48:38	-12.659	166.11	78	Santa Cruz Islands.
5.9	15-Oct-09	12:11:15	-3.146	139.518	94	Irian Jaya, Indonesia.
6.2	15-Oct-09	18:33:41	-3.7	123.195	49	Sulawesi, Indonesia.
5.3	15-Oct-09	19:20:17	-12.43	166.869	56	Solomon Islands Region.
5	16-Oct-09	8:27:49	-17.934	-178.5	576	Fiji Islands Region.
5.1	16-Oct-09	9:07:40	-7.676	129.089	45	Banda Sea, Sunda Arc.
6	16-Oct-09	9:52:53	-6.569	105.215	62	Sunda Strait, Indonesia-Sunda Arc.
5.2	16-Oct-09	17:17:07	-12.566	166.097	106	Solomon Islands Region.
5.7	17-Oct-09	10:45:24	-16.53	-171.72	0	Samoa Islands Region.
5.2	17-Oct-09	13:18:47	-13.029	166.342	74	Vanuatu Islands Region.
5.4	18-Oct-09	8:23:26	-3.743	123.19	28	Sulawesi, Indonesia.
5.3	18-Oct-09	8:26:16	-3.624	123.159	40	Sulawesi, Indonesia.
5.1	18-Oct-09	17:21:58	-7.611	125.895	17	Banda Sea, Sunda Arc.
5.3	19-Oct-09	7:41:37	-15.436	-173.02	8	Tonga Islands.
5	19-Oct-09	16:35:07	-1.907	100.345	54	Southern Sumatra, Indonesia.
5.6	19-Oct-09	22:18:16	-6.876	123.91	609	Banda Sea, Sunda Arc.
5.9	19-Oct-09	22:49:37	-15.342	-172.37	0	Samoa Islands Region.
5.8	23-Oct-09	11:15:25	-0.719	133.958	26	Irian Jaya Region, Indonesia.
5.9	23-Oct-09	15:14:14	-12.221	166.108	35	Vanuatu Islands Region.
7	24-Oct-09	14:40:46	-6.296	130.416	155	Banda Sea.
5.5	24-Oct-09	20:54:53	-10.142	118.713	57	South of Sumbawa, Indonesia.
5.2	24-Oct-09	21:04:32	-10.25	118.706	35	South of Sumbawa, Indonesia.
5.8	25-Oct-09	7:53:53	-22.97	-179.04	428	South of Fiji Islands, Kermadec-Tonga-Samoa Area.
5.3	27-Oct-09	14:10:02	-12.182	166.141	50	Vanuatu Islands Region.
5.4	29-Oct-09	1:33:58	-5.346	140.367	13	Irian Jaya, Indonesia.
5.3	29-Oct-09	5:21:21	1.145	126.332	63	Molucca Sea.
5	29-Oct-09	21:05:16	8.103	91.73	0	Nicobar Islands.
5.1	30-Oct-09	14:47:57	-5.04	149.77	415	New Britain Region, Papua New Guniea.
5.1	31-Oct-09	0:14:09	1.221	120.915	51	Minahassa Peninsula, Sulawesi.
5.1	31-Oct-09	10:38:13	-24.228	-179.57	533	South of Fiji Islands.
5	31-Oct-09	13:03:42	-12.459	166.198	203	Solomon Islands.
5.9	31-Oct-09	19:09:55	-11.439	166.416	164	Santa Cruz Islands.
5.2	31-Oct-09	22:50:02	-5.065	102.866	59	Southern Sumatra, Indonesia.
5.9	1-Nov-09	21:28:58	-15.583	-173.64	101	Tonga Islands.
6.1	2-Nov-09	10:47:12	-23.869	-175.15	0	Tonga Islands Region.
5.2	3-Nov-09	9:13:14	-8.367	120.563	174	Flores Region, Indonesia.
5.6	4-Nov-09	6:21:46	7.008	126.625	105	Mindanao, Philippines Region.
5.2	4-Nov-09	18:35:23	-15.497	-171.66	10	Vanuatu Islands.
5.6	5-Nov-09	4:17:17	-2.77	138.918	43	Irian Jaya, Indonesia-New Guinea.
5.9	5-Nov-09	9:43:17	-52.15	161.416	0	Northeast of Macquarie Island.
5	7-Nov-09	20:55:42	6.828	127.115	80	Philippine Islands Region.
5.2	8-Nov-09	1:08:44	-17.969	-178.29	603	Fiji Islands Region.

5.3	8-Nov-09	15:46:14	-16.073	168.027	228	Vanuatu Islands.
6.8	8-Nov-09	19:41:44	-8.407	118.515	20	Sumbawa Region, Indonesia.
5.2	8-Nov-09	22:18:21	-22.586	-174.92	38	Tonga Islands Region.
6.8	9-Nov-09	10:44:54	-17.167	178.538	584	Fiji Islands.
5.5	9-Nov-09	16:02:40	-4.52	144.258	131	Near North Coast of Papua New Guinea.
5.8	10-Nov-09	2:48:43	7.972	91.83	2	Nicobar Islands Region.
5	11-Nov-09	13:34:11	5.428	94.449	68	Off the Coast of Northern Sumatra.
5.7	11-Nov-09	13:48:23	9.228	125.628	64	Mindanao, Philippines.
5.6	12-Nov-09	2:13:36	-20.959	-178.61	560	Fiji Islands Region.
5	12-Nov-09	4:06:56	0.374	98.547	66	Northern Sumatra.
5.3	12-Nov-09	19:39:15	-4.905	102.956	61	Southern Sumatra, Indonesia.
5.4	13-Nov-09	17:22:03	-16.295	-172.41	10	Samoa Islands Region.
5.2	14-Nov-09	9:50:46	-12.068	166.083	20	Santa Cruz Islands.
5.2	16-Nov-09	5:56:18	-14.578	167.294	234	Vanuatu Islands Region.
5.4	16-Nov-09	19:58:57	6.641	126.471	63	Mindanao, Philippines.
5.3	17-Nov-09	0:39:09	5.791	127.103	114	Philippine Islands Region.
5.2	18-Nov-09	2:17:06	-9.396	107.352	19	South of Java, Indonesia.
5	18-Nov-09	18:03:58	-40.402	175.732	43	North Island, New Zealand.
5.4	19-Nov-09	1:14:41	2.884	128.28	57	Halmahera, Indonesia.
5.2	19-Nov-09	23:07:28	-0.729	134.589	9	Irian Jaya Region, Indonesia.
5.2	21-Nov-09	19:30:22	-15.354	-173.08	0	Samoa Islands Region.
6.2	22-Nov-09	7:48:23	-17.737	-178.64	534	Fiji Region.
5.9	22-Nov-09	22:47:28	-31.458	179.587	433	Kermadec Islands Region.
5.4	23-Nov-09	18:36:37	-12.538	166.133	40	Santa Cruz Islands.
6.9	24-Nov-09	12:47:18	-20.591	-174.09	33	Tonga Islands Region.
5.2	25-Nov-09	1:14:28	-5.795	146.274	110	Eastern Papua New Guinea.
5.1	25-Nov-09	10:05:53	-15.912	-172.05	61	Samoa Islands Region .
5.3	26-Nov-09	11:33:00	-3.408	136.116	29	Irian Java Region, Indonesia.
5.3	26-Nov-09	15:42:19	-30.291	-177.04	67	Kerdamec Islands, New Zealand.
5.1	27-Nov-09	23:36:07	-10.684	118.882	12	South of Sumbawa, Indonesia.
5.1	28-Nov-09	0:04:31	-10.474	118.946	0	South of Sumbawa, Indonesia.
5.7	28-Nov-09	6:04:26	-11.292	119.245	0	South of Sumba, Indonesia.
6.2	28-Nov-09	9:21:22	-28.83	-177.03	52	Kerdamec Islands Region.
6	28-Nov-09	18:10:14	5.272	126.43	50	Mindanao, Philippines.
5.3	29-Nov-09	2:28:05	5.361	126.589	58	Mindanao, Philippines.
5.4	29-Nov-09	20:09:10	5.212	126.187	41	Mindanao, Philippines.
5.1	30-Nov-09	1:13:16	-21.708	-176.05	188	Fiji Islands Region.
5.5	1-Dec-09	16:11:11	5.056	127.483	115	Philippine Islands Region.
5.5	1-Dec-09	19:43:00	-16.97	167.709	55	Vanuatu.
5.8	2-Dec-09	21:01:50	-18.007	-178.75	641	Fiji Islands Region.
5	4-Dec-09	12:03:00	-19.62	169.503	195	Vanuatu Islands.
5.1	4-Dec-09	17:52:00	1.237	127.439	163	Halmahera, Indonesia.
5.1	5-Dec-09	16:43:12	0.295	126.029	64	Northern Molucca Sea.
5.5	5-Dec-09	22:56:12	-17.891	-178.35	581	Fiji Islands Region.
5	6-Dec-09	6:44:23	-8.197	119.227	0	Flores sea, Indonesia.

5.2	7-Dec-09	22:06:12	0.107	97.093	6	Northern Sumatra.
5.1	8-Dec-09	0:11:35	-4.872	102.945	73	Southern Sumatra.
5	8-Dec-09	11:37:58	5.601	125.876	108	Mindanao, Philippines.
6.4	9-Dec-09	9:46:08	-22.229	171.033	84	Southeast of Loyalty Islands.
6	9-Dec-09	21:29:00	2.499	95.951	5	Northern Sumatra, Indonesia.
5.6	10-Dec-09	15:06:43	6.604	126.448	50	Mindanao, Philippines.
5.1	11-Dec-09	0:10:33	-17.774	-178.46	590	Fiji Islands Region.
5.1	11-Dec-09	3:37:00	-12.422	166.426	90	Santa Cruz Islands.
5.4	11-Dec-09	12:33:39	-20.916	-174.44	13	Tonga Islands.
5.4	14-Dec-09	3:05:18	-10.109	123.726	0	Timor Region, Sunda Arc.
5.9	14-Dec-09	8:54:03	-5.99	154.666	62	Solomon Islands.
5.1	14-Dec-09	15:38:13	-7.465	128.395	128	Banda Sea.
5.2	15-Dec-09	15:10:46	-29.118	-177.47	47	Kermadec Islands.
5.6	16-Dec-09	12:36:37	-31.24	-177.28	16	Kermadec Islands Region.
5.1	18-Dec-09	6:45:03	-8.465	120.691	195	Flores Region, Indonesia.
5.2	18-Dec-09	9:45:37	-20.035	-173.23	0	Tonga Islands Region.
5.2	19-Dec-09	13:43:58	2.752	96.16	57	Northern Sumatra.
5.3	20-Dec-09	13:25:48	-0.385	124.51	46	Southern Molucca Sea.
5.2	22-Dec-09	12:21:04	1.558	127.211	151	Halmahera, Indonesia.
5.1	22-Dec-09	19:19:16	-17.044	-174.97	250	Tonga Islands.
5.9	23-Dec-09	1:12:01	-1.312	99.543	45	Southern Sumatra.
5.2	23-Dec-09	1:47:18	-1.333	99.424	46	Southern Sumatra.
5.4	23-Dec-09	4:55:09	-31.239	-175.23	35	Kermadec Islands.
5.1	23-Dec-09	16:28:35	-7.514	130.058	44	Tanimbar Islands Region, Indonesia.
5	23-Dec-09	18:13:19	0.393	121.576	132	Minahassa Peninsula, Sulawesi.
5.5	23-Dec-09	21:37:06	-6.996	129.892	43	Tanimbar Islands Region, Indonesia.
5.4	24-Dec-09	5:05:34	-5.577	145.52	115	Eastern Papua New Guinea.
5.6	25-Dec-09	22:04:21	-15.83	-173.05	0	Tonga Islands.
5.7	26-Dec-09	5:09:25	6.488	126.556	42	Mindanao, Philippines.
6.1	26-Dec-09	8:57:24	-5.526	131.264	50	Banda Sea.
5.4	27-Dec-09	13:19:12	-3.232	139.642	42	Irian Jaya, Indonesia.
5.3	28-Dec-09	10:18:10	3.94	126.87	56	Talaud Islands, Indonesia.
5.4	29-Dec-09	5:12:28	-5.169	152.509	61	New Britain Region.
5.5	30-Dec-09	11:17:50	6.558	126.538	55	Mindanao, Philippines.
5.4	31-Dec-09	6:26:15	-2.318	137.186	45	Irian Jaya, Indonesia.
5	31-Dec-09	9:05:58	-7.619	127.936	148	Banda Sea.
5.4	31-Dec-09	17:42:13	-19.547	-177.66	364	Fiji Islands Region.

World

Geoscience Australia detects and locates any earthquakes in the World of Magnitude 6 or higher.

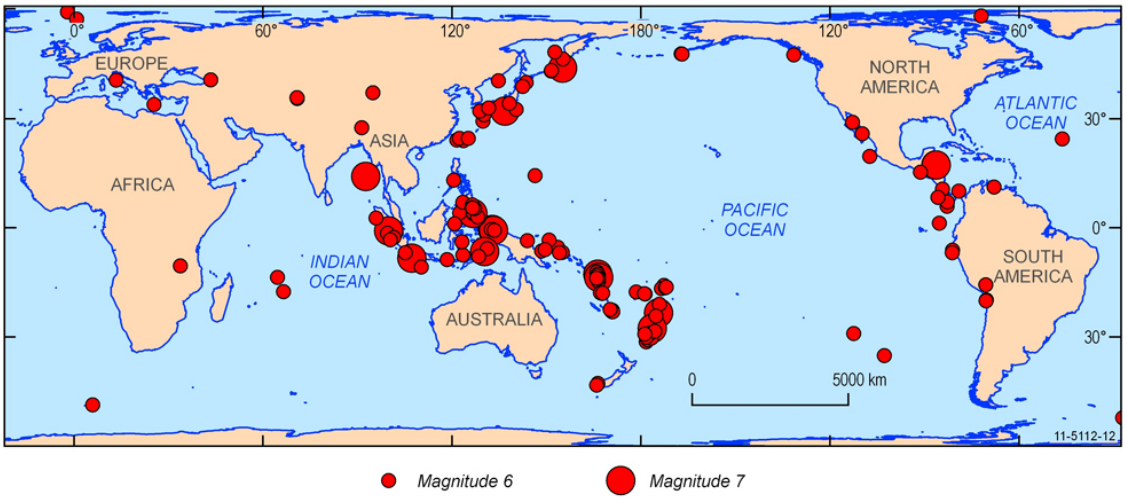

Figure 19: *Map of 2009 Magnitude 6+ World Earthquakes.*

Table 23: Largest 10 Earthquakes in 2009

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
8.1	29-Sep-09	17:48:10	-15.702	-171.91	5	Samoa Islands Region.
7.9	7-Oct-09	22:03:15	-13.169	166.234	24	Vanuatu Islands Region.
7.9	15-Jul-09	9:22:28	-45.96	166.47	10	Off West Coast Of South Island, NZ.
7.7	3-Jan-09	19:43:49	-0.51	132.86	0	West Irian Region, New Guinea.
7.6	19-Mar-09	18:17:34	-22.96	-174.33	28	Tonga Islands Region.
7.5	30-Sep-09	10:16:09	-0.854	99.919	67	Southern Sumatra, Indonesia.
7.5	10-Aug-09	19:55:40	13.554	92.638	32	Andaman Islands, India Region.
7.5	15-Jan-09	17:49:38	46.9	155.2	27	Kuril Islands Region, Japan-Kuriles-Kamchatka.
7.4	7-Oct-09	22:18:26	-12.353	166.319	35	Vanuatu Islands Region.
7.4	28-May-09	8:24:47	16.7	-86.3	33	Caribbean Sea.

Table 24: World Earthquakes Magnitude 6+ 2009

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
7.7	3-Jan-09	19:43:49	-0.51	132.86	0	West Irian Region, New Guinea.
6.1	3-Jan-09	20:23:20	36.39	70.89	200	Hindu Kush Region.
7.3	3-Jan-09	22:33:42	-0.695	133.279	35	Near North Coast of Papua, Indonesia.
6.1	4-Jan-09	7:14:02	-0.49	132.5	35	West Irian Region, New Guinea.
6	6-Jan-09	22:48:27	-0.692	133.543	14	Near North Coast of Papua, Indonesia.
6.1	8-Jan-09	19:21:34	10.197	-84.159	4	Costa Rica.
6.8	15-Jan-09	7:27:20	-22.32	170.5	7	Vanuatu Islands Region.
7.5	15-Jan-09	17:49:38	46.9	155.2	27	Kuril Islands Region, Japan-Kuriles-Kamchatka.
6.4	18-Jan-09	14:11:44	-30.37	-176.65	35	Kermadec Islands, New Zealand.
6.8	19-Jan-09	3:35:18	-22.68	170.88	35	Southeast of the Loyalty Islands.
6.2	21-Jan-09	17:08:40	-22.64	171.1	1	Loyalty Islands Region.
6.2	22-Jan-09	13:40:29	-6.15	148.56	55	New Britain Region, Bismarck and Solomon Islands.
6.1	22-Jan-09	20:16:31	-7.56	128.53	100	Banda Sea, Sunda Arc.
6.1	24-Jan-09	1:28:40	-28.35	-175.51	61	Kermadec Islands Region.
6	24-Jan-09	18:09:50	33.22	131.7	108	Southern Alaska, Aleutian Arc.
6	9-Feb-09	14:09:03	-6.567	-81.125	15	Near the Coast of Northern Peru.
7.2	11-Feb-09	17:34:54	3.768	126.704	55	Talaud Islands, Borneo-Celebes.
6.3	12-Feb-09	13:15:10	3.96	126.77	59	Talaud Islands, Indonesia.
6	15-Feb-09	9:24:33	40.3	142.5	78	Near East Coast of Honshu, Japan.
6	15-Feb-09	10:04:51	-5.9	-81	33	Near Coast of Northern Peru.
6.4	17-Feb-09	3:30:49	-30.96	-177.74	5	Kermadec Islands, Kermadec-Tonga-Samoa Area.
7.2	18-Feb-09	21:53:50	-27.45	-176.37	63	Kermadec Islands Region.
6.1	24-Feb-09	5:58:05	13.8	146.4	50	South of Mariana Islands.
6.4	28-Feb-09	14:33:05	-60.47	-24.69	0	South Sandwich Islands Region.
6	5-Mar-09	19:33:16	-17.6	-178.81	563	Fiji Islands Region.
6.4	6-Mar-09	10:50:30	80.297	-2.046	10	North of Svalbard.
6.2	12-Mar-09	23:23:45	5.6	-82.77	10	South of Panama, Central America.
6.3	16-Mar-09	14:15:51	3.63	126.89	0	Talaud Islands, Borneo-Celebes.
7.6	19-Mar-09	18:17:34	-22.96	-174.33	28	Tonga Islands Region.
6.3	1-Apr-09	3:54:59	-3.46	143.94	0	Near North Coast of Papua New Guinea.
6.2	4-Apr-09	5:31:56	5.05	127.26	60	Philippine Islands Region.
6	5-Apr-09	9:36:35	32.28	128.87	50	Kyushu, Japan.
6.3	6-Apr-09	1:32:43	42.423	13.395	10	Central Italy.
6.8	7-Apr-09	4:23:39	46	151.6	92	Kuril Islands Region.
6.3	15-Apr-09	20:01:35	-3.21	100.49	20	Southern Sumatra, Sunda Arc.
6.1	16-Apr-09	0:43:31	-6.57	154.16	100	Solomon Islands.
6.9	16-Apr-09	14:57:22	-60.35	-26.95	50	South Sandwich Islands Region.

6.3	17-Apr-09	2:08:06	-19.6	-70.4	10	Near Coast of Northern Chile.
6.2	18-Apr-09	2:03:50	-28.88	-176.84	60	Kermadec Islands, Tonga-Samoa Area.
6.8	18-Apr-09	19:17:54	45.83	151.49	0	Kuril Islands.
6.4	19-Apr-09	5:23:29	4	127	60	Talaud Islands, Borneo.
6.3	21-Apr-09	5:25:55	50.55	155.3	10	Kuril Islands, Japan-Kuriles-Kamchatka.
6.1	26-Apr-09	0:06:51	-30.11	-178.26	113	Kermadec Islands.
6.1	3-May-09	16:21:48	14.7	-91.2	118	Guatemala.
6.3	10-May-09	1:16:11	1.2	-85.2	37	Off the Coast of Ecuador, South America.
6.1	12-May-09	1:26:27	-5.75	149.57	97	New Britain.
6.1	12-May-09	12:38:36	-13.16	64.61	50	Mid-Indian Rise, Indian Ocean.
6.7	16-May-09	0:53:52	-31.5	-178.28	31	Kermadec Islands Region.
7.4	28-May-09	8:24:47	16.7	-86.3	33	Caribbean Sea.
7.1	28-May-09	8:24:47	16.73	-86.209	10	Caribbean Sea.
6.6	2-Jun-09	2:17:07	-17.485	167.913	25	Vanuatu Islands.
6.3	5-Jun-09	3:30:33	41.7	143.6	33	Hokkaido Region, Japan.
6.1	5-Jun-09	21:17:02	-17.424	167.156	82	Vanuatu Islands, Hebrides Islands.
6.1	6-Jun-09	20:33:29	24	-46.2	10	Northern Mid-Atlantic Ridge.
6.2	12-Jun-09	9:44:17	-17.521	167.759	15	Vanuatu Islands.
6.2	12-Jun-09	9:44:20	-17.507	167.792	44	Vanuatu Islands.
6	14-Jun-09	5:58:46	5.14	126.621	41	Mindanao, Philippine Islands.
6.2	16-Jun-09	20:06:01	-54.092	5.999	26	Bouvet Island Region, Atlantic Ocean.
6.9	23-Jun-09	14:19:19	-5.151	153.601	60	New Ireland Region, Papua New Guinea.
6.5	1-Jul-09	9:30:13	34.3	25.4	33	Crete, Greece.
6	3-Jul-09	11:00:19	25.465	-109.638	10	Gulf of California, Mexico.
6	4-Jul-09	6:49:36	9.654	-78.982	78	Panama, Central America.
6	7-Jul-09	19:11:59	75.3	-71.92	50	Baffin Bay, Northen Alaska to Greenland.
6	8-Jul-09	19:23:41	-35.9	-102.7	33	Southeast of Easter Island.
6.3	12-Jul-09	6:12:43	-15.2	-70.5	165	Southern Peru.
6.2	13-Jul-09	18:04:59	24.175	122.422	0	Taiwan Region.
7.9	15-Jul-09	9:22:28	-45.96	166.47	10	Off West Coast of South Island, New Zealand.
6.2	15-Jul-09	20:10:43	-3.249	150.921	40	New Ireland Region, Papua New Guinea.
6	16-Jul-09	17:59:42	-17.485	167.913	35	Vanuatu Islands.
6	16-Jul-09	22:18:24	-46.06	165.973	29	Off West Coast of South Island, New Zealand.
6.3	25-Jul-09	1:42:27	-6.548	155.048	48	Bougainville Region, Papua New Guinea.
6.2	2-Aug-09	8:54:35	-0.487	133	100	West Irian Region, New Guinea.
6.9	3-Aug-09	18:00:01	28.9	-112.8	15	Gulf of California.
6.1	5-Aug-09	0:17:57	24.2	125.2	10	Ryukyu Islands, Southwestern Japan Region.
6.2	5-Aug-09	8:31:40	-45.456	166.339	0	Off West Coast of South Island, New Zealand.
7	9-Aug-09	10:56:14	32.224	136.848	287	South of Honshu, Japan.
6.6	10-Aug-09	4:06:31	-11.742	166.085	19	Santa Cruz Islands Region.

7.5	10-Aug-09	19:55:40	13.554	92.638	32	Andaman Islands, India Region.
6.6	10-Aug-09	20:07:13	34.727	138.278	50	Near the South Coast of Honshu, Japan.
6.1	12-Aug-09	20:04:26	5.998	126.51	100	Mindanao, Philippine Islands.
6.7	12-Aug-09	22:48:52	32.816	140.382	51	South of Honshu, Japan.
6	13-Aug-09	9:37:39	8	-85.7	35	Off coast of Costa Rica.
6.8	16-Aug-09	7:38:23	-1.49	99.56	16	Southern Sumatra, Sunda Arc.
6.8	17-Aug-09	0:06:06	23.6	123.7	33	Southeast of Taiwan.
6.5	17-Aug-09	10:10:57	23.5	123.7	33	Southwestern Ryukyu Island, Japan.
6.1	20-Aug-09	6:35:05	72.2	0.89	10	Norwegian Sea.
6.7	28-Aug-09	1:51:20	-7.233	123.467	617	Banda Sea, Sunda Arc.
6.4	28-Aug-09	1:52:18	38.168	94.949	50	Qinghai Province, China.
6.7	30-Aug-09	14:51:34	-15.351	-172.588	0	Samoa Islands Region.
7.1	2-Sep-09	7:55:02	-8.045	107.279	60	Java, Indonesia.
6	2-Sep-09	18:00:07	-29.165	-178.73	225	Kermadec Islands.
6.2	3-Sep-09	13:26:41	31.1	130.2	165	Kyushu, Japan.
6.3	7-Sep-09	16:12:19	-10.4	110.347	0	South of Java, Indonesia.
6.2	7-Sep-09	22:41:40	42.6	43.4	33	Caucasus Mountains, Georgia.
6.2	8-Sep-09	18:51:28	1.036	120.828	63	Minahassa Peninsula, Sulawesi, Borneo-Celebes.
6.4	12-Sep-09	20:06:25	10.7	-67.8	33	Near Coast of Venezuela.
6.1	17-Sep-09	23:21:40	-29	-112.4	10	Easter Island Region, Southeastern Pacific.
6.1	18-Sep-09	6:23:56	12.6	120.6	33	Mindoro, Philippines.
6.3	21-Sep-09	8:53:05	27.28	91.425	7	Bhutan.
6.4	24-Sep-09	7:16:21	19.085	-107.315	5	Off Coast of Jalisco, Mexico.
8.1	29-Sep-09	17:48:10	-15.702	-171.91	5	Samoa Islands Region.
6.1	29-Sep-09	23:45:02	-16.007	-172.14	11	Samoa Islands Region.
7.5	30-Sep-09	10:16:09	-0.854	99.919	67	Southern Sumatra, Indonesia.
6.5	1-Oct-09	1:52:26	-2.627	101.593	0	Southern Sumatra, Indonesia.
6.3	2-Oct-09	1:07:37	-16.247	-173.46	0	Samoa Islands Region.
6.2	3-Oct-09	17:36:08	23.7	121.6	36	Taiwan Region.
6.5	4-Oct-09	10:58:00	6.701	123.528	631	Mindanao, Philippines.
6.5	7-Oct-09	21:41:14	3.887	122.512	580	Celebes Sea, Indonesia.
7.9	7-Oct-09	22:03:15	-13.169	166.234	24	Vanuatu Islands Region.
7.4	7-Oct-09	22:18:26	-12.353	166.319	35	Vanuatu Islands Region.
6.7	7-Oct-09	23:13:50	-13.118	166.419	35	Vanuatu Islands Region.
6.1	7-Oct-09	23:48:50	-13.513	166.518	14	Vanuatu Islands Region.
6.1	7-Oct-09	23:54:14	-13.427	166.032	0	Vanuatu Islands Region.
6.4	8-Oct-09	2:12:45	-11.772	166.021	74	Vanuatu Islands Region.
6.9	8-Oct-09	8:28:44	-13.169	166.624	35	Vanuatu Islands Region.
6.2	8-Oct-09	8:34:39	-12.353	166.319	35	Vanuatu Islands Region.
6.1	8-Oct-09	21:16:17	-12.807	166.159	42	Vanuatu Islands Region.
6.1	10-Oct-09	14:25:21	-14.276	166.525	59	Vanuatu Islands Region.
6	10-Oct-09	19:41:22	-15.786	-171.881	18	Samoa Islands Region.
6	11-Oct-09	3:12:13	-22	170.234	4	Southeast of Loyalty Islands.
6.2	12-Oct-09	3:15:48	-17.049	66.544	18	Mauritius-Reunion Region.

6.3	12-Oct-09	9:37:30	-12.612	166.504	124	Solomon Islands Region.
6.3	13-Oct-09	5:37:29	52.564	-166.94	70	Fox Islands, Aleutian Islands, Alaska.
6.2	13-Oct-09	11:38:08	2.8	128.195	63	Halmahera, Indonesia.
6.4	13-Oct-09	20:21:53	52.7	-167.19	14	Fox Islands, Aleutian Islands, Alaska.
6.2	15-Oct-09	18:33:41	-3.7	123.195	49	Sulawesi, Indonesia, Borneo-Celebes.
6	16-Oct-09	9:52:53	-6.569	105.215	62	Sunda Strait, Indonesia-Sunda Arc.
6.1	22-Oct-09	0:51:39	6.777	-82.631	12	South of Panama.
6.1	22-Oct-09	19:51:35	36.28	70.889	272	Afghanistan-Tajikistan Border Region.
7	24-Oct-09	14:40:46	-6.296	130.416	155	Banda Sea.
6	29-Oct-09	17:44:31	36.5	70.8	196	Hindu Kush Region, Afghanistan.
6.8	30-Oct-09	7:03:40	29.192	129.877	35	Ryukyu Islands, Japan.
6.1	2-Nov-09	10:47:12	-23.869	-175.15	0	Tonga Islands region.
6.8	8-Nov-09	19:41:44	-8.407	118.515	20	Sumbawa Region, Indonesia.
6.8	9-Nov-09	10:44:54	-17.167	178.538	584	Fiji Islands.
6.5	13-Nov-09	3:05:57	-19.385	-70.266	28	Offshore Tarapaca, Chile.
6.6	17-Nov-09	15:30:47	52.151	-131.378	11	Queen Charlotte Islands Region.
6.2	22-Nov-09	7:48:23	-17.737	-178.641	534	Fiji Region.
6.9	24-Nov-09	12:47:18	-20.591	-174.087	33	Tonga Islands Region.
6.2	28-Nov-09	9:21:22	-28.83	-177.033	52	Kerdamec Islands Region.
6	28-Nov-09	18:10:14	5.272	126.43	50	Mindanao, Philippines.
6.4	9-Dec-09	9:46:08	-22.229	171.033	84	Southeast of Loyalty Islands.
6	9-Dec-09	21:29:00	2.499	95.951	5	Northern Sumatra, Indonesia.
6.1	10-Dec-09	2:30:52	53.44	152.7	650	Sea of Okhotsk.
6.4	19-Dec-09	13:02:17	23.763	121.689	44	Taiwan.
6	19-Dec-09	23:19:17	-10.11	33.814	15	Malawi.
6.3	24-Dec-09	0:23:27	42.21	134.79	348	Sea of Japan.
6.1	26-Dec-09	8:57:24	-5.526	131.264	50	Banda Sea.

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