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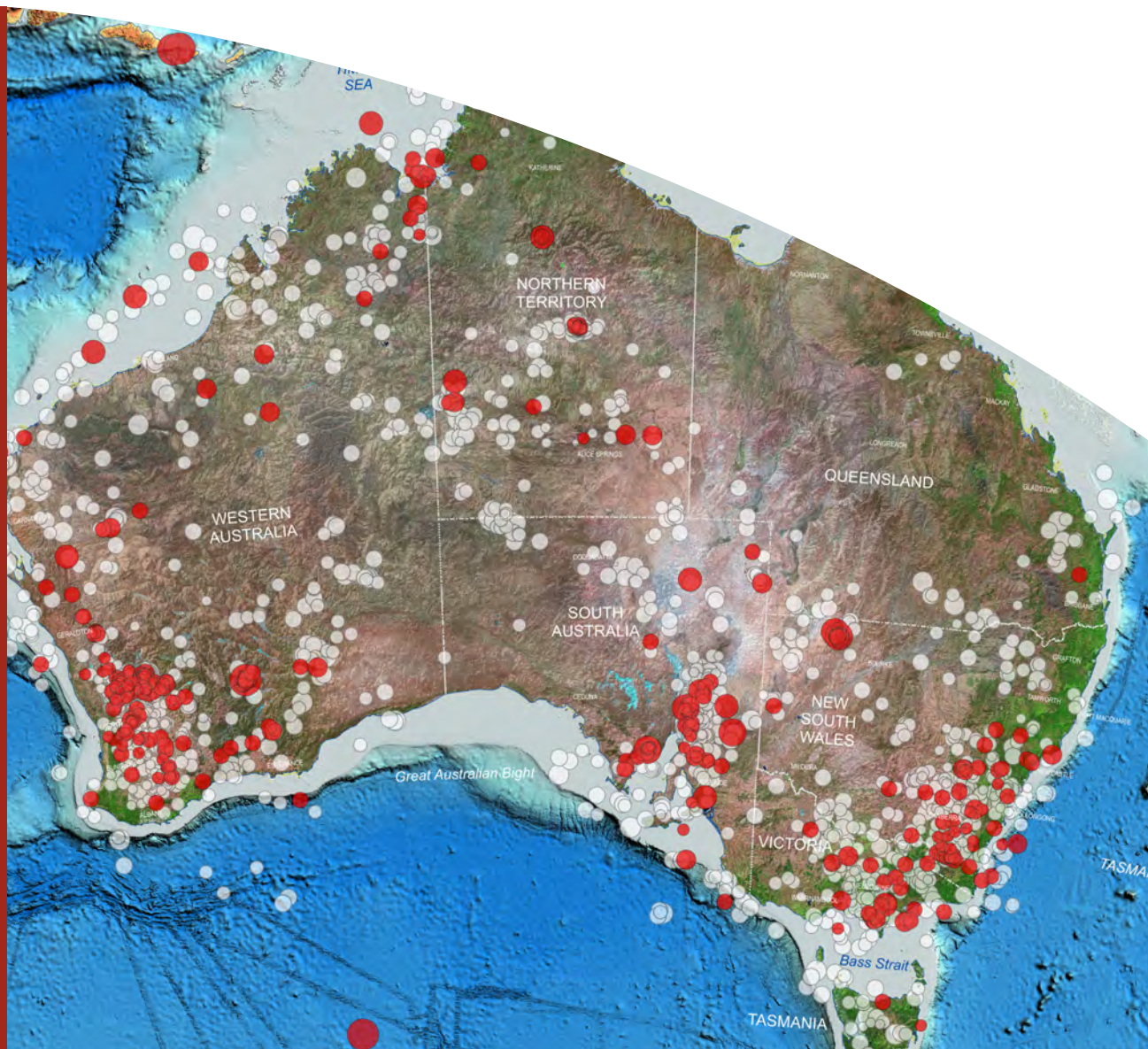
Australian Seismological Report 2010

D.H. Glanville

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Australian Seismological Report 2010

GEOSCIENCE AUSTRALIA
RECORD 2011/16

Compiled by

D.H. Glanville¹



Government of South Australia
Primary Industries and Resources SA

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Introduction

This report details earthquakes detected and located by Geoscience Australia in 2010. 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 2010, 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 worldwide 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 -70°S and Longitude 85°E to -150°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 into 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, 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 or more 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 is converted to a Wood-Anderson seismometer response, using the following 3 formulae:
 - 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, Alison Wallace and Jennette Brown, 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/earthquakes/staticPageController.do?page=felt-earthquake>

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

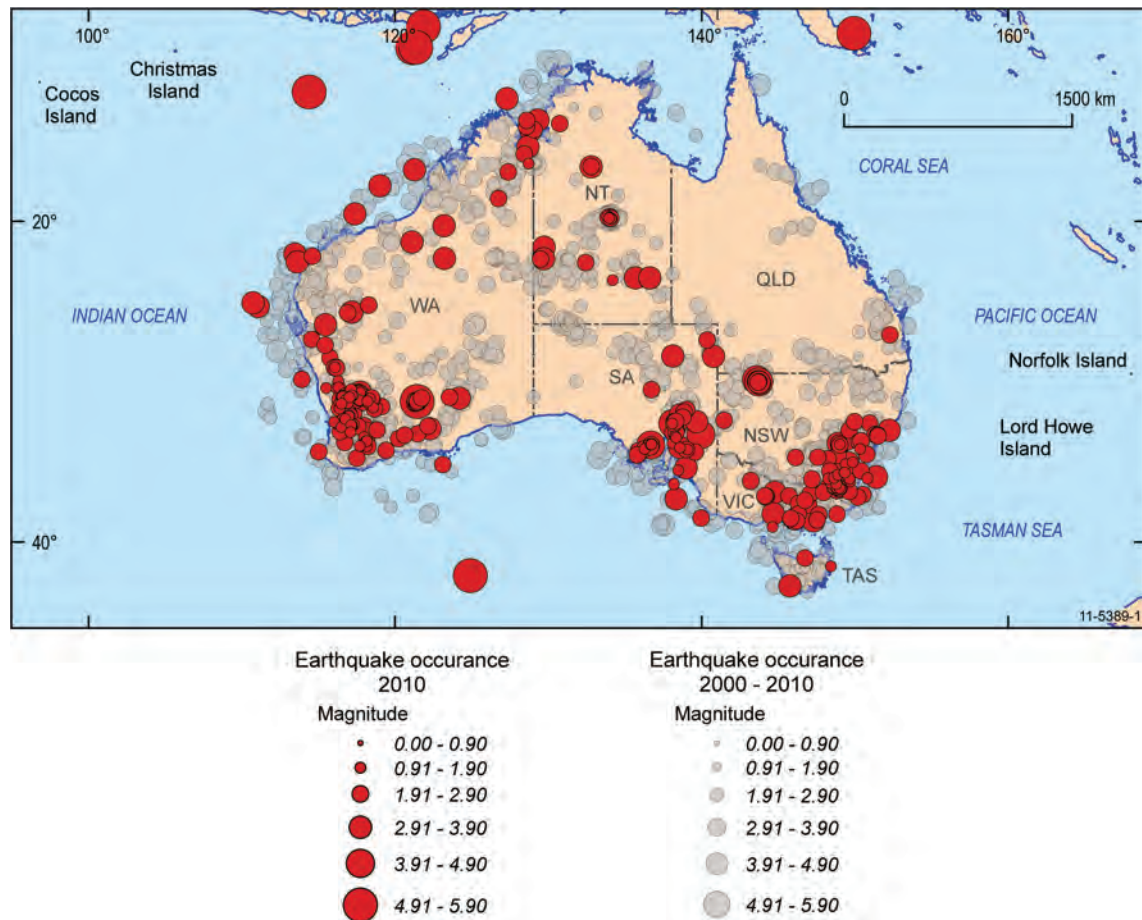


Figure 1: Map of 2010 Australian Earthquakes (magnitude sized circles with subdued historical seismicity).

Table 1: Australian Top 10 Earthquakes 2010 (Recorded by Geoscience Australia)

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
5.0	20-Apr-10	00:17:10	-30.787	121.489	2	Kalgoorlie, WA.
5.0	24-Jul-10	11:23:45	-12.752	114.453	0	Northwest of Australia.
5.0	5-Apr-10	19:17:53	-42.423	124.939	37	South of Australia, Indian Ocean.
4.8	5-Jun-10	21:47:00	-33.559	136.714	15	NE of Cleve, SA.
4.4	27-Oct-10	14:18:02	-29.438	143.594	7	NW of Bourke, NSW.
4.2	30-Jul-10	21:29:22	-32.175	138.141	10	NE of Quorn, SA.
4.1	10-Oct-10	02:30:18	-32.902	139.961	0	E of Peterborough, SA.
4.0	29-Sep-10	09:09:25	-29.568	143.752	0	NW of Bourke, NSW.
3.9	8-Jun-10	20:07:17	-21.935	113.534	34	W of Exmouth, WA.
3.8	16-Apr-10	13:57:22	-35.033	139.002	4	Near Mt Barker, SA.

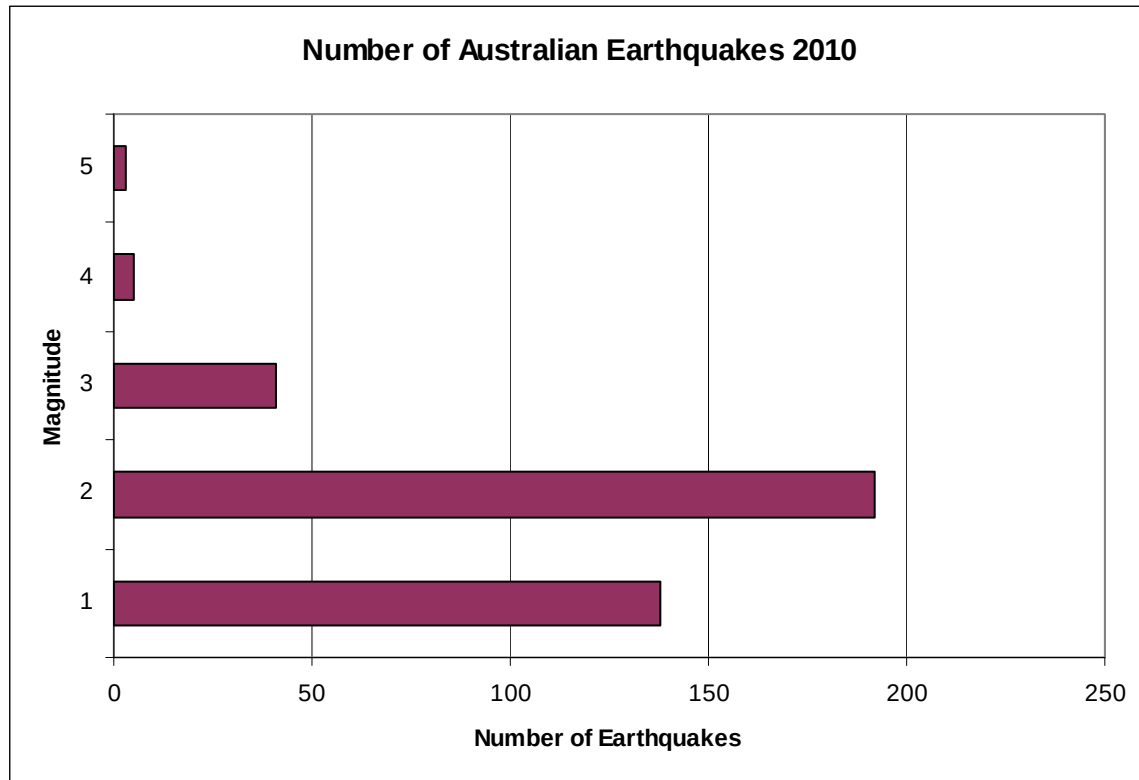


Figure 2: Number of Australian Earthquakes by Magnitude 2010. (Note that not all small earthquakes [less than magnitude 3] can be located)

Table 2: Australian Top 10 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 2010.

MAGNITUDE	DATE	TIME (UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS	TIME SINCE
5	20-Apr-10	00:17:10	-30.787	121.489	2	Kalgoorlie, WA.	8 Mths
6.3	10-Aug-1997	09:20:31	-16.050	124.423	10	Collier Bay WA.	13 yrs
7.3	29-Apr-1941	01:35:39	-26.920	115.800	0	Meeberrie WA.	69 yrs

Table 4: Australian Earthquakes 2010 (Recorded by Geoscience Australia)

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
2.2	2-Jan-10	19:24:07	-30.75	118.206	0	SW of Bonnie Rock, WA.
2.3	6-Jan-10	08:36:39	-33.395	116.754	0	Darkan, WA.
2.8	8-Jan-10	14:24:34	-37.489	147.010	17	SW of Dargo, VIC.
1.9	14-Jan-10	21:35:37	-30.536	118.026	0	SE of Beacon, WA.
2.5	14-Jan-10	05:24:29	-33.147	120.278	0	N of Ravensthorpe, WA.
1.6	15-Jan-10	13:47:13	-36.348	148.997	10	East of Berridale, NSW.
2.5	15-Jan-10	17:17:37	-31.696	117.036	0	Meckering, WA.
2.0	18-Jan-10	14:18:03	-30.528	118.085	0	SE of Beacon, WA.
1.6	20-Jan-10	07:31:18	-35.734	148.270	10	E of Tumbarumba, NSW.
2.4	20-Jan-10	18:54:32	-31.5442	117.336	5	NE of Cunderdin, WA.
2.4	23-Jan-10	06:00:54	-31.6	117.057	4	E of Northam, WA.
3.8	26-Jan-10	18:25:32	-26.08	115.510	4	Mt Rebecca, WA.
3.6	3-Feb-10	05:02:04	-27.984	138.140	1	NE of Lake Eyre, SA.
2.6	6-Feb-10	19:31:18	-33.355	150.287	12	NE of Lithgow, NSW.
2.0	14-Feb-10	10:14:36	-30.564	118.016	5	SE of Beacon, WA.
2.9	14-Feb-10	05:03:19	-32.506	122.307	0	SE of Norseman, WA.
1.7	15-Feb-10	11:25:06	-35.213	138.501	16	West of McLaren Vale, SA.
1.9	15-Feb-10	17:23:59	-34.815	149.396	0	E of Gunning, NSW.
2.0	17-Feb-10	18:12:09	-30.936	116.620	0	Wongan Hills, WA.
2.0	17-Feb-10	09:39:31	-19.811	133.935	1	Tennant Creek, NT.
2.4	17-Feb-10	04:12:16	-32.983	151.517	0	NW of Ryhope NSW.
2.0	19-Feb-10	18:31:42	-32.01	116.784	0	S of York, WA.
2.1	19-Feb-10	14:24:04	-32.08	116.665	0	SW of York, WA.
3.0	20-Feb-10	18:50:01	-34.714	149.577	7	NW of Goulburn, NSW.
2.3	23-Feb-10	02:45:03	-33.296	150.407	0	NE of Lithgow, NSW.
2.4	23-Feb-10	22:27:55	-35.174	148.753	7	SE of Wee Jasper, NSW.
1.3	24-Feb-10	12:11:45	-31.908	116.805	10	Near York, WA.
1.7	26-Feb-10	16:41:26	-29.879	116.476	5	South of Latham, WA.
1.5	27-Feb-10	19:02:19	-30.771	118.254	5	North of Mukinbudin, WA.
2.7	28-Feb-10	05:08:44	-37.358	146.325	12	E of Jamieson, VIC.
1.8	4-Mar-10	18:06:56	-19.886	134.153	1	Tennant Creek, NT.
2.3	4-Mar-10	07:50:54	-30.418	117.749	0	Beacon, WA.
2.9	5-Mar-10	22:25:41	-33.463	148.926	0	SW of Orange, NSW.
3.0	10-Mar-10	00:45:17	-35.632	151.401	0	Off Ulladulla, NSW.
2.8	11-Mar-10	16:25:08	-22.413	132.472	0	NW of Alice Springs, NT.
3.0	11-Mar-10	07:58:36	-37.066	138.354	10	125km W of Robe, SA.
3.3	11-Mar-10	12:57:53	-32.622	152.252	0	Nelson Bay area, NSW.
2.4	13-Mar-10	00:08:15	-36.778	150.538	0	Tasman Sea.
3.0	14-Mar-10	18:29:02	-33.4649	148.945	0	SW of Orange, NSW.
1.8	15-Mar-10	21:06:40	-33.513	149.029	0	SW of Orange, NSW.
2.0	15-Mar-10	04:09:07	-33.55	149.021	0	SW of Orange, NSW.
2.2	15-Mar-10	00:56:25	-33.442	148.973	1	SW of Orange, NSW.
2.5	15-Mar-10	16:01:42	-33.503	148.950	2	SW of Orange, NSW.

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1.9	16-Mar-10	04:48:50	-32.699	116.467	0	Boddington area, WA.
1.4	17-Mar-10	17:54:31	-19.802	134.019	3	Tennant Creek, NT.
2.9	20-Mar-10	10:56:40	-18.718	126.785	1	SW of Halls Creek, WA.
3.3	22-Mar-10	21:11:50	-33.469	148.969	2	SW of Orange, NSW.
2.4	23-Mar-10	03:40:26	-19.78	133.959	1	Tennant Creek, NT.
3.0	23-Mar-10	15:26:21	-15.797	128.712	3	Kununurra, WA.
1.9	25-Mar-10	17:37:43	-34.158	150.774	0	Appin area, NSW.
2.3	27-Mar-10	07:59:15	-37.17	146.758	0	Wonnangatta, VIC.
2.7	28-Mar-10	16:37:37	-30.832	121.558	10	Near Kalgoorlie, WA.
2.0	29-Mar-10	20:38:21	-30.556	117.012	1	Burakin, WA.
2.3	29-Mar-10	06:44:29	-35.78	147.214	10	Holbrook area, NSW.
3.0	29-Mar-10	22:05:30	-30.533	117.032	0	Burakin, WA.
3.0	30-Mar-10	08:08:26	-38.075	144.675	10	NE of Portarlington, VIC.
2.4	3-Apr-10	20:50:26	-32.92	151.494	0	Mt Vincent, NSW.
2.6	3-Apr-10	17:49:42	-38.628	146.074	0	S of Leongatha, VIC.
2.6	3-Apr-10	13:47:49	-30.683	118.316	0	Mukinbudin, WA.
5.0	5-Apr-10	11:23:45	-42.423	124.939	37	South of Australia, Indian Ocean.
2.7	6-Apr-10	06:37:38	-38.133	147.645	0	SW of Lakes Entrance, VIC.
3.4	11-Apr-10	12:02:58	-16.924	132.830	20	NW of Newcastle Waters, NT.
2.8	12-Apr-10	12:38:17	-16.911	132.823	20	NW of Newcastle Waters, NT.
2.6	13-Apr-10	11:10:50	-31.309	117.284	4	SW of Wyalkatchem, WA.
2.5	16-Apr-10	13:57:22	-32.069	149.993	0	S of Cassilis, NSW.
3.8	16-Apr-10	19:26:21	-35.033	139.002	4	Near Mt Barker, SA.
2.5	17-Apr-10	08:57:39	-30.74	121.492	0	Kalgoorlie, WA.
2.7	18-Apr-10	23:20:05	-32.16	150.965	10	W of Dangarfield, NSW.
2.6	20-Apr-10	00:17:10	-32.356	122.199	0	SE of Norseman, WA.
2.6	20-Apr-10	18:38:14	-30.823	121.464	2	Kalgoorlie, WA.
5.0	20-Apr-10	10:19:45	-30.787	121.489	2	Kalgoorlie, WA.
2.8	21-Apr-10	15:45:37	-32.322	118.049	3	E of Corrigin, WA.
2.4	22-Apr-10	11:22:43	-28.642	116.143	0	NE of Morowa, WA.
2.6	22-Apr-10	22:24:26	-30.786	121.525	10	Kalgoorlie, WA.
2.8	22-Apr-10	01:20:08	-32.838	121.520	0	S of Norseman, WA.
2.8	23-Apr-10	15:49:38	-30.899	121.419	0	S of Kalgoorlie, WA.
2.8	25-Apr-10	13:05:56	-30.764	121.526	0	Kalgoorlie, WA.
2.9	25-Apr-10	15:40:34	-36.879	144.253	10	S of Bendigo, VIC.
1.1	29-Apr-10	00:23:19	-19.873	134.122	0	Tennant Creek, NT.
2.7	30-Apr-10	00:38:17	-30.795	121.451	0	S of Kalgoorlie, WA.
2.8	30-Apr-10	11:48:59	-30.754	117.763	7	Bencubbin, WA.
2.6	2-May-10	04:30:41	-30.714	118.002	11	NE of Bencubbin, WA.
2.8	9-May-10	16:55:08	-30.843	121.411	0	SW of Kalgoorlie, WA.
2.6	12-May-10	11:09:08	-33.646	118.278	4	Pingrup, WA.
2.1	16-May-10	01:37:57	-19.843	134.024	4	Tennant Creek, NT.
3.6	19-May-10	20:08:03	-24.985	111.125	50	W of Carnarvon, WA.
1.2	21-May-10	18:25:49	-35.357	149.330	4	NW of Carwoola, NSW.
1.2	21-May-10	19:38:30	-35.355	149.336	3	N of Carwoola, NSW.

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2.7	24-May-10	00:56:52	-36.863	145.718	3	Strathbogie, VIC.
2.4	25-May-10	08:35:20	-36.727	147.091	0	Bright area, VIC.
1.6	26-May-10	10:09:20	-30.034	117.196	0	N of Kalannie, WA.
3.0	26-May-10	20:50:24	-36.634	144.796	10	Colbinabbin, VIC.
2.7	27-May-10	11:08:54	-34.005	139.600	10	NW of Morgan, SA.
2.6	31-May-10	19:20:17	-32.614	149.643	0	Mudgee, NSW.
2.1	4-Jun-10	10:56:26	-32.762	138.365	20	NW of Peterborough, SA.
2.6	4-Jun-10	18:58:50	-30.726	121.385	0	NW of Kalgoorlie, WA.
4.8	5-Jun-10	21:47:00	-33.559	136.714	15	NE of Cleve, SA.
1.9	6-Jun-10	18:29:47	-28.674	116.127	0	NE of Canna, WA.
2.5	6-Jun-10	10:25:17	-30.844	121.487	0	S of Kalgoorlie, WA.
3.1	7-Jun-10	12:30:28	-28.007	140.791	0	Innamincka, SA.
3.9	8-Jun-10	20:07:17	-21.935	113.534	34	W of Exmouth, WA.
2.0	9-Jun-10	15:41:42	-30.724	118.309	0	N of Mukinbudin, WA.
3.3	9-Jun-10	03:53:58	-22.166	123.256	0	East of Lake Dora, WA.
1.8	11-Jun-10	13:51:59	-33.806	136.312	1	Verran, SA.
2.2	11-Jun-10	18:29:45	-32.6	118.869	9	South of Hyden, WA.
2.3	11-Jun-10	08:36:18	-16.213	128.459	8	W of Lake Argyle, WA.
2.1	14-Jun-10	12:51:48	-41.155	146.752	1	Near Beaconsfield, TAS.
2.0	16-Jun-10	22:59:32	-30.5675	121.776	5	Kalgoorlie, WA.
2.2	17-Jun-10	10:58:59	-36.424	149.025	12	SE of Berridale, NSW.
2.1	19-Jun-10	18:09:02	-28.665	116.159	0	N of Morawa, WA.
2.3	19-Jun-10	18:28:00	-28.704	116.171	0	N of Morawa, WA.
1.3	20-Jun-10	13:03:12	-30.881	116.919	7	W of Manmanning, WA.
1.3	20-Jun-10	17:51:01	-30.604	116.976	10	SW of Burakin, WA.
2.1	20-Jun-10	21:13:28	-32.039	138.325	0	Kanyaka, SA.
3.6	21-Jun-10	04:04:10	-21.524	129.752	5	Lake Mackay, NT.
2.3	23-Jun-10	03:30:00	-30.776	121.494	0	Kalgoorlie, WA.
1.5	25-Jun-10	08:58:38	-35.504	148.910	6	Corin Forest, ACT.
2.3	25-Jun-10	03:06:11	-28.09	115.793	0	NE of Geraldton, WA.
1.7	26-Jun-10	18:41:34	-33.543	136.712	0	Gawler Ranges, SA.
1.3	29-Jun-10	14:53:41	-35.733	149.664	5	SE of Captains Flat, NSW.
3.1	4-Jul-10	03:48:11	-22.37	113.677	13	SW of Learmonth, WA.
2.6	5-Jul-10	14:34:30	-24.916	118.336	0	N of Meekatharra WA.
1.2	7-Jul-10	18:53:49	-30.608	116.970	10	E of Ballidu, WA.
2.0	8-Jul-10	17:40:37	-30.737	117.186	1	NE of Cadoux, WA.
2.7	9-Jul-10	17:16:02	-38.424	145.826	0	Korumburra, VIC.
1.9	14-Jul-10	17:27:18	-28.709	116.220	0	NE of Canna, WA.
1.8	15-Jul-10	18:26:26	-33.048	118.011	0	SE of Harrismith, WA.
2.5	15-Jul-10	17:43:53	-33.905	119.454	10	East of Jerramungup, WA.
2.9	15-Jul-10	13:59:34	-35.884	143.225	10	North of Wycheproof, VIC.
3.5	15-Jul-10	05:05:58	-31.609	138.659	10	Wilpena, SA.
1.4	16-Jul-10	16:35:58	-30.403	117.304	0	Cadoux area, WA.
1.9	16-Jul-10	04:35:02	-32.207	116.253	0	SE of Armadale, WA.
3.7	16-Jul-10	01:42:18	-18	119.068	0	W of Broome, WA.
1.7	17-Jul-10	16:24:04	-32.399	116.550	10	W of Brookton, WA.

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2.6	17-Jul-10	07:05:12	-34.823	123.154	14	SE of Esperance, WA.
2.0	18-Jul-10	21:45:18	-19.846	134.091	0	Tennant Creek, NT.
2.0	21-Jul-10	05:46:06	-34.41	117.553	10	Near Cranbrook, WA.
2.9	23-Jul-10	22:20:42	-36.315	148.879	0	Near Berridale, NSW.
5.0	24-Jul-10	19:17:53	-12.752	114.453	0	Northwest of Australia.
2.4	26-Jul-10	18:38:30	-31.769	138.804	10	NE of Hawker, SA.
2.9	26-Jul-10	20:57:25	-30.9109	121.343	0	Kalgoorlie, WA.
2.0	27-Jul-10	15:39:07	-38.397	145.829	0	N of Korumburra, VIC.
2.0	28-Jul-10	03:46:06	-35.239	150.416	1	North of Milton, NSW.
2.7	28-Jul-10	12:59:49	-31.291	139.038	0	SE of Blinman, SA.
1.9	29-Jul-10	13:59:33	-36.313	148.868	0	Berridale, NSW.
2.3	29-Jul-10	12:48:28	-32.621	118.204	5	Kulin, WA.
2.3	29-Jul-10	04:51:44	-32.765	118.176	0	Kulin, WA.
2.8	29-Jul-10	09:23:37	-30.64	116.460	1	W of Ballidu, WA.
1.4	30-Jul-10	21:29:22	-32.184	138.099	0	NE of Quorn, SA.
1.7	30-Jul-10	23:27:57	-36.311	148.870	0	Berridale, NSW.
2.1	30-Jul-10	22:29:21	-32.189	138.212	6	NE of Quorn, SA.
2.2	30-Jul-10	21:24:55	-32.154	138.209	6	NE of Quorn, SA.
2.2	30-Jul-10	22:46:12	-32.167	138.246	0	NE of Quorn, SA.
2.2	30-Jul-10	21:12:17	-32.206	138.300	10	NE of Quorn, SA.
2.4	30-Jul-10	00:27:42	-33.553	136.745	10	NE of Cleve, SA.
4.2	30-Jul-10	22:16:12	-32.175	138.141	10	NE of Quorn, SA.
2.7	31-Jul-10	16:56:27	-32.224	138.206	12	NE of Quorn, SA.
2.9	31-Jul-10	02:45:38	-30.048	136.744	1	NW of Olympic Dam, SA.
2.2	1-Aug-10	14:07:10	-32.057	138.230	10	NE of Quorn, SA.
2.0	2-Aug-10	09:22:14	-30.202	117.636	0	NW of Beacon, WA.
2.1	5-Aug-10	12:26:32	-28.695	116.086	0	North of Morawa, WA.
2.8	6-Aug-10	06:50:38	-38.608	146.006	13	Buffalo, VIC.
1.7	8-Aug-10	11:02:12	-36.329	148.818	4	N of Berridale, NSW.
1.8	8-Aug-10	21:52:28	-36.326	148.899	0	Berridale, NSW.
1.4	10-Aug-10	07:25:48	-30.366	116.849	0	NE of Ballidu, WA.
3.5	11-Aug-10	21:12:06	-43.172	145.769	0	SW of Strathgordon, TAS.
2.5	14-Aug-10	21:23:19	-38.504	147.541	0	SE of Seaspray, VIC.
2.5	15-Aug-10	08:56:10	-26.701	152.283	6	East of Kingaroy, QLD.
1.8	17-Aug-10	15:39:18	-36.348	148.701	20	Jindabyne, NSW.
1.5	18-Aug-10	20:54:01	-35.897	149.691	0	W of Moruya, NSW.
1.6	18-Aug-10	02:37:40	-33.636	117.804	0	Badgebup, WA.
3.0	18-Aug-10	15:21:37	-25.345	117.219	1	SW of Mt Clare, WA.
1.9	19-Aug-10	14:11:26	-30.424	116.720	0	N of Ballidu, WA.
2.1	19-Aug-10	06:18:06	-28.715	116.112	0	NE of Canna, WA.
1.1	21-Aug-10	05:12:28	-30.896	116.973	0	Manmanning, WA.
1.6	21-Aug-10	15:30:19	-36.064	148.806	12	Adaminaby, NSW.
2.2	21-Aug-10	12:21:50	-31.258	118.701	5	NE of Merredin, WA.
3.4	22-Aug-10	04:10:30	-24.777	110.795	10	W of Carnarvon, off WA.
2.1	23-Aug-10	05:03:04	-28.683	116.110	0	N of Morawa, WA.
2.3	25-Aug-10	01:07:12	-14.499	130.775	10	S of Darwin, NT.

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2.4	25-Aug-10	04:42:55	-34.228	148.887	10	Boorowa, NSW.
1.7	26-Aug-10	11:08:28	-33.08	138.364	0	NW of Jamestown, SA.
3.0	26-Aug-10	08:40:14	-21.221	121.148	0	E of Marble Bar, WA.
1.5	27-Aug-10	19:39:22	-29.916	116.369	12	SW of Latham, WA.
1.5	28-Aug-10	16:03:54	-30.544	117.023	0	W of Burakin, WA.
2.2	29-Aug-10	01:52:35	-36.877	144.150	5	Bendigo, VIC.
1.3	31-Aug-10	09:52:32	-30.427	116.751	0	N of Ballidu, WA.
2.4	31-Aug-10	17:36:13	-31.615	116.977	4	Meckering, WA.
2.6	31-Aug-10	07:50:28	-30.875	117.799	1	SW of Bencubbin, WA.
2.3	1-Sep-10	18:48:58	-32.748	138.143	13	NW of Melrose, SA.
1.1	2-Sep-10	07:25:14	-30.53	117.070	0	Burakin, WA.
2.6	2-Sep-10	04:27:59	-30.855	117.799	0	Bencubbin, WA.
3.1	2-Sep-10	14:27:59	-14.31	129.351	0	NE of Kununarra, WA.
1.8	3-Sep-10	15:05:01	-19.746	133.958	0	SW of Tennant Creek, NT.
3.0	3-Sep-10	15:56:38	-20.281	123.232	10	Great Sandy Desert, WA.
1.2	4-Sep-10	09:57:07	-19.852	134.051	0	SW of Tennant Creek, NT.
2.2	4-Sep-10	23:50:29	-32.66	138.383	0	NE of Melrose, SA.
2.1	5-Sep-10	21:08:40	-35.242	148.391	11	NE of Tumut, NSW.
1.1	6-Sep-10	19:39:29	-19.832	134.000	1	SW of Tennant Creek, NT.
1.9	7-Sep-10	16:48:38	-30.174	116.777	0	NE of Dalwallinu, WA.
1.7	9-Sep-10	14:03:28	-33.006	138.300	9	NE of Crystal Brook, SA.
1.7	9-Sep-10	20:53:07	-29.961	115.542	10	SE of Eneabba, WA.
2.0	9-Sep-10	21:50:03	-19.768	134.056	0	SW of Tennant Creek, NT.
1.3	10-Sep-10	11:46:02	-19.843	134.070	0	SW of Tennant Creek, NT.
2.1	10-Sep-10	13:41:01	-19.86	134.052	0	SW of Tennant Creek, NT.
1.6	11-Sep-10	16:49:32	-23.45	134.223	0	NE of Alice Springs, NT.
2.9	18-Sep-10	12:53:32	-22.045	114.650	0	SW of Onslow, WA.
2.6	19-Sep-10	21:23:15	-30.745	121.642	1	East of Kalgoorlie, WA.
1.2	22-Sep-10	23:58:49	-30.407	117.221	0	Kalannie, WA.
2.2	24-Sep-10	14:54:24	-36.247	148.295	0	Khancoban, NSW.
2.9	26-Sep-10	22:59:35	-30.52	117.447	0	N of Koorda, WA.
2.3	27-Sep-10	16:00:25	-34.17	148.887	8	NE of Boorowa, NSW.
1.3	28-Sep-10	07:37:31	-33.612	117.748	0	NE of Katanning, WA.
4.0	29-Sep-10	09:09:25	-29.568	143.752	0	NW of Bourke, NSW.
1.8	30-Sep-10	04:27:38	-31.7	117.084	0	Meckering, WA.
1.6	3-Oct-10	18:28:23	-29.524	116.345	0	Perenjorie area, WA.
1.9	4-Oct-10	22:11:13	-30.307	117.697	0	NW of Beacon, WA.
2.0	4-Oct-10	23:27:24	-30.247	117.735	0	W of Beacon, WA.
2.1	4-Oct-10	23:30:55	-30.269	117.697	0	NW of Beacon, WA.
1.8	5-Oct-10	07:15:31	-30.266	117.707	0	NW of Beacon, WA.
1.8	5-Oct-10	10:24:44	-30.222	117.733	0	NW of Beacon, WA.
1.9	5-Oct-10	07:24:40	-30.302	117.694	0	NW of Beacon, WA.
1.9	5-Oct-10	07:28:40	-30.265	117.737	0	NW of Beacon, WA.
2.0	5-Oct-10	10:05:36	-30.313	117.695	0	NW of Beacon, WA.
2.4	5-Oct-10	11:53:25	-30.301	117.633	0	NW of Beacon, WA.
2.5	5-Oct-10	01:42:47	-29.598	143.710	10	NW of Bourke, NSW.

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2.6	5-Oct-10	05:40:39	-30.2615	117.768	0	NW of Beacon, WA.
1.4	8-Oct-10	10:53:50	-30.753	117.057	0	Cadoux, WA.
3.2	8-Oct-10	12:01:43	-33.708	138.577	3	NW of Clare, SA.
4.1	10-Oct-10	02:30:18	-32.902	139.961	0	E of Peterborough, SA.
2.0	13-Oct-10	18:49:07	-33.678	136.677	0	Cleve area, SA.
3.1	14-Oct-10	11:00:56	-23.319	135.707	0	E of Alice Springs, NT.
1.8	15-Oct-10	13:06:02	-30.702	117.485	2	N of Koorda, WA.
3.5	15-Oct-10	22:33:34	-19.603	117.435	10	NW of Port Hedland, WA.
1.8	16-Oct-10	14:07:40	-30.274	117.692	6	NW of Beacon, WA.
2.3	16-Oct-10	18:20:44	-34.227	148.895	17	NE of Boorowa, NSW.
2.6	16-Oct-10	15:30:56	-38.108	146.319	0	N of Morwell, VIC.
3.3	16-Oct-10	15:15:13	-38.072	146.458	0	N of Morwell, VIC.
1.4	17-Oct-10	10:53:11	-31.719	117.039	0	SE of Meckering, WA.
1.7	17-Oct-10	12:10:19	-30.237	117.763	0	N of Beacon, WA.
2.9	17-Oct-10	02:08:26	-30.209	117.759	0	N of Beacon, WA.
1.3	19-Oct-10	04:03:57	-30.033	117.179	0	N of Kalannie, WA.
1.7	20-Oct-10	15:09:01	-30.822	117.052	0	SW of Cadoux, WA.
1.1	21-Oct-10	08:30:14	-32.734	117.138	13	N of Narrogin, WA.
2.1	21-Oct-10	10:11:00	-32.359	117.610	0	W of Corrigin, WA.
2.5	21-Oct-10	23:27:49	-29.424	113.972	0	SW of Geraldton, WA.
2.4	22-Oct-10	04:45:41	-38.56	146.212	10	North of Foster, VIC.
2.9	22-Oct-10	16:32:46	-33.36	149.498	0	NW of Bathurst, NSW.
1.6	23-Oct-10	03:40:20	-33.733	138.608	8	Clare area, SA.
2.0	23-Oct-10	02:01:21	-34.206	135.837	0	SE of Yeelanna, SA.
2.6	23-Oct-10	10:47:27	-34.14	135.914	0	E of Yeelanna, SA.
1.8	24-Oct-10	10:17:23	-30.262	117.731	0	NW of Beacon, WA.
2.7	24-Oct-10	18:11:45	-30.52	123.594	10	N of Zanthus, WA.
2.7	24-Oct-10	12:55:08	-25.367	116.939	6	Landor area, WA.
2.9	24-Oct-10	09:10:13	-30.582	124.228	31	NE of Zanthus, WA.
2.2	25-Oct-10	04:48:45	-36.925	144.176	9	Maldon, VIC.
2.0	27-Oct-10	14:18:02	-30.836	117.962	2	NW of Mukinbudin, WA.
2.0	27-Oct-10	15:14:04	-30.824	117.963	1	Welbungin, WA.
2.2	27-Oct-10	15:13:09	-30.762	118.000	0	NW of Mukinbudin, WA.
3.0	27-Oct-10	12:30:39	-29.599	143.756	0	NW of Bourke, NSW.
3.0	27-Oct-10	16:17:42	-29.652	143.805	0	NW of Bourke, NSW.
4.4	27-Oct-10	13:16:06	-29.438	143.594	7	NW of Bourke, NSW.
1.5	30-Oct-10	23:35:41	-33.634	118.210	5	SE of Nyabing, WA.
1.6	30-Oct-10	00:07:35	-33.326	118.123	7	North of Nyabing, WA.
1.6	30-Oct-10	02:53:53	-33.311	118.167	3	North of Nyabing, WA.
2.8	30-Oct-10	07:28:13	-33.303	118.208	2	N of Nyabing, WA.
2.3	31-Oct-10	03:40:42	-34.461	148.253	3	Young, NSW.
1.8	2-Nov-10	20:35:58	-30.635	118.342	0	S of Bonnie Rock, WA.
1.5	3-Nov-10	09:43:19	-30.329	116.698	15	N of Ballidu, WA.
1.7	3-Nov-10	07:37:07	-30.605	118.404	0	SE of Bonnie Rock, WA.
1.8	3-Nov-10	13:38:24	-30.655	118.343	0	S of Bonnie Rock, WA.
1.9	3-Nov-10	16:39:01	-30.649	118.348	0	S of Bonnie Rock, WA.

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1.9	3-Nov-10	20:04:52	-33.4775	136.749	10	NE of Cleve, SA.
1.9	3-Nov-10	17:17:49	-30.732	118.377	10	S of Bonnie Rock, WA.
2.0	3-Nov-10	19:30:58	-30.615	118.332	0	Near Bonnie Rock, WA.
2.1	3-Nov-10	14:22:09	-30.753	118.332	10	S of Bonnie Rock, WA.
2.1	3-Nov-10	11:11:38	-30.652	118.291	0	SW of Bonnie Rock, WA.
2.2	3-Nov-10	13:48:01	-30.731	118.376	5	Bonnie Rock, WA.
2.2	3-Nov-10	15:54:29	-30.651	118.353	5	S of Bonnie Rock, WA.
1.8	4-Nov-10	01:47:54	-36.391	149.120	10	S of Cooma, NSW.
1.4	5-Nov-10	08:21:30	-30.452	116.638	5	Pithara, WA.
1.8	5-Nov-10	08:25:20	-36.366	148.651	10	NE of Jindabyne, NSW.
1.9	5-Nov-10	00:03:54	-36.367	148.538	10	NW of Jindabyne, NSW.
1.3	6-Nov-10	19:11:20	-30.487	116.606	11	NW of Ballidu, WA.
1.5	6-Nov-10	08:58:26	-31.227	116.436	0	Bolgart, WA.
2.2	7-Nov-10	12:51:38	-30.641	118.551	7	SE of Bonnie Rock, WA.
1.6	8-Nov-10	19:41:17	-31.169	118.611	0	NW of Westonia, WA.
1.8	8-Nov-10	16:15:11	-30.288	117.659	8	NW of Beacon, WA.
1.9	8-Nov-10	21:29:43	-36.266	148.753	10	NW of Berridale, NSW.
2.7	8-Nov-10	05:44:41	-31.113	119.162	10	NW of Southern Cross, WA.
1.0	9-Nov-10	19:20:13	-30.922	116.561	15	Wongan Hills, WA.
2.0	9-Nov-10	12:10:00	-34.355	147.584	0	NE of Temora, NSW.
2.8	9-Nov-10	17:47:15	-38.358	139.979	20	S of Beachport, SA.
1.8	10-Nov-10	01:04:00	-33.8416	139.101	8	SE of Burra, SA.
3.1	10-Nov-10	23:12:31	-23.32	136.649	10	E of Alice Springs, NT.
1.5	12-Nov-10	18:52:15	-35.6705	148.651	10	NE of Kiandra, NSW.
2.1	13-Nov-10	19:36:50	-31.2037	116.420	0	S of Calingiri, WA.
2.5	13-Nov-10	03:23:56	-31.4471	138.870	10	NE of Wilpena pound, SA.
2.8	14-Nov-10	16:29:16	-27.001	140.374	10	N of Innamincka, SA.
2.0	16-Nov-10	10:00:30	-36.5676	149.629	10	Bega area, NSW.
2.2	17-Nov-10	09:58:47	-27.3273	115.496	10	SW of Murchison, WA.
1.9	19-Nov-10	19:14:07	-32.2433	117.365	10	Brookton area, WA.
1.2	20-Nov-10	11:12:30	-30.681	116.836	14	SE of Ballidu, WA.
2.1	20-Nov-10	05:39:27	-30.5632	118.509	5	Bonnie Rock, WA.
1.3	21-Nov-10	00:15:32	-32.2902	117.188	0	NE of Brookton, WA.
1.9	21-Nov-10	18:27:38	-16.7455	128.741	0	S of Kununurra, WA.
2.1	21-Nov-10	13:41:17	-30.5748	117.029	5	Burakin, WA.
3.1	24-Nov-10	17:44:55	-17.0937	121.321	10	NW of Broome, WA.
1.6	27-Nov-10	23:26:35	-30.5759	116.995	0	Burakin, WA.
2.6	28-Nov-10	08:11:40	-31.9709	141.486	16	Broken Hill, NSW.
3.4	29-Nov-10	20:08:06	-32.0584	139.683	10	NW of Manna Hill, SA.
2.5	30-Nov-10	16:02:19	-32.8933	151.315	13	NE of Ellalong, NSW.
1.5	1-Dec-10	15:39:17	-31.6936	117.003	10	S of Meckering, WA.
1.5	1-Dec-10	17:28:54	-41.7623	148.450	10	Offshore of Seymour, TAS.
1.7	2-Dec-10	18:30:10	-30.3497	117.630	10	NW of Beacon, WA.
1.8	2-Dec-10	09:50:02	-29.9493	116.226	2	SE of Coorow, WA.
2.5	2-Dec-10	21:24:03	-14.6581	128.594	2	N of Kununurra, WA.
1.4	3-Dec-10	14:24:30	-33.3093	118.199	5	North of Nyabing, WA.

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1.5	3-Dec-10	00:40:05	-33.3218	118.141	3	North of Nyabing, WA.
1.6	3-Dec-10	13:42:46	-33.3233	118.153	3	North of Nyabing, WA.
1.7	3-Dec-10	21:01:46	-30.8608	117.589	10	W of Bencubbin, WA.
1.9	3-Dec-10	20:00:31	-30.3052	117.707	10	NW of Beacon, WA.
2.0	3-Dec-10	16:37:37	-30.2705	117.694	13	NW of Beacon, WA.
2.1	3-Dec-10	06:47:30	-30.2938	117.676	10	Beacon area, WA.
2.5	3-Dec-10	01:22:22	-33.933	135.908	10	North of Cummins, SA.
2.6	3-Dec-10	02:02:35	-32.8817	151.339	9	Cessnock area, NSW.
1.5	4-Dec-10	08:42:32	-30.2985	116.768	10	Dalwallinu, WA.
1.8	4-Dec-10	00:27:24	-35.7175	150.819	0	E of Batemans Bay, NSW.
1.9	4-Dec-10	23:57:21	-30.5085	116.604	17	NW of Ballidu, WA.
1.7	5-Dec-10	13:25:29	-36.0064	148.438	0	SE of Cabramurra, NSW.
1.8	5-Dec-10	15:34:51	-30.2334	116.893	10	Dalwallinu, WA.
1.9	5-Dec-10	21:22:12	-33.4573	138.133	11	Near Merriton, SA.
2.3	5-Dec-10	00:18:56	-14.3208	128.629	35	N of Kununurra, WA.
3.6	5-Dec-10	18:19:46	-14.8854	128.900	30	N of Kununurra, WA.
1.8	6-Dec-10	03:46:07	-34.6908	149.861	0	Towrang, NSW.
1.9	6-Dec-10	05:34:01	-30.3344	116.674	15	Dalwallinu, WA.
2.1	6-Dec-10	03:19:00	-31.7032	117.083	0	Meckering, WA.
1.6	7-Dec-10	01:39:25	-30.2164	116.965	9	NW of Kalannie, WA.
1.9	7-Dec-10	14:51:31	-30.5671	118.524	0	Bonnie Rock, WA.
1.5	8-Dec-10	09:10:20	-32.2981	117.197	0	NE of Brookton, WA.
1.7	8-Dec-10	05:43:19	-32.3103	117.244	1	NE of Brookton, WA.
2.0	8-Dec-10	08:34:30	-32.9263	120.662	0	NE of Ravensthorpe, WA.
2.6	8-Dec-10	08:37:07	-38.1051	148.847	0	E of Lakes Entrance, VIC.
1.5	9-Dec-10	16:53:04	-33.5139	136.754	10	NW of Cowell, SA.
2.7	9-Dec-10	12:05:08	-17.2233	127.410	5	Near Bedford Downs, WA.
1.6	10-Dec-10	22:10:50	-19.7223	133.857	0	Tennant Creek, NT.
2.5	10-Dec-10	12:44:05	-29.5613	143.738	10	NW of Wanaaring, NSW.
2.7	10-Dec-10	18:25:39	-14.8417	129.110	10	N of Kununurra, WA.
1.7	11-Dec-10	13:02:58	-33.8023	150.337	10	SE of Katoomba, NSW.
2.2	11-Dec-10	14:24:08	-36.6233	147.964	10	NW of Mt Murphy, VIC.
2.3	12-Dec-10	12:26:13	-33.7918	136.338	10	Near Cleve, SA.
2.5	12-Dec-10	22:38:36	-26.9645	114.607	10	N of Northampton, WA.
2.1	13-Dec-10	13:15:19	-33.5413	136.737	15	NE of Cleve, SA.
1.8	15-Dec-10	02:50:48	-36.3457	148.806	0	Berridale, NSW.
1.7	16-Dec-10	21:41:16	-30.2334	116.627	0	Dalwallinu area, WA.
1.7	16-Dec-10	04:36:03	-32.0807	116.078	10	Canning Mills, WA.
2.2	16-Dec-10	08:22:23	-30.6048	118.504	5	SE of Bonnie Rock, WA.
2.2	19-Dec-10	19:47:55	-28.657	116.188	0	NE of Morawa, WA.
2.3	19-Dec-10	19:31:07	-28.6903	116.128	0	NE of Morawa, WA.
1.9	20-Dec-10	18:06:34	-33.8493	139.032	12	SE of Burra, SA.
2.4	20-Dec-10	17:03:22	-36.9553	150.200	10	E of Merimbula, NSW.
3.5	21-Dec-10	15:00:42	-13.1147	127.327	10	NW of Kununurra, WA.
1.3	22-Dec-10	05:45:11	-30.4768	116.611	8	NW of Ballidu, WA.
2.4	22-Dec-10	22:53:12	-34.3589	146.155	15	Griffith area, NSW.

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2.5	22-Dec-10	06:27:58	-30.661	117.782	5	SW of Beacon, WA.
2.5	22-Dec-10	05:41:21	-29.5549	143.740	10	Wanaaring, NSW.
3.0	22-Dec-10	10:16:31	-29.5558	143.728	10	Wanaaring, NSW.
1.5	23-Dec-10	12:43:12	-30.7124	117.717	10	NW of Bencubbin, WA.
1.7	23-Dec-10	06:11:57	-30.6737	117.750	10	NW of Bencubbin, WA.
2.0	23-Dec-10	03:39:35	-30.6114	117.840	0	N of Bencubbin, WA.
1.9	25-Dec-10	12:01:32	-38.9712	144.636	17	Bass Strait, VIC.
2.5	25-Dec-10	09:43:54	-22.2116	129.532	10	E of Lake Mackay, NT.
3.2	25-Dec-10	00:23:31	-22.1968	129.721	15	E of Lake Mackay, NT.
1.1	26-Dec-10	13:09:34	-30.9119	116.864	8	Cadoux, WA.
1.6	27-Dec-10	15:58:52	-30.7588	117.715	0	NW of Bencubbin, WA.
1.8	27-Dec-10	21:12:06	-36.3063	148.915	10	NE of Berridale, NSW.
1.9	27-Dec-10	21:48:25	-36.3335	148.966	10	NE of Berridale, NSW.
2.3	27-Dec-10	20:46:13	-33.9879	115.063	0	SW of Margaret River, WA.
1.9	28-Dec-10	08:51:51	-36.1018	138.207	3	SW of Victor Harbour, SA.
3.0	28-Dec-10	00:46:28	-38.5589	147.311	10	SE of Seaspray, VIC.

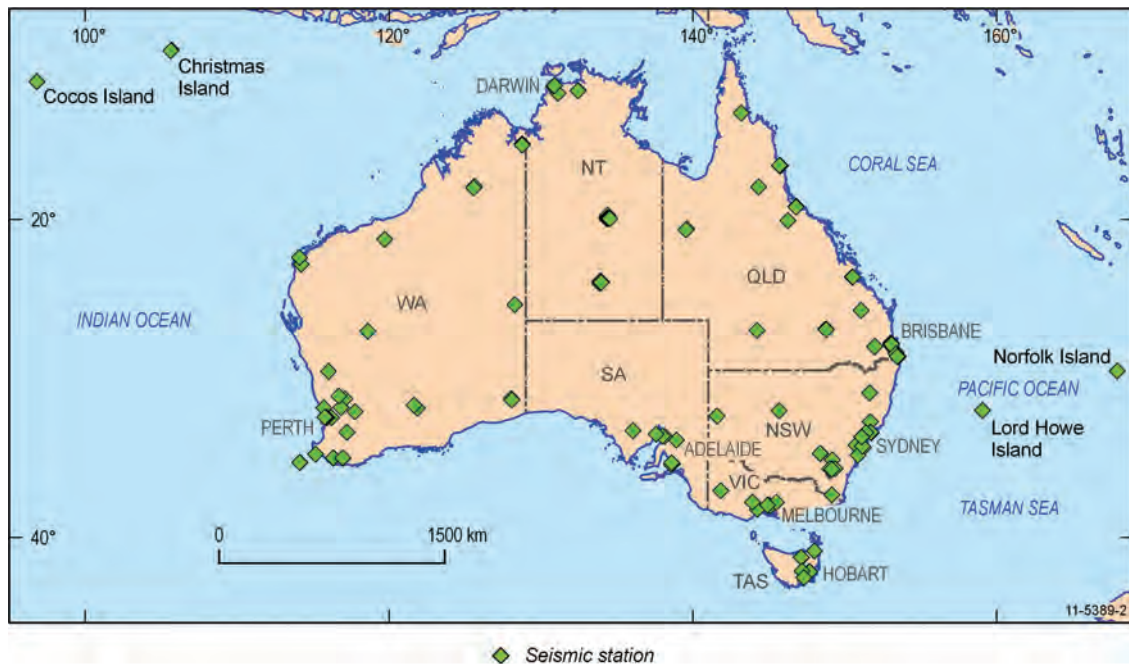


Figure 3: Map of Australian National Seismic Network (ANSN) Stations operated by Geoscience Australia, including triggered stations.

Table 5: Australian ANSN Station List current to 25th November 2010

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
G_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
MUN	Mundaring, Western Australia	Available from SEEDLINK
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
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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
WRKA	Warrakurna, Western Australia	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 2010

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 Aust.	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
NTLH	Newcastle Hard Rock, New South Wales	Not yet available
NTLS	Newcastle Soft Rock, New South Wales	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
SYDH	Sydney Hard Rock, New South Wales	Available from SEEDLINK
SYDS	Sydney Soft Rock, New South Wales	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 Aust.	Available from SEEDLINK
WHYH	Whyalla, South Australia	Available from SEEDLINK
WOLH	Wollongong Hard Rock, New South Wales	Not yet available
WOLS	Wollongong Soft Rock, New South Wales	Not yet available

Australian Capital Territory

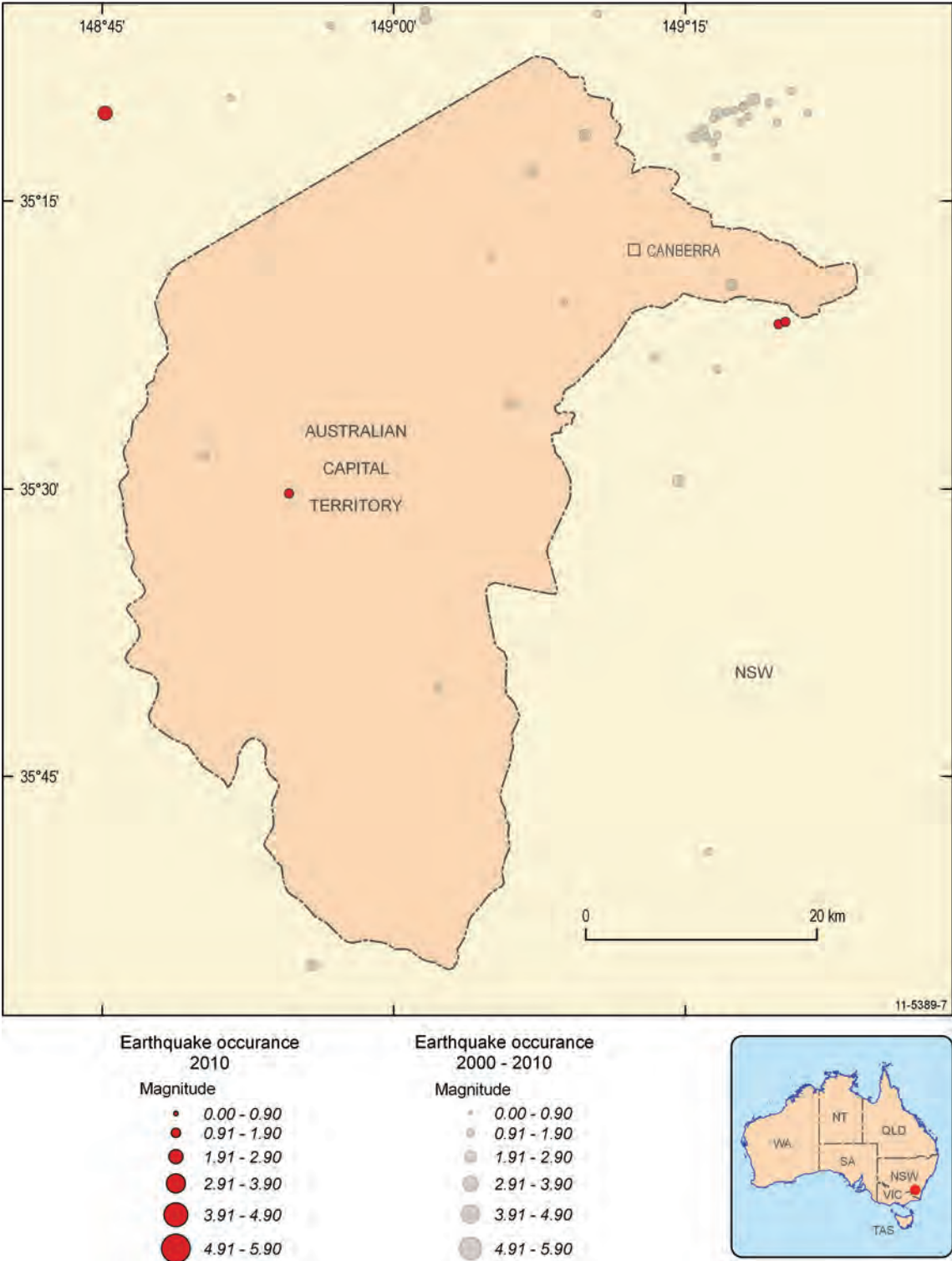


Figure 4: Map of 2010 Australian Capital Territory Earthquakes (magnitude sized circles with subdued historical seismicity).

Table 7: Australian Capital Territory Top 9 Earthquakes

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
3.0	25-Apr-1970	10:54:50	-35.430	149.100	18	ACT
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

Table 8: Australian Capital Territory Earthquakes 2010

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
1.5	25-Jun-10	03:06:11	-35.504	148.910	6	Corin Forest, ACT.

New South Wales

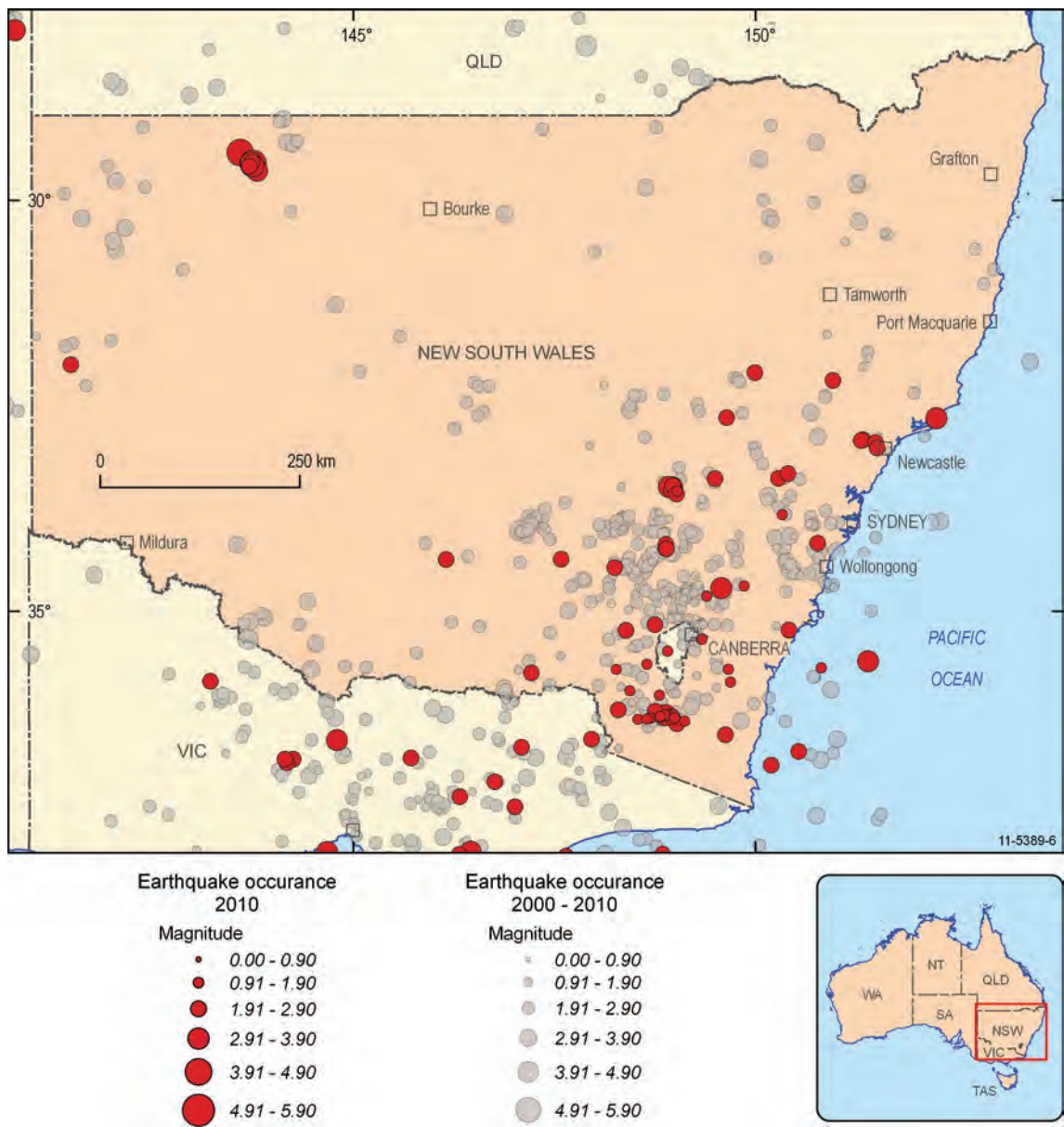


Figure 5: Map of 2010 New South Wales Earthquakes (magnitude sized circles with subdued historical seismicity).

Table 9: New South Wales Top 7 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.
5.7	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	Bowning, NSW.
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 10: New South Wales Earthquakes 2010

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
1.6	15-Jan-10	17:17:37	-36.348	148.997	10	East of Berridale, NSW.
1.6	20-Jan-10	18:54:32	-35.734	148.270	10	E of Tumbarumba, NSW.
2.6	6-Feb-10	19:31:18	-33.355	150.287	12	NE of Lithgow, NSW.
1.9	15-Feb-10	11:25:06	-34.815	149.396	0	E of Gunning, NSW.
2.4	17-Feb-10	18:12:09	-32.983	151.517	0	NW of Ryhope, NSW.
3.0	20-Feb-10	18:50:01	-34.714	149.577	7	NW of Goulburn, NSW.
2.4	23-Feb-10	02:45:03	-35.174	148.753	7	SE of Wee Jasper, NSW.
2.3	23-Feb-10	22:27:55	-33.296	150.407	0	NE of Lithgow, NSW.
2.9	5-Mar-10	22:25:41	-33.463	148.926	0	SW of Orange, NSW.
3.0	10-Mar-10	00:45:17	-35.632	151.401	0	Off Ulladulla, NSW.
3.3	11-Mar-10	16:25:08	-32.622	152.252	0	Nelson Bay area, NSW.
2.4	13-Mar-10	00:08:15	-36.778	150.538	0	Tasman Sea.
3.0	14-Mar-10	18:29:02	-33.4649	148.945	0	SW of Orange, NSW.
2.5	15-Mar-10	21:06:40	-33.503	148.950	2	SW of Orange, NSW.
2.2	15-Mar-10	04:09:07	-33.442	148.973	1	SW of Orange, NSW.
2.0	15-Mar-10	00:56:25	-33.55	149.021	0	SW of Orange, NSW.
1.8	15-Mar-10	16:01:42	-33.513	149.029	0	SW of Orange, NSW.
3.3	22-Mar-10	21:11:50	-33.469	148.969	2	SW of Orange, NSW.
1.9	25-Mar-10	17:37:43	-34.158	150.774	0	Appin area, NSW.
2.3	29-Mar-10	06:44:29	-35.78	147.214	10	Holbrook area, NSW.
2.4	3-Apr-10	13:47:49	-32.92	151.494	0	Mt Vincent, NSW.
2.5	16-Apr-10	19:26:21	-32.069	149.993	0	S of Cassilis, NSW.
2.7	18-Apr-10	23:20:05	-32.16	150.965	10	W of Dangarfield, NSW.
1.2	21-May-10	18:25:49	-35.357	149.330	4	NW of Carwoola, NSW.
1.2	21-May-10	19:38:30	-35.355	149.336	3	N of Carwoola, NSW.
2.6	31-May-10	19:20:17	-32.614	149.643	0	Mudgee, NSW.
2.2	17-Jun-10	10:58:59	-36.424	149.025	12	SE of Berridale, NSW.
1.3	29-Jun-10	14:53:41	-35.733	149.664	5	SE of Captains Flat, NSW.
2.9	23-Jul-10	22:20:42	-36.315	148.879	0	Near Berridale, NSW.
2.0	28-Jul-10	12:59:49	-35.239	150.416	1	North of Milton, NSW.
1.9	29-Jul-10	09:23:37	-36.313	148.868	0	Berridale, NSW.
1.7	30-Jul-10	00:27:42	-36.311	148.870	0	Berridale, NSW.
1.7	8-Aug-10	21:52:28	-36.329	148.818	4	N of Berridale, NSW.

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1.8	8-Aug-10	11:02:12	-36.326	148.899	0	Berridale, NSW.
1.8	17-Aug-10	15:39:18	-36.348	148.701	20	Jindabyne, NSW.
1.5	18-Aug-10	15:21:37	-35.897	149.691	0	W of Moruya, NSW.
1.6	21-Aug-10	15:30:19	-36.064	148.806	12	Adaminaby, NSW.
2.4	25-Aug-10	01:07:12	-34.228	148.887	10	Boorowa, NSW.
2.1	5-Sep-10	21:08:40	-35.242	148.391	11	NE of Tumut, NSW.
2.2	24-Sep-10	14:54:24	-36.247	148.295	0	Khancoban, NSW.
2.3	27-Sep-10	16:00:25	-34.17	148.887	8	NE of Boorowa, NSW.
4.0	29-Sep-10	09:09:25	-29.568	143.752	0	NW of Bourke, NSW.
2.5	5-Oct-10	10:24:44	-29.598	143.710	10	NW of Bourke, NSW.
2.3	16-Oct-10	15:30:56	-34.227	148.895	17	NE of Boorowa, NSW.
2.9	22-Oct-10	04:45:41	-33.36	149.498	0	NW of Bathurst, NSW.
4.4	27-Oct-10	14:18:02	-29.438	143.594	7	NW of Bourke, NSW.
3.0	27-Oct-10	15:13:09	-29.599	143.756	0	NW of Bourke, NSW.
3.0	27-Oct-10	15:14:04	-29.652	143.805	0	NW of Bourke, NSW.
2.3	31-Oct-10	03:40:42	-34.461	148.253	3	Young, NSW.
1.8	4-Nov-10	01:47:54	-36.391	149.120	10	S of Cooma, NSW.
1.9	5-Nov-10	08:21:30	-36.367	148.538	10	NW of Jindabyne, NSW.
1.8	5-Nov-10	08:25:20	-36.366	148.651	10	NE of Jindabyne, NSW.
1.9	8-Nov-10	16:15:11	-36.266	148.753	10	NW of Berridale, NSW.
2.0	9-Nov-10	12:10:00	-34.355	147.584	0	NE of Temora, NSW.
1.5	12-Nov-10	18:52:15	-35.6705	148.651	10	NE of Kiandra, NSW.
2.0	16-Nov-10	10:00:30	-36.5676	149.629	10	Bega area, NSW.
2.6	28-Nov-10	08:11:40	-31.9709	141.486	16	Broken Hill, NSW.
2.5	30-Nov-10	16:02:19	-32.8933	151.315	13	NE of Ellalong, NSW.
2.6	3-Dec-10	14:24:30	-32.8817	151.339	9	Cessnock area, NSW.
1.8	4-Dec-10	00:27:24	-35.7175	150.819	0	Off coast of Batemans Bay, NSW.
1.7	5-Dec-10	18:19:46	-36.0064	148.438	0	SE of Cabramurra, NSW.
1.8	6-Dec-10	03:19:00	-34.6908	149.861	0	Towrang, NSW.
2.5	10-Dec-10	12:44:05	-29.5613	143.738	10	NW of Wanaaring, NSW.
1.7	11-Dec-10	14:24:08	-33.8023	150.337	10	SE of Katoomba, NSW.
1.8	15-Dec-10	02:50:48	-36.3457	148.806	0	Berridale, NSW.
2.4	20-Dec-10	18:06:34	-36.9553	150.200	10	Offshore, E of Merimbula, NSW.
3.0	22-Dec-10	05:45:11	-29.5558	143.728	10	Wanaaring, NSW.
2.5	22-Dec-10	06:27:58	-29.5549	143.740	10	Wanaaring, NSW.
2.4	22-Dec-10	05:41:21	-34.3589	146.155	15	Griffith area, NSW.
1.8	27-Dec-10	21:48:25	-36.3063	148.915	10	NE of Berridale, NSW.
1.9	27-Dec-10	21:12:06	-36.3335	148.966	10	NE of Berridale, NSW.

Northern Territory

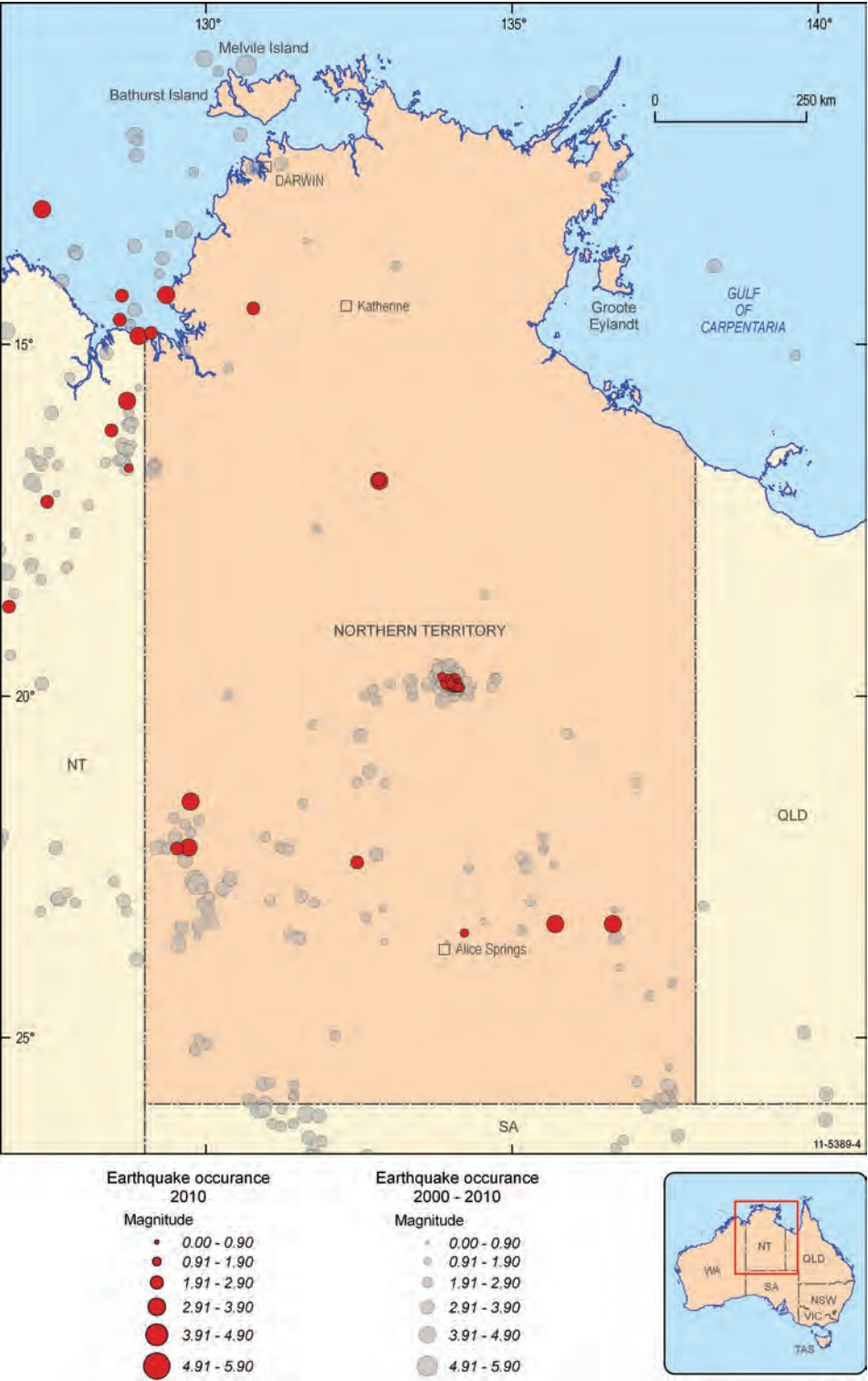


Figure 6: Map of 2010 Northern Territory Earthquakes (magnitude sized circles with subdued historical seismicity).

Table 11: Northern Territory Top 9 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	Gibson Desert, NT.
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.
5.8	12-Mar-1999	0:29:14	-11.119	130.666	100	Arafura Sea.

Table 12: Northern Territory Earthquakes 2010

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
2.0	17-Feb-10	09:39:31	-19.811	133.935	1	Tennant Creek NT.
1.8	4-Mar-10	07:50:54	-19.886	134.153	1	Tennant Creek, NT.
2.8	11-Mar-10	12:57:53	-22.413	132.472	0	NW of Alice Springs, NT.
1.4	17-Mar-10	17:54:31	-19.802	134.019	3	Tennant Creek NT.
2.4	23-Mar-10	15:26:21	-19.78	133.959	1	Tennant Creek NT.
3.4	11-Apr-10	12:02:58	-16.924	132.830	20	NW of Newcastle Waters, NT.
2.8	12-Apr-10	12:38:17	-16.911	132.823	20	NW of Newcastle Waters, NT.
1.1	29-Apr-10	00:23:19	-19.873	134.122	0	Tennant Creek, NT.
2.1	16-May-10	01:37:57	-19.843	134.024	4	Tennant Creek, NT.
3.6	21-Jun-10	04:04:10	-21.524	129.752	5	Lake Mackay NT.
2.0	18-Jul-10	21:45:18	-19.846	134.091	0	Tennant Creek, NT.
2.3	25-Aug-10	04:42:55	-14.499	130.775	10	S of Darwin, NT.
1.8	3-Sep-10	15:56:38	-19.746	133.958	0	SW of Tennant Creek, NT.
1.2	4-Sep-10	23:50:29	-19.852	134.051	0	SW of Tennant Creek, NT.
1.1	6-Sep-10	19:39:29	-19.832	134.000	1	SW of Tennant Creek, NT.
2.0	9-Sep-10	14:03:28	-19.768	134.056	0	SW of Tennant Creek, NT.
2.1	10-Sep-10	11:46:02	-19.86	134.052	0	SW of Tennant Creek, NT.
1.3	10-Sep-10	13:41:01	-19.843	134.070	0	SW of Tennant Creek, NT.
1.6	11-Sep-10	16:49:32	-23.45	134.223	0	NE of Alice Springs, NT.
3.1	14-Oct-10	11:00:56	-23.319	135.707	0	E of Alice Springs, NT.
3.1	10-Nov-10	01:04:00	-23.32	136.649	10	E of Alice Springs, NT.
1.6	10-Dec-10	18:25:39	-19.7223	133.857	0	Tennant Creek, NT.
2.5	25-Dec-10	09:43:54	-22.2116	129.532	10	E of Lake Mackay, NT.
3.2	25-Dec-10	12:01:32	-22.1968	129.721	15	E of Lake Mackay, NT.

Queensland

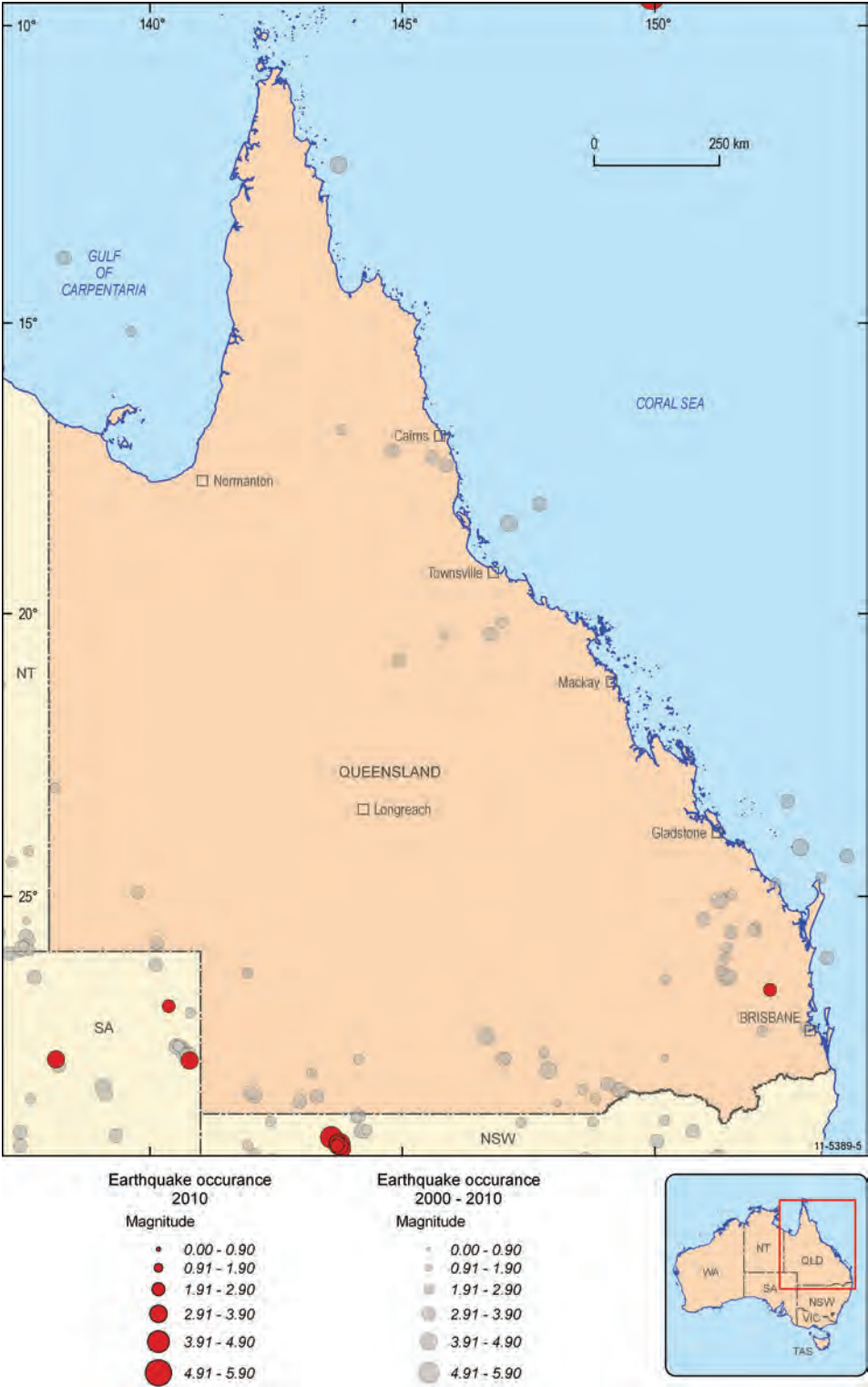


Figure 7: Map of 2010 Queensland Earthquakes (magnitude sized circles with subdued historical seismicity).

Table 13: Queensland Top 8 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.

Table 14: Queensland Earthquakes 2010

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
2.5	15-Aug-10	08:56:10	-26.701	152.283	6	East of Kingaroy, QLD.

South Australia Seismicity Report

PIRSA

David Love

Alison Wallace

Jennette Brown

Seismicity

Earthquake activity was similar to 2009 (see Australian Seismological Report 2009), but the largest onshore event (ML 5.0, Cleve 5th June) was larger than last year. 301 events were located by PIRSA, four greater than Magnitude 4 onshore, eleven greater than Magnitude 3. An event Magnitude 5.1 was located far south of Australia.

The Mount Barker earthquake, 16th April, was the most newsworthy event of the year. The magnitude 3.7 event was widely felt, especially in Adelaide. It was particularly deep at 26km. A focal mechanism was computed, and an isoseismal map produced. A small aftershock survey of 3 instruments was instigated, but no aftershocks were measured. The event was reported in: Love, D. 2010 'The Mount Barker Earthquake – 16th April 2010 magnitude 3.7' *Australian Earthquake Engineering Society 2010 Conference, Perth, WA*

The Cleve earthquake, 5th June, was widely felt, with a few reports in Adelaide. Four aftershock recorders were installed and a number of small events were recorded. These suggested a depth of about 20km. A preliminary focal mechanism was produced. A paper is in preparation (International Union of Geodesy and Geophysics Conference 2011).

Geoscience Australia carried out a short term deployment of surface instruments near Innamincka while fracture stimulation was being carried out. The data will remain confidential for 2 years.

A magnitude 4.0 event in the far north near Lake Eyre was not felt, possibly due to the very heavy rain that was occurring at the time. A magnitude 4.5 event 44km NE of Port Augusta, near Quorn, had a significant number of aftershocks. A small sequence of events, largest magnitude 4.1, occurred north of Yunta. Two events near Innamincka, and one near Olympic Dam are included in the catalogue. These events are probably related to geothermal and mining activities respectively, but not directly. There is currently no column in our publicly available catalogue to include a description.

Network

There were a few changes to the network during 2010. The continuous digital signal from HTT to PIRSA was discontinued. This station now transmits continuously to GA. The analogue records at THS were discontinued, but it may be possible to get a digital signal later. Arkaroola was converted from analogue to digital in August, with funding and assistance from Beach Energy and GA. A new private operator, John Harris, opened a station at Morphett Vale which is continuously transmitting to the Australian Centre for Geomechanics, Perth. The station at Strathalbyn STR2 was flooded twice, the second time ruining the digital recorder. It has been out of action since September.

The PIRSA network now comprises 8 analogue stations, 5 dial-up stations, 11 continuous realtime stations, and 1 visit and download station (suburban). GA has 7 stations within the state, and there are 3 private stations.

Procedures

There were no procedural changes during 2010. Jennette Brown filled in for four months while Alison Wallace was on long service leave.

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 are 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.

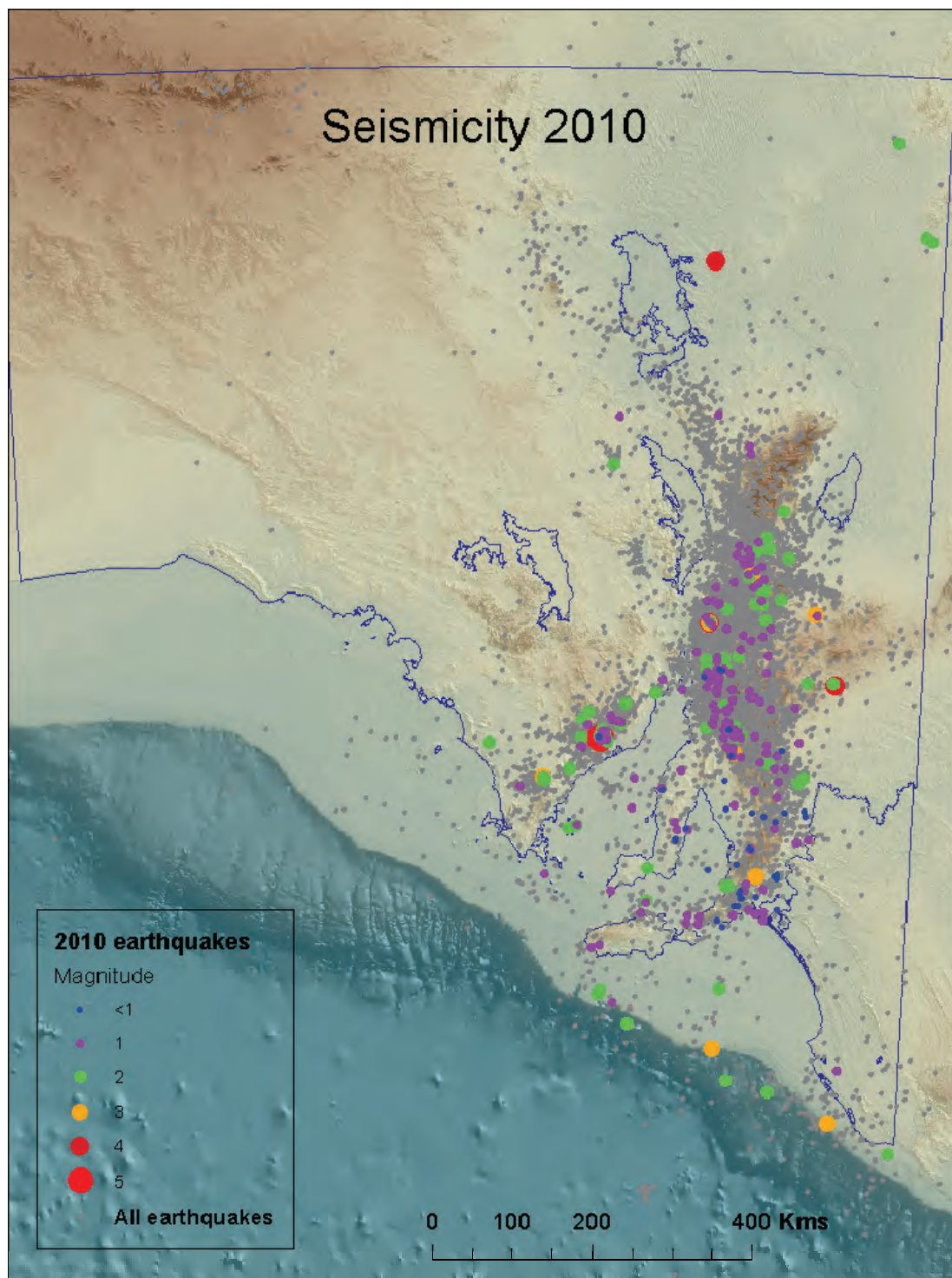


Figure 8: Seismicity for 2010. 2010 Seismicity shown in colour, and the complete list of earthquakes (from 1840) shown in grey.

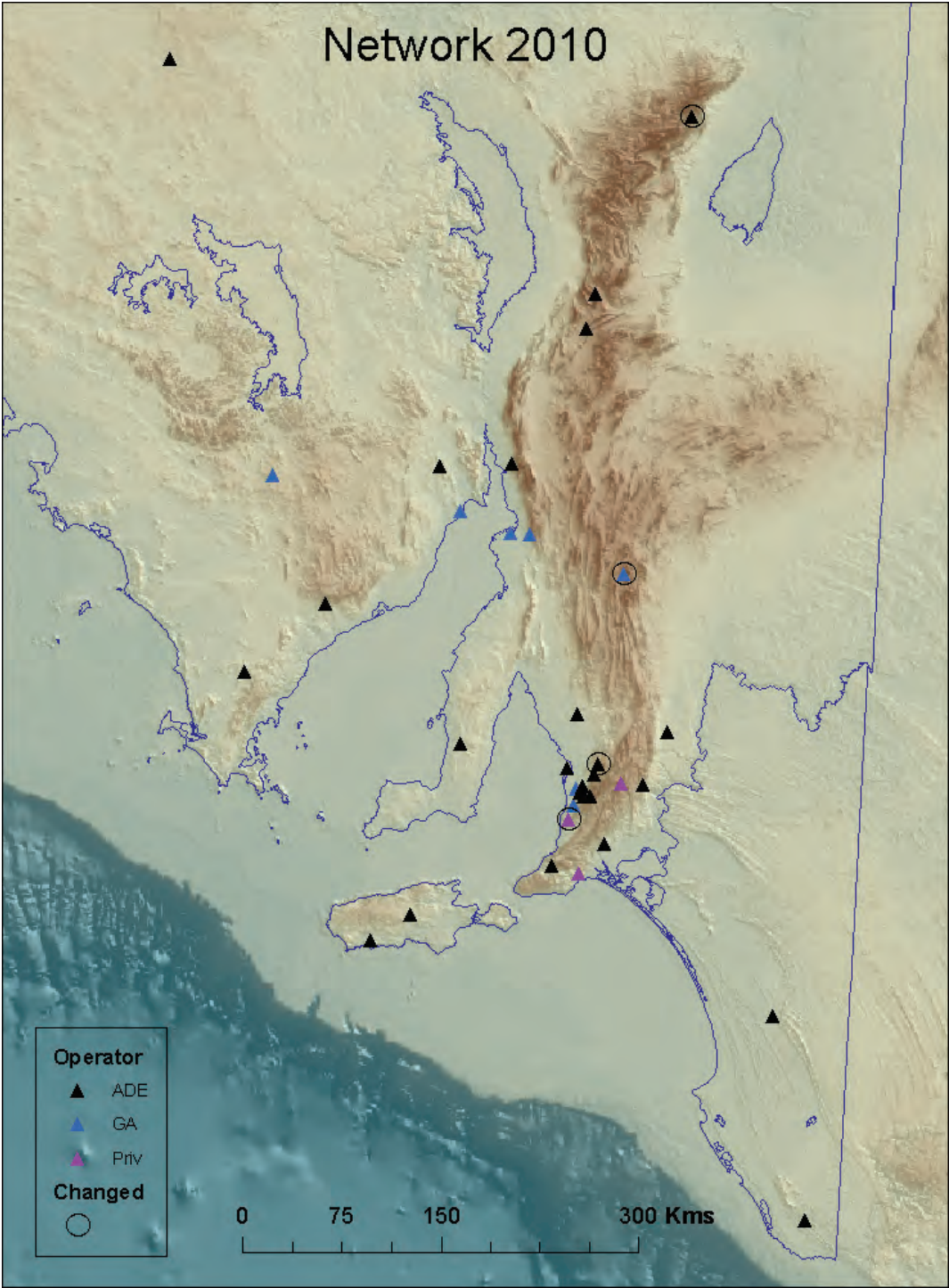


Figure 9: South Australian seismographs in 2010. Circles showing those where changes occurred.

Table 15: Magnitude 2.5+ Seismicity located by PIRSA.

	Time			Depth				Acc	
Date	UTC	Long	Lat	km	Place	Mag	MMI	A-F	Stns
2010-01-02	1300	136.763	-36.449	22.3	KINGSCOTE 118KM SW	2.9		C	21
2010-01-04	0554	138.556	-37.434	24.3	BEACHPORT 130KM W	2.7		E	14
2010-02-03	0502	138.098	-28.157	7.6	ODDNADATTA 270KM E	4.0		D	23
2010-03-11	0758	138.364	-37.074	9.7	PARNDANA 173KM SE	3.0		C	22
2010-03-28	1431	137.151	-36.823	16.8	S OF KANGAROO ISLAND	2.9		D	18
2010-04-05	1123	125.498	-41.762		SOUTH OF AUSTRALIA	5.1			
2010-04-16	1357	138.880	-35.109	26.4	MT BARKER 6KM SE	3.8	5	C	30
2010-05-10	1132	135.950	-34.073	4.8	CUMMINS 30KM NE	2.5		C	17
2010-05-27	1108	139.476	-33.992	15.0	CLARE 81KM E	2.7		D	18
2010-06-05	2147	136.719	-33.589	22.4	CLEVE 24 KM NE	5.0		C	24
2010-06-07	1230	140.758	-27.811	4.0	INNAMINKA	2.7		B	6
2010-06-22	2041	138.537	-32.641	13.5	PETERBOROUGH 46KM NW	2.8		C	20
2010-07-15	1826	138.694	-31.698	18.9	HAWKER 33KM NE	3.5	3	C	21
2010-07-26	2057	138.851	-31.885	11.4	HAWKER 40KM E	2.6		D	9
2010-07-28	0346	139.166	-31.498	9.6	CURNAMONA HS 40KM NW	2.8		E	11
2010-07-30	2129	138.149	-32.253	19.1	PORT AUGUSTA 44KM NE	4.5	5	C	21
2010-07-30	2229	138.149	-32.253	19.1	PORT AUGUSTA 44KM NE	2.7		D	13
2010-07-30	2246	138.149	-32.253	19.1	PORT AUGUSTA 44KM NE	2.7		D	13
2010-07-30	2327	136.740	-33.580	20.1	CLEVE 26KM NE	2.7		C	15
2010-07-30	2112	138.149	-32.253	19.1	PORT AUGUSTA 44KM NE	2.5		D	13
2010-07-30	2124	138.149	-32.253	19.1	PORT AUGUSTA 44KM NE	2.5		D	14
2010-07-31	0246	138.149	-32.253	19.1	PORT AUGUSTA 44KM NE	3.0		C	14
2010-07-31	1656	136.822	-30.483	0.0	OLYMPIC DAM	2.5		D	7
2010-09-19	2211	138.817	-31.884	4.1	HAWKER 37KM E	2.6		D	11
2010-10-08	1053	138.537	-33.731	13.2	CLARE 14KM NW	3.1	3	C	26
2010-10-10	0230	139.852	-32.913	5.4	PETERBOROUGH 96KM E	4.1		C	27
2010-10-23	0340	135.957	-34.040	3.7	CUMMINS 33KM NE	3.0		C	19
2010-11-09	1920	140.030	-37.873	13.1	BEACHPORT 43KM S	3.1		D	17
2010-11-13	1936	138.753	-31.429	12.3	HAWKER 60KM NE	2.8		C	18
2010-11-14	1629	140.353	-26.758	28.9	INNAMINCKA 115KM NE	2.9		E	12
2010-11-18	0400	137.379	-35.423	11.9	KINGSCOTE 33KM NW	2.8		C	20
2010-11-29	2008	139.564	-32.120	8.6	YUNTA 51KM N	3.9		D	20
2010-12-03	0040	135.964	-34.066	5.8	CUMMINS 31KM NE	2.7		C	17

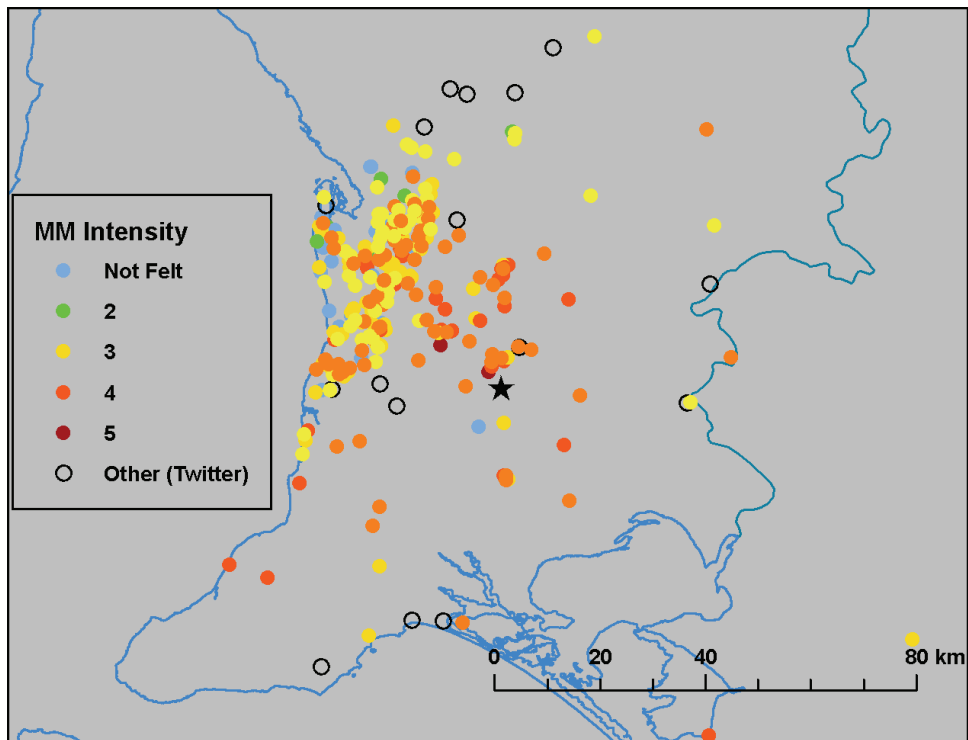


Figure 10: Intensity values recorded for the Mt Barker earthquake

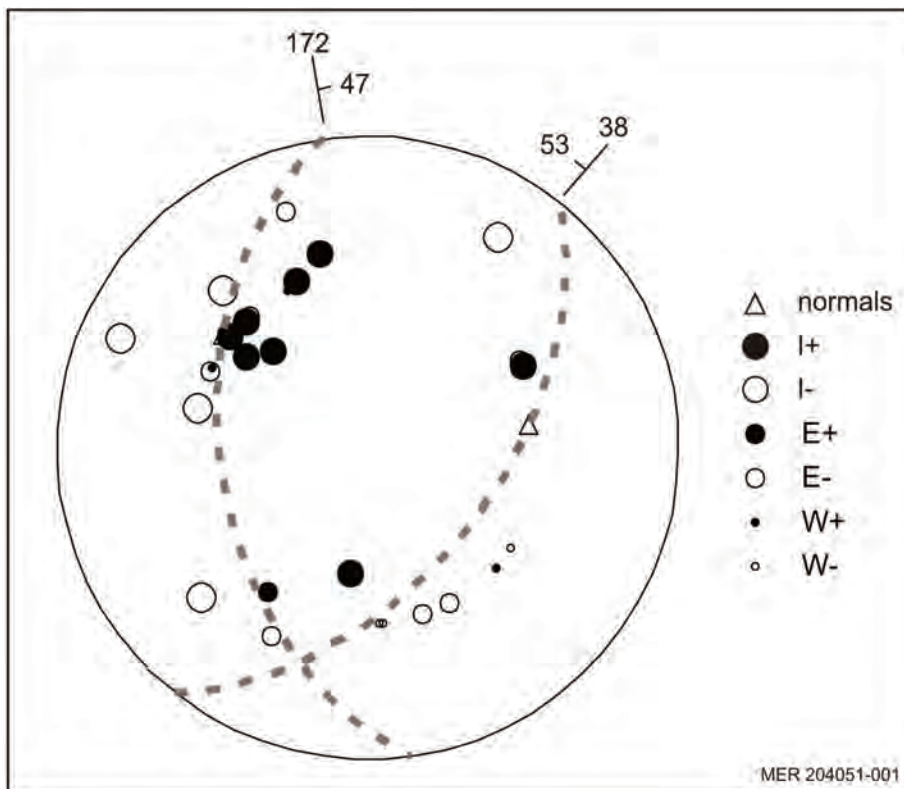


Figure 11: Focal mechanism (upper hemisphere) for the Mt Barker (2010-04-16) Earthquake

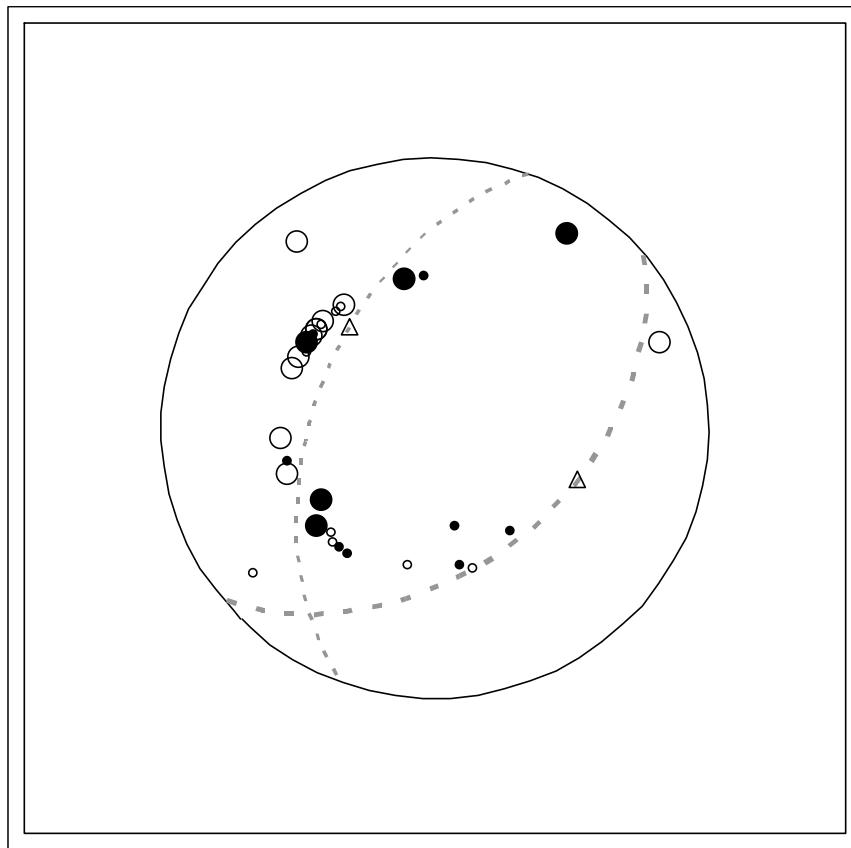


Figure 12: Preliminary focal mechanism (upper hemisphere) for the Cleve 2010-06-05 event

Table 16: South Australian Top 10 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	30-Mar-1986	08:53:48	-26.333	132.517	5	Marryat Creek, 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.

Table 17: South Australian Earthquakes 2010 Recorded by Geoscience Australia

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
3.6	3-Feb-10	05:02:04	-27.984	138.140	1	NE of Lake Eyre, SA.
1.7	15-Feb-10	17:23:59	-35.213	138.501	16	West of McLaren Vale, SA.
3	11-Mar-10	07:58:36	-37.066	138.354	10	125km W of Robe, SA.

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3.8	16-Apr-10	13:57:22	-35.033	139.002	4	Near Mt Barker, SA.
2.7	27-May-10	11:08:54	-34.005	139.600	10	NW of Morgan, SA.
2.1	4-Jun-10	18:58:50	-32.762	138.365	20	NW of Peterborough, SA.
4.8	5-Jun-10	21:47:00	-33.559	136.714	15	NE of Cleve, SA.
3.1	7-Jun-10	12:30:28	-28.007	140.791	0	Innamincka, SA.
1.8	11-Jun-10	08:36:18	-33.806	136.312	1	Verran, SA.
2.1	20-Jun-10	13:03:12	-32.039	138.325	0	Kanyaka, SA.
1.7	26-Jun-10	18:41:34	-33.543	136.712	0	Gawler Ranges, SA.
3.5	15-Jul-10	18:26:26	-31.609	138.659	10	Wilpena, SA.
2.4	26-Jul-10	20:57:25	-31.769	138.804	10	NE of Hawker, SA.
2.7	28-Jul-10	03:46:06	-31.291	139.038	0	SE of Blinman, SA.
2.4	30-Jul-10	23:27:57	-33.553	136.745	10	NE of Cleve, SA.
1.4	30-Jul-10	22:16:12	-32.184	138.099	0	NE of Quorn, SA.
4.2	30-Jul-10	21:29:22	-32.175	138.141	10	NE of Quorn, SA.
2.2	30-Jul-10	22:29:21	-32.154	138.209	6	NE of Quorn, SA.
2.1	30-Jul-10	21:12:17	-32.189	138.212	6	NE of Quorn, SA.
2.2	30-Jul-10	21:24:55	-32.167	138.246	0	NE of Quorn, SA.
2.2	30-Jul-10	22:46:12	-32.206	138.300	10	NE of Quorn, SA.
2.9	31-Jul-10	16:56:27	-30.048	136.744	1	NW of Olympic Dam, SA.
2.7	31-Jul-10	02:45:38	-32.224	138.206	12	NE of Quorn, SA.
2.2	1-Aug-10	14:07:10	-32.057	138.230	10	NE of Quorn, SA.
1.7	26-Aug-10	08:40:14	-33.08	138.364	0	NW of Jamestown, SA.
2.3	1-Sep-10	18:48:58	-32.748	138.143	13	NW of Melrose, SA.
2.2	4-Sep-10	09:57:07	-32.66	138.383	0	NE of Melrose, SA.
1.7	9-Sep-10	21:50:03	-33.006	138.300	9	NE of Crystal Brook, SA.
3.2	8-Oct-10	10:53:50	-33.708	138.577	3	NW of Clare, SA.
4.1	10-Oct-10	02:30:18	-32.902	139.961	0	E of Peterborough, SA.
2.0	13-Oct-10	18:49:07	-33.678	136.677	0	Cleve area, SA.
2.0	23-Oct-10	02:01:21	-34.206	135.837	0	SE of Yeelanna, SA.
2.6	23-Oct-10	03:40:20	-34.14	135.914	0	E of Yeelanna, SA.
1.6	23-Oct-10	10:47:27	-33.733	138.608	8	Clare area, SA.
1.9	3-Nov-10	19:30:58	-33.4775	136.749	10	NE of Cleve, SA.
2.8	9-Nov-10	19:20:13	-38.358	139.979	20	S of Beachport, SA.
1.8	10-Nov-10	23:12:31	-33.8416	139.101	8	SE of Burra, SA.
2.5	13-Nov-10	19:36:50	-31.4471	138.870	10	NE of Wilpena pound, SA.
2.8	14-Nov-10	16:29:16	-27.001	140.374	10	N of Innamincka, SA.
3.4	29-Nov-10	20:08:06	-32.0584	139.683	10	NW of Manna Hill, SA.
2.5	3-Dec-10	00:40:05	-33.933	135.908	10	North of Cummins, SA.
1.9	5-Dec-10	21:22:12	-33.4573	138.133	11	Near Merriton, SA.
1.5	9-Dec-10	12:05:08	-33.5139	136.754	10	NW of Cowell, SA.
2.3	12-Dec-10	22:38:36	-33.7918	136.338	10	Near Cleve, SA.
2.1	13-Dec-10	13:15:19	-33.5413	136.737	15	NE of Cleve, SA.
1.9	20-Dec-10	17:03:22	-33.8493	139.032	12	SE of Burra, SA.
1.9	28-Dec-10	00:46:28	-36.1018	138.207	3	SW of Victor Harbour, SA.

Tasmania

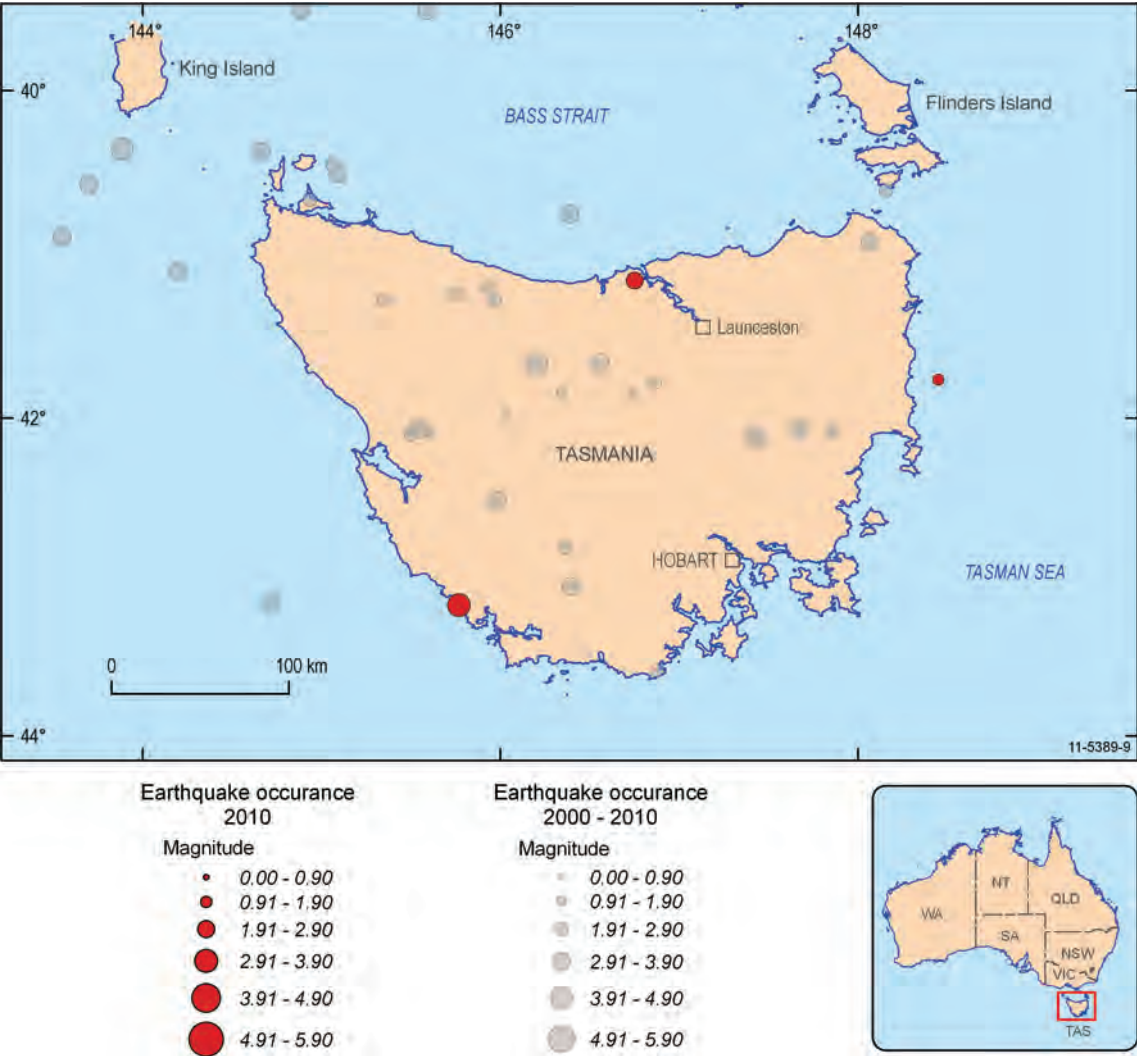


Figure 13: Map of 2010 Tasmanian Earthquakes (magnitude sized circles with subdued historical seismicity).

Table 18: Tasmanian Top 10 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.
6.4	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.
5.4	28-Dec-1929	01:22:00	-39.690	149.450	10	Flinders Island, TAS.
5.3	10-Apr-1922	20:47:00	-40.000	147.500	33	Cape Barren Island, TAS.
5.3	01-Jan-1958	10:07:22	-42.200	146.100	10	Near Lake St. Clair, TAS.

Table 19: Tasmanian Earthquakes 2010

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
3.5	11-Aug-10	21:12:06	-43.172	145.769	0	SW of Strathgordon TAS.
2.1	14-Jun-10	12:51:48	-41.155	146.752	1	Near Beaconsfield TAS.
1.5	1-Dec-10	15:39:17	-41.7623	148.450	10	Offshore, E of Seymour, TAS.

Victoria

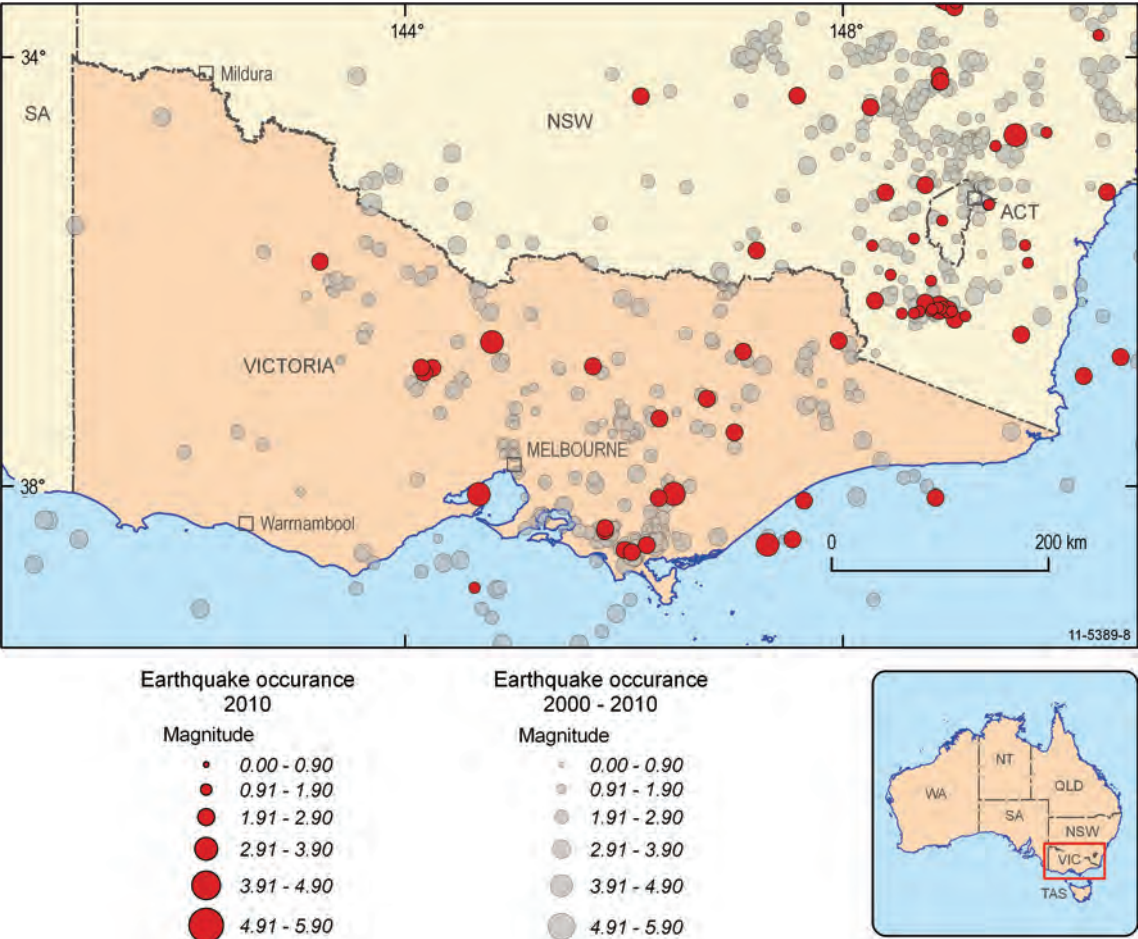


Figure 14: Map of 2010 Victorian Earthquakes (magnitude sized circles with subdued historical seismicity).

Table 20: Victorian Top 7 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	Bass Strait, VIC.
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, 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 21: Victorian Earthquakes 2010

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
2.8	8-Jan-10	14:24:34	-37.489	147.010	17	SW of Dargo, VIC.
2.7	28-Feb-10	05:08:44	-37.358	146.325	12	E of Jamieson, VIC.
2.3	27-Mar-10	07:59:15	-37.17	146.758	0	Wonnangatta, VIC.
3.0	30-Mar-10	08:08:26	-38.075	144.675	10	NE of Portarlington, VIC.
2.6	3-Apr-10	17:49:42	-38.628	146.074	0	S of Leongatha, VIC.
2.7	6-Apr-10	06:37:38	-38.133	147.645	0	SW of Lakes Entrance, VIC.
2.9	25-Apr-10	13:05:56	-36.879	144.253	10	S of Bendigo, VIC.
2.7	24-May-10	00:56:52	-36.863	145.718	3	Strathbogie, VIC.
2.4	25-May-10	08:35:20	-36.727	147.091	0	Bright area, VIC.
3.0	26-May-10	10:09:20	-36.634	144.796	10	Colbinabbin VIC.
2.7	9-Jul-10	17:16:02	-38.424	145.826	0	Korumburra, VIC.
2.9	15-Jul-10	17:43:53	-35.884	143.225	10	North of Wycheproof, VIC.
2.0	27-Jul-10	15:39:07	-38.397	145.829	0	N of Korumburra, VIC.
2.8	6-Aug-10	06:50:38	-38.608	146.006	13	Buffalo, VIC.
2.5	14-Aug-10	21:23:19	-38.504	147.541	0	SE of Seaspray, VIC.
2.2	29-Aug-10	01:52:35	-36.877	144.150	5	Bendigo, VIC.
2.6	16-Oct-10	18:20:44	-38.108	146.319	0	N of Morwell, VIC.
3.3	16-Oct-10	14:07:40	-38.072	146.458	0	N of Morwell, VIC.
2.4	22-Oct-10	16:32:46	-38.56	146.212	10	North of Foster, VIC.
2.2	25-Oct-10	04:48:45	-36.925	144.176	9	Maldon, VIC.
2.6	8-Dec-10	09:10:20	-38.1051	148.847	0	Offshore, E of Lakes Entrance, VIC.
2.2	11-Dec-10	13:02:58	-36.6233	147.964	10	NW of Mt Murphy, VIC.
1.9	25-Dec-10	00:23:31	-38.9712	144.636	17	Bass Strait, VIC.
3.0	28-Dec-10	08:51:51	-38.5589	147.311	10	SE of Seaspray, VIC.

Western Australia

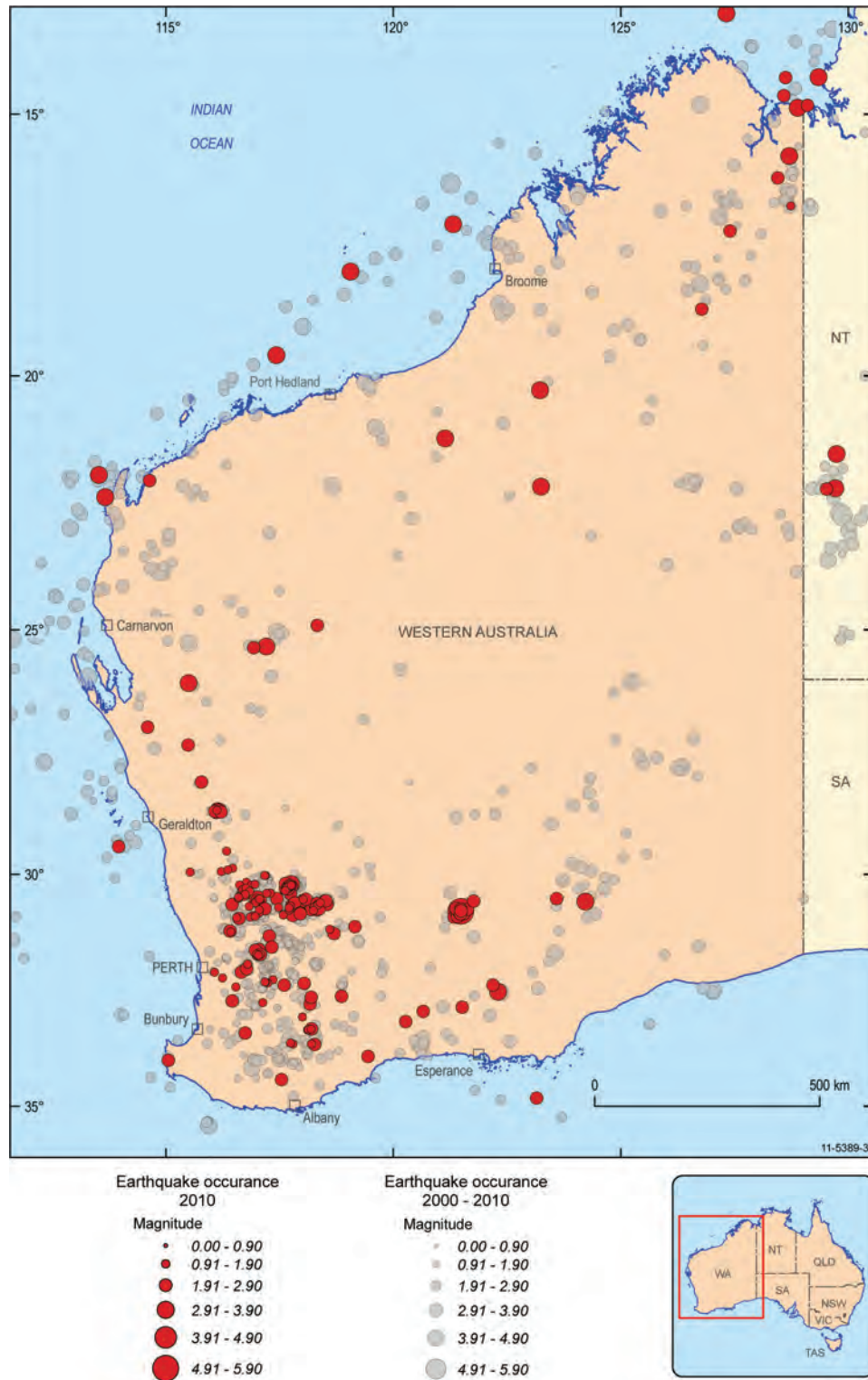


Figure 15: Map of 2010 Western Australian Earthquakes (magnitude sized circles with subdued historical seismicity).

Table 22: Western Australian Top 10 Earthquakes 2010

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
5.0	20-Apr-10	00:17:10	-30.787	121.489	2	Kalgoorlie, WA.
5.0	24-Jul-10	11:23:45	-12.752	114.453	0	Northwest of Australia.
5.0	5-Apr-10	19:17:53	-42.423	124.939	37	South of Australia, Indian Ocean.
3.9	8-Jun-10	20:07:17	-21.935	113.534	34	W of Exmouth, WA.
3.8	26-Jan-10	18:25:32	-26.08	115.510	4	Mt Rebecca, WA.
3.7	16-Jul-10	16:35:58	-18	119.068	0	W of Broome, WA.
3.6	19-May-10	20:08:03	-24.985	111.125	50	W of Carnarvon, WA.
3.6	5-Dec-10	13:25:29	-14.8854	128.900	30	N of Kununurra, WA.
3.5	15-Oct-10	13:06:02	-19.603	117.435	10	NW of Port Hedland, WA.
3.5	21-Dec-10	15:00:42	-13.1147	127.327	10	Offshore NW of Kununurra, WA.

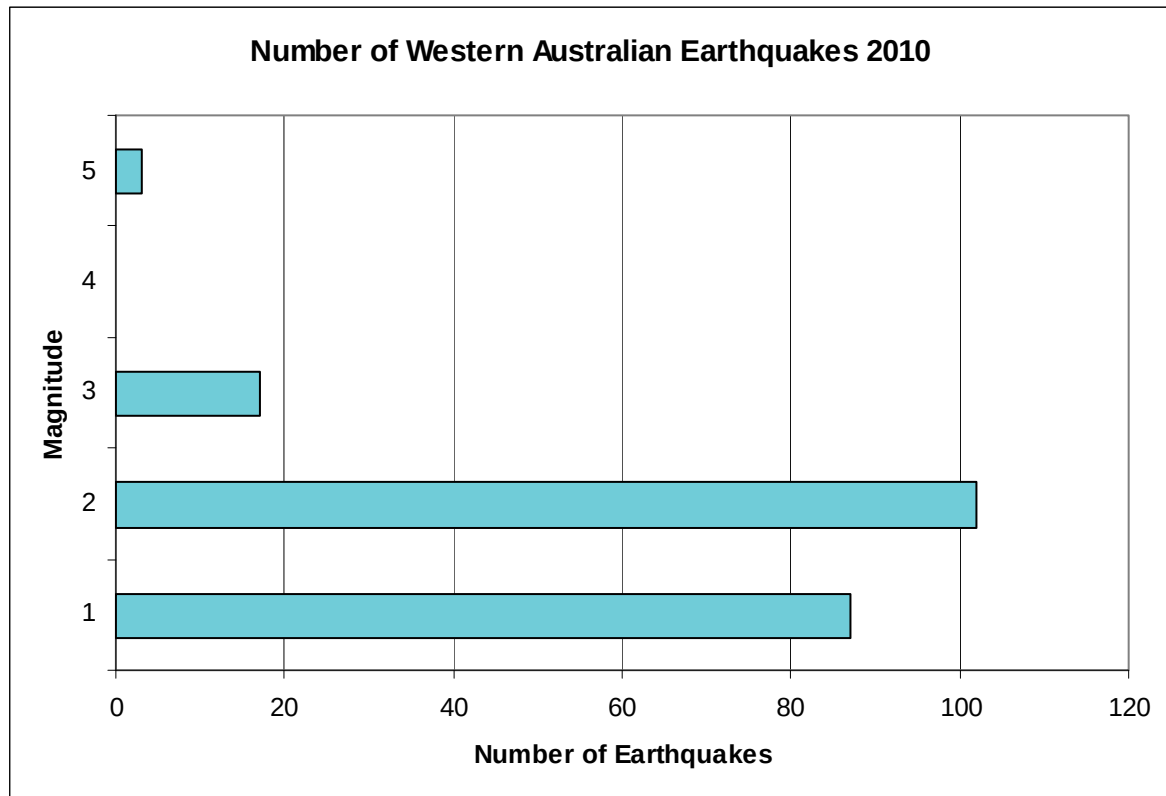


Figure 16: Number of Western Australian earthquakes by magnitude 2010 (Note that not all small earthquakes [less than magnitude 3] can be located)

Table 23: Western Australian Top 10 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	Near Geraldton, WA.
6.3	10-Aug-1997	9:20:31	-16.050	124.423	10	Collier Bay, 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 24: Western Australian Earthquakes 2010

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
2.2	2-Jan-10	19:24:07	-30.75	118.206	0	SW of Bonnie Rock, WA.
2.3	6-Jan-10	08:36:39	-33.395	116.754	0	Darkan, WA.
1.9	14-Jan-10	05:24:29	-30.536	118.026	0	SE of Beacon, WA.
2.5	14-Jan-10	21:35:37	-33.147	120.278	0	N of Ravensthorpe, WA.
2.5	15-Jan-10	13:47:13	-31.696	117.036	0	Meckering, WA.
2.0	18-Jan-10	14:18:03	-30.528	118.085	0	SE of Beacon, WA.
2.4	20-Jan-10	07:31:18	-31.5442	117.336	5	NE of Cunderdin, WA.
2.4	23-Jan-10	06:00:54	-31.6	117.057	4	E of Northam, WA.
3.8	26-Jan-10	18:25:32	-26.08	115.510	4	Mt Rebecca, WA.
2.0	14-Feb-10	05:03:19	-30.564	118.016	5	SE of Beacon, WA.
2.9	14-Feb-10	10:14:36	-32.506	122.307	0	SE of Norseman, WA.
2.0	17-Feb-10	04:12:16	-30.936	116.620	0	Wongan Hills, WA.
2.0	19-Feb-10	14:24:04	-32.01	116.784	0	S of York, WA.
2.1	19-Feb-10	18:31:42	-32.08	116.665	0	SW of York, WA.
1.3	24-Feb-10	12:11:45	-31.908	116.805	10	Near York, WA.
1.7	26-Feb-10	16:41:26	-29.879	116.476	5	South of Latham, WA.
1.5	27-Feb-10	19:02:19	-30.771	118.254	5	North of Mukinbudin, WA.
2.3	4-Mar-10	18:06:56	-30.418	117.749	0	Beacon, WA.
1.9	16-Mar-10	04:48:50	-32.699	116.467	0	Boddington area WA.
2.9	20-Mar-10	10:56:40	-18.718	126.785	1	SW of Halls Creek, WA.
3.0	23-Mar-10	03:40:26	-15.797	128.712	3	Kununurra, WA.
2.7	28-Mar-10	16:37:37	-30.832	121.558	10	Near Kalgoorlie, WA.
2.0	29-Mar-10	22:05:30	-30.556	117.012	1	Burakin, WA.
3.0	29-Mar-10	20:38:21	-30.533	117.032	0	Burakin, WA.
2.6	3-Apr-10	20:50:26	-30.683	118.316	0	Mukinbudin, WA.
5.0	5-Apr-10	11:23:45	-42.423	124.939	37	South of Australia, Indian Ocean.
2.6	13-Apr-10	11:10:50	-31.309	117.284	4	SW of Wyalkatchem, WA.
2.5	17-Apr-10	08:57:39	-30.74	121.492	0	Kalgoorlie, WA.
2.6	20-Apr-10	10:19:45	-32.356	122.199	0	SE of Norseman, WA.
2.6	20-Apr-10	18:38:14	-30.823	121.464	2	Kalgoorlie, WA.

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5.0	20-Apr-10	00:17:10	-30.787	121.489	2	Kalgoorlie, WA.
2.8	21-Apr-10	15:45:37	-32.322	118.049	3	E of Corrigin, WA.
2.4	22-Apr-10	01:20:08	-28.642	116.143	0	NE of Morowa, WA.
2.6	22-Apr-10	22:24:26	-30.786	121.525	10	Kalgoorlie, WA.
2.8	22-Apr-10	11:22:43	-32.838	121.520	0	S of Norseman, WA.
2.8	23-Apr-10	15:49:38	-30.899	121.419	0	S of Kalgoorlie, WA.
2.8	25-Apr-10	15:40:34	-30.764	121.526	0	Kalgoorlie, WA.
2.7	30-Apr-10	11:48:59	-30.795	121.451	0	S of Kalgoorlie, WA.
2.8	30-Apr-10	00:38:17	-30.754	117.763	7	Bencubbin, WA.
2.6	2-May-10	04:30:41	-30.714	118.002	11	NE of Bencubbin, WA.
2.8	9-May-10	16:55:08	-30.843	121.411	0	SW of Kalgoorlie, WA.
2.6	12-May-10	11:09:08	-33.646	118.278	4	Pingrup, WA.
3.6	19-May-10	20:08:03	-24.985	111.125	50	W of Carnarvon, WA.
1.6	26-May-10	20:50:24	-30.034	117.196	0	N of Kalannie, WA.
2.6	4-Jun-10	10:56:26	-30.726	121.385	0	NW of Kalgoorlie, WA.
1.9	6-Jun-10	10:25:17	-28.674	116.127	0	NE of Canna, WA.
2.5	6-Jun-10	18:29:47	-30.844	121.487	0	S of Kalgoorlie, WA.
3.9	8-Jun-10	20:07:17	-21.935	113.534	34	W of Exmouth, WA.
2.0	9-Jun-10	03:53:58	-30.724	118.309	0	N of Mukinbudin, WA.
3.3	9-Jun-10	15:41:42	-22.166	123.256	0	East of Lake Dora, WA.
2.2	11-Jun-10	18:29:45	-32.6	118.869	9	South of Hyden, WA.
2.3	11-Jun-10	13:51:59	-16.213	128.459	8	W of Lake Argyle, WA.
2.0	16-Jun-10	22:59:32	-30.5675	121.776	5	Kalgoorlie, WA.
2.1	19-Jun-10	18:28:00	-28.665	116.159	0	N of Morawa, WA.
2.3	19-Jun-10	18:09:02	-28.704	116.171	0	N of Morawa, WA.
1.3	20-Jun-10	17:51:01	-30.881	116.919	7	W of Manmanning, WA.
1.3	20-Jun-10	21:13:28	-30.604	116.976	10	SW of Burakin, WA.
2.3	23-Jun-10	03:30:00	-30.776	121.494	0	Kalgoorlie, WA.
2.3	25-Jun-10	08:58:38	-28.09	115.793	0	NE of Geraldton, WA.
3.1	4-Jul-10	03:48:11	-22.37	113.677	13	SW of Learmonth, WA.
2.6	5-Jul-10	14:34:30	-24.916	118.336	0	N of Meekatharra, WA.
1.2	7-Jul-10	18:53:49	-30.608	116.970	10	E of Ballidu, WA.
2.0	8-Jul-10	17:40:37	-30.737	117.186	1	NE of Cadoux, WA.
1.9	14-Jul-10	17:27:18	-28.709	116.220	0	NE of Canna, WA.
1.8	15-Jul-10	05:05:58	-33.048	118.011	0	SE of Harris Smith, WA.
2.5	15-Jul-10	13:59:34	-33.905	119.454	10	East of Jerramungup, WA.
1.4	16-Jul-10	01:42:18	-30.403	117.304	0	Cadoux area, WA.
1.9	16-Jul-10	04:35:02	-32.207	116.253	0	SE of Armadale, WA.
3.7	16-Jul-10	16:35:58	-18	119.068	0	W of Broome, WA.
1.7	17-Jul-10	07:05:12	-32.399	116.550	10	W of Brookton, WA.
2.6	17-Jul-10	16:24:04	-34.823	123.154	14	SE of Esperance, WA.
2.0	21-Jul-10	05:46:06	-34.41	117.553	10	Near Cranbrook, WA.
5.0	24-Jul-10	19:17:53	-12.752	114.453	0	Northwest of Australia.
2.9	26-Jul-10	18:38:30	-30.9109	121.343	0	Kalgoorlie, WA.
2.3	29-Jul-10	04:51:44	-32.621	118.204	5	Kulin, WA.
2.3	29-Jul-10	12:48:28	-32.765	118.176	0	Kulin, WA.
2.8	29-Jul-10	13:59:33	-30.64	116.460	1	W of Ballidu, WA.
2.0	2-Aug-10	09:22:14	-30.202	117.636	0	NW of Beacon, WA.
2.1	5-Aug-10	12:26:32	-28.695	116.086	0	North of Morawa, WA.

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1.4	10-Aug-10	07:25:48	-30.366	116.849	0	NE of Ballidu, WA.
1.6	18-Aug-10	02:37:40	-33.636	117.804	0	Badgebup, WA.
3.0	18-Aug-10	20:54:01	-25.345	117.219	1	SW of Mt Clare, WA.
1.9	19-Aug-10	06:18:06	-30.424	116.720	0	N of Ballidu, WA.
2.1	19-Aug-10	14:11:26	-28.715	116.112	0	NE of Canna, WA.
1.1	21-Aug-10	12:21:50	-30.896	116.973	0	Manmanning, WA.
2.2	21-Aug-10	05:12:28	-31.258	118.701	5	NE of Merredin, WA.
3.4	22-Aug-10	04:10:30	-24.777	110.795	10	W of Carnarvon, off WA.
2.1	23-Aug-10	05:03:04	-28.683	116.110	0	N of Morawa, WA.
3.0	26-Aug-10	11:08:28	-21.221	121.148	0	E of Marble Bar, WA.
1.5	27-Aug-10	19:39:22	-29.916	116.369	12	SW of Latham, WA.
1.5	28-Aug-10	16:03:54	-30.544	117.023	0	W of Burakin, WA.
1.3	31-Aug-10	07:50:28	-30.427	116.751	0	N of Ballidu, WA.
2.4	31-Aug-10	17:36:13	-31.615	116.977	4	Meckering, WA.
2.6	31-Aug-10	09:52:32	-30.875	117.799	1	SW of Bencubbin, WA.
1.1	2-Sep-10	14:27:59	-30.53	117.070	0	Burakin, WA.
2.6	2-Sep-10	04:27:59	-30.855	117.799	0	Bencubbin, WA.
3.1	2-Sep-10	07:25:14	-14.31	129.351	0	NE of Kununarra, WA.
3.0	3-Sep-10	15:05:01	-20.281	123.232	10	Great Sandy Desert, WA.
1.9	7-Sep-10	16:48:38	-30.174	116.777	0	NE of Dalwallinu, WA.
1.7	9-Sep-10	20:53:07	-29.961	115.542	10	SE of Eneabba, WA.
2.9	18-Sep-10	12:53:32	-22.045	114.650	0	SW of Onslow, WA.
2.6	19-Sep-10	21:23:15	-30.745	121.642	1	East of Kalgoorlie, WA.
1.2	22-Sep-10	23:58:49	-30.407	117.221	0	Kalannie, WA.
2.9	26-Sep-10	22:59:35	-30.52	117.447	0	N of Koorda, WA.
1.3	28-Sep-10	07:37:31	-33.612	117.748	0	NE of Katanning, WA.
1.8	30-Sep-10	04:27:38	-31.7	117.084	0	Meckering, WA.
1.6	3-Oct-10	18:28:23	-29.524	116.345	0	Perenjorie area, WA.
1.9	4-Oct-10	23:30:55	-30.307	117.697	0	NW of Beacon, WA.
2.0	4-Oct-10	23:27:24	-30.247	117.735	0	W of Beacon, WA.
2.1	4-Oct-10	22:11:13	-30.269	117.697	0	NW of Beacon, WA.
1.8	5-Oct-10	05:40:39	-30.266	117.707	0	NW of Beacon, WA.
1.8	5-Oct-10	01:42:47	-30.222	117.733	0	NW of Beacon, WA.
1.9	5-Oct-10	11:53:25	-30.302	117.694	0	NW of Beacon, WA.
1.9	5-Oct-10	10:05:36	-30.265	117.737	0	NW of Beacon, WA.
2.0	5-Oct-10	07:28:40	-30.313	117.695	0	NW of Beacon, WA.
2.4	5-Oct-10	07:24:40	-30.301	117.633	0	NW of Beacon, WA.
2.6	5-Oct-10	07:15:31	-30.2615	117.768	0	NW of Beacon, WA.
1.4	8-Oct-10	12:01:43	-30.753	117.057	0	Cadoux, WA.
1.8	15-Oct-10	22:33:34	-30.702	117.485	2	N of Koorda, WA.
3.5	15-Oct-10	13:06:02	-19.603	117.435	10	NW of Port Hedland, WA.
1.8	16-Oct-10	15:15:13	-30.274	117.692	6	NW of Beacon, WA.
1.4	17-Oct-10	02:08:26	-31.719	117.039	0	SE of Meckering, WA.
1.7	17-Oct-10	12:10:19	-30.237	117.763	0	N of Beacon, WA.
2.9	17-Oct-10	10:53:11	-30.209	117.759	0	N of Beacon, WA.
1.3	19-Oct-10	04:03:57	-30.033	117.179	0	N of Kalannie, WA.
1.7	20-Oct-10	15:09:01	-30.822	117.052	0	SW of Cadoux, WA.
1.1	21-Oct-10	23:27:49	-32.734	117.138	13	N of Narrogin, WA.
2.1	21-Oct-10	10:11:00	-32.359	117.610	0	W of Corrigin, WA.

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2.5	21-Oct-10	08:30:14	-29.424	113.972	0	SW of Geraldton, WA.
1.8	24-Oct-10	09:10:13	-30.262	117.731	0	NW of Beacon, WA.
2.7	24-Oct-10	12:55:08	-30.52	123.594	10	N of Zanthus, WA.
2.7	24-Oct-10	18:11:45	-25.367	116.939	6	Landor area, WA.
2.9	24-Oct-10	10:17:23	-30.582	124.228	31	NE of Zanthus, WA.
2.0	27-Oct-10	13:16:06	-30.836	117.962	2	NW of Mukinbudin, WA.
2.0	27-Oct-10	16:17:42	-30.824	117.963	1	Welbungin, WA.
2.2	27-Oct-10	12:30:39	-30.762	118.000	0	NW of Mukinbudin, WA.
1.5	30-Oct-10	07:28:13	-33.634	118.210	5	SE of Nyabing, WA.
1.6	30-Oct-10	02:53:53	-33.326	118.123	7	North of Nyabing, WA.
1.6	30-Oct-10	00:07:35	-33.311	118.167	3	North of Nyabing, WA.
2.8	30-Oct-10	23:35:41	-33.303	118.208	2	N of Nyabing, WA.
1.8	2-Nov-10	20:35:58	-30.635	118.342	0	S of Bonnie Rock, WA.
1.5	3-Nov-10	15:54:29	-30.329	116.698	15	N of Ballidu, WA.
1.7	3-Nov-10	13:48:01	-30.605	118.404	0	SE of Bonnie Rock, WA.
1.8	3-Nov-10	11:11:38	-30.655	118.343	0	S of Bonnie Rock, WA.
1.9	3-Nov-10	14:22:09	-30.649	118.348	0	S of Bonnie Rock, WA.
1.9	3-Nov-10	17:17:49	-30.732	118.377	10	S of Bonnie Rock, WA.
2.0	3-Nov-10	20:04:52	-30.615	118.332	0	Near Bonnie Rock, WA.
2.1	3-Nov-10	16:39:01	-30.753	118.332	10	S of Bonnie Rock, WA.
2.1	3-Nov-10	13:38:24	-30.652	118.291	0	SW of Bonnie Rock, WA.
2.2	3-Nov-10	07:37:07	-30.731	118.376	5	Bonnie Rock, WA.
2.2	3-Nov-10	09:43:19	-30.651	118.353	5	S of Bonnie Rock, WA.
1.4	5-Nov-10	00:03:54	-30.452	116.638	5	Pithara, WA.
1.3	6-Nov-10	08:58:26	-30.487	116.606	11	NW of Ballidu, WA.
1.5	6-Nov-10	19:11:20	-31.227	116.436	0	Bolgart, WA.
2.2	7-Nov-10	12:51:38	-30.641	118.551	7	SE of Bonnie Rock, WA.
1.6	8-Nov-10	05:44:41	-31.169	118.611	0	NW of Westonia, WA.
1.8	8-Nov-10	21:29:43	-30.288	117.659	8	NW of Beacon, WA.
2.7	8-Nov-10	19:41:17	-31.113	119.162	10	NW of Southern Cross, WA.
1.0	9-Nov-10	17:47:15	-30.922	116.561	15	Wongan Hills, WA.
2.1	13-Nov-10	03:23:56	-31.2037	116.420	0	S of Calingiri, WA.
2.2	17-Nov-10	09:58:47	-27.3273	115.496	10	SW of Murchison, WA.
1.9	19-Nov-10	19:14:07	-32.2433	117.365	10	Brookton area, WA.
1.2	20-Nov-10	05:39:27	-30.681	116.836	14	SE of Ballidu, WA.
2.1	20-Nov-10	11:12:30	-30.5632	118.509	5	Bonnie Rock, WA.
1.3	21-Nov-10	13:41:17	-32.2902	117.188	0	NE of Brookton, WA.
1.9	21-Nov-10	18:27:38	-16.7455	128.741	0	S of Kununurra, WA.
2.1	21-Nov-10	00:15:32	-30.5748	117.029	5	Burakin, WA.
3.1	24-Nov-10	17:44:55	-17.0937	121.321	10	NW of Broome, WA.
1.6	27-Nov-10	23:26:35	-30.5759	116.995	0	Burakin, WA.
1.5	1-Dec-10	17:28:54	-31.6936	117.003	10	S of Meckering, WA.
1.7	2-Dec-10	21:24:03	-30.3497	117.630	10	NW of Beacon, WA.
1.8	2-Dec-10	09:50:02	-29.9493	116.226	2	SE of Coorow, WA.
2.5	2-Dec-10	18:30:10	-14.6581	128.594	2	N of Kununurra, WA.
1.4	3-Dec-10	02:02:35	-33.3093	118.199	5	North of Nyabing, WA.
1.5	3-Dec-10	01:22:22	-33.3218	118.141	3	North of Nyabing, WA.
1.6	3-Dec-10	06:47:30	-33.3233	118.153	3	North of Nyabing, WA.
1.7	3-Dec-10	16:37:37	-30.8608	117.589	10	W of Bencubbin, WA.

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1.9	3-Dec-10	20:00:31	-30.3052	117.707	10	NW of Beacon, WA.
2.0	3-Dec-10	21:01:46	-30.2705	117.694	13	NW of Beacon, WA.
2.1	3-Dec-10	13:42:46	-30.2938	117.676	10	Beacon area, WA.
1.5	4-Dec-10	23:57:21	-30.2985	116.768	10	Dalwallinu, WA.
1.9	4-Dec-10	08:42:32	-30.5085	116.604	17	NW of Ballidu, WA.
1.8	5-Dec-10	00:18:56	-30.2334	116.893	10	Dalwallinu, WA.
2.3	5-Dec-10	15:34:51	-14.3208	128.629	35	N of Kununurra, WA.
3.6	5-Dec-10	13:25:29	-14.8854	128.900	30	N of Kununurra, WA.
1.9	6-Dec-10	05:34:01	-30.3344	116.674	15	Dalwallinu, WA.
2.1	6-Dec-10	03:46:07	-31.7032	117.083	0	Meckering, WA.
1.6	7-Dec-10	14:51:31	-30.2164	116.965	9	NW of Kalannie, WA.
1.9	7-Dec-10	01:39:25	-30.5671	118.524	0	Bonnie Rock, WA.
1.5	8-Dec-10	08:37:07	-32.2981	117.197	0	NE of Brookton, WA.
1.7	8-Dec-10	08:34:30	-32.3103	117.244	1	NE of Brookton, WA.
2.0	8-Dec-10	05:43:19	-32.9263	120.662	0	NE of Ravensthorpe, WA.
2.7	9-Dec-10	16:53:04	-17.2233	127.410	5	Near Bedford Downs, WA.
2.7	10-Dec-10	22:10:50	-14.8417	129.110	10	N of Kununurra, WA.
2.5	12-Dec-10	12:26:13	-26.9645	114.607	10	N of Northampton, WA.
1.7	16-Dec-10	08:22:23	-30.2334	116.627	0	Dalwallinu area, WA.
1.7	16-Dec-10	04:36:03	-32.0807	116.078	10	Canning Mills, WA.
2.2	16-Dec-10	21:41:16	-30.6048	118.504	5	SE of Bonnie Rock, WA.
2.2	19-Dec-10	19:31:07	-28.657	116.188	0	NE of Morawa, WA.
2.3	19-Dec-10	19:47:55	-28.6903	116.128	0	NE of Morawa, WA.
3.5	21-Dec-10	15:00:42	-13.1147	127.327	10	Offshore NW of Kununurra, WA.
1.3	22-Dec-10	10:16:31	-30.4768	116.611	8	NW of Ballidu, WA.
2.5	22-Dec-10	22:53:12	-30.661	117.782	5	SW of Beacon, WA.
1.5	23-Dec-10	03:39:35	-30.7124	117.717	10	NW of Bencubbin, WA.
1.7	23-Dec-10	06:11:57	-30.6737	117.750	10	NW of Bencubbin, WA.
2.0	23-Dec-10	12:43:12	-30.6114	117.840	0	North of Bencubbin, WA.
1.1	26-Dec-10	13:09:34	-30.9119	116.864	8	Cadoux, WA.
1.6	27-Dec-10	20:46:13	-30.7588	117.715	0	NW of Bencubbin, WA.
2.3	27-Dec-10	15:58:52	-33.9879	115.063	0	SW of Margaret River, WA.

Kalgoorlie Earthquake Summary

Jonathan Bathgate

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Hugh Glanville

On 20 April 2010 a magnitude 5.0 earthquake occurred under Boulder, Western Australia, at a depth of approximately 1.7 km. Five temporary recording systems were deployed around Kalgoorlie-Boulder which recorded aftershocks between 22 April and 8 June. The epicentre of the main shock was located by Geoscience Australia using data from the National Network and arrival times recorded by the mine monitoring networks in Boulder-Kalgoorlie and the Australian Centre for Geomechanics (ACG).

A total of 544 events were located by the temporary stations that Geoscience Australia deployed. Two groups of events are evident; one group at the southern end of Boulder is located around the epicentre of the main shock and a northern group is clustered around the Mount Charlotte Mine to the north of Boulder. The origin times of the events in the northern group coincide with routine blasting times at the mine. The aftershocks provide the opportunity to relate the seismic activity to known faults, and are a useful dataset for testing velocity models and to improve the discrimination of blasts from natural earthquakes.



Figure 17: Building damage caused by the 20th April earthquake.

Main-Shock

At 8.20 am (local time) on the 20th April 2010 an earthquake struck the Kalgoorlie-Boulder region. The earthquake was recorded across the Australian National Seismograph Network giving an initial location just south of Kalgoorlie. Geoscience Australia estimated the magnitude to be 5.0 which was reflected in the amount of significant building damage in the town ([Figure 17](#)). In the days following the earthquake Geoscience Australia sought to improve the accuracy

of the earthquake epicentre by seeking further waveform and arrival data from existing local monitoring networks. The Australian Centre for Geomechanics (ACG) and Kalgoorlie Consolidated Gold Mines (KCGM) supplied this information for 15 seismic monitoring sites in the vicinity of the earthquake and this enabled a re-evaluation of the location of the epicentre. With the improved data coverage the epicentre was re-located towards the southern edge of Boulder (Figure 18).

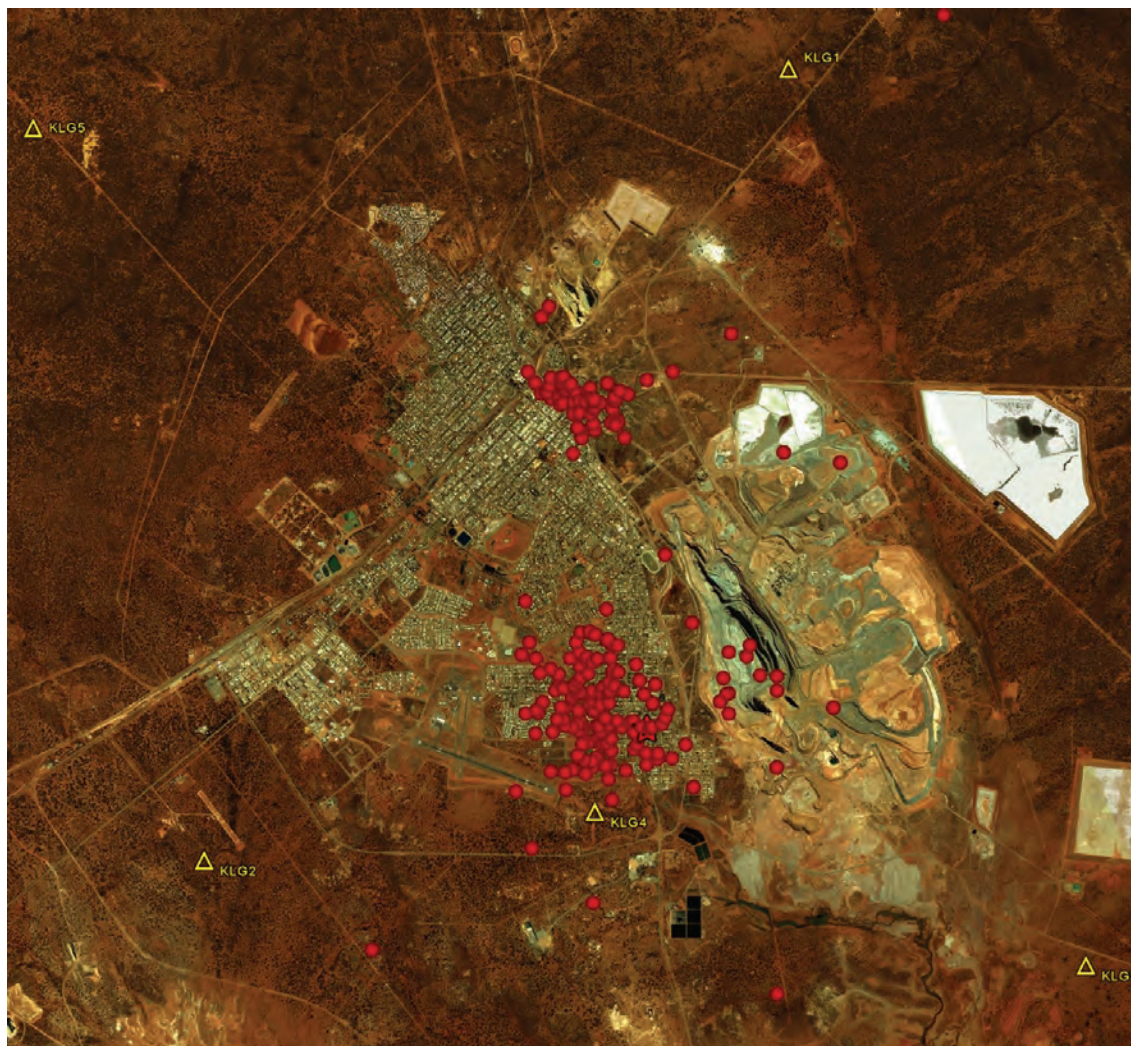


Figure 18: Location map: Red star = 20th April main earthquake; red circles = seismic events recorded from 22 April to 8 June; yellow triangles = temporary seismic stations

Aftershock Deployment

Within 2 days of the main shock Geoscience Australia started to deploy temporary seismic stations around the area to capture the aftershock sequence. In less than 4 days 5 temporary aftershock kits were in operation and collecting valuable data. The aftershock kits are extremely portable cases containing a complete seismic station. This includes the sensor (Lennartz 3Dlite), data logger (Kelunji Echo), solar panel, all necessary cabling, tools and weather proofing materials. This has improved Geoscience Australia's ability to respond quickly to such events. The locations of the temporary stations (Figure 18) were chosen to maximise the azimuthal coverage of the aftershocks based on the epicentre of the main shock. The aftershock sequence following the April 20 event consisted of many relatively strong

earthquakes that were widely felt in the Kalgoorlie area. 544 seismic events were recorded between 22 April and 8 June (Figure 18).

Aftershock Epicentres

The epicentres of the aftershocks extend 3km in a N-S direction. This provides an estimate of the overall rupture length of the mainshock and is consistent with a magnitude 5 earthquake. A large fault, shown in Figures 19 and 20 occurs just to the east of the mainshock and dips in the direction of Boulder. At a depth of 2-3km this fault intersects the mainshock location, making it a prime candidate for being the fault that ruptured during the earthquake. Assuming that the aftershocks occurred along the Boulder fault or offshoots of this fault, the data in Figure 19 shows the movement in depth and location of aftershocks over time, indicating that there was migration of slippage along the fault as stresses were released. In Figure 18, aftershocks from the earthquake as well as a cluster of mining blasts in the northern area of the map can be seen. The concentration of events within an area 1.3 km x 0.6 km over the Mt Charlotte mine indicates that the spread of aftershock locations is real and not solely due to errors in location.

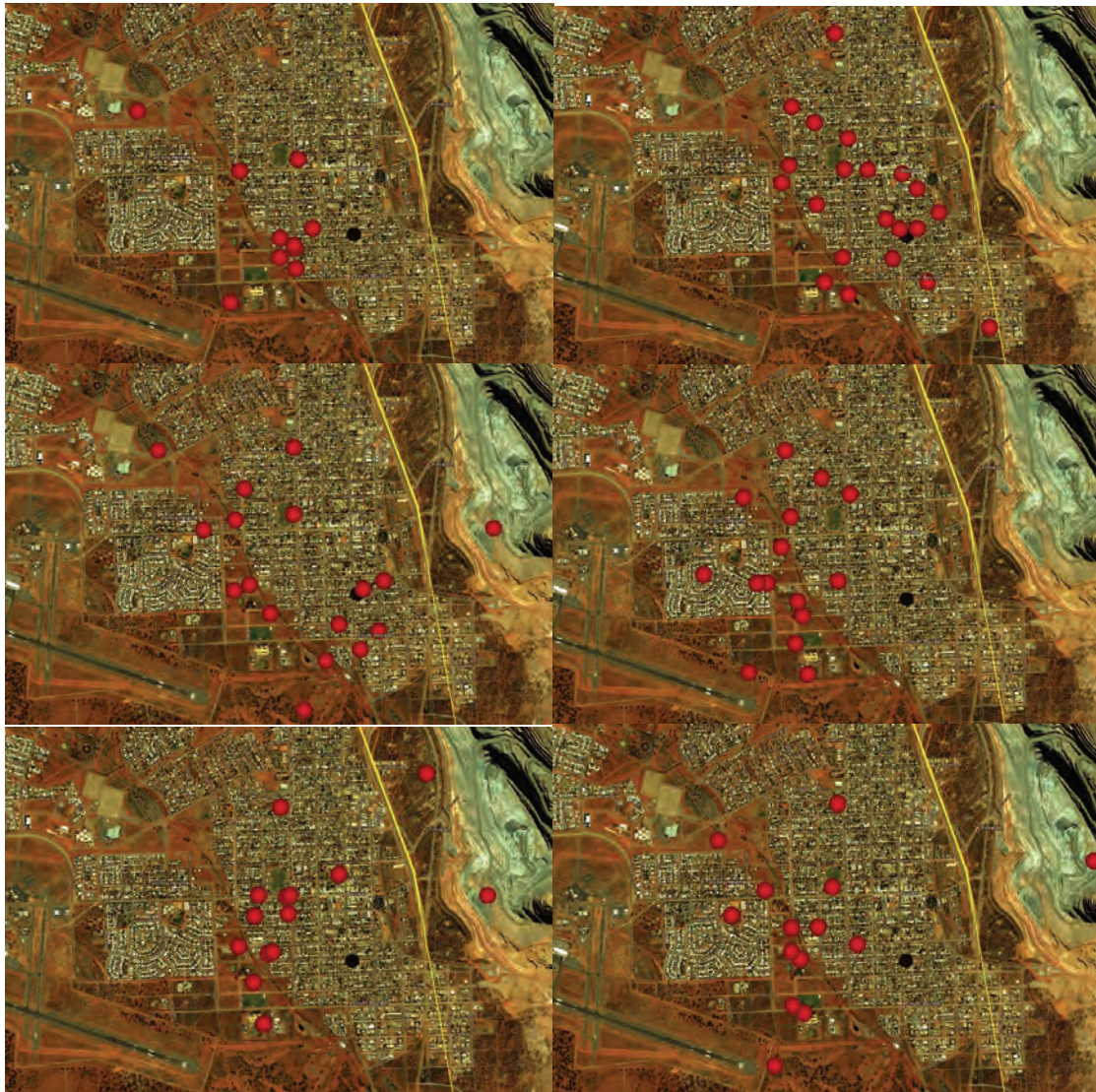


Figure 19: Aftershocks recorded in the first 6 days of the aftershock deployment, left to right, top to bottom; day 1 to day 6. Black Circle = Mainshock. Yellow line = Boulder Fault.

Aftershock Depths

A few conclusions can be drawn from the depth of aftershocks. The depth of the aftershocks do not exceed a depth of 4.5km. This indicates that the rupture of the mainshock most likely did not extend below this depth. The location of the aftershocks also varies with depth. The aftershocks at a depth of 1-2km occur over a smaller area than those of depth 0-1km. The same applies to those occurring at a depth of 2-3km in comparison to the shallower aftershocks. This may indicate that the deeper rupture was constrained to this area and rupture propagated to a greater extent nearer to the surface. The deeper aftershocks are also concentrated to the west of the Boulder Fault, reflecting the dip of the fault towards the west.

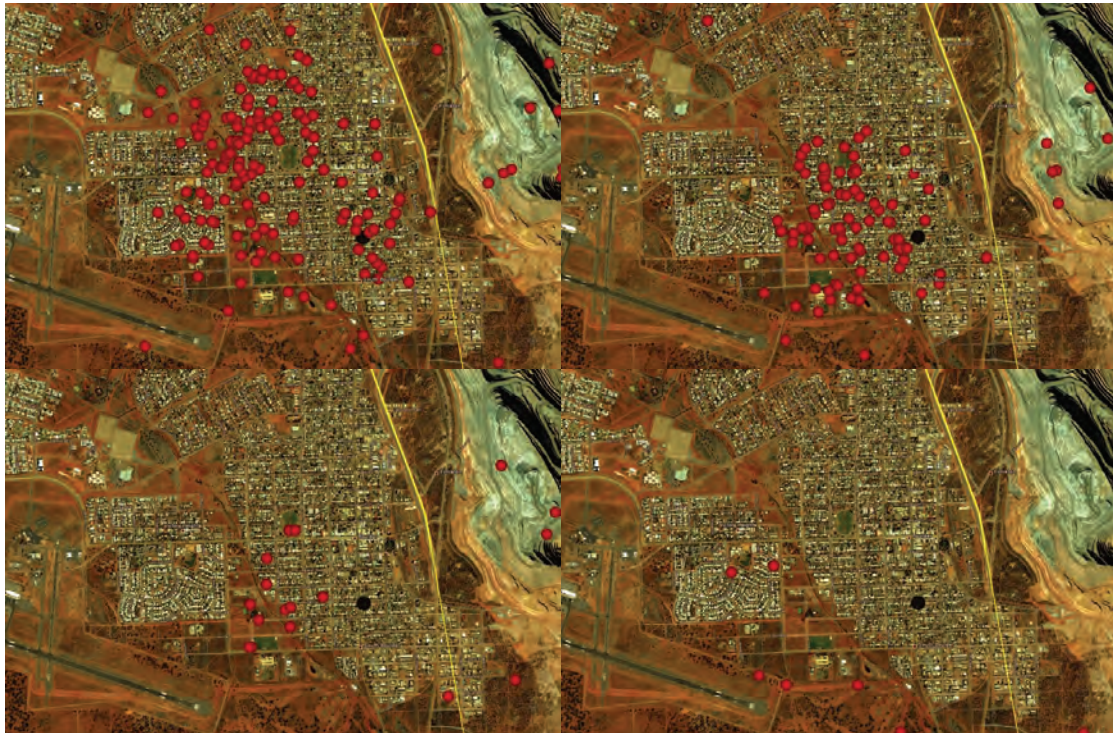


Figure 20: Aftershock Depth. Left to right, top to bottom Aftershocks with depth 0-0.9km, Aftershocks with depth 1-1.9km, Aftershocks with depth 2-2.9km, Aftershocks with depth 3km+, Black Circle = epicentre of mainshock. Yellow line = Boulder Fault.

Velocity Model Comparison

The occurrence of so many aftershocks and blasts in one location along with the placement of the aftershock deployment allowed us to run a comparison between different velocity models in the area. All the aftershocks and blast recorded were located whenever possible using both IASPEI91 and WA2A velocity models. Overall, IASPEI91 epicentres had lower residuals, indicating the arrivals of seismic waves had a better fit to the IASPEI91 velocity model than the WA2A model. The data in [Figure 21](#) show that the locations using the WA2A model have an overall spread away from the stations due to the higher velocities in the WA2A model compared to IASPEI91. This indicates that the velocity of seismic waves in the WA2A model is overestimated slightly in this area.

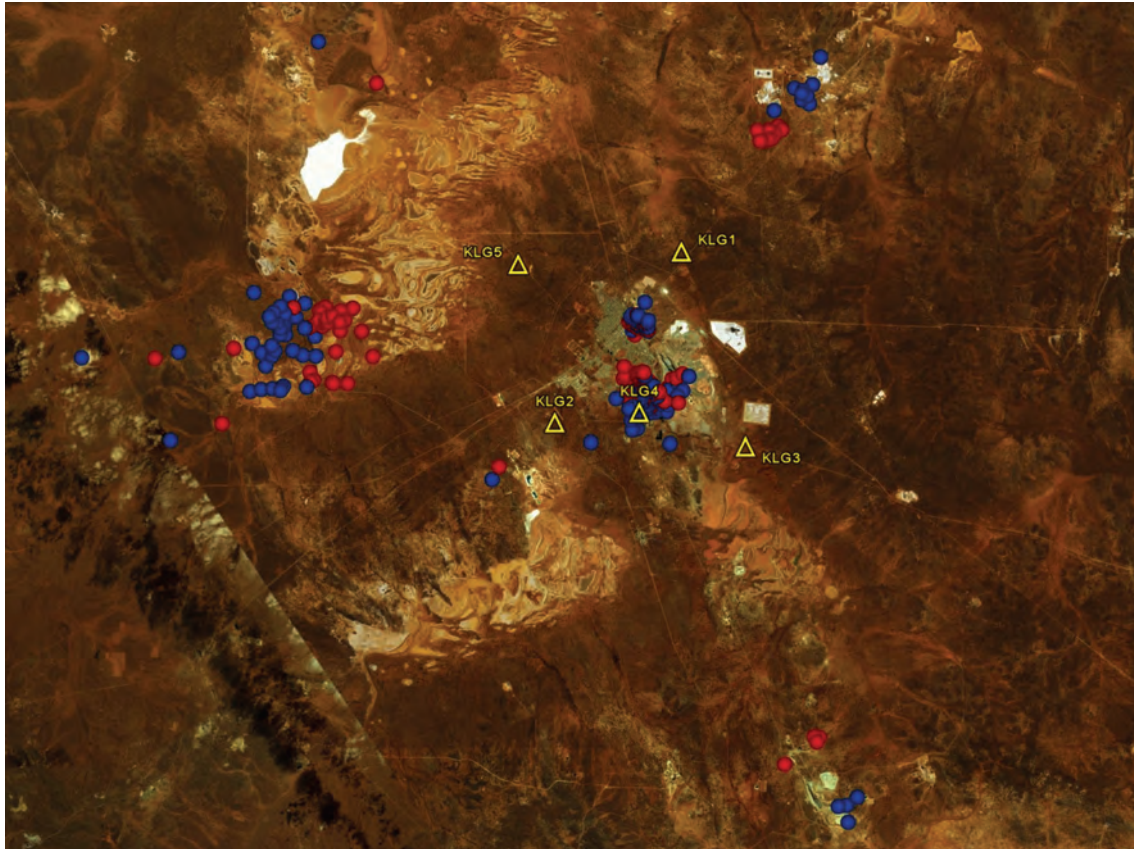


Figure 21: Sensitivity of epicentral locations to velocity models. Blue circles = WA2A model; Red circles = IASPEI91 model.

Acknowledgements

We wish to thank Owen McConnel, Matthew Knafl, Karyn Linney and Steve Yates for their assistance with the field deployment. We gratefully acknowledge the provision of travel-time data by the Australian Centre of Geomechanics and Kalgoorlie Consolidated Gold Mines Pty Ltd to improve the location of the main shock.

Australian Region

Geoscience Australia detects and locates earthquakes of magnitude 5 or higher in the Australian region, which for earthquakes encompasses Latitude 10° to -70° and Longitude 85° to -150° .

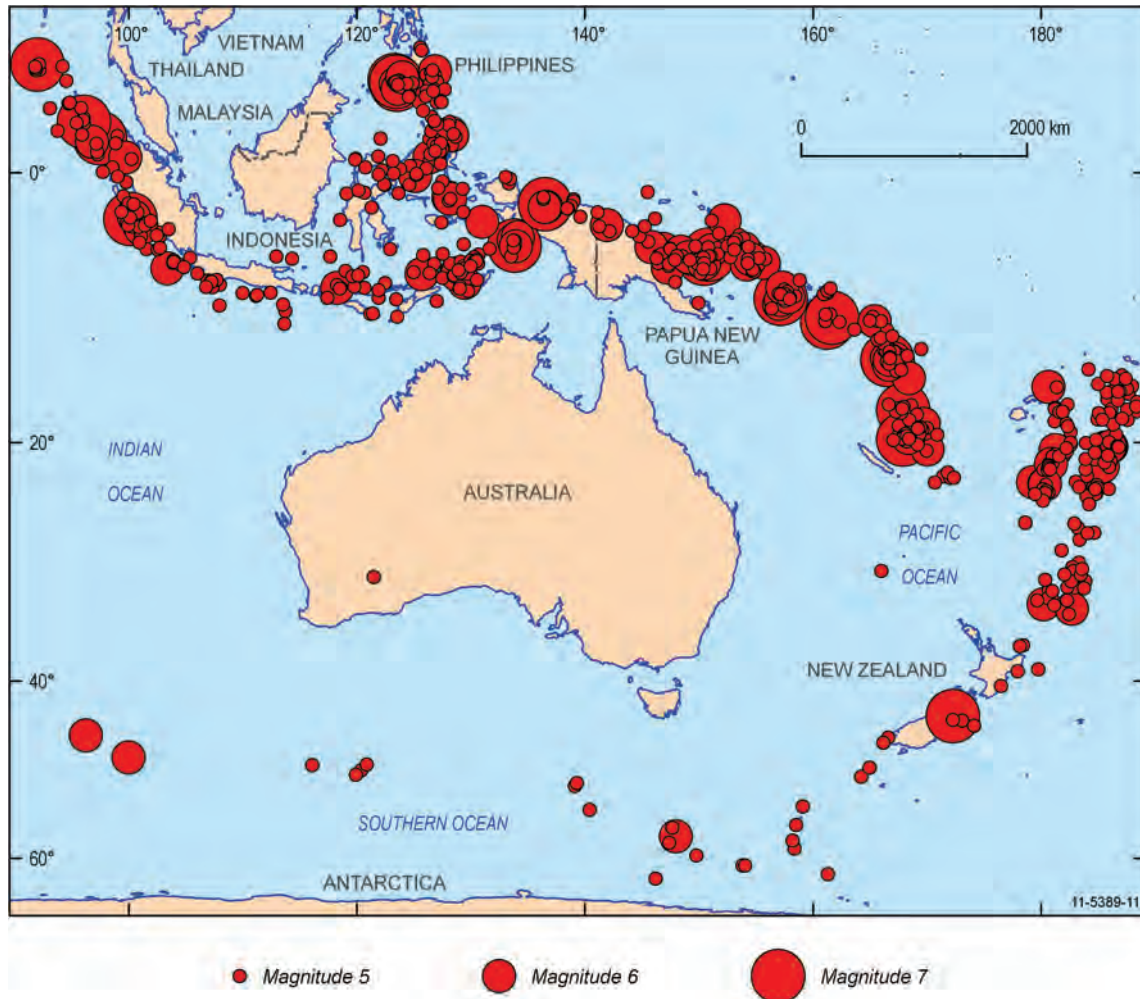


Figure 22: Map of 2010 Magnitude 5+ Australian Region Earthquakes.

Table 25: Australian Region Top 10 Earthquakes 2010

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
7.7	6-Apr-10	22:15:04	2.483	97.492	35	Northern Sumatra, Indonesia.
7.7	12-Jun-10	19:26:46	7.875	92.001	2	Nicobar Islands, India Region.
7.6	25-Dec-10	17:14:54	-19.7619	167.924	31	Vanuatu Islands Region.
7.6	10-Aug-10	05:23:48	-17.514	167.911	60	Vanuatu Islands.
7.6	27-May-10	13:16:40	-13.741	166.553	94	Vanuatu Islands.
7.5	23-Jul-10	22:51:12	6.4018	123.527	585	Mindanao, Philippines.
7.5	23-Jul-10	23:15:10	6.7212	123.309	635	Mindanao, Philippines.
7.4	25-Oct-10	14:42:20	-3.3875	100.163	6	Southern Sumatra, Indonesia.
7.3	9-May-10	05:59:44	3.6779	96.073	62	Northern Sumatra, Indonesia, Andaman Islands to Sumatra.
7.3	18-Jul-10	13:35:06	-6.2751	150.447	78	New Britain Region, PNG.

Table 26: Australian Region Earthquakes (Magnitude 5+) 2010

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
5.3	2-Jan-10	00:10:05	-19.804	-175.152	100	Tonga Islands.
5.2	3-Jan-10	09:10:38	-13.813	167.385	207	Vanuatu Islands.
5.3	3-Jan-10	21:38:41	6.4758	126.424	61	Mindanao, Philippines.
5.6	3-Jan-10	15:13:55	-13.006	166.243	53	Vanuatu Islands.
5.7	3-Jan-10	14:13:54	-1.9473	139.000	0	Near N Coast of Irian Jaya, New Guinea.
6.0	3-Jan-10	04:11:42	-5.4218	145.836	50	Eastern Papua New Guinea.
6.7	3-Jan-10	21:48:15	-9.2973	157.187	59	Solomon Islands.
7.2	3-Jan-10	22:36:35	-9.2147	157.192	50	Solomon Islands.
5.1	4-Jan-10	23:25:25	-8.8252	157.000	171	Solomon Islands.
5.1	4-Jan-10	02:08:17	-9.2195	157.442	54	Solomon Islands.
5.2	4-Jan-10	14:24:19	-8.536	157.475	19	Solomon Islands.
5.2	4-Jan-10	01:47:41	-9.912	156.398	107	Solomon Islands.
5.3	4-Jan-10	21:28:31	-7.2629	120.552	504	Flores Sea, Indonesia.
5.5	4-Jan-10	10:04:40	-20.906	-178.712	596	Fiji Islands Region.
5.6	4-Jan-10	04:17:46	-8.815	157.670	0	Solomon Islands.
6.1	4-Jan-10	11:28:17	-8.3762	157.309	0	Solomon Islands.
5.1	5-Jan-10	12:25:34	-9.0941	157.946	65	Solomon Islands Region.
5.1	5-Jan-10	14:36:27	-2.549	121.309	38	Sulawesi, Indonesia.
5.2	5-Jan-10	13:10:09	-9.059	157.634	101	Solomon Islands Region.
5.7	5-Jan-10	13:11:41	-9.043	157.843	21	Solomon Islands Region.
6.9	5-Jan-10	12:15:48	-9.595	157.045	115	Solomon Islands Region.
5.3	6-Jan-10	09:48:45	-49.779	164.245	10	Auckland Islands, New Zealand Region.
5.6	6-Jan-10	17:27:55	-4.4244	151.783	198	New Britain Region, Papua New Guinea.
5.1	7-Jan-10	08:29:22	-53.213	159.112	135	Macquarie Island Region, New Zealand Region.

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5.2	8-Jan-10	04:30:40	-31.017	-179.636	417	Kermadec Islands Region.
5.2	8-Jan-10	04:29:09	-8.691	157.745	26	Solomon Islands.
5.3	8-Jan-10	12:14:59	6.0512	126.820	121	Mindanao, Philippines.
5.3	8-Jan-10	12:55:01	1.9367	126.995	89	Molucca Sea.
5.3	9-Jan-10	07:04:39	-9.3745	157.511	55	Solomon Islands.
6.4	9-Jan-10	05:51:28	-9.0985	157.844	0	Solomon Islands.
5.0	10-Jan-10	18:25:04	-14.49	167.756	86	Vanuatu Islands.
5.1	10-Jan-10	00:25:02	-7.8218	107.723	51	Java, Indonesia.
5.2	10-Jan-10	08:09:45	-0.0625	123.231	178	Minahassa Peninsula, Sulawesi, Indonesia.
5.4	10-Jan-10	13:27:33	-6.26	147.480	75	Papua New Guinea.
5.6	10-Jan-10	22:44:28	-16.722	-174.167	56	Tonga Islands Region.
5.4	12-Jan-10	10:58:10	-5.459	133.744	6	Aru Islands Region, Indonesia.
5.0	13-Jan-10	07:54:58	5.1265	127.415	109	Philippine Islands Region.
5.1	13-Jan-10	12:42:43	6.4733	124.389	46	Mindanao, Philippines.
5.8	13-Jan-10	17:18:11	-0.7913	133.334	32	Irian Jaya Region, Indonesia.
5.1	14-Jan-10	16:22:39	-12.11	165.943	42	Santa Cruz Islands.
5.3	15-Jan-10	10:38:28	-31.723	-176.208	0	Kermadec Islands Region.
5.3	15-Jan-10	00:06:53	7.1311	126.086	81	Mindanao, Philippines.
5.3	15-Jan-10	10:14:09	-31.681	-177.031	81	Kermadec Islands Region.
5.5	17-Jan-10	09:46:44	-6.1907	152.758	37	New Britain Region, PNG.
5.1	18-Jan-10	12:19:12	-6.355	130.527	110	Banda Sea.
5.2	18-Jan-10	08:18:25	-6.2625	114.332	505	Bali Sea.
5.2	18-Jan-10	06:00:33	-11.532	166.501	100	Santa Cruz Islands.
5.4	18-Jan-10	16:09:22	-12.517	166.211	68	Santa Cruz Islands Region.
5.6	19-Jan-10	00:17:44	-9.0161	158.477	17	Solomon Islands.
5.1	20-Jan-10	22:57:01	-19.991	-177.395	364	Fiji Islands Region.
5.2	20-Jan-10	19:53:15	-17.866	-178.369	580	Fiji Islands Region.
5.1	21-Jan-10	17:00:53	1.1563	121.885	51	Minahassa Peninsula, Sulawesi.
5.3	22-Jan-10	06:46:17	3.0183	93.757	30	Off West Coast of Northern Sumatra.
5.1	24-Jan-10	06:50:00	-18.378	-178.799	608	Fiji Islands.
5.2	24-Jan-10	23:37:05	0.366	120.750	104	Minahassa Peninsula, Sulawesi, Borneo-Celebes.
5.5	24-Jan-10	05:38:29	-8.2961	129.048	35	Timor Sea.
5.5	24-Jan-10	14:19:00	-9.127	158.005	14	Solomon Islands Region.
5.8	24-Jan-10	18:15:14	-18.437	167.977	51	Vanuatu Islands.
5.1	25-Jan-10	14:08:25	-32.769	179.669	0	South of the Kermadec Islands.
5.3	25-Jan-10	15:55:44	-4.348	102.618	66	Southern Sumatra, Indonesia.
5.5	25-Jan-10	21:38:50	-18.626	-173.665	0	Tonga Islands Region.
5.1	26-Jan-10	06:53:25	-0.2929	99.017	57	Southern Sumatra, Indonesia.
5.3	26-Jan-10	22:12:34	-17.812	-178.473	577	Fiji Islands Region.
5.1	27-Jan-10	07:29:13	0.0534	97.731	2	Northern Sumatra, Indonesia.
5.2	27-Jan-10	06:53:32	-6.2338	155.257	213	Solomon Islands.
5.3	27-Jan-10	19:00:33	-7.2484	124.989	524	Banda Sea.
5.3	28-Jan-10	09:55:16	3.0111	126.538	59	Talaud Islands, Indonesia.
5.2	29-Jan-10	03:16:00	-8.3535	107.348	71	Java, Indonesia, Sunda Arc.
5.3	29-Jan-10	08:15:35	-19.045	169.599	98	Vanuatu Islands.

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5.9	29-Jan-10	09:19:58	-18.892	169.989	56	Vanuatu Islands.
5.5	30-Jan-10	15:59:46	2.327	126.944	50	Northern Molucca Sea.
5.2	31-Jan-10	15:18:49	-18.833	169.437	274	Vanuatu Islands.
5.4	31-Jan-10	07:02:47	-2.9013	100.766	62	Southern Sumatra, Indonesia.
6.6	1-Feb-10	22:28:19	-6.149	154.651	59	W of Bougainville, PNG.
5.3	4-Feb-10	13:02:34	-20.165	-177.370	468	Fiji Islands Region.
5.6	4-Feb-10	17:48:05	-19.413	-173.422	0	Tonga Islands Region.
6.1	5-Feb-10	06:59:16	-47.685	99.972	77	Southeast Indian Ridge.
5.3	6-Feb-10	21:26:20	-7.8164	130.552	41	Tanimbar Islands Region, Indonesia.
5.4	6-Feb-10	20:51:03	-15.904	-172.455	0	Samoa Islands Region.
5.4	6-Feb-10	07:55:48	-7.9913	147.914	99	Eastern New Guinea Region, PNG.
5.7	6-Feb-10	20:32:04	-16.273	-172.305	67	Samoa Islands Region.
5.3	7-Feb-10	07:41:56	-5.5357	147.486	198	Eastern New Guinea Region, PNG.
5.6	7-Feb-10	23:22:54	-23.301	-179.557	553	South of Fiji Islands.
6.0	7-Feb-10	22:28:20	-23.251	-179.695	541	South of Fiji Islands.
5.3	8-Feb-10	13:45:02	-23.996	-175.165	65	South of Tonga.
5.1	9-Feb-10	10:21:43	-38.91	179.755	0	East of the North Island of New Zealand.
5.7	9-Feb-10	01:03:49	-15.167	-173.553	30	Tonga Islands.
5.0	10-Feb-10	05:37:00	-4.2737	144.166	163	Near North Coast of Papua New Guinea.
5.1	10-Feb-10	04:51:15	-23.119	170.701	99	Southeast of Loyalty Islands.
5.2	10-Feb-10	11:42:13	-7.062	154.724	75	Solomon Islands Region.
5.3	10-Feb-10	12:22:44	-7.2116	154.882	59	Solomon Islands Region.
5.5	10-Feb-10	20:46:48	0.8523	126.420	86	Northern Molucca Sea.
5.7	10-Feb-10	07:18:37	-7.1867	154.691	70	Solomon Islands Region.
5.3	11-Feb-10	19:05:23	-24.043	-175.220	12	Tonga Islands Region.
5.7	11-Feb-10	18:43:09	-10.103	113.736	58	South of Java, Indonesia.
6.2	13-Feb-10	02:34:27	-21.858	-174.585	0	Tonga Islands Region.
5.2	14-Feb-10	20:21:44	5.5607	126.048	145	Mindanao, Philippines.
5.2	14-Feb-10	01:58:10	-18.263	168.446	39	Port Vila, Vanuatu Islands.
5.1	15-Feb-10	17:34:38	1.7261	127.519	111	Halmahera, Indonesia.
5.5	15-Feb-10	10:15:42	6.08	126.986	85	Mindanao, Philippines.
6.1	15-Feb-10	21:51:47	-7.3601	128.709	112	Banda Sea.
5.2	16-Feb-10	19:08:21	4.6646	93.089	11	Off W Coast of Northern Sumatra, Indonesia.
5.9	17-Feb-10	19:37:56	-29.579	-176.675	0	Kermadec Islands Region.
5.7	19-Feb-10	11:13:22	-21.314	-175.254	20	Tonga Region.
5.9	20-Feb-10	13:35:59	-13.576	166.784	100	Vanuatu Islands, New Hebrides Islands.
5.1	21-Feb-10	01:49:50	-16.134	-173.230	154	Tonga Region.
5.0	22-Feb-10	11:04:40	-27.157	-175.898	43	Kermadec Islands Region.
5.1	22-Feb-10	19:48:39	-23.661	-175.227	81	Tonga Region.
5.2	22-Feb-10	08:42:41	-23.319	-175.108	107	Tonga Region.
5.2	22-Feb-10	23:47:45	-3.65	101.571	43	Southern Sumatra, Indonesia.
5.5	22-Feb-10	07:00:52	-23.497	-175.436	53	Tonga Region.
5.7	22-Feb-10	05:08:56	-21.337	-173.923	83	Tonga region.

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5.2	23-Feb-10	06:04:52	-23.618	-174.063	58	Tonga Islands Region.
5.4	23-Feb-10	22:38:35	-23.678	-175.314	55	Tonga Islands Region.
5.2	24-Feb-10	11:57:56	-30.265	165.995	6	Northwest of New Zealand.
5.3	24-Feb-10	21:57:03	-21.053	-178.405	565	Fiji Islands Region.
5.0	25-Feb-10	04:38:37	-46.103	166.186	7	Off W Coast of S Island, NZ.
5.2	26-Feb-10	04:41:28	0.8403	123.141	67	Minahassa Peninsula, Indonesia.
5.4	26-Feb-10	16:18:57	5.7587	125.752	60	Mindanao, Philippines.
5.7	26-Feb-10	08:37:04	6.3587	126.902	140	Mindanao, Philippines.
5.0	28-Feb-10	20:24:52	-6.6264	130.635	93	Banda Sea, Sunda Arc.
5.2	28-Feb-10	12:13:23	2.1165	98.855	23	Northern Sumatra, Indonesia.
5.1	1-Mar-10	11:52:34	-3.4582	118.540	45	Sulawesi, Indonesia, Borneo - Celebes.
5.2	1-Mar-10	03:15:51	7.3004	126.507	34	Mindanao, Philippines.
5.1	2-Mar-10	22:18:44	3.4988	127.063	90	Talaud Islands, Indonesia.
5.3	4-Mar-10	09:39:41	-1.4111	145.507	35	Admiralty Islands Region, PNG.
6.7	4-Mar-10	14:02:30	-13.62	167.140	200	Vanuatu Islands.
5.2	5-Mar-10	10:14:26	1.8178	127.563	110	Halmahera, Indonesia, Borneo - Celebes.
6.6	5-Mar-10	16:07:01	-3.8511	100.923	32	Southern Sumatra, Indonesia, Sunda Arc.
5.2	6-Mar-10	12:10:59	-13.126	166.701	113	Vanuatu Islands.
5.2	11-Mar-10	23:20:20	-23.513	-175.072	91	Tonga Islands Region.
5.2	12-Mar-10	03:22:49	-9.1648	157.674	58	Solomon Islands.
5.2	13-Mar-10	19:55:09	-45.59	166.590	5	Off West Coast of South Island, New Zealand.
5.8	13-Mar-10	14:59:06	1.51	97.214	61	Northern Sumatra.
5.1	14-Mar-10	18:23:08	5.2152	127.355	117	Philippine Islands Region.
6.6	14-Mar-10	00:57:46	-1.8267	128.059	56	Halmahera, Indonesia.
5.0	16-Mar-10	14:53:14	2.152	127.364	100	Northern Molucca Sea.
5.7	16-Mar-10	12:25:08	-17.108	-177.687	426	Fiji Region.
5.5	17-Mar-10	04:46:15	-4.6723	102.713	62	Southern Sumatra, Indonesia, Sunda Arc.
5.2	18-Mar-10	06:28:50	-48.785	164.972	13	Off West Coast of South Island, New Zealand.
5.2	18-Mar-10	23:49:05	-27.11	-175.331	39	Kermadec Islands Region.
5.3	18-Mar-10	18:51:51	-22.147	-179.292	611	South of Fiji Islands.
5.8	18-Mar-10	09:14:01	-23.07	-176.948	115	South of Fiji Islands.
5.2	19-Mar-10	10:50:10	-5.5733	147.499	186	Eastern New Guinea Reg, PNG.
6.4	20-Mar-10	14:00:52	-3.4634	152.251	440	New Ireland Region, PNG.
5.2	21-Mar-10	22:40:42	-3.743	101.982	73	Southern Sumatra, Indonesia, Sunda Arc.
5.2	21-Mar-10	23:41:31	-14.585	167.339	106	Vanuatu Islands.
5.0	22-Mar-10	05:56:30	-26.302	178.630	629	South of Fiji Islands.
5.1	22-Mar-10	08:37:12	-6.497	130.273	117	Banda Sea.
5.3	23-Mar-10	06:33:19	-33.954	-177.552	0	South of Kermadec Islands.
5.3	24-Mar-10	19:50:09	-17.608	-171.570	0	Tonga Islands Region.
5.8	25-Mar-10	15:13:21	-7.5369	128.485	169	Banda Sea.
5.3	26-Mar-10	05:33:09	-18.272	-172.394	62	Tonga.
5.7	26-Mar-10	10:39:01	-6.3327	130.220	105	Banda Sea.
5.1	28-Mar-10	21:13:41	-21.841	-179.346	611	Fiji Islands Region.

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5.2	28-Mar-10	21:40:23	-22.137	-179.423	609	South of Fiji Islands.
5.3	28-Mar-10	21:13:44	-5.5825	122.940	36	Sulawesi, Indonesia.
5.3	1-Apr-10	15:46:57	-61.033	154.054	62	Balleny Islands Region, Macquarie Loop.
5.8	2-Apr-10	02:42:06	-7.6777	127.503	159	Banda Sea.
5.1	3-Apr-10	22:33:43	-2.2345	99.989	40	Southern Sumatra, Indonesia.
5.4	3-Apr-10	01:35:35	-31.143	-176.119	38	Kermadec Islands Region.
5.0	4-Apr-10	14:19:44	1.569	126.854	74	Northern Molucca Sea, Borneo - Celebes.
5.4	4-Apr-10	09:31:44	-23.778	-179.547	531	South of Fiji Islands.
5.0	5-Apr-10	14:40:12	-0.098	125.226	26	Southern Molucca Sea, Borneo - Celebes.
5.4	5-Apr-10	12:11:04	-0.184	125.216	39	Southern Molucca Sea, Borneo - Celebes.
6.1	5-Apr-10	10:05:48	-0.249	125.121	57	Southern Molucca Sea, Borneo - Celebes.
5.2	6-Apr-10	00:25:16	-9.2596	123.449	96	Timor Region.
7.7	6-Apr-10	22:15:04	2.483	97.492	35	Northern Sumatra, Indonesia.
6.1	7-Apr-10	14:33:04	-3.8274	141.925	36	New Guinea, Papua New Guinea.
5.3	8-Apr-10	14:58:08	-18.314	168.129	159	Vanuatu Islands.
5.3	9-Apr-10	06:04:19	-21.483	-173.900	57	Tonga Islands.
5.5	9-Apr-10	16:34:21	-9.5192	149.941	4	Eastern New Guinea Region, PNG.
5.3	10-Apr-10	06:16:17	-5.0405	145.558	72	Eastern New Guinea region, PNG.
5.6	10-Apr-10	02:53:23	-7.3678	129.725	86	Banda Sea.
5.9	10-Apr-10	16:54:20	-20.039	-176.049	235	Fiji Islands Region.
5.0	11-Apr-10	04:09:12	-5.5467	131.631	73	Banda Sea.
5.4	11-Apr-10	08:45:15	-5.337	152.522	67	New Britain Region, PNG.
5.5	11-Apr-10	02:19:14	-13.076	166.391	51	Vanuatu Islands.
5.6	11-Apr-10	05:59:28	-5.5666	101.571	7	Southwest of Sumatra, Indonesia.
7.3	11-Apr-10	09:40:31	-10.958	161.244	62	Solomon Islands.
5.1	12-Apr-10	06:07:50	-21.991	-179.305	595	South of Fiji Islands.
6.0	12-Apr-10	10:23:15	-56.987	147.988	44	West of Macquarie Island.
5.3	13-Apr-10	15:46:38	-10.866	161.074	71	Solomon Islands.
5.6	13-Apr-10	00:55:42	-4.5468	153.538	69	New Ireland Region, PNG.
5.3	14-Apr-10	12:36:45	-18.716	167.517	83	Vanuatu.
5.1	15-Apr-10	13:40:57	-31.171	-177.339	44	Kermadec Islands Region.
5.0	16-Apr-10	08:58:11	-9.2326	157.955	77	Solomon Islands.
5.1	16-Apr-10	22:44:14	-23.47	-176.636	182	South of Fiji Islands.
5.2	16-Apr-10	03:01:29	-10.54	165.253	68	Santa Cruz Islands.
5.1	17-Apr-10	16:00:22	-6.997	129.391	135	Banda Sea, Sunda Arc.
5.2	17-Apr-10	10:02:26	3.6871	126.800	47	Talaud Islands, Indonesia.
5.2	17-Apr-10	07:23:01	3.6231	126.797	62	Talaud Islands, Indonesia.
6.5	17-Apr-10	23:15:25	-6.92	147.283	66	Eastern New Guinea Reg, PNG.
5.0	18-Apr-10	05:31:25	-62.347	161.299	10	Balleny Islands Region, Macquarie Loop.
5.0	20-Apr-10	00:17:10	-30.787	121.489	2	Kalgoorlie, WA.
5.2	20-Apr-10	16:20:00	-17.878	-178.228	559	Fiji Islands Region.
5.9	21-Apr-10	17:20:26	-15.342	-172.993	17	Samoa Islands Region.
5.0	22-Apr-10	04:02:40	-15.135	-172.566	87	Samoa Islands Region.

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5.2	22-Apr-10	01:58:10	-4.6483	144.788	128	Near N Coast of New Guinea, PNG.
5.4	22-Apr-10	18:32:20	-6.6131	146.427	129	Eastern New Guinea Reg, PNG.
5.5	23-Apr-10	09:26:01	-6.8109	147.335	78	Eastern New Guinea Reg, PNG.
5.7	24-Apr-10	22:30:44	-15.914	-172.213	0	Samoa Islands Region.
6.2	24-Apr-10	07:41:03	-1.92	128.191	47	Halmahera, Indonesia.
5.1	25-Apr-10	23:23:25	-7.1202	128.907	15	Banda Sea.
5.2	25-Apr-10	09:38:23	-19.966	-174.014	68	Tonga Islands.
5.0	27-Apr-10	09:24:55	-8.869	157.187	75	Solomon Islands.
5.4	27-Apr-10	17:17:29	-48.491	116.092	35	Western Indian-Antarctic Ridge.
5.8	29-Apr-10	23:48:10	-50.813	139.118	30	Western Indian-Antarctic Ridge.
5.1	1-May-10	16:34:48	-9.1306	117.407	0	Sumbawa Region, Indonesia.
5.0	2-May-10	06:28:44	-17.661	-178.382	591	Fiji Islands Region.
5.1	3-May-10	23:30:04	-0.852	122.404	21	Minahassa Peninsula, Sulawesi.
5.3	5-May-10	17:49:07	-57.83	147.379	35	West of Macquarie Island.
5.8	5-May-10	17:09:10	-6.301	155.820	76	Solomon Islands, Bismarck and Solomon Islands.
6.3	5-May-10	16:29:05	-4.093	101.080	39	Southern Sumatra, Indonesia.
5.1	6-May-10	16:38:46	-1.9147	128.208	18	Halmahera, Indonesia, Borneo - Celebes.
5.1	6-May-10	06:14:54	-3.8545	101.425	42	Southern Sumatra, Indonesia.
5.4	6-May-10	09:13:08	-3.9486	100.887	29	Southern Sumatra, Indonesia.
5.3	7-May-10	11:44:45	-10.5254	123.542	1	Timor Region, Sunda Arc.
5.7	7-May-10	07:39:27	3.4467	128.069	128	North of Halmahera, Indonesia, Borneo - Celebes.
5.0	8-May-10	04:21:02	-8.1898	118.271	33	Sumbawa Region, Indonesia, Sunda Arc.
5.1	8-May-10	10:54:16	-2.0503	128.081	49	Ceram Sea, Borneo - Celebes.
5.3	8-May-10	05:39:29	-0.9041	122.449	30	Minahassa Peninsula, Sulawesi, Borneo - Celebes.
5.4	8-May-10	14:46:46	-17.7685	-174.929	161	Tonga Islands, Kermadec - Tonga - Samoa Area.
6.3	8-May-10	03:22:13	-8.4041	118.278	0	Sumbawa Region, Indonesia, Sunda Arc.
5.7	9-May-10	02:02:33	-8.45	129.005	25	Timor Sea, Sunda Arc.
7.3	9-May-10	05:59:44	3.6779	96.073	62	Northern Sumatra, Indonesia, Andaman Islands to Sumatra.
5.1	10-May-10	13:05:17	-11.9702	166.968	0	Santa Cruz Islands, New Hebrides Islands.
5.1	10-May-10	18:34:26	-8.4606	129.035	12	Timor Sea, Sunda Arc.
5.1	10-May-10	07:03:53	-22.0953	-179.210	600	South of Fiji Islands, Kermadec - Tonga - Samoa Area.
5.2	10-May-10	22:59:08	-17.2397	-171.639	111	Tonga Islands Region, Kermadec - Tonga - Samoa Area.
5.5	11-May-10	12:17:48	3.5749	96.080	98	Northern Sumatra, Indonesia, Andaman Islands to Sumatra.
5.1	12-May-10	23:07:56	-1.3064	120.149	36	Sulawesi, Indonesia.
5.2	13-May-10	02:11:14	9.1266	125.565	66	Mindanao, Philippines.
5.8	15-May-10	15:18:11	-23.503	-176.230	69	South of Fiji Islands.
5.7	16-May-10	00:33:09	0.4812	124.661	144	Minahassa Peninsula, Sulawesi.
5.2	17-May-10	09:51:14	-7.557	119.623	0	Flores Sea.
5.4	18-May-10	12:00:01	-7.9267	107.223	62	Java, Indonesia.
5.2	19-May-10	00:13:14	-6.8861	104.855	0	Sunda Strait, Indonesia.

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5.4	19-May-10	01:36:35	-13.116	167.134	223	Vanuatu Islands.
5.5	19-May-10	12:42:10	-6.6242	128.192	307	Banda Sea.
5.4	20-May-10	13:36:35	-7.1609	119.029	575	Flores Sea, Sunda Arc.
5.3	25-May-10	00:28:25	-21.662	-179.012	600	Fiji Islands Region.
5.1	26-May-10	15:55:53	-9.6438	113.533	12	South of Java, Indonesia.
5.1	26-May-10	07:14:15	4.5037	125.827	148	Talaud Islands, Indonesia.
5.2	26-May-10	07:48:52	-10.302	121.401	0	Savu Sea.
5.3	26-May-10	07:51:08	-10.315	121.193	17	Savu Sea.
5.1	27-May-10	19:16:50	-14.066	166.675	117	Vanuatu Islands.
5.2	27-May-10	17:45:40	-13.749	166.775	128	Vanuatu Islands.
5.2	27-May-10	17:24:36	-13.898	166.495	140	Vanuatu Islands.
6.0	27-May-10	20:48:06	-13.741	166.727	77	Vanuatu Islands.
7.6	27-May-10	17:14:54	-13.741	166.553	94	Vanuatu Islands.
5.1	28-May-10	19:22:32	1.5433	127.287	135	Halmahera, Indonesia.
5.2	28-May-10	19:27:01	-10.356	161.121	161	Solomon Islands.
5.4	28-May-10	18:32:43	-3.8804	100.820	37	Southern Sumatra, Indonesia.
6.1	28-May-10	04:26:05	-14.11	166.678	84	Vanuatu Islands.
5.3	29-May-10	18:02:35	-19.344	169.361	177	Vanuatu Islands.
6.0	31-May-10	10:16:03	6.925	123.995	33	Moro Gulf, Mindanao, Philippines.
5.3	1-Jun-10	16:47:35	-17.863	169.135	71	Vanuatu Islands.
5.1	2-Jun-10	10:21:50	-6.3758	149.215	80	New Britain Region, PNG.
5.2	2-Jun-10	01:01:48	4.0603	126.544	41	Talaud Islands, Indonesia.
5.5	2-Jun-10	18:51:14	-13.774	166.511	90	Vanuatu Islands.
6.2	2-Jun-10	09:29:03	-6.2874	149.351	120	New Britain Region, PNG.
5.5	3-Jun-10	09:24:16	4.6809	95.813	77	Northern Sumatra, Indonesia.
5.0	4-Jun-10	15:12:38	-9.697	107.955	5	South of Java, Indonesia.
5.5	5-Jun-10	17:43:19	1.4972	127.380	161	Halmahera, Indonesia.
5.1	6-Jun-10	02:19:54	-33.187	-178.822	0	South of Kermadec Islands.
5.2	6-Jun-10	16:57:26	-8.7584	112.429	81	Java, Indonesia.
5.0	9-Jun-10	07:00:21	-20.178	169.179	111	Vanuatu Islands.
5.6	9-Jun-10	08:57:41	1.97	127.170	114	Halmahera, Indonesia.
6.0	9-Jun-10	23:23:23	-18.557	169.725	71	Vanuatu Islands.
5.1	10-Jun-10	03:08:27	-30.596	-176.488	57	Kermadec Islands region.
5.1	10-Jun-10	13:36:08	-12.9224	169.493	650	Santa Cruz Islands Region.
5.3	10-Jun-10	02:13:24	7.1021	126.866	83	Mindanao, Philippines.
5.1	11-Jun-10	20:55:00	-24.843	-175.762	0	South of Tonga Islands.
5.2	11-Jun-10	19:58:18	-17.965	-178.214	611	Fiji Islands Region.
5.1	12-Jun-10	04:41:51	0.9215	119.867	46	Minahassa Peninsula, Sulawesi.
5.2	12-Jun-10	22:41:37	-10.857	165.985	171	Santa Cruz Islands, New Hebrides Islands.
5.2	12-Jun-10	13:36:41	-5.5869	102.551	33	Southern Sumatra, Indonesia.
5.3	12-Jun-10	02:21:26	-22.775	172.051	43	Southeast of Loyalty Islands.
5.4	12-Jun-10	03:50:00	1.003	119.889	70	Minahassa Peninsula, Sulawesi.
5.6	12-Jun-10	22:44:40	7.881	92.072	10	Nicobar Islands, India Region.
7.7	12-Jun-10	19:26:46	7.875	92.001	2	Nicobar Islands, India Region.
5.0	13-Jun-10	22:22:58	3.7443	126.807	83	Talaud Islands, Indonesia.
5.0	13-Jun-10	01:57:57	0.627	127.339	156	Halmahera, Indonesia.

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5.1	13-Jun-10	02:50:36	7.697	91.813	28	Nicobar Islands, India Region.
5.2	13-Jun-10	04:01:06	7.8859	92.124	19	Nicobar Islands, India Region.
5.3	13-Jun-10	07:05:36	7.8059	91.940	29	Nicobar Islands, India Region.
5.3	13-Jun-10	06:25:59	7.7189	91.855	0	Nicobar Islands, India Region.
5.4	13-Jun-10	17:51:26	-6.0545	147.672	66	Eastern New Guinea Region, PNG.
5.0	16-Jun-10	06:20:18	-1.7952	136.370	0	Irian Jaya Region, Indonesia.
5.1	16-Jun-10	06:10:43	-1.9201	136.382	0	Irian Jaya Region, Indonesia.
5.2	16-Jun-10	21:04:39	-8.6517	129.750	13	Timor Sea, Sunda Arc.
5.3	16-Jun-10	00:52:57	-1.5441	119.113	21	Sulawesi, Indonesia.
5.3	16-Jun-10	12:24:49	1.9687	128.367	70	Halmahera, Indonesia.
5.3	16-Jun-10	00:04:51	-6.4888	129.120	214	Banda Sea, Indonesia.
5.4	16-Jun-10	02:47:33	-10.344	161.501	111	Solomon Islands Region.
6.3	16-Jun-10	03:06:04	-2.5173	136.490	18	Irian Jaya Region, Indonesia.
6.4	16-Jun-10	03:58:10	-2.4824	136.617	19	Irian Jaya Region, Indonesia.
7.2	16-Jun-10	03:16:27	-2.3072	136.514	8	Irian Jaya Region, Indonesia.
5.2	17-Jun-10	16:35:39	-1.5189	123.660	65	Sulawesi, Indonesia.
6.0	17-Jun-10	13:06:50	-33.104	-179.751	212	South of Kermadec Islands.
5.2	18-Jun-10	14:42:52	-8.922	111.258	45	Java, Indonesia.
5.1	19-Jun-10	18:40:10	-2.301	100.422	62	Southern Sumatra, Indonesia.
5.3	20-Jun-10	10:21:33	-5.9166	146.735	63	Eastern New Guinea Reg, PNG.
5.0	21-Jun-10	10:23:23	-17.097	166.666	53	Vanuatu Islands.
5.8	22-Jun-10	22:16:21	-19.211	-177.409	563	Fiji Islands Region.
5.2	24-Jun-10	18:07:43	7.5854	91.867	0	Nicobar Islands, India Region.
5.6	24-Jun-10	04:08:32	7.7021	91.848	0	Nicobar Islands, India Region.
6.1	24-Jun-10	05:32:32	-5.6329	151.140	76	New Britain Region, PNG.
5.4	25-Jun-10	07:28:58	7.7079	91.832	0	Nicobar Islands.
5.1	26-Jun-10	08:56:27	-32.766	-177.708	58	South of Kermadec Islands.
5.1	26-Jun-10	01:18:07	0.3817	98.572	59	Northern Sumatra, Indonesia.
5.4	26-Jun-10	22:43:58	-6.1577	130.305	130	Banda Sea.
5.7	26-Jun-10	09:50:45	-8.1777	107.997	87	Java, Indonesia.
7.0	26-Jun-10	05:30:25	-10.609	161.666	96	Solomon Islands Region.
5.2	27-Jun-10	12:58:05	-8.4635	161.542	88	Solomon Islands.
5.5	27-Jun-10	13:01:39	-8.6533	161.283	72	Solomon Islands.
5.6	27-Jun-10	08:47:39	-4.6336	101.087	19	Southwest of Sumatra, Indonesia.
5.6	27-Jun-10	14:19:20	-8.8855	160.949	81	Solomon Islands.
5.6	27-Jun-10	23:47:36	5.1167	126.994	83	Mindanao, Philippines.
5.1	28-Jun-10	06:27:47	-13.625	166.766	175	Vanuatu Islands.
5.9	28-Jun-10	18:19:11	-8.8147	161.257	92	Solomon Islands.
5.2	29-Jun-10	15:32:59	-18.174	-172.877	25	Tonga Islands.
5.5	29-Jun-10	01:24:05	-4.7797	153.922	185	New Ireland Region, PNG.
5.4	30-Jun-10	10:54:53	-0.6954	99.774	96	Southern Sumatra, Indonesia.
6.3	30-Jun-10	04:31:01	-23.098	179.322	559	South of Fiji Islands.
5.4	1-Jul-10	15:21:51	1.309	97.272	44	Northern Sumatra, Indonesia.
5.8	1-Jul-10	16:57:45	-5.228	129.363	5	Banda Sea, Sunda Arc.
5.2	2-Jul-10	16:25:25	-13.519	166.777	39	Vanuatu Islands.
5.2	2-Jul-10	12:28:02	-5.439	150.827	116	New Britain Region, PNG.

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5.8	2-Jul-10	12:00:21	-13.715	166.587	98	Vanuatu Islands.
6.8	2-Jul-10	06:04:09	-13.623	166.498	86	Vanuatu Islands.
5.3	3-Jul-10	12:13:39	-11.487	163.636	126	Solomon Islands.
5.0	5-Jul-10	21:47:29	-57.545	158.209	33	Macquarie Island Region.
5.1	6-Jul-10	18:02:16	-53.612	140.416	43	West of Macquarie Island.
5.2	6-Jul-10	01:16:29	-8.8906	157.595	133	Solomon Islands.
5.3	6-Jul-10	16:38:04	-22.333	171.825	115	Southeast of Loyalty Islands.
5.1	7-Jul-10	09:13:36	-6.3155	154.301	65	Solomon Islands.
6.0	7-Jul-10	06:50:42	-6.2889	154.501	48	Solomon Islands Region.
5.2	8-Jul-10	20:15:19	-9.1505	121.905	72	Savu Sea, Sunda Arc.
5.7	8-Jul-10	12:48:21	-23.916	-179.347	529	South of Fiji Islands.
5.0	9-Jul-10	14:45:19	-6.3573	147.900	62	Eastern New Guinea Region, PNG.
5.1	9-Jul-10	11:16:32	-48.435	120.876	100	Western Indian-Antarctic Ridge, Indian Ocean.
5.5	9-Jul-10	10:13:37	-6.1998	105.377	42	Sunda Strait, Indonesia.
5.6	10-Jul-10	12:54:22	-7.8567	158.828	72	Solomon Islands Region.
5.0	11-Jul-10	13:23:31	-39.104	177.967	0	Off E Coast of N Island of New Zealand.
5.3	11-Jul-10	21:08:27	7.464	92.156	32	Nicobar Islands, India Region.
5.3	11-Jul-10	03:34:51	-17.937	-178.384	567	Fiji Islands Region.
5.3	11-Jul-10	03:00:03	-30.871	-177.402	70	Kermadec Islands, New Zealand.
5.5	12-Jul-10	16:53:07	6.5073	123.409	623	Mindanao, Philippines.
5.3	13-Jul-10	04:26:29	1.4837	97.226	66	Northern Sumatra, Indonesia.
5.6	13-Jul-10	23:56:27	-2.427	138.790	4	Irian Jaya, Indonesia.
5.0	16-Jul-10	05:58:25	-8.449	118.527	21	Sumbawa Region, Indonesia.
5.1	16-Jul-10	05:45:51	-8.3913	118.564	19	Sumbawa Region, Indonesia.
5.3	17-Jul-10	16:19:59	-15.548	-174.991	0	Tonga Islands.
6.9	18-Jul-10	13:04:16	-6.2684	150.565	74	New Britain Region, PNG.
7.3	18-Jul-10	13:35:06	-6.2751	150.447	78	New Britain Region, PNG.
5.2	19-Jul-10	15:34:22	-6.0764	151.062	45	New Britain Region, PNG.
5.3	19-Jul-10	07:24:45	-6.3266	150.478	66	New Britain Region, PNG.
5.4	19-Jul-10	03:01:13	-6.5938	150.305	43	New Britain Region, PNG.
5.5	20-Jul-10	23:54:30	-2.8872	141.131	15	Near N Coast of New Guinea, PNG.
5.7	20-Jul-10	20:31:13	-6.2395	150.681	61	New Britain Region, PNG.
6.5	20-Jul-10	19:18:26	-6.1017	150.608	57	New Britain Region, PNG.
5.2	21-Jul-10	22:25:29	-5.073	100.949	9	Southwest of Sumatra, Indonesia.
6.3	21-Jul-10	09:16:06	2.8989	128.243	119	Halmahera, Indonesia.
5.0	22-Jul-10	03:54:33	-6.5993	150.457	66	New Britain Region, PNG.
5.3	22-Jul-10	22:26:50	1.355	126.963	89	Molucca Sea.
6.3	22-Jul-10	05:03:57	-15.114	168.413	15	Vanuatu Islands Region.
5.2	23-Jul-10	14:34:16	-4.563	102.459	73	Southern Sumatra, Indonesia.
5.2	23-Jul-10	23:49:36	6.5247	123.540	598	Mindanao, Philippines.
7.2	23-Jul-10	22:08:11	6.6117	123.453	611	Mindanao, Philippines.
7.5	23-Jul-10	23:15:10	6.7212	123.309	635	Mindanao, Philippines.
7.5	23-Jul-10	22:51:12	6.4018	123.527	585	Mindanao, Philippines.
5.0	24-Jul-10	02:06:47	6.3965	123.615	593	Mindanao, Philippines.

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5.1	24-Jul-10	07:46:19	-6.6337	149.860	47	New Britain Region, PNG.
5.1	24-Jul-10	23:51:14	-1.4715	120.677	62	Sulawesi, Indonesia.
5.3	24-Jul-10	07:55:39	-10.832	165.621	44	Santa Cruz Islands, New Hebrides Islands.
5.3	24-Jul-10	01:44:45	6.502	123.678	598	Mindanao, Philippines.
6.2	24-Jul-10	02:11:26	1.0969	99.689	45	Northern Sumatra, Indonesia.
6.4	24-Jul-10	05:35:02	6.0979	123.587	571	Mindanao, Philippines.
5.0	25-Jul-10	07:35:40	-17.625	-178.096	539	Fiji Islands Region.
5.6	25-Jul-10	08:18:30	6.6619	123.491	621	Mindanao, Philippines.
5.7	25-Jul-10	04:21:39	6.6997	123.731	603	Mindanao, Philippines.
5.9	25-Jul-10	03:39:20	-14.906	-172.896	65	Samoa Islands.
5.2	26-Jul-10	23:19:18	-24.221	-176.007	181	South of Tonga Islands.
5.2	26-Jul-10	16:37:03	6.6751	123.611	608	Mindanao, Philippines.
5.5	26-Jul-10	17:08:52	-3.9106	141.256	53	New Guinea, Papua New Guinea.
5.7	26-Jul-10	23:06:50	6.5564	123.266	631	Mindanao, Philippines.
5.0	27-Jul-10	08:26:20	-3.5097	101.917	87	Southern Sumatra, Indonesia.
5.0	27-Jul-10	16:54:12	-7.3382	126.388	373	Banda Sea.
5.3	28-Jul-10	18:21:12	-12.233	165.666	60	Santa Cruz Islands, New Hebrides Islands.
5.2	29-Jul-10	08:55:27	6.4551	123.378	627	Mindanao, Philippines.
6.5	29-Jul-10	07:31:57	6.4655	123.408	618	Mindanao, Philippines.
5.3	30-Jul-10	04:37:21	-61.071	153.845	0	Balleny Islands Region.
5.3	30-Jul-10	18:19:35	-21.274	-176.093	116	Fiji Islands Region.
5.4	30-Jul-10	11:39:55	2.1064	126.725	61	Northern Molucca Sea.
5.1	31-Jul-10	23:12:50	-7.0025	151.024	6	New Britain Region, PNG.
5.1	31-Jul-10	13:34:30	-23.954	-179.627	624	S of Fiji Islands.
5.5	31-Jul-10	04:28:23	-6.3814	150.524	61	New Britain Region, PNG.
5.2	2-Aug-10	12:00:44	7.4376	91.845	0	Nicobar Islands, India Region.
5.4	2-Aug-10	23:13:30	-6.7409	104.572	50	Sunda Strait, Indonesia, Sunda Arc.
5.3	3-Aug-10	08:03:19	-6.5156	103.960	50	Southwest of Sumatra, Indonesia.
5.6	3-Aug-10	22:30:31	-22.627	171.430	64	Southeast of Loyalty Islands.
6.6	3-Aug-10	12:08:30	1.1145	126.382	71	Northern Molucca Sea, Borneo-Celebes.
5.2	4-Aug-10	10:07:12	-21.551	-174.412	81	Tonga Islands.
5.3	4-Aug-10	00:43:05	6.6005	127.061	69	Philippine Islands Region.
5.9	4-Aug-10	04:46:17	-26.733	-176.746	0	South of Fiji Islands.
6.4	4-Aug-10	07:15:33	-5.5556	146.899	214	Eastern New Guinea Region.
7.1	4-Aug-10	22:01:46	-5.9755	150.884	65	New Britain Region, PNG.
5.4	5-Aug-10	08:45:35	-6.0422	146.453	139	Eastern New Guinea Region, PNG.
5.6	5-Aug-10	05:09:28	-6.317	150.566	73	New Britain Region.
5.7	6-Aug-10	08:58:37	-7.5248	128.472	31	Banda Sea.
5.7	6-Aug-10	05:04:00	-21.65	-179.322	600	Fiji Islands Region.
5.5	7-Aug-10	12:51:59	-13.432	167.918	54	Vanuatu Islands Region.
5.2	9-Aug-10	20:25:45	-21.008	-174.127	0	Tonga Islands.
5.4	9-Aug-10	03:34:16	-6.0989	112.955	594	Java, Indonesia.
5.1	10-Aug-10	12:39:50	-17.424	167.842	74	Vanuatu Islands.
5.3	10-Aug-10	19:05:14	-17.671	167.975	30	Vanuatu Islands.

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5.8	10-Aug-10	23:18:33	-14.401	167.259	196	Vanuatu Islands.
7.6	10-Aug-10	05:23:48	-17.514	167.911	60	Vanuatu Islands.
5.4	11-Aug-10	23:58:01	-5.4166	154.331	124	Solomon Islands.
5.5	11-Aug-10	19:10:22	-7.8595	106.921	42	Java, Indonesia.
5.9	11-Aug-10	03:35:27	-17.369	167.568	83	Vanuatu Islands.
5.3	12-Aug-10	04:48:33	-21.088	-178.963	631	Fiji Islands Region.
5.4	12-Aug-10	12:53:50	-17.269	167.956	60	Vanuatu Islands.
5.2	13-Aug-10	18:42:40	-7.3479	150.160	63	New Britain Region, PNG.
5.1	14-Aug-10	09:11:07	-24.574	-179.822	553	South of Fiji Islands.
5.2	14-Aug-10	01:08:40	-3.2198	139.603	29	Irian Jaya, Indonesia.
5.0	15-Aug-10	03:04:09	-7.0152	150.380	17	New Britain Region, PNG.
5.1	15-Aug-10	08:04:34	-6.6487	126.781	454	Banda Sea.
5.1	15-Aug-10	03:18:30	6.5714	123.410	624	Mindanao, Philippines.
5.2	15-Aug-10	02:51:23	-22.1	-179.788	626	South of Fiji Islands.
6.4	15-Aug-10	15:09:31	-5.7496	148.391	185	New Britain Region.
5.1	16-Aug-10	17:20:30	-17.647	167.261	144	Vanuatu Islands.
5.5	16-Aug-10	18:56:12	-7.484	128.558	153	Banda Sea.
6.2	16-Aug-10	19:35:47	-20.582	-178.711	572	Fiji Islands Region.
5.2	17-Aug-10	10:43:57	-30.265	-177.137	45	Kermadec Islands.
5.5	18-Aug-10	19:49:08	-16.179	-174.230	112	Tonga Islands Region.
6.2	20-Aug-10	17:56:18	-6.694	154.189	36	Solomon Islands.
6.1	21-Aug-10	05:42:56	2.2434	96.770	48	Northern Sumatra, Indonesia.
5.0	22-Aug-10	20:20:35	-6.5942	154.278	116	Solomon Islands.
5.0	23-Aug-10	10:15:09	-7.4909	120.106	619	Flores Sea, Sunda Arc.
5.5	24-Aug-10	03:06:24	-8.4098	120.677	172	Flores region, Indonesia.
5.6	24-Aug-10	06:07:55	-6.1011	133.528	21	Aru Islands, Indonesia.
5.1	25-Aug-10	21:09:10	-6.214	150.388	62	New Britain Region, PNG.
5.2	25-Aug-10	16:46:37	2.583	128.655	262	Halmahera, Indonesia.
5.3	25-Aug-10	22:57:13	-21.91	-174.024	0	Tonga Islands Region.
5.4	25-Aug-10	06:25:15	0.252	123.796	207	Minahassa Peninsula, Sulawesi.
5.5	25-Aug-10	08:55:54	-0.8881	124.629	54	Southern Molucca Sea, Indonesia.
5.2	26-Aug-10	04:21:30	-6.6091	130.056	123	Banda Sea.
5.1	27-Aug-10	06:42:22	-6.2496	146.294	117	Eastern New Guinea Region, PNG.
5.1	27-Aug-10	00:56:13	-5.479	102.740	40	Southern Sumatra, Indonesia.
5.2	29-Aug-10	10:02:39	-0.3318	133.052	14	Irian Jaya Region, Indonesia, New Guinea.
5.1	30-Aug-10	04:44:14	-14.935	-174.193	10	Samoa Islands Region.
5.3	30-Aug-10	23:25:33	-16.107	-173.075	0	Samoa Islands Region.
5.2	31-Aug-10	20:47:47	-3.6355	127.439	39	Seram, Indonesia.
5.2	1-Sep-10	01:46:21	-6.8508	150.355	45	New Britain Region, PNG.
5.0	2-Sep-10	03:38:22	-8.5819	121.915	7	Flores Region, Indonesia.
5.1	3-Sep-10	10:30:26	-5.6242	153.096	86	New Britain Region, PNG.
5.1	3-Sep-10	10:25:51	-13.424	168.283	0	Vanuatu Islands.
5.3	3-Sep-10	10:29:24	-6.3805	149.739	68	New Britain Region, PNG.
5.7	3-Sep-10	17:06:49	-3.7236	101.868	59	Southern Sumatra, Indonesia.
5.7	3-Sep-10	02:29:12	-6.2789	149.969	54	New Britain Region, PNG.

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7.1	3-Sep-10	16:35:42	-43.422	172.266	0	West of Christchurch, NZ.
5.0	4-Sep-10	03:39:20	-2.6013	138.458	49	Irian Jaya, Indonesia.
5.6	4-Sep-10	08:51:58	-17.44	-173.835	19	Tonga Islands Region.
5.6	4-Sep-10	03:14:35	-2.6227	138.501	37	Irian Jaya, Indonesia.
5.0	5-Sep-10	12:19:18	5.9363	126.693	65	Mindanao, Philippines.
5.5	5-Sep-10	23:48:26	-23.661	-179.823	531	South of Fiji Islands.
5.5	5-Sep-10	17:34:13	-0.6488	127.519	1	Halmahera, Indonesia.
5.8	5-Sep-10	08:20:14	-6.0609	147.703	68	Eastern New Guinea Reg, PNG.
5.1	6-Sep-10	11:40:49	-43.799	172.288	15	South Island, New Zealand.
5.3	6-Sep-10	17:15:36	-4.1137	103.506	142	Southern Sumatra, Indonesia.
5.3	6-Sep-10	09:54:32	-30.507	-177.490	67	Kermadec Islands, New Zealand.
5.4	6-Sep-10	22:48:32	-40.477	176.500	0	North Island, New Zealand.
5.8	6-Sep-10	13:46:31	-10.919	162.319	71	Solomon Islands.
5.8	6-Sep-10	07:24:28	-18.229	-175.032	154	Tonga Islands Region.
5.0	7-Sep-10	19:49:49	-44.385	174.145	12	Off East Coast of Sth Island, New Zealand.
5.4	7-Sep-10	12:48:54	-14.445	-175.835	0	Samoa Islands Region.
6.0	7-Sep-10	00:57:21	-6.9783	103.380	0	Southwest of Sumatra, Indonesia.
6.3	7-Sep-10	16:13:31	-15.764	-179.341	0	Fiji Islands Region.
5.1	8-Sep-10	08:01:29	-20.627	169.975	106	Vanuatu Islands.
6.6	8-Sep-10	11:37:37	-20.542	170.050	48	Vanuatu Islands.
5.1	9-Sep-10	05:49:43	-17.433	-178.788	544	Fiji Islands Region.
5.6	9-Sep-10	07:42:36	-6.0267	125.834	516	Banda Sea.
5.6	11-Sep-10	07:12:30	-1.1748	129.282	7	Halmahera, Indonesia.
5.7	11-Sep-10	11:43:13	7.7327	94.204	41	Andaman Islands, India Region.
5.2	12-Sep-10	16:35:57	5.499	124.560	44	Mindanao, Philippines.
5.4	12-Sep-10	06:00:47	-63.091	146.211	89	Balleny Islands region.
5.2	13-Sep-10	18:31:46	-6.8219	129.366	183	Banda Sea.
5.2	14-Sep-10	07:33:28	5.601	124.592	34	Mindanao, Philippines.
5.2	14-Sep-10	13:08:58	5.5106	124.547	39	Mindanao, Philippines.
5.0	15-Sep-10	07:56:32	-5.3655	149.707	47	New Britain Region, PNG.
5.1	15-Sep-10	06:33:06	-8.0511	122.474	238	Flores Region, Indonesia.
5.2	15-Sep-10	18:42:58	5.9336	126.111	98	Mindanao, Philippines.
5.3	15-Sep-10	13:43:51	-21.763	-179.339	563	Fiji Islands Region.
5.8	16-Sep-10	01:54:37	-16.104	-173.812	46	Tonga Islands.
5.2	17-Sep-10	19:34:09	3.6139	126.832	66	Talaud Islands, Indonesia.
5.5	18-Sep-10	14:29:17	-17.344	-178.766	553	Fiji Islands Region.
5.0	23-Sep-10	12:56:22	-18.931	169.201	295	Vanuatu Islands.
5.5	23-Sep-10	12:53:09	-5.9147	151.645	43	New Britain Region, PNG.
5.5	26-Sep-10	05:33:32	5.7518	126.132	158	Mindanao, Philippines.
6.0	26-Sep-10	12:12:37	-5.3505	133.947	2	Aru Islands Region, Indonesia.
5.0	27-Sep-10	06:43:19	-1.1305	127.145	34	Halmahera, Indonesia.
5.3	28-Sep-10	23:44:42	2.1019	97.174	61	Northern Sumatra, Indonesia.
5.1	29-Sep-10	19:06:47	-7.3069	129.122	114	Banda Sea, Sunda Arc.
5.2	29-Sep-10	04:14:38	-36.737	178.433	272	Off East Coast of Nth Island, New Zealand.
5.2	29-Sep-10	21:03:24	-4.9366	133.713	0	Irian Jaya Region, Indonesia.

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5.5	29-Sep-10	11:33:32	5.0125	94.711	35	Northern Sumatra, Indonesia.
5.6	29-Sep-10	18:49:29	-15.685	-172.005	0	Samoa Islands Region.
6.2	29-Sep-10	17:10:49	-4.967	133.872	0	Irian Jaya Region, Indonesia.
7.2	29-Sep-10	17:11:35	-5.3184	133.852	79	Aru Island Region, Indonesia.
5.1	30-Sep-10	13:32:21	-5.1119	153.076	50	New Ireland Region, PNG.
5.4	30-Sep-10	01:07:37	-5.3075	133.880	9	Aru Islands Region, Indonesia.
5.5	30-Sep-10	09:54:12	5.0863	94.849	72	Northern Sumatra, Indonesia.
5.6	30-Sep-10	02:11:01	-4.9683	133.880	0	Aru Islands Region, Indonesia.
5.7	30-Sep-10	03:45:01	-0.463	133.435	0	Irian Jaya Region, Indonesia.
5.3	1-Oct-10	05:00:20	5.1057	125.461	210	Talaud Islands, Indonesia.
5.3	1-Oct-10	07:26:03	-17.497	-172.460	0	Tonga Islands Region.
5.4	1-Oct-10	01:24:23	-11.057	113.638	0	South of Java, Indonesia.
5.8	2-Oct-10	11:29:05	-6.6005	128.660	230	Banda Sea.
5.2	3-Oct-10	13:04:45	-5.9312	127.543	43	Banda Sea.
5.3	3-Oct-10	16:42:45	-32.57	-179.396	61	S of Kermadec Islands.
5.0	4-Oct-10	00:06:13	-30.555	-177.928	133	Kermadec Islands Region.
5.1	4-Oct-10	09:21:46	-43.873	173.085	1	South Island, New Zealand.
5.2	4-Oct-10	15:52:46	-59.589	149.773	50	West of Macquarie Island.
5.1	5-Oct-10	19:22:01	-3.493	151.132	66	New Ireland Region, PNG.
5.2	5-Oct-10	20:29:51	-4.8615	153.261	77	New Ireland Region, PNG.
5.4	5-Oct-10	08:26:29	6.6186	123.700	607	Mindanao, Philippines.
5.7	5-Oct-10	03:36:47	-20.685	-177.732	446	Fiji Region.
5.1	6-Oct-10	21:07:13	-6.0783	150.868	54	New Britain Region, PNG.
5.6	6-Oct-10	19:43:28	-17.725	-174.012	0	Tonga Islands.
5.6	6-Oct-10	21:57:43	6.511	124.905	71	Mindanao, Philippines.
6.3	8-Oct-10	05:43:11	2.7008	128.358	155	Halmahera, Indonesia.
5.1	12-Oct-10	04:20:35	2.4667	122.094	542	Celebes Sea, Borneo - Celebes.
5.4	12-Oct-10	12:01:07	-20.319	-174.191	0	Tonga Islands.
5.5	12-Oct-10	12:02:54	-20.448	-173.935	0	Tonga Islands.
6.2	12-Oct-10	10:21:34	-4.9166	133.743	5	Irian Jaya Region, Indonesia.
5.1	15-Oct-10	12:43:55	3.6185	95.433	49	Off W Coast of Northern Sumatra.
5.3	16-Oct-10	13:51:39	-55.512	158.522	0	Macquarie Island Region.
5.8	16-Oct-10	19:51:52	6.6802	94.534	100	Nicobar Islands, India Region.
6.0	16-Oct-10	13:27:45	-20.313	-173.953	0	Tonga Islands.
6.1	16-Oct-10	15:44:30	-7.4074	125.681	0	Banda Sea.
6.2	16-Oct-10	20:08:29	-20.317	-173.822	0	Tonga Islands.
5.1	19-Oct-10	10:58:12	-20.307	-173.255	42	Tonga Islands Region.
5.2	19-Oct-10	21:16:15	-20.284	-173.238	0	Tonga Islands.
5.0	22-Oct-10	12:11:13	-18.764	-177.647	646	Fiji Islands Region.
5.1	22-Oct-10	02:52:46	-20.282	-173.338	0	Tonga Islands.
5.1	22-Oct-10	18:23:27	7.4382	126.647	168	Mindanao, Philippines.
5.0	23-Oct-10	18:38:02	8.9151	125.675	80	Mindanao, Philippines.
5.0	23-Oct-10	00:54:18	-20.359	-173.191	0	Tonga Islands Region.
5.4	24-Oct-10	09:11:08	-19.583	168.273	41	Vanuatu Islands.
5.6	24-Oct-10	23:15:49	-5.4301	154.337	131	Solomon Islands.
5.0	25-Oct-10	17:36:37	-2.8701	99.362	0	Southern Sumatra, Indonesia.

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5.7	25-Oct-10	12:05:29	-0.131	125.279	47	Southern Molucca Sea.
5.9	25-Oct-10	19:37:30	-2.7608	100.438	19	Southern Sumatra, Indonesia.
6.0	25-Oct-10	22:59:56	-3.219	100.456	42	Southern Sumatra, Indonesia.
7.4	25-Oct-10	14:42:20	-3.3875	100.163	6	Southern Sumatra, Indonesia.
5.3	26-Oct-10	11:33:15	-2.6853	99.659	0	Southern Sumatra, Indonesia.
5.4	26-Oct-10	10:51:23	-3.6165	99.838	11	Southwest of Sumatra, Indonesia.
5.8	26-Oct-10	23:45:37	-2.3373	99.827	16	Southern Sumatra, Indonesia.
5.2	28-Oct-10	03:16:15	-6.413	129.992	155	Banda Sea.
6.1	28-Oct-10	03:17:27	-5.5193	153.935	63	New Ireland Region, PNG.
5.1	29-Oct-10	06:19:21	2.805	128.466	83	Halmahera, Indonesia.
5.2	31-Oct-10	18:49:15	-6.528	150.410	33	New Britain Region, PNG.
6.0	31-Oct-10	16:38:52	-6.6311	150.453	33	New Britain Region, PNG.
5.6	1-Nov-10	05:16:42	-6.708	150.236	57	New Britain Region, PNG.
5.3	2-Nov-10	23:08:06	-19.129	168.702	39	Vanuatu Islands.
5.8	2-Nov-10	06:39:57	-5.4836	151.642	60	New Britain Region, PNG.
5.1	3-Nov-10	11:04:08	-58.612	158.384	63	Macquarie Island Region.
5.4	3-Nov-10	03:01:49	-6.5855	103.900	27	Southwest of Sumatra, Indonesia.
5.8	3-Nov-10	14:10:27	2.435	126.346	80	Northern Molucca Sea.
6.1	3-Nov-10	11:18:13	-4.7102	134.130	0	Irian Jaya Region, Indonesia.
6.2	3-Nov-10	23:34:41	-20.379	-174.349	0	Tonga Islands.
5.2	5-Nov-10	12:13:52	6.9592	126.601	195	Mindanao, Philippines.
5.2	5-Nov-10	01:17:28	-17.731	167.760	66	Vanuatu Islands.
5.7	8-Nov-10	21:40:11	-4.2669	142.164	120	New Guinea, Papua New Guinea.
5.1	9-Nov-10	05:18:09	-18.573	-177.773	571	Fiji Islands Region.
5.1	9-Nov-10	12:39:00	-7.965	107.253	54	Java, Indonesia.
5.2	9-Nov-10	11:16:50	-1.7324	99.522	22	Southern Sumatra, Indonesia.
5.4	9-Nov-10	07:03:29	-8.787	110.004	49	Java, Indonesia.
5.1	10-Nov-10	11:43:47	-28.5581	-178.202	208	Kermadec Islands Region.
5.2	10-Nov-10	03:09:27	0.3038	126.110	59	Northern Molucca Sea.
6.3	10-Nov-10	04:05:23	-45.349	96.241	0	Southeast Indian Ridge, Indian Ocean.
5.2	11-Nov-10	03:34:09	1.3257	126.432	72	Northern Molucca Sea.
5.9	11-Nov-10	20:30:01	-6.2836	154.822	66	Solomon Islands.
5.0	12-Nov-10	21:16:44	-30.1095	-176.385	55	Kermadec Islands, New Zealand.
5.5	12-Nov-10	02:14:44	-6.642	129.976	141	Banda Sea.
5.3	14-Nov-10	19:01:12	-16.7835	-173.265	0	Tonga Islands.
5.5	16-Nov-10	20:06:37	-5.9631	130.688	104	Banda Sea.
5.7	16-Nov-10	01:39:42	-2.101	139.024	6	Irian Jaya, Indonesia.
6.2	17-Nov-10	15:53:31	-8.0394	129.461	9	Timor Sea, Indonesia.
5.6	19-Nov-10	21:55:14	0.9713	100.242	183	Northern Sumatra, Indonesia.
5.0	20-Nov-10	18:42:16	-7.3606	106.020	36	Java, Indonesia.
5.1	20-Nov-10	02:13:33	-3.2933	100.118	2	Southern Sumatra, Indonesia.
5.4	20-Nov-10	06:12:04	-17.1579	168.623	244	Vanuatu Islands.
5.2	22-Nov-10	14:13:00	-18.875	169.204	259	Vanuatu Islands.
6.0	22-Nov-10	16:18:34	-33.4981	-177.295	10	South of Kermadec Islands.
5.1	23-Nov-10	15:55:16	-55.8616	147.681	45	West of Macquarie Island, Macquarie Loop.

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6.1	23-Nov-10	09:01:09	-6.1464	149.071	81	New Britain Region, PNG.
5.2	24-Nov-10	18:35:54	-24.2194	179.978	500	South of Fiji Islands.
5.1	25-Nov-10	00:26:18	-20.443	-177.766	444	Fiji Islands Region.
5.1	25-Nov-10	16:15:21	-22.7364	172.354	0	Southeast of the Loyalty Islands.
5.1	26-Nov-10	22:12:31	-2.86	129.342	50	Seram, Indonesia.
6.2	26-Nov-10	17:36:10	-3.5888	130.998	0	Seram, Indonesia.
5.8	27-Nov-10	18:11:16	3.6761	128.120	80	North of Halmahera, Indonesia.
5.0	28-Nov-10	17:38:49	-6.6738	147.362	59	Eastern New Guinea Region.
5.1	28-Nov-10	16:47:40	-24.0214	179.487	608	South of Fiji Islands.
5.1	28-Nov-10	19:45:17	-6.581	130.500	70	Banda Sea.
5.1	29-Nov-10	10:27:15	-8.3482	106.780	2	South of Java, Indonesia.
5.5	1-Dec-10	00:50:22	2.6659	98.996	162	Northern Sumatra, Indonesia.
5.7	1-Dec-10	16:01:31	-15.7884	-178.608	59	Fiji Islands Region.
5.1	2-Dec-10	23:40:05	-49.0572	120.408	69	Western Indian-Antarctic Ridge.
6.9	2-Dec-10	03:12:14	-6.2386	149.876	50	New Britain Region, PNG.
5.0	4-Dec-10	06:33:41	-6.8168	129.988	167	Banda Sea.
5.0	4-Dec-10	12:55:10	-6.4541	130.489	107	Banda Sea, Sunda Arc.
5.1	4-Dec-10	05:57:55	-49.5637	119.912	54	Western Indian-Antarctic Ridge.
5.1	6-Dec-10	01:55:42	-9.3702	127.011	31	Timor Sea.
5.3	6-Dec-10	07:56:09	-3.8396	99.953	0	Southwest of Sumatra, Indonesia.
5.1	8-Dec-10	05:08:07	-20.7971	-175.273	63	Tonga Islands.
5.2	8-Dec-10	09:18:53	-31.9781	-179.009	108	South of Kermadec Islands.
5.4	8-Dec-10	14:41:23	-22.0783	-176.067	124	South of Fiji Islands.
5.8	8-Dec-10	15:31:05	-6.779	129.940	160	Banda Sea.
6.3	8-Dec-10	06:47:19	7.3692	126.869	91	Mindanao, Philippines.
5.1	11-Dec-10	07:58:44	-0.149	121.914	198	Minahassa Peninsula, Sulawesi.
5.1	11-Dec-10	18:31:37	-3.9168	145.261	76	Near N Coast of New Guinea, PNG.
5.2	11-Dec-10	07:23:17	-6.0833	148.558	62	New Britain Region, PNG.
5.2	11-Dec-10	22:11:07	-3.3452	146.142	45	Bismarck Sea, New Guinea.
6.1	11-Dec-10	13:43:19	-21.6728	-179.119	581	Fiji Islands Region.
5.2	12-Dec-10	05:05:40	-6.0681	148.061	73	New Britain Region, PNG.
5.4	12-Dec-10	17:50:34	-27.6908	-176.608	18	Kermadec Islands Region.
5.4	12-Dec-10	14:53:11	-6.612	150.564	36	New Britain Region, PNG.
5.5	12-Dec-10	14:54:34	-6.5742	150.471	63	New Britain Region, PNG.
5.7	12-Dec-10	15:59:17	-6.1012	117.672	9	Bali Sea.
5.1	13-Dec-10	08:56:44	-18.2464	-174.630	87	Tonga Islands.
5.5	13-Dec-10	13:30:49	-8.3125	119.777	169	Flores Region, Indonesia.
5.7	13-Dec-10	09:18:30	-6.4022	103.937	28	Southwest of Sumatra, Indonesia.
6.6	13-Dec-10	01:14:49	-6.5739	155.697	199	Solomon Islands.
5.3	14-Dec-10	20:01:01	3.7959	95.996	62	Northern Sumatra, Indonesia.
5.4	14-Dec-10	01:16:27	-31.9429	-179.327	86	Kermadec Islands region.
6.0	15-Dec-10	11:29:30	-7.4478	128.812	129	Banda Sea, Indonesia.
5.6	16-Dec-10	02:10:25	-29.9606	-177.246	69	Kermadec Islands, New Zealand.
5.8	17-Dec-10	13:22:46	-6.526	130.023	160	Banda Sea.
5.3	21-Dec-10	04:21:29	0.1581	122.193	179	Minahassa Peninsula, Sulawesi.
5.4	21-Dec-10	14:07:51	2.7576	95.894	38	Simeulue, Indonesia.

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5.6	21-Dec-10	03:59:38	-8.9981	111.179	37	Java, Indonesia.
5.2	23-Dec-10	16:01:34	-19.7594	168.576	45	Vanuatu Islands.
5.4	23-Dec-10	05:02:06	-16.9132	-171.589	0	Samoa Islands Region.
5.8	23-Dec-10	16:28:14	-8.1509	119.883	184	Flores region, Indonesia.
5.8	23-Dec-10	00:01:41	3.9646	96.059	74	Northern Sumatra, Indonesia.
5.0	24-Dec-10	18:27:49	-10.8255	164.987	65	Santa Cruz Islands.
5.9	24-Dec-10	05:49:26	-63.541	-167.481	307	Pacific-Antarctic Ridge.
5.1	25-Dec-10	23:19:59	-19.4027	170.888	0	Vanuatu Islands.
5.1	25-Dec-10	11:59:31	-36.7963	178.144	223	Offshore North Island, New Zealand.
5.1	25-Dec-10	22:26:07	-19.9175	168.271	48	Vanuatu Islands.
5.1	25-Dec-10	21:16:49	6.0383	127.721	50	Philippine Islands Region.
5.1	25-Dec-10	22:41:33	-19.3238	168.148	52	Vanuatu Islands.
5.1	25-Dec-10	15:26:24	-19.5655	168.088	45	Vanuatu Islands Region.
5.2	25-Dec-10	16:22:16	-19.3771	168.039	36	Vanuatu Islands Region.
5.4	25-Dec-10	13:59:11	-19.5058	168.009	76	Vanuatu Islands Region.
5.5	25-Dec-10	15:28:38	-19.6968	168.172	33	Vanuatu Islands Region.
5.7	25-Dec-10	14:44:35	-19.4438	168.063	0	Vanuatu Islands Region.
7.6	25-Dec-10	13:16:40	-19.7619	167.924	31	Vanuatu Islands Region.
5.0	26-Dec-10	10:00:07	-19.7272	168.437	91	Vanuatu Islands Region.
5.0	26-Dec-10	00:12:45	-19.497	168.262	90	Vanuatu Islands Region.
5.1	26-Dec-10	10:33:22	-19.5559	168.041	93	Vanuatu Islands Region.
5.2	26-Dec-10	06:52:52	-19.6941	168.454	62	Vanuatu Islands Region.
5.3	26-Dec-10	13:34:10	-19.8491	168.442	69	Vanuatu Islands Region.
5.4	26-Dec-10	01:00:26	-19.8579	168.292	41	Vanuatu Islands Region.
5.6	26-Dec-10	06:18:00	-19.7106	168.504	33	Vanuatu Islands Region.
6.0	26-Dec-10	19:38:26	-19.6535	168.378	45	Vanuatu Islands Region.
6.3	26-Dec-10	02:13:40	-19.6118	168.373	35	Vanuatu Islands Region.
5.2	27-Dec-10	20:26:26	-26.3799	-177.064	83	South of Fiji Islands.
5.4	27-Dec-10	23:53:19	-19.862	168.208	98	Vanuatu Islands.
5.4	27-Dec-10	17:02:38	-50.5048	139.295	39	Western Indian-Antarctic Ridge.
5.5	27-Dec-10	06:41:45	-22.6137	-175.968	98	Tonga Islands Region.
5.8	27-Dec-10	19:40:19	-19.2772	167.998	57	Vanuatu Islands Region.
5.1	28-Dec-10	22:02:49	-19.8158	167.048	235	Vanuatu islands Region.
5.6	28-Dec-10	21:43:59	-19.4845	168.145	92	Vanuatu Islands Region.
6.0	28-Dec-10	08:34:17	-23.2626	-179.658	542	South of Fiji Islands.
5.1	29-Dec-10	21:10:52	-19.7238	167.846	133	Vanuatu Islands Region.
5.4	29-Dec-10	07:02:28	-19.8926	168.158	102	Vanuatu Islands Region.
6.7	29-Dec-10	06:54:20	-19.6209	168.364	30	Vanuatu Island Region.
5.2	30-Dec-10	23:47:05	-31.6462	-177.685	57	Kermadec Islands Region.
6.0	30-Dec-10	14:36:59	-10.8695	165.423	42	Santa Cruz Islands.

World

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

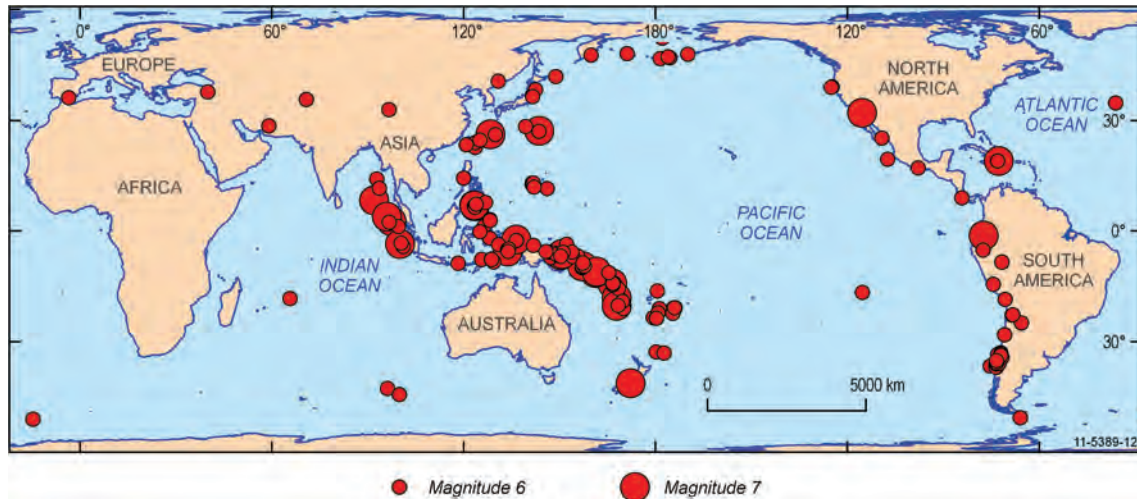


Figure 23: Map of 2010 Magnitude 6+ World Earthquakes.

Table 27: World Top 10 Earthquakes 2010

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
8.8	27-Feb-10	06:34:15	-35.846	-72.719	35	Offshore Maule, Chile.
7.7	6-Apr-10	00:15:04	2.483	97.492	35	Northern Sumatra, Indonesia.
7.7	12-Jun-10	00:26:46	7.875	92.001	2	Nicobar Islands, India Region.
7.6	25-Dec-10	00:16:40	-19.7619	167.924	31	Vanuatu Islands Region.
7.6	10-Aug-10	00:23:48	-17.514	167.911	60	Vanuatu Islands.
7.6	27-May-10	00:14:54	-13.741	166.553	94	Vanuatu Islands.
7.5	23-Jul-10	00:51:12	6.4018	123.527	585	Mindanao, Philippines.
7.5	23-Jul-10	00:15:10	6.7212	123.309	635	Mindanao, Philippines.
7.4	21-Dec-10	17:19:41	26.892	143.726	14	Bonin Islands, Japan Region.
7.4	25-Oct-10	00:42:20	-3.3875	100.163	6	Southern Sumatra, Indonesia.

Table 28: World Earthquakes Magnitude 6+ 2010

MAGNITUDE	DATE	TIME(UTC)	LATITUDE	LONGITUDE	DEPTH (KM)	COMMENTS
6.2	2-Jan-10	08:45:33	12.51	141.888	10	Mariana Islands Region.
6.0	3-Jan-10	00:11:42	-5.4218	145.836	50	Eastern Papua New Guinea.
6.7	3-Jan-10	00:48:15	-9.2973	157.187	59	Solomon Islands.
7.2	3-Jan-10	00:36:35	-9.2147	157.192	50	Solomon Islands.
6.1	4-Jan-10	00:28:17	-8.3762	157.309	0	Solomon Islands.
6.7	5-Jan-10	04:55:39	-58.173	-14.689	10	East of the South Sandwich Islands.
6.9	5-Jan-10	00:15:48	-9.595	157.045	115	Solomon Islands Region.
6.4	9-Jan-10	00:51:28	-9.0985	157.844	0	Solomon Islands.
6.5	10-Jan-10	00:27:39	40.652	-124.692	29	Offshore Northern California.
7.0	12-Jan-10	21:53:10	18.457	-72.533	13	Haiti Region.
6.0	14-Jan-10	00:03:44	11.3878	142.086	66	South of Mariana Islands.
6.1	17-Jan-10	00:00:07	-57.5	-65.800	33	Drake Passage.
6.0	20-Jan-10	00:03:44	18.43	-72.880	10	Haiti Region.
6.6	1-Feb-10	00:28:19	-6.149	154.651	59	W of Bougainville, PNG.
6.1	4-Feb-10	20:20:21	40.43	-124.930	11	Offshore Northern California.
6.1	5-Feb-10	00:59:16	-47.685	99.972	77	Southeast Indian Ridge.
6.0	7-Feb-10	00:28:20	-23.251	-179.695	541	South of Fiji Islands.
6.4	7-Feb-10	06:10:00	23.472	123.713	17	Southwestern Ryukyu Islands, Japan.
6.2	13-Feb-10	00:34:27	-21.858	-174.585	0	Tonga Islands Region.
6.1	15-Feb-10	00:51:47	-7.3601	128.709	112	Banda Sea.
6.8	18-Feb-10	00:13:19	42.5593	130.834	575	N Korea, China, Russian Border Region.
7.0	26-Feb-10	20:31:27	25.902	128.417	22	Ryukyu Islands, Japan.
6.0	27-Feb-10	10:30:33	-33.969	-72.879	35	Offshore Libertador O'Higgins, Chile.
6.0	27-Feb-10	07:37:18	-36.837	-72.541	35	Bio-Bio, Chile.
6.0	27-Feb-10	07:12:29	-33.807	-71.913	35	Offshore Valparaiso, Chile.
6.1	27-Feb-10	08:25:30	-34.75	-72.394	35	Offshore Maule, Chile.
6.2	27-Feb-10	06:52:35	-34.735	-72.638	35	Offshore Maule, Chile.
6.3	27-Feb-10	19:00:08	-33.425	-71.909	35	Offshore Valparaiso, Chile.
6.3	27-Feb-10	15:45:41	-24.588	-65.432	38	Salta, Argentina.
6.9	27-Feb-10	08:01:24	-37.654	-75.199	39	Off the coast of Bio-Bio, Chile.
8.8	27-Feb-10	06:34:15	-35.846	-72.719	35	Offshore Maule, Chile.
6.2	28-Feb-10	00:25:36	-34.864	-71.571	46	Libertador O'Higgins, Chile.
6.0	3-Mar-10	17:44:25	-36.452	-73.069	19	Off Shore Bio-Bio, Chile.
6.3	4-Mar-10	00:39:26	-22.33	-68.340	105	Antofagasta, Chile.
6.4	4-Mar-10	00:18:52	22.903	120.823	23	Taiwan.
6.7	4-Mar-10	00:02:30	-13.62	167.140	200	Vanuatu Islands.
6.0	5-Mar-10	09:19:38	-36.535	-73.253	35	Off Shore Bio-Bio, Chile.
6.6	5-Mar-10	11:47:10	-36.513	-73.116	35	Off Shore Bio-Bio, Chile.
6.6	5-Mar-10	00:07:01	-3.8511	100.923	32	Southern Sumatra, Indonesia, Sunda Arc.
6.3	7-Mar-10	07:05:25	-16.108	-115.256	10	Southern East Pacific Rise.
6.1	8-Mar-10	00:32:35	38.876	39.992	12	Eastern Turkey.
6.0	11-Mar-10	15:06:04	-34.218	-71.889	32	Libertador O'Higgins, Chile.

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6.7	11-Mar-10	14:55:28	-34.282	-71.837	18	Libertador O'Higgins, Chile.
6.9	11-Mar-10	14:39:44	-34.259	-71.929	11	Libertador O'Higgins, Chile.
6.5	14-Mar-10	08:08:05	37.78	141.562	39	Near East Coast of Honshu, Japan.
6.6	14-Mar-10	00:57:46	-1.8267	128.059	56	Halmahera, Indonesia.
6.0	15-Mar-10	11:08:28	-35.88	-73.283	10	Off Shore Bio-Bio, Chile.
6.7	16-Mar-10	00:21:59	-36.124	-73.147	18	Offshore Bio-Bio, Chile.
6.4	20-Mar-10	00:00:52	-3.4634	152.251	440	New Ireland Region, PNG.
6.0	25-Mar-10	05:29:25	13.823	120.070	18	Mindoro, Philippines.
6.2	26-Mar-10	14:52:06	-27.985	-70.709	35	Atacama, Chile.
6.6	30-Mar-10	16:54:48	13.609	92.884	42	Andaman Islands, India Region.
7.2	4-Apr-10	22:40:42	32.259	-115.287	10	Baja California, Mexico.
6.1	5-Apr-10	00:05:48	-0.249	125.121	57	Southern Molucca Sea, Borneo - Celebes.
7.7	6-Apr-10	00:15:04	2.483	97.492	35	Northern Sumatra, Indonesia.
6.1	7-Apr-10	00:33:04	-3.8274	141.925	36	New Guinea, Papua New Guinea.
6.3	11-Apr-10	22:08:11	37.048	-3.513	620	Spain.
7.3	11-Apr-10	00:40:31	-10.958	161.244	62	Solomon Islands.
6.9	13-Apr-10	23:49:38	33.271	96.629	10	Southern Qinghai, China.
6.5	17-Apr-10	00:15:25	-6.92	147.283	66	Eastern New Guinea Reg, PNG.
6.2	24-Apr-10	00:41:03	-1.92	128.191	47	Halmahera, Indonesia.
6.5	26-Apr-10	02:59:53	22.219	123.711	22	Southeast of Taiwan, Taiwan.
6.0	30-Apr-10	23:16:30	60.524	-177.728	16	Bering Sea.
6.4	30-Apr-10	23:11:44	60.55	-177.877	15	Bering Sea.
6.3	3-May-10	23:09:45	-38.053	-73.490	19	Offshore Bio-Bio, Chile.
6.3	5-May-10	00:29:05	-4.093	101.080	39	Southern Sumatra, Indonesia.
6.2	6-May-10	02:42:48	-18.023	-70.533	35	Offshore Tarapaca, Chile.
6.3	8-May-10	00:22:13	-8.4041	118.278	0	Sumbawa Region, Indonesia, Sunda Arc.
7.3	9-May-10	00:59:44	3.6779	96.073	62	Northern Sumatra, Indonesia, Andaman Islands to Sumatra.
6.0	19-May-10	04:15:44	-5.041	-77.504	138	Northern Peru.
6.1	23-May-10	22:46:51	-13.921	-74.325	95	Central Peru.
6.5	24-May-10	16:18:28	-8.095	-71.558	565	Acre, Brazil.
6.3	25-May-10	10:09:06	35.342	-35.940	10	Northern Mid-Atlantic Ridge.
6.4	26-May-10	08:53:08	25.796	129.956	10	Southeast of Ryukyu Islands.
6.0	27-May-10	00:48:06	-13.741	166.727	77	Vanuatu Islands.
7.6	27-May-10	00:14:54	-13.741	166.553	94	Vanuatu Islands.
6.1	28-May-10	00:26:05	-14.11	166.678	84	Vanuatu Islands.
6.0	31-May-10	10:16:03	6.925	123.995	33	Moro Gulf, Mindanao, Philippines.
6.4	31-May-10	19:51:49	11.119	93.698	128	Andaman Islands, India Region.
6.1	1-Jun-10	03:26:18	8.6014	-84.119	150	Off Coast of Costa Rica, Central America.
6.2	2-Jun-10	00:29:03	-6.2874	149.351	120	New Britain Region, PNG.
6.0	9-Jun-10	00:23:23	-18.557	169.725	71	Vanuatu Islands.
7.7	12-Jun-10	00:26:46	7.875	92.001	2	Nicobar Islands, India Region.
6.1	13-Jun-10	03:32:55	37.405	141.602	8	Near the East Coast of Honshu, Japan.
6.3	16-Jun-10	00:06:04	-2.5173	136.490	18	Irian Jaya Region, Indonesia.
6.4	16-Jun-10	00:58:10	-2.4824	136.617	19	Irian Jaya Region, Indonesia.

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7.2	16-Jun-10	00:16:27	-2.3072	136.514	8	Irian Jaya Region, Indonesia.
6.0	17-Jun-10	00:06:50	-33.104	-179.751	212	South of Kermadec Islands.
6.2	18-Jun-10	00:23:05	44.2148	148.878	25	Kuril Islands.
6.1	24-Jun-10	00:32:32	-5.6329	151.140	76	New Britain Region, P N G.
7.0	26-Jun-10	00:30:25	-10.609	161.666	96	Solomon Islands Region.
6.2	30-Jun-10	07:22:29	16.527	-97.760	20	Oaxaca, Mexico.
6.3	30-Jun-10	00:31:01	-23.098	179.322	559	South of Fiji Islands.
6.8	2-Jul-10	00:04:09	-13.623	166.498	86	Vanuatu Islands.
6.4	4-Jul-10	21:55:52	39.705	142.523	24	Near the East Coast of Honshu, Japan.
6.1	10-Jul-10	00:43:33	11.0061	146.139	19	South of Mariana Islands.
6.2	12-Jul-10	00:11:18	-22.255	-68.205	91	Antofagasta, Chile.
6.5	14-Jul-10	08:32:23	-38.002	-73.282	28	Bio-Bio, Chile.
6.6	18-Jul-10	05:56:44	52.867	-169.840	10	Fox Islands, Aleutian Islands Alaska.
6.9	18-Jul-10	00:04:16	-6.2684	150.565	74	New Britain Region, PNG.
7.3	18-Jul-10	00:35:06	-6.2751	150.447	78	New Britain Region, PNG.
6.5	20-Jul-10	00:18:26	-6.1017	150.608	57	New Britain Region, PNG.
6.3	21-Jul-10	00:16:06	2.8989	128.243	119	Halmahera, Indonesia.
6.3	22-Jul-10	00:03:57	-15.114	168.413	15	Vanuatu Islands Region.
7.2	23-Jul-10	00:08:11	6.6117	123.453	611	Mindanao, Philippines.
7.5	23-Jul-10	00:15:10	6.7212	123.309	635	Mindanao, Philippines.
7.5	23-Jul-10	00:51:12	6.4018	123.527	585	Mindanao, Philippines.
6.2	24-Jul-10	00:11:26	1.0969	99.689	45	Northern Sumatra, Indonesia.
6.4	24-Jul-10	00:35:02	6.0979	123.587	571	Mindanao, Philippines.
6.5	29-Jul-10	00:31:57	6.4655	123.408	618	Mindanao, Philippines.
6.2	30-Jul-10	00:56:14	52.535	159.919	21	Kamchatka, Russia.
6.6	3-Aug-10	00:08:30	1.1145	126.382	71	Northern Molucca Sea, Borneo-Celebes.
6.4	4-Aug-10	00:58:30	51.086	-178.465	69	Andreanof Islands, Aleutian Islands.
6.4	4-Aug-10	00:15:33	-5.5556	146.899	214	Eastern New Guinea Region.
7.1	4-Aug-10	00:01:46	-5.9755	150.884	65	New Britain Region, PNG.
7.6	10-Aug-10	00:23:48	-17.514	167.911	60	Vanuatu Islands.
7.1	12-Aug-10	00:54:14	-1.26	-77.312	211	Ecuador.
6.9	13-Aug-10	21:19:33	12.503	141.474	10	Mariana Islands Region.
6.3	14-Aug-10	07:30:17	12.328	141.473	10	Mariana Islands Region.
6.6	14-Aug-10	23:01:06	12.211	141.408	23	Mariana Islands Region.
6.4	15-Aug-10	00:09:31	-5.7496	148.391	185	New Britain Region.
6.2	16-Aug-10	00:35:47	-20.582	-178.711	572	Fiji Islands Region.
6.3	16-Aug-10	03:30:55	-17.788	65.692	11	Mauritius - Reunion Region.
6.3	18-Aug-10	16:28:15	12.218	141.513	10	Mariana Islands Region.
6.2	20-Aug-10	00:56:18	-6.694	154.189	36	Solomon Islands.
6.1	21-Aug-10	00:42:56	2.2434	96.770	48	Northern Sumatra, Indonesia.
6.1	24-Aug-10	00:12:00	18.867	-107.327	10	Off the coast of Jalisco, Mexico.
6.3	3-Sep-10	11:16:09	51.785	-176.010	51	Andreanof Islands, Aleutian Islands, Alaska.
7.1	3-Sep-10	00:35:42	-43.422	172.266	0	West of Christchurch, NZ.
6.3	7-Sep-10	00:13:31	-15.764	-179.341	0	Fiji Islands Region.
6.6	8-Sep-10	00:37:37	-20.542	170.050	48	Vanuatu Islands.

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6.1	9-Sep-10	07:28:02	-37.005	-73.368	18	Offshore Bio-Bio, Chile.
6.2	17-Sep-10	19:21:15	36.438	70.787	220	Hindu Kush Region, Afghanistan.
6.0	26-Sep-10	00:12:37	-5.3505	133.947	2	Aru Islands Region, Indonesia.
6.2	29-Sep-10	00:10:49	-4.967	133.872	0	Irian Jaya Region, Indonesia.
7.2	29-Sep-10	00:11:35	-5.3184	133.852	79	Aru Island Region, Indonesia.
6.3	4-Oct-10	13:28:39	24.268	125.149	35	Southwestern Ryukyu Islands, Japan.
6.3	8-Oct-10	00:43:11	2.7008	128.358	155	Halmahera, Indonesia.
6.4	8-Oct-10	03:26:14	51.421	-175.434	21	Andreanov Islands, Aleutian Islands, Alaska.
6.2	12-Oct-10	00:21:34	-4.9166	133.743	5	Irian Jaya Region, Indonesia.
6.0	16-Oct-10	00:27:45	-20.313	-173.953	0	Tonga Islands.
6.1	16-Oct-10	00:44:30	-7.4074	125.681	0	Banda Sea.
6.2	16-Oct-10	00:08:29	-20.317	-173.822	0	Tonga Islands.
6.7	21-Oct-10	17:53:15	24.843	-109.171	10	Gulf of California.
6.0	25-Oct-10	00:59:56	-3.219	100.456	42	Southern Sumatra, Indonesia.
7.4	25-Oct-10	00:42:20	-3.3875	100.163	6	Southern Sumatra, Indonesia.
6.1	28-Oct-10	00:17:27	-5.5193	153.935	63	New Ireland Region, PNG.
6.0	31-Oct-10	00:38:52	-6.6311	150.453	33	New Britain Region, PNG.
6.1	3-Nov-10	00:18:13	-4.7102	134.130	0	Irian Jaya Region, Indonesia.
6.2	3-Nov-10	00:34:40	-20.379	-174.349	0	Tonga Islands.
6.3	10-Nov-10	00:05:23	-45.349	96.241	0	Southeast Indian Ridge, Indian Ocean.
6.2	17-Nov-10	00:53:31	-8.0394	129.461	9	Timor Sea, Indonesia.
6.0	22-Nov-10	00:18:34	-33.4981	-177.295	10	South of Kermadec Islands.
6.1	23-Nov-10	00:01:09	-6.1464	149.071	81	New Britain Region, PNG.
6.2	26-Nov-10	00:36:10	-3.5888	130.998	0	Seram, Indonesia.
6.5	30-Nov-10	00:24:39	28.2118	139.433	456	Bonin Islands, Japan Region.
6.9	2-Dec-10	00:12:14	-6.2386	149.876	50	New Britain Region, PNG.
6.3	8-Dec-10	00:47:19	7.3692	126.869	91	Mindanao, Philippines.
6.5	8-Dec-10	00:24:34	-56.44	-25.866	17	South Sandwich Islands region.
6.1	11-Dec-10	00:43:19	-21.6728	-179.119	581	Fiji Islands Region.
6.6	13-Dec-10	00:14:49	-6.5739	155.697	199	Solomon Islands.
6.0	15-Dec-10	00:29:30	-7.4478	128.812	129	Banda Sea, Indonesia.
6.6	20-Dec-10	00:42:06	28.328	59.108	65	Southern Iran.
7.4	21-Dec-10	17:19:41	26.892	143.726	14	Bonin Islands, Japan Region.
6.3	22-Dec-10	21:49:39	26.78	143.635	11	Bonin Islands, Japan Region.
6.2	23-Dec-10	14:00:33	53.175	171.218	22	Near Islands, Aleutian Islands, Alaska.
7.6	25-Dec-10	00:16:40	-19.7619	167.924	31	Vanuatu Islands Region.
6.0	26-Dec-10	00:38:27	-19.6535	168.378	45	Vanuatu Islands Region.
6.3	26-Dec-10	00:13:40	-19.6118	168.373	35	Vanuatu Islands Region.
6.0	28-Dec-10	00:34:17	-23.2626	-179.658	542	South of Fiji Islands.
6.7	29-Dec-10	00:54:20	-19.6209	168.364	30	Vanuatu Island Region.
6.0	30-Dec-10	00:36:59	-10.8695	165.423	42	Santa Cruz Islands.

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