AEES NEWSLETTER

November 2011

Contents

AEES 2011 Conference
18-20 November 2011

Novotel Barossa Valley Resort, Barossa Valley, SA

Keynote speakers this year are:

- **Gary Gibson,** Environmental Systems & Services, Seismology Research Centre, The University of Melbourne
- **Jason Ingham,** The University of Auckland, New Zealand
- **Peter McBean,** Consulting Engineer, Director of Wallbridge & Gilbert, Adelaide
- **John Wilson,** Swinburne University, Hawthorn, Victoria

Prof. Michael Griffith and the local organising committee look forward to welcoming you to the Barossa Valley, South Australia to attend the 2011 Australian Earthquake Engineering Society Conference. The conference will be held at the Novotel Barossa Valley Resort over three half days commencing at 1pm on the Friday (registration will open at 12nn). There will be conference dinners on both Friday evening (at the Novotel Barossa Valley Resort) and Saturday evening (at the Murray Road Vineyards). There will also be a site visit to the Para Fault for those interested on Saturday afternoon. A meeting of Australian Seismologists is scheduled for Thursday in Adelaide (details below) and the AEES AGM will also be held during the conference.

President's Report

This year's annual conference and AGM will be held at Barossa Valley, SA this week. Thanks to the hard work of Sharon Anderson, Mike Griffith, Kevin McCue, Nelson Lam, John Wilson and others, the planning and organization of the conference are well underway. More than 50 papers have been received and peer reviewed. Two special sessions are planned in this year's conference. One is a special session conducted by researchers from GA on the next generation of hazard map for Australia, which may affect the seismic design loadings and might lead to certain changes in seismic resistance design practice in Australia. The other special session is devoted to the observations and findings of the Christchurch earthquake. Many of our members and the Australian community at large are very interested in this earthquake that occurred in February 2011. A number of our members went to Christchurch to help in the USAR work, to collect data and to inspect damage. Some of them, together with colleagues from NZ, will share their experiences in this special session. I hope to see many of you in the conference.

Despite the petitions from more than 5000 scientists worldwide, the trial on 7 Italian seismologists started in late September. They are charged with manslaughter for failing to predict the 6.3-magnitude earthquake in April 2009 that killed 308 people in and around L'Aquila in Italy, and for providing misleading information regarding earthquake risk in the region. The trial is considered very unfortunate by many in the science community. It surely has already had an impact on earthquake research and practice. On the good side, I am sure more people now understand the fact that earthquakes cannot be accurately predicted yet with today's knowledge and technique. More research is absolutely necessary in order to predict earthquakes and quantify ground motion intensity. Governments and communities should work together to provide more supports for the research of seismologists and earthquake engineers for better protection of life and economy.

Deadline for abstract submission of 15WCEE in next September in Lisbon, Portugal is 5 November. More information can be found at www.15wcee.org

We will go there to bid for hosting the 16WCEE in Australia in 2016. I hope a large number of our

members will be able to attend the conference and help in the bidding.

A world renowned researcher, leader and educator in earthquake engineering, Prof. Joseph Penzien passed away on 19 September 2011. Prof. Penzien was professor in the University of California at Berkeley from 1953 to 1988. He is the founding director of Berkeley's Earthquake Engineering Research Center (EERC), now Pacific Earthquake Engineering Research Center (PEER), one of the 14 honorary members of IAEE, and one of the 13 Earthquake Engineering Legends. His lifelong achievement can be found in the EERI Oral History website:

www.eeri.org/site/images/projects/oralhistory/penzien.pdf

Many of us know him personally or through his many archival publications in earthquake engineering. He was well-liked and highly respected among the earthquake engineering community. He will be dearly missed. A Celebration for the Life of Joseph Penzien will be held on Saturday, 12 November 2011 in Berkeley, California to honor and celebrate his life and achievement. More information regarding the event can be found at

peer.berkeley.edu/events/2011/09/celebration-of-life-for-joseph-penzien

On 23 October a M7.2 earthquake struck Turkey. More than 600 people were killed and more than 1600 injured. Shortly after a M6.9 earthquake struck Peru on 28 October, with more than 20 reported injuries. Despite the enormous research efforts and advancement in technologies to monitor and predict earthquakes, and to design structures to be earthquake resistant, earthquake still remains the single most destructive natural hazard, claiming lives and causing enormous economic losses.

It has been almost a year since I took over the duties of the AEES President. It is a great honor to serve and to represent the society. I would like to thank all the members for your support, and thank all the committee members and state representatives for your voluntary services which keep the society functioning. Special thanks go to Sharon Anderson for looking after all the secretarial work and most of the communications with members, and to Kevin McCue, without his generous guidance I would not have known how to fulfil many of my duties.

I am looking forward to seeing all of you at Barossa Valley soon!

Hong Hao

President, AEES

Australian Crisis Coordination Centre

On 17 October 2011 Attorney-General Robert McClelland opened the new Australian Government Crisis Coordination Centre (CCC) in Canberra, which will improve the Government's capability to respond to large scale natural disasters or acts of terrorism.

Mr McClelland said the purpose-built secure facility - which monitors risks to Australia and Australians 24 hours a day, seven days a week - has capacity for up to 100 officers from Commonwealth, state and territory agencies on site during a crisis.

The Crisis Coordination Centre connects Commonwealth, State and Territory agencies to centralise Australian Government actions during national emergencies, he said.

Operating from its temporary premises from September 2010, the CCC coordinated Australian Government assistance during the Queensland floods, Tropical Cyclone Yasi, the New Zealand earthquake and Victorian floods.

While state and territory authorities are the first responders during times of disasters, the Australian Government has a critical role in coordinating support from other states, the Australian Defence Force, Commonwealth agencies and overseas.

The new $14 million CCC facility includes a large operational room, linked video conferencing facilities with the states and territories, crisis coordination rooms as well as secure premise that can be used during a national security incident.

It also features high-speed and secure communications for officers from all agencies to link back to their home agency.

The new CCC premises will mean staff are ready to move instantly from 24/7 monitoring state to response state whenever an emergency happens.

During a 'steady' state the CCC is staffed by approximately 20 officers from Emergency Management Australia, reporting information to the Australian Government on all potential known hazards, and undertaking contingency planning and preparation for crisis response.

This includes threats such as natural disasters and man-made disasters, including security and cyber threats, Mr McClelland said.

As the bushfire and disaster season approaches, this new facility will be a welcome boost to our capabilities over summer.

We hope that there will be no need activate the full capabilities of the CCC this summer – but we can be confident that if a crisis occurs that we will be able to respond quickly and effectively.

Media Contact: Ryan Liddell - 02 6277 7300

Ed. – It is not clear at this stage whether or how AEES would liaise with the Crisis Centre following a destructive earthquake in our region, perhaps in New Zealand or PNG for example.

Obituary: Professor Joe Penzien, 1924-2011

Elected in 2008 as one of the Legends of Earthquake Engineering, Professor Penzien died this week in California.

Prof. Penzien spent 35 years as Professor of Structural Engineering of the University of California, Berkeley in the Department of Civil Engineering specializing in the areas of dynamics of structures and earthquake engineering. He was the founding Director of the University's Earthquake Engineering Research Center (EERC — now known as the PEER Center) having responsibility for its research and laboratory development programs, including design of the earthquake simulator (shaking table) facility at the UCB Richmond Field Station. After retirement in 1988 he started International Civil Engineering Consultants (which is now a Division of Paul C. Rizzo Associates, Inc.) in 1990 along with Wen S. Tseng.

He guided the development of numerous computer programs, including Computer Programs HASSI-1 through HASSI-8 for evaluating three-dimensional soil-structure interaction effects.

Joe chaired the Steering Committee for the Eighth World Conference on Earthquake Engineering in 1984 in San Francisco. He co-authored with Ray Clough, Dynamics of Structures (McGraw-Hill 1975) a landmark that has been translated into Bahasa Indonesia, Chinese, Greek, French, Japanese, and Russian.

Professor Hong Hao was the last PhD student of Joe Penzien before he retired in 1988:

> *"I met him occasionally after I left Berkeley in early 1990, after working for Bruce Bolt as a postdoctoral fellow. Both Penzien and Bolt gave me strong support, and always wrote excellent recommendations for me. I felt very sad about the news. The last time I met Penzien was in 2008 at the WCEE in Beijing. He looked healthy and in fact better than he had in the early 1980's. One morning I walked with him shortly. He told me that at 84 he felt better than when he was in his 60's because he did not need to worry about work and the professional service. He walked 2 to 3 hours almost everyday.*
>
> *"Penzien made enormous contributions in modern earthquake engineering, and was highly respected in the earthquake engineering community. He was a real gentleman, very kind not only to his students, but also to everybody he knew. I am really honoured to be his student."*

He had a long and full career and will be sadly missed by friends and family, and by all the students now scattered around the world whose lives and careers he influenced.

Obituary: Professor Owen Martin Phillips, 1930-2010

Modified from an article by Peter Olson, Department of Earth and Planetary Sciences, Johns Hopkins University, Baltimore, Md., USA in Eos.Vol 92, 8, pp63, 2011.

Owen Martin Phillips, a pioneer in geophysical fluid dynamics, died on 13 October 2010 at his home in Chestertown, Maryland. USA, at the age of 79. He was born on 30 December 1930 in Parramatta, NSW., Australia. In 1948 he enrolled in the University of Sydney, where he earned a B.S. in applied mathematics in 1952, the same year and department as Bruce Bolt. That year, he joined the Cavendish Laboratory at Cambridge University as a research student, where he applied the concepts of turbulent flow recently developed by Andrei Kolmogorov, G. I. Taylor, and George Batchelor to the oceans. In 1957 the Journal of Fluid Mechanics published two papers on ocean wave generation. One paper, by the applied mathematician John Miles (J. Fluid Mech., 2(5), 417–445, 1957), proposed that energy transfer from the air to the sea occurs at a critical layer in the atmosphere boundary layer. The other paper, by Phillips, then 26 years old (J. Fluid Mech., 3(2), 185–204, 1957), proposed that turbulent pressure fluctuations in the wind resonate with propagating ocean waves, forcing them to grow. Together these became known as the Phillips-Miles process, the beginning of Phillips's 50-year career of innovative contributions to geophysics through fluid mechanics.

IAEE Matters: Australia bid for WCEE 2016

AEES will bid to host the World Conference on Earthquake Engineering in 2016 at the 2012 WCEE in Lisbon Portugal. A meeting has been convened in Melbourne on the morning of December 01 for AEES members to talk with the Melbourne Convention and Visitors Bureau, the venue for the proposed conference.

The AEES Committee would appreciate offers of support and help from members.

Another Christchurch NZ earthquake

Ref Number	3591999
Universal Time	October 9 2011 at 7:34
NZ DST	8:34 pm
Location	43.58°S, 172.82°E
Focal Depth	12 km
Richter mag	5.5
Region	Canterbury
Location	(a) 10 km NE Diamond Harbour (b) 10 km E of Lyttelton (c) 20 km E Christchurch

Strongly felt in Christchurch area and widely felt in Canterbury.

Italian seismologists on trial

In Italy, six seismologists and a government official are on trial for alleged negligence and manslaughter, their failure: to warn residents of the city of L'Aquila of a destructive magnitude 6.3 earthquake in the early morning on 6 April 2009 that destroyed 20,000 buildings resulting in 308 deaths and 1500 injuries.

Agreeing to their prosecution, the judge stated: The defendants gave inexact, incomplete, and contradictory information about smaller tremors in L'Aquila six days before the earthquake.

The seven people on trial; Enzo Boschi, then-president of Italy's National Institute of Geophysics and Volcanology (INGV) in Rome; Franco Barberi, at the University of 'Rome Tre'; Mauro Dolce, head of the seismic-risk office at the national Department of Civil Protection in Rome; Claudio Eva, from the University of Genova; Giulio Selvaggi, director of the INGV's National Earthquake Centre in Rome; and Gian Michele Calvi, president of the European Centre for Training and Research in Earthquake Engineering in Pavia; as well as government official Bernardo De Bernardinis, then vice-director of the Department of Civil Protection. They were members of an expert panel, the Commission of Grand Risks, that met six days before the disaster to conduct a risk assessment of the situation after hundreds of small earthquakes had rocked the city in the previous 3 months.

Epicentre of L'Aquila earthquake, 6 April 2009, magnitude 6.3.

The group's defence argues that it is impossible to predict an earthquake, a consideration universally shared by scientists. About 5200 seismologists representing the scientific community worldwide have signed a document in support of the Italian seismologists arguing that the technology to predict the time and place of occurrence of an earthquake does not exist yet, thus earthquakes cannot be accurately predicted.

Many scientific organisations worldwide condemned the trial, the American Geophysical Union claim that it could put future earthquake research at-risk.

Litigation will discourage scientists and officials from advising their government or even working in the field of seismology and seismic risk assessment, the organisation said.

Most of the deaths were attributed to the collapse of buildings that had not been constructed or strengthened according to local building standards, even relatively new hospitals and schools.

Conferences

18-20 November 2011 AEES2011 Prof Mike Griffith will host this year's annual conference in the Barossa Valley, South Australia. This conference will no doubt match the prize winning wines that come from the valley.

The committee would like to see every member of AEES at the conference.

13-15 April 2012 Christchurch New Zealand. Implementing Lessons Learned. NZSEE Technical Conference and AGM.

19-24 August 2012 33rd General Assembly of the European Seismological Commission to be held in Moscow, Russia.

The official language of the Assembly is English.

ON-LINE REGISTRATION is now available on the official website www.esc2012-moscow.org

Please address questions to the Technical Secretariat:

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Obituary: Professor Giuseppe Grandori, 1921-2011

On November 2, 2011, Professor Giuseppe Grandori passed away, after resisting for two months the attacks of a severe respiratory illness. Emeritus at Politecnico di Milano, where he had kept a chair of Structural Mechanics (Scienza delle Costruzioni) from 1962 to 1991, he left in countless former students, and in many younger colleagues, indelible memories as an educator, a civil engineer and a researcher. Professor Grandori had served as IAEE President from 1988 to 1992, as Vice President from 1969 to 1973, and as Director from 1973 to 1980 and 1984 to 1988. He had also been a key scientific organizer of the Rome WCEE in 1973.

Professor Grandori had played the leader's role in introducing modern Earthquake Engineering and Engineering Seismology in Italy beginning in the early 1960ies, when he also established at Politecnico di Milano an International Centre in those disciplines, which attracted young engineers and researchers from many countries. With his research, he was among the first worldwide to provide convincing demonstrations that the judicious use of probability theory and risk analysis tools can be vital for the progress of Earthquake Engineering at large. Thus, he made important contributions to topics such as the choice of acceptable seismic risk and the reliability of seismic hazard models, published in the most authoritative journals of our trade. The circumstance that he had published his most recent scientific paper as recently as 2010 is witness to the vitality of his mind.

Professor Grandori was a man of deep and warm humanity, which had won him lasting relationships from many parts of the world: his death leaves a feeling of great loss in those of us who had the privilege of being his friends. We convey to his wife, Professor Elisa Guagenti Grandori, and to his daughters our most heartfelt condolences.

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The 2011 AEES Committee:

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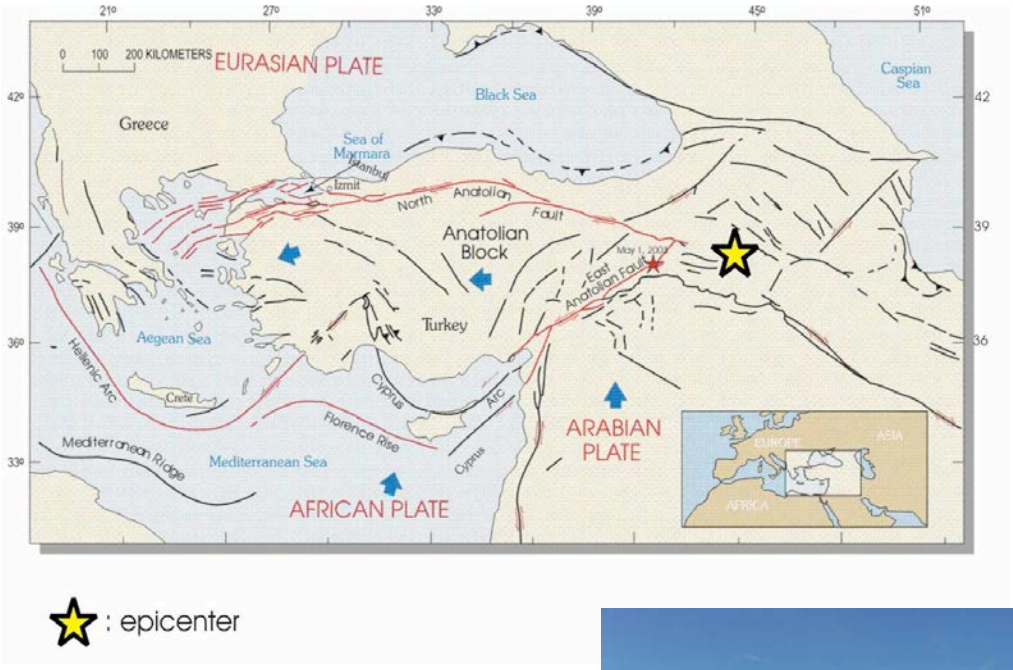
Western Australia	Hong Hao
Northern Territory	tba

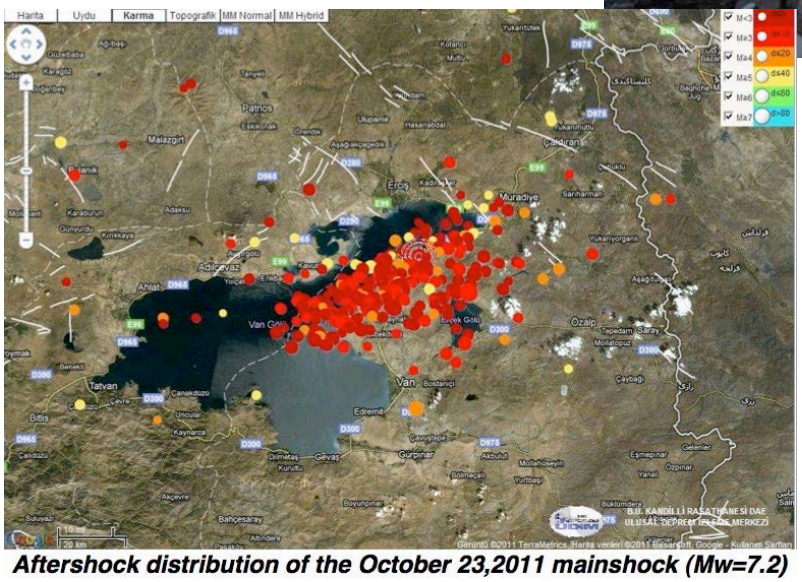
Earthquake in Eastern Turkey

A major earthquake, magnitude Mw 7.2, occurred on 23 October 2011at 10:41:22.0 UTC (13:42 local time) in Eastern Turkey. The earthquake originated at shallow depth, 5 to 10km below the surface and 30km north of Van, a city with a population of about 380,000. More than 600 people are known to have died in 2200 collapsing buildings and some 1350 people were injured. It was felt widely in Turkey and in neighbouring countries, Iran and Armenia. The city of Ercis suffered particularly badly. A long series of aftershocks followed the main quake, the largest magnitude ML=5.7 (23 October 2011 at 20:45 UTC) More than 300 aftershocks above magnitude 3 were recorded up to 13:45 on 24 October 2011. http://www.koeri.boun.edu.tr/scripts/lasteq.asp



The tectonic setting (left) shows the epicentre at the eastern edge of the Anatolian Block, between the converging Eurasian Plate to the north and the African and Arabian Plates to the south. The region is on an extension of the East Anatolian Fault that extends down to Syria and Lebanon, which is historical active alternately with the North Anatolian Fault; whilst ones is quiescent, the other active, over periods of 300 to 500 years.

Loss estimates provided by KOERI anticipated 700 to 1000 fatalities, whilst PAGER downgraded their original estimate of 10,000 fatalities to just over 1000 fatalities. CEDIM estimate the direct economic loss to be in the order of 500-1000 million USD given past Turkish earthquakes, damage and intensities seen and the current economic status of the region.



Aftershock distribution of the October 23,2011 mainshock (Mw=7.2)

Time of day may have been a factor in the lower than expected death toll. Already questions are being asked in the media about the quality of construction in the region with its long history of destructive earthquakes.

References:

Bogăziçi University

Kandilli Observatory and Earthquake Research Institute

CSEM, Centre Sismologique Euro-Méditerranéen

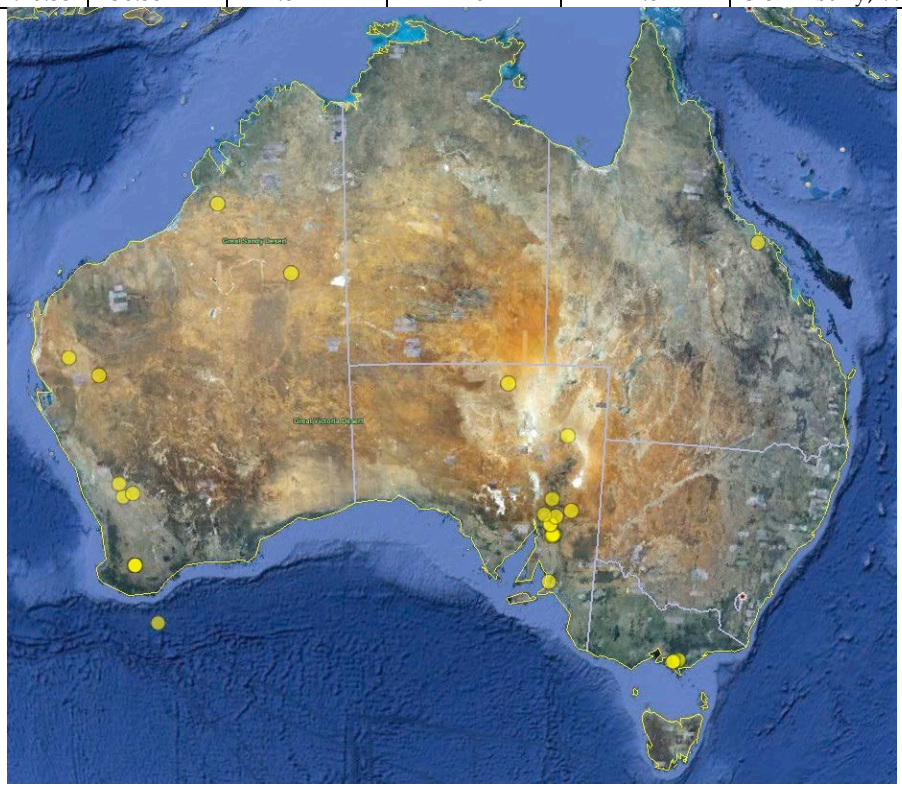
Ambraseys on the Anatolian Fault

CEDIM Forensic Earthquake Analysis Group Status Report 25 Oct 2011.

Australian earthquakes, 1 September – 30 Oct 2011

Earthquakes in the Australian region, magnitude 2.5 or greater, located by Geoscience Australia, PIRSA, ES&S, and ASC are listed below. The implied accuracy in epicentral coordinates is no better than 3km (.03º) horizontally and 5km vertically. The largest earthquake, ML 4.4, occurred near Carrieton SA on 15 October , no damage reported.

Date UTC	Time	Latitude	Longitude	Depth (km)	Magnitude	Approximate location
1-Sep-11	1:56:51	-18.845	123.3	10	3.8	Inland of Broome, WA.
4-Sep-11	11:15:11	-33.079	138.713	2	3.8	Near Jamestown, SA.
4-Sep-11	23:46:59	-33.11	138.693	0	2.7	Near Jamestown, SA.
4-Sep-11	23:48:55	-33.04	138.733	0	2.7	Near Yongala, SA.
7-Sep-11	6:51:08	-33.085	138.667	0	2.6	SW of Yongala, SA.
9-Sep-11	13:39:19	-38.40	145.90	0	3.0	Korumburra, Vic.
9-Sep-11	22:24:40	-26.81	136.326	10	3.5	Simpson Desert, SA.
17-Sep-11	16:28:27	-20.2	147. 8	10	4.2	Dalbeg, Qld.
18-Sep-11	19:13:26	-32.21	138.236	7	2.6	NE of Quorn, SA.
22-Sep-11	4:51:58	-33.733	117.217	5	3.4	Near Katanning, WA.
23-Sep-11	16:42:12	-32.626	138.565	6	3.3	NW of Orroroo, SA.
24-Sep-11	2:33:06	-25.486	116.885	10	3.0	NW of Meekatharra, WA.
24-Sep-11	13:14:02	-32.614	138.562	4	2.8	NW of Orroroo, SA.
26-Sep-11	16:24:20	-28.905	139.195	10	2.8	N of Arkaroola, SA.
27-Sep-11	19:13:38	-30.642	117.8	2	3.1	SW of Beacon, WA.
5-Oct-11	17:06:17	-33.73	117.236	16	3.5	Near Kojonup, WA.
8-Oct-11	21:40:30	-38.317	146.163	4	2.5	SW of Moe, Vic.
11-Oct-11	21:22:23	-30.161	117.135	11	2.7	N of Kalannie, WA.
13-Oct-11	09:58	-38.4	145.8	10	2.5	Korumburra Vic
14-Oct-11	1:09:30	-33.716	117.2	15	2.8	Near Kojonup, WA.
14-Oct-11	5:20:15	-30.734	117.236	4	2.7	Near Cadoux, WA.
15-Oct-11	10:38:10	-32.385	138.805	0	4.4	25km E of Carrieton, SA.
16-Oct-11	5:38:59	-31.622	138.567	10	2.6	10km S of Wilpena Pound, SA.
18-Oct-11	15:52:24	-35.042	138.656	24	3.4	4km SE Blackwood, SA.
21-Oct-11	7:45:42	-24.538	115.418	10	2.8	NE of Gascoyne Junction, WA.
21-Oct-11	22:52:59	-38.381	145.907	0	3.1	Near Korumburra, Vic.
22-Oct-11	17:18:31	-32.125	139.553	10	3.4	50 km N of Yunta, SA.
27-Oct-11	7:05:55	-22.061	126.529	10	3.1	E of Tobin Lake, WA.
29-Oct-11	7:48:33	-36.357	117.874	10	2.8	S of Albany, WA.



Epicentres of earthquakes in Australia, as listed above