

# THE VICTORIAN GEOLOGIST



June 2014

THE GEOLOGICAL SOCIETY OF AUSTRALIA

Victoria Division

General Meeting

**Thursday 26th June at 6:15 p.m.**

## **Biology, molecules and geology biogeography in the southwest Pacific (Zealandia)**

**Professor David Cantrill**

**Director of the National Herbarium of Victoria**

**GSAV Committee Chair**

**Fritz Loewe Theatre, School of Earth Sciences, University of Melbourne**

Talk will be preceded by drinks from 5:30 pm in the 4th floor tearoom, cost \$2

Considerable controversy has arisen in recent years as a result of new molecular techniques that allow evolutionary frameworks to be dated. The dating of molecular phylogenies has seen a resurgence in dispersal as a major mechanism for biogeographic patterns. This is particularly true in the southwest Pacific where the debate about the origins of the New Zealand biota have been polarised between those that believe New Zealand drowned in the Oligocene and the biota is the result of post-Oligocene dispersal, and those that favour a vicariance scenario. The latter scenario implies that land has existed in the region since the opening of the Tasman. Similar debates exist for other regions of the southwest Pacific. This talk will discuss the interplay between geology and biology, providing some insights into how these issues can be resolved.

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## THE MAY MEETING

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### **GSAV meeting: The Pioneering Work in Seismography of John Milne**

On the 29th of May, the GSAV hosted Dr Will Twycross, the great nephew of seismologist John Milne, at the National Herbarium Melbourne. For the 100th anniversary of Milne's death, Dr Twycross documented the 19th Century seismologist's journey from Britain to Japan to become a professor at the Imperial College of Engineering. His studies on earthquakes in Japan revolutionised the world's understanding of the phenomenon and led to the invention of the Gray-Milne seismograph. Through the use of excerpts of his documentary on Milne, the audience was shown the creation of these instruments and the establishment of the first global network of seismographs that fed information back to Milne on the Isle of Wight. One of these instruments was brought to the Melbourne Observatory to be held in the previous Magnet Room to record seismic data, making the location for the month's meeting the perfect place to commemorate the life and achievements of John Milne.

After a successful talk by Dr Twycross, members embarked on the Royal Botanic Gardens' Night Sky Tour. Guided by volunteers from the Astronomical Society of Victoria, the tour included a walk around the grounds of the Melbourne Observatory, and a look at the two remaining telescopes in operation. The walk among the buildings revealed that not only was the Observatory used to track the stars and planets, but it hosted many buildings in which meteorological studies, geodetic surveys and, of course, seismological studies were performed. One of the more significant studies undertaken was participation in the 'Carte du Ciel', and involved creating a photographic record of the stars using glass plates. The Observatory employed women whose task it was to sit at a desk all day and measure each star on the many glass plates photographed at the time. The only pre-requisites for the job? One must be unmarried and in good physical condition.

The experience of looking through the two telescopes still remaining on the site was met with awe and amazement by the members. The volunteers of the Astronomical Society proved to be full of curious and interesting information as they guided each of us through gazing at the stars. Although largely colourless and small when seen through the telescopes, the views brought home the realities of past astronomy, making the feats achieved seem even more impressive. Of interest were the views of Saturn and four of its moons; the constellation known as the Jewel Box, normally hidden from the naked eye within the stars of the Southern Cross; and Alpha Centauri A and B. It takes four years and three months for light to travel from Alpha A to Earth, a period of time important to many postgrad students, Fiona Glover pointed out, as that is the period of time it takes to complete a PhD these days.

I would like to thank the GSAV committee for organising the talk by Dr Twycross as well as the Night Sky walk. The evening proved to be a great success, and allowed members the chance to learn about a topic different to their chosen fields. I would also like to thank the Astronomical Society for their well presented and informative tour.

For anyone interested in watching the full documentary of J. Milne, Dr Twycross has kindly provided the details:

<http://vimeo.com/78465244>

Password: Twycross

*by Karen Kapteinis*

**PUZZLE**

**Geological Target Word**

C	R	O
T	<b>A</b>	A
B	N	E

*The nine letters the the grid at left form a geological word. A variety of other words (geological or otherwise) can be made using the nine letters. You must use the central **bold** letter. Words must be at least four letters long. No proper nouns, acronyms or plurals ending in 's'. Space is provided below for answers. Enjoy!*

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**20 words, good; 30 words, very good; 40 words, excellent!**

**CROSSWORD SOLUTIONS**

**May Igneous Geology Crossword**

**Across:**

9. Cordierite; 10. Aphanitic; 11. Feldspathoid; 12. Phenocryst; 13. Sericitisation; 14. Vesicle; 15. Shoshonite; 17. Carbonatite; 18. Basalt; 21. Restite model; 22. Pegmatite; 26. Pigeonite; 29. Granite.

**Down:**

1. Hedenbergite; 2. Cr diopside; 3. Adamellite; 4. Microcline; 5. Amphibole; 6. Clinozoisite; 7. Subduction; 8. Orthosilicates; 12. Peridotite; 16. Norite; 19. Volcanoes; 20. Weathered; 23. Syenite; 24. Sphene; 25. Biotite; 27. Ilmenite; 28. Core.

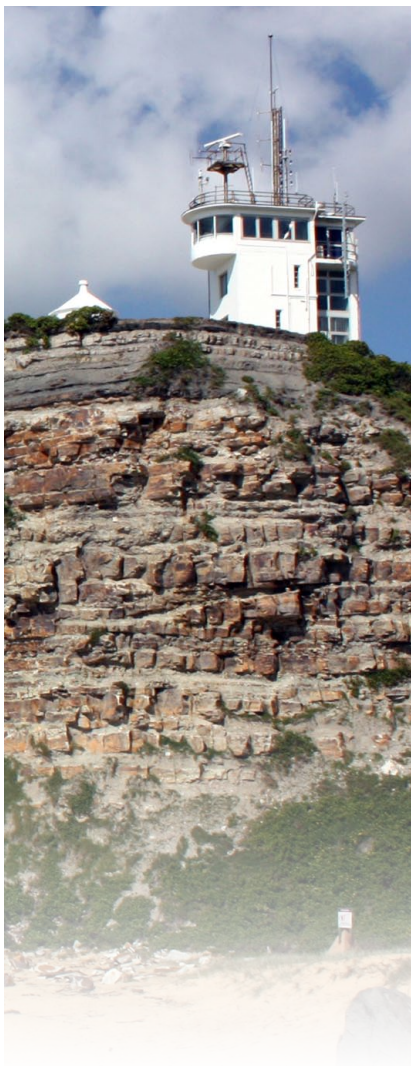


# AESC

australian earth sciences  
convention

**Sustainable  
Australia:**  
7-10 July 2014

NEWCASTLE, NSW, AUSTRALIA



AESC 2014 will be held in Newcastle, a vibrant port city that is characterised by its working harbour, beautiful surf beaches and proximity to many of Australia's most prestigious wineries.

It is the gateway to the Hunter Valley – heart of the Sydney Basin coalfields, centre of power generation for New South Wales, and home of the NSW Institute for Frontier Geoscience, a joint initiative of the University of Newcastle and the NSW Department of Trade and Investment. Combined with the city's focus on energy efficiency via the Federal Government's Smart Grid, Smart City initiative and the CSIRO Energy Centre, Newcastle is an ideal site for our convention – **Sustainable Australia.**

The convention will be based around the themes of energy, basin geology, geodynamics, resources and the environment. Dedicated symposia include the 39th Symposium on the Advances in the Study of the Sydney Basin and Comparisons & Contrasts in Circum-Pacific Orogens.

AESC 2014 offers all geoscientists a unique opportunity for professional development and a chance to hear firsthand the latest developments in geosciences.

## Plan your trip to Newcastle

Call for Abstracts:  
**October 2013**

Abstracts Deadline:  
**March 2014**

The website is coming soon,  
in the interim please contact:  
**info@gsa.org.au**

**Presentation:** Oral and poster

**Registration:** early 2014

### Workshops and field trips:

The convention invites proposals for short courses, workshops and field trips.

### Exhibition:

The convention will host an exhibition. We welcome companies and businesses to participate so they can promote the emerging opportunities in their organisation, state or territory.

### Supporters:

The organising committee invites companies, institutions and technology providers to support this meeting.

### Expressions of interest:

info@gsa.org.au

### Convention location:

Newcastle City Hall



Coalfield Geology Council  
of New South Wales

T + 61 2 9290 2194  
F + 61 2 9290 2198

Email: info@gsa.org.au  
Convention Website: coming soon

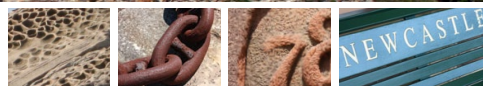


# AESC

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**Sustainable  
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NEWCASTLE, NSW, AUSTRALIA



Earth scientists recognise that the key to sustaining the Australian society, economy and environment into the future lies in an understanding of the make-up, structure and deep-time history of the continent, and its setting in an evolving planet.

## THEMES

### Energy

Increases in the global demand for energy has been driving advances in the efficiency of coal and conventional hydrocarbon extraction, while also urging the rapid growth of interest in unconventional hydrocarbons. Future energy supplies are likely to include all fossil fuels, nuclear sources, and significant increases in the use of renewable energy and cleaner alternatives. Building on the public debate to be stimulated by the 'Energy 2050' public forum, the Energy theme will encompass Earth Science perspectives on energy sources, exploration and extraction methods, and environmental consequences and solutions.



Coalfield Geology Council  
of New South Wales

### Resources

In an era of increasing demand for mineral resources from the developing Asian economies, and declining rates of discovery of new deposits, new mineral exploration strategies are vital. Discovery will be stimulated by new technologies, new methods of data interpretation and dissemination, refined and novel understandings of mineral systems and ore environments, and the strength of the pre-competitive geological and geophysical data sector, all addressed under the Resources theme.

### Environment

Earth's environment is a dynamic and responsive system with a long geological record of change and an immediate and future impact on society, particularly in an Australian context. High-resolution records of past climates (including outcome of the International Ocean Drilling Program), assessments of the state and future of our ground- and surface-water resources, predictions of the response of the Australian environment to climate change, and studies specific to the Australian arid and semi-arid zones, will be major elements of the Environment theme.

### Service and Community

The Earth Sciences have an ongoing role of service by informing, influencing, and supporting Australian society, and a proud history of education and research. The Service and Community theme will address the geoscience response to distributed grid computing and cloud storage, the dissemination of geoscience information in a high-bandwidth environment, the continuing and evolving role of geoscience outreach and education, geohazard studies and their role in protecting the community, the contributions of geotourism and geoheritage, and the historical record and influence of Earth scientists.

### Dynamic Planet

Today's Earth is the sum of 4.5 billion years of geological processes. The Dynamic planet theme will address: the geodynamic evolution of Australia and other continents from the Hadean to the present; the evolution of the Earth-Moon system and the meteoritic impact record; the expression of the circulation driven by the Earth's heat engine in lithospheric plate tectonics, mantle dynamics and differentiation, and core evolution; the processes that govern deposition and deformation in intracratonic settings; processes of crustal growth and recycling, at convergent margins and in other settings; geophysical and geochemical evidence of the structure and composition of the deep subsurface; and the influence of all of these elements on the formation and distribution of mineral and energy resources.

### Living Earth

Life has fundamentally influenced the development of the Earth, making it unique with respect to its planetary neighbours. The Living Earth theme will investigate: the evolution of life as witnessed in the fossil record; consider novel methods to supplement traditional palaeontological approaches; investigate the major events in the evolution of life, the hydrosphere and atmosphere; and draw contrasts and comparisons with other planets.

## SYMPOSIA

39<sup>th</sup> Symposium on the Advances  
in the Study of the Sydney Basin

Comparisons & Contrasts  
in Circum-Pacific Orogens

T + 61 2 9290 2194

F + 61 2 9290 2198

Email: [info@gsa.org.au](mailto:info@gsa.org.au)

Convention Website: coming soon

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**STUDENT FUNDING OPPORTUNITIES****Geological Society of Australia (Victoria Division) Student Research Scholarships**

The scholarship is valued at up to \$500 for travel within Australia and \$700 for travel outside of Australia. The number of and value of the scholarships awarded each year is made at the discretion of the GSA(Vic) committee.

Funding will not be granted retrospectively and applicants are asked to submit forms no later than 6 weeks prior to their trip to give the committee time to consider the application.

**Eligibility**

Applicants must be members of the GSA and enrolled in a full-time degree at a Victorian Tertiary institution and undertaking research in Geology. The scholarship will be awarded to assist with conference travel for honours and postgraduate students, who are presenting (either poster or talk) at the conference.

Honours and postgraduate students that receive this scholarship will be required to submit a report for publication in 'The Victorian Geologist' newsletter following to their trip. A presentation may also be requested by the committee, which will consist of a short 10-15 minute presentation prior to the monthly seminar.

Students who have previously received a GSAV research scholarship are not eligible. Scholarships and bursaries from other sources are acceptable.

Applications forms can be scanned and emailed to: [secretary@vic.gsa.org.au](mailto:secretary@vic.gsa.org.au)

or mailed to:

Geology Research Scholarships Victoria  
Geological Society of Australia (Victoria Division)  
GPO Box 2355  
Melbourne VIC 3001

More information can be found by contacting Barbara Wagstaff ([wagstaff@unimelb.edu.au](mailto:wagstaff@unimelb.edu.au))

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**Something interesting to share? Want to see your name in print?**

Don't be bashful, contribute to the GSA(V) monthly newsletter!

If there are any events, happenings, news, or views that would be of interest to the membership, please send your details and information to Kieran Iles at [kiles@student.unimelb.edu.au](mailto:kiles@student.unimelb.edu.au)

**We'd be glad to hear from you**

## FORTHCOMING SEMINARS AND EVENTS

to be presented at  
GSA (Victoria Division) meetings

Note: unless otherwise indicated, all 2014 talks will be held in the Fritz Loewe Theatre, Earth Sciences Building, University of Melbourne.

June 26th:

**Monthly Meeting:** David Cantrill

Biology, molecules and geology biogeography in the southwest Pacific (Zealandia)

July 24th:

**Monthly Meeting:** Student Night (speakers TBA)

August 28th:

**Monthly Meeting:** Barbara Wagstaff

Dating Dinosaurs

Please welcome our newest members

Yu-Chen Ling



Visit the GSAV on [www.vic.gsa.org.au](http://www.vic.gsa.org.au) or the GSA on [www.gsa.org.au](http://www.gsa.org.au)  
• Renewing your GSA membership is easy - it can now be done online. •

### CONSIDER CONTRIBUTING TO TAG!

It is member contributions which make TAG a member magazine – please keep the contributions coming and assist with informing all of the membership (not just your Division) about your activities.

Please send your news to: [tag@gsa.org.au](mailto:tag@gsa.org.au)



### GSA (VICTORIA DIVISION) COMMITTEE

Please address all correspondence to the GSA Victoria Division  
GPO Box 2355, Melbourne, VIC, 3001  
Internet address: [www.vic.gsa.org.au](http://www.vic.gsa.org.au)

#### OFFICE BEARERS

Chair: David Cantrill 9252 2301 (BH)  
Vice-chair: position vacant  
Secretary: Adele Seymon 0403 269 462  
Treasurer: Barbara Wagstaff 8344 6537 (BH)

#### COMMITTEE

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Susan White 9328 4154  
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Karen Kapteinis

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#### Newsletter deadline:

First Friday of the month except Dec & Jan  
[kiles@student.unimelb.edu.au](mailto:kiles@student.unimelb.edu.au)

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