

Welcome to the last issue of the AuScope Email Update for 2009.

On 8 September AuScope submitted an application for the competitive Round 3 Education Investment Fund infrastructure program. The AuScope proposal is to build on existing AuScope infrastructure to deliver new geophysical observing capability designed to characterise and monitor the physical state and behaviour of parts of the Australian continent. Our Stage 1 application was successful Stage 2 was submitted on 8 December. Outcomes of the competitive funding round are expected to be announced in March 2010. An [overview of the proposal](#) can be found on the AuScope website.

AuScope's public website has recently undergone some development and now contains image galleries for all the components. The galleries allow access to a variety of images that can be downloaded for presentations. The galleries will be update continuously as new visual material comes to hand.

The AuScope Head quarters will be closed from 23 December and will reopen on 6 January 2010. The Management and Board of AuScope wish all of its collaborative partners and researchers a safe and happy festive season.

Bob Haydon
CEO, AuScope Ltd

AuScope Grid and Interoperability Program Director Robert Woodcock

The **AuScope Portal version 2.3** has been released, offering a new layout, improved usability and increased data providers. AuScope Grid has been working with the **Australian Geological Surveys** to deploy the Spatial Information Services Stack (SISS) to deliver their Mineral Occurrence (Earth Resource) data – several Surveys have recently deployed these services as they are available on the Portal – the remaining will deploy in the new year.

The CSIRO team responsible for AuScope Grid has received support for a new project to further advance the software infrastructure developed under AuScope Grid and SISS in support of interoperable data delivery in disciplines beyond the Geoscience. The **Australian Spatial Research Data Commons**, a project funded by the Australian National Data Services (ANDS) will allow CSIRO to ramp up its development effort and support other groups to make their data interoperable. This is a major opportunity to get the SISS deployed into many organisations and support greater, improved access to data. This will support cross-disciplinary research with the AuScope Grid infrastructure in important areas like Groundwater, Geothermal and Environmental fields. Anyone interested in either publishing spatial data or seeking to consume spatial data from public sector agencies important to national research priorities in these and related fields can contact AuScope Grid to see if the new project can assist.



v2.3 of the AuScope Portal displaying NVCL boreholes and a mosaic of a selected borehole's core tray. Additionally, occurrences of Iron in Australia and Earth Imaging seismic recorder locations are displayed.

National Virtual Core Library Program Director Jon Huntington

With the establishment of the **Tasmanian NVCL** node in Hobart in early October there are now five operational HyLoggers in NVCL nodes in NSW, South Australia, Western Australia, Queensland and Tasmania. The **Northern Territory** node will be commissioned in early 2010 and the Victorian node sometime after July 2010. In excess of 25,000 metres of drill core have been scanned so far and the operational teams are settling down well with production of new logs and identification of new mineral assemblages. The work programs include several cores provided by the private sector, as well as those from very recently drilled State-assisted drilling programs. At Mineral Resources Tasmania validation of HyLogged mineralogies using their in-house x-ray diffraction capability is adding considerably to confirming the veracity and meaning of the new logs. The NVCL has been promoted at recent conferences in Sydney, Hobart and London. An announcement targeting would-be undergraduate, graduate and post-graduate researchers was recently launched and can be downloaded from the **AuScope website**.



NVCL's Research Opportunities brochure

Earth Composition and Evolution Program Director Bruce Schaefer

The **third biennial conference of the Specialist Group for Geochemistry, Mineralogy and Petrology was held on Kangaroo Island from the 8-13th of November**. Approximately 50 delegates enjoyed the combined field and presentation style workshop, with the mornings generally given to oral discussion and the afternoons incorporating field visits to key localities relating to the Delamerian Orogen. Posters were available for delegates to peruse throughout the meeting, with a dedicated evening presentation time allocated.

AuScope was prominent at the meeting, acting as a co-sponsor with the Geological Society of Australia, and an hour long discussion session was devoted to AuScope, outlining current developments, access and opportunities with further discussion focussing on positioning the geochemical and petrological communities to be heavily involved in future large infrastructure rounds. What was particularly pleasing was that a number of presentations used data from AuScope supported capabilities. Notably, one speaker presented data that had been wholly derived from the Cameca 1280 in Perth, which was only opened in August, highlighting the immediacy of such instrumentation to geoscientific research.

Overall the quality of the science presented at the meeting was excellent, certainly worthy of an international meeting, and congratulations and a big thank you must go to the organising committee who managed to put together a fascinating and well co-ordinated program.



Conference delegates cool off at Snellings Beach after a hot afternoons fieldwork.

Earth Imaging and Structure Program Director Brian Kennett

The **Delamerian reflection profile** of approx 200 km was completed in November crossing from Western Victoria into South Australia with major funding from AuScope Transects and a contribution from Geoscience Victoria.

The quality of data is very high and should throw new light on the nature of the southern Delmarian structures.



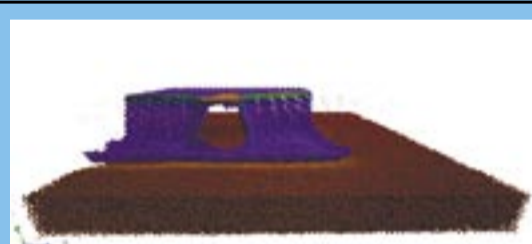
Transect in W Victoria SA

Earth Simulation, Analysis and Modelling (SAM) Program Director Louis Moresi

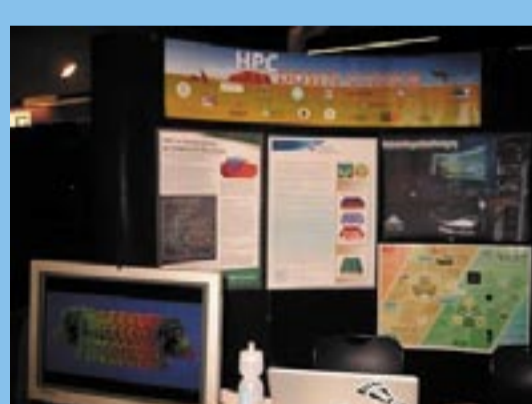
Dr Margarete Jadamec and Owen Kaluza represented Monash Geodynamics and AuScope SAM at **OzViz 2009** hosted at Monash University in early December. Dr Jadamec presented research incorporating 3D virtual reality into plate boundary modeling workflows in "Three-dimensional visualisation in Geodynamics: Techniques for data interactivity and exploration", and Owen showcased exciting new functionality of gLucifer with, "Exploring the Underworld with gLucifer: Real-time and Interactive Visualisation for Geodynamic Simulations".

AuScope SAM will be showcasing the new **Monash 3D Interactive Visualisation Facility** in early 2010. The collaborative project, led by Dr Jadamec and Professor Louis Moresi, is a joint project between Monash Geodynamics, AuScope SAM, CSIRO, Monash e-Research Centre, and the Monash Schools of Mathematical Sciences and Geosciences. The project also involves overseas collaboration with W. M. Keck Center for Active Visualization in the Earth Sciences (**KeckCAVES**) at the University of California, Davis USA. The facility will consist of both a 3D stereo display plus real-time motion tracking, the combination of which will provide a virtual reality (VR) work space allowing real-time interaction with 3D data volumes. The facility will be geared towards work groups of 2 to 15 people and, in addition to being used by researchers working with complexly varying 3D data, the facility will be open for laboratory style teaching and for presentations requiring 3D data rendering.

Wendy Mason represented AuScope SAM at **eResearch Australasia (eRA) 2009** in Manly NSW, and also at the **Supercomputing Conference 2009 (SC'09)** in Portland, Oregon USA, during November. The events enabled Wendy to network with representatives from Australian and international organisations, and to gain a wider perspective of HPC in Australia. At **eRA 2009**, Wendy presented her collaborative work on "**ARCS Compute Grid Supporting Research Community Development: the Underworld Case Study**" and attended the AuScope booth alongside staff from AuScope Grid. At SC '09, Wendy attended Visualisation Tutorials on Visit and Paraview and represented AuScope SAM at the VPAC "**HPC Down Under**" booth.



Simulation of a subducting oceanic plateau (as detailed in Mason, W. G., Moresi, L., Betts, P. G. and Miller, M. S., Three-dimensional numerical models of the influence of a buoyant oceanic plateau on subduction zones, *Tectonophysics* (In Press), doi:10.1016/j.tecto.2009.08.021), rendered with gLucifer.



AuScope SAM was represented at the VPAC "HPC Down Under" booth at Supercomputing Conference 2009.

Geospatial Framework and Earth Dynamics Program Director Gary Johnston

The second of the 3 AuScope VLBI telescopes was lifted into place on 3 December at Katherine in the Northern Territory. Completion of building of the **Katherine antenna** is expected by the next **(6th) General Meeting of the International VLBI Service**, on Feb 7 to 13 2010, which will be hosted by UTAS who is the node for the AuScope VLBI program.

It is also expected the **Yarragadee antenna** may be just completed by that time.

The official launch and opening of the Hobart 12m telescope will be conducted while the meeting is being held.



Lifting the dish at Katherine on December 3 2009.

Conferences

AuScope has developed a **Calendar of Events to 2011** at which it will market the progress of the research undertaken.

AuScope will have a presence at the following events. FIG 2010, AESC 2010, eResearch Australasia 2010, ASEG 2010, Seismix 2010, GEO-COMPUTING 2010, ASEG 2011 and IUGG 2011.

This update will be issued every three months to the Australian geoscience research community, keeping you up to date with the latest developments and progress of each of the six AuScope infrastructure components. Please forward the update to anyone in the wider research community who would be interested in finding out more about the investment in earth science infrastructure in Australia.