

Monash e-Research Centre



Seminar: Thursday, 21 April 2011

Enabling Contemporary e-Research: Applications in Astronomy Presented by Dr David Barnes

**Research Fellow, Centre for Astrophysics and Supercomputing,
Swinburne University of Technology**

Time: 10.00am-11.00am

Location: Room 135, Bldg 26, Clayton Campus, Monash University

Enquiries: Debra.Truin@monash.edu

For more information visit: www.monash.edu/eresearch

Abstract:

Astronomy sits alongside research disciplines such as high-energy particle physics, climate modelling and bioinformatics, as a genuine petascale endeavour. Revolutionary new facilities and instrumentation, planned and under construction, will provide petabytes of scientific data.

The immensity of the data demands new approaches and techniques to ensure that standard display and analysis tasks can be accomplished at all, let alone in a reasonable time. In this talk Dr Barnes will introduce and describe some of the methods we are developing in astronomy to (1) enable the visualisation of extremely large, multi-dimensional images, (2) accelerate the analysis of these images (using e.g. graphics processing units - GPUs) and (3) improve the communication of science, based on these images, to colleagues and to the broader community.

Biography: <http://astronomy.swin.edu.au/staff/dbarnes.html>

Dr David Barnes is senior research fellow in visualisation in the Centre for Astrophysics and Supercomputing at Swinburne University of Technology. He co-leads the Centre's Scientific Computing and Visualisation research group. Dr Barnes is a radio astronomer by training, and presently focuses his research on novel and efficient techniques for analysing and displaying the extremely large images that will soon be delivered by the next generation of radio telescopes. Dr Barnes is an experienced visualisation programmer and has co-authored numerous papers on the application of GPU technology to astronomy problems.