



# Public Outreach and Educational Activities

The Centre for Astrophysics and Supercomputing at Swinburne University is dedicated to inspiring a fascination in the Universe through research and education. A range of public outreach and educational activities link the Centre to schools, providing a great way to motivate and interest students in science as a career possibility. Our activities also meet the demands of a growing public interest in astronomy, in particular, by allowing the public to interact with professional astronomers.

<http://astronomy.swin.edu.au/>

## AstroTours:

<http://astronomy.swin.edu.au/astrotour/>

Exploring the planets of our Solar System, deciding the ultimate fate of a star or flying around the galaxies of the local Universe, AstroTours are designed to entertain and educate audiences about astronomy in stereoscopic 3D. Each AstroTour is hosted by a professional astronomer who tailors the session according to the interests of the audience. For school AstroTours, a complete list of topics that can be covered is listed under “Curriculum Resources” on our website. The website also contains links to informative websites and good classroom activities you may wish to explore with your students.

AstroTours are usually 50 minutes in length and held in our Virtual Reality theatre at Swinburne’s Hawthorn campus. However, we have also recently received funding to establish a traveling AstroTour program, allowing us to reach the students and citizens of regional Victoria. Instructions on how to register your interest to have the AstroTour visit your region are given in the Regional Tour section of the website. We have already visited several schools in the Bendigo (2005), Sale (2006), Wodonga (2006) and Shepparton (2007) regions.





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## **Swinburne Astronomy Online (SAO):**

<http://astronomy.swin.edu.au/sao/>

SAO is an online astronomy degree program which concentrates on the fundamental concepts and key issues in contemporary astronomy. It is designed for amateur astronomers and astronomy educators, and contains custom-made course material, newsgroup discussions led by professional astronomers, low student-staff ratios, informed commentary on current 'hot topics' in astronomy and projects tailored to suit the individual interests of participants. In addition – due to its asynchronous, online format, it is accessible to full-time workers whose current commitments do not allow for face-to-face programs.

## **Cosmos:**

<http://cosmos.swin.edu.au/>

Written by professional astronomers for secondary school students and anyone with an interest in astronomy, Cosmos is the Swinburne Astronomy Online Encyclopedia of Astronomy and Astrophysics. Entries highlight key scientific concepts and are enhanced through the use of images and animations. This resource is continually evolving with more entries added all the time.

## **Faulkes Telescope:**

The Faulkes Telescope is a 2-metre, professional quality telescope built expressly for the purpose of astronomy education. With support from ASISTM, the Centre for Astrophysics and Macquarie University in collaboration with teachers from 10 secondary schools in Victoria and NSW, have initiated a pilot project to determine how best to implement this incredible resource into classrooms across Australia. We will report on the results of the first year of the pilot project at STAVCON later this year and hope to open up the program to all Australian schools in 2008.

## **Public Lectures:**

<http://astronomy.swin.edu.au/>

Two or three times per year, the Centre for Astrophysics showcases current astronomical research in talks specifically developed for the general public. These are called "New Views on the Universe" and are advertised through the Centre webpage and the Education Programs website.



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Swinburne University also offers workshops and VCE curriculum lectures in other areas of Physics. These programs have been designed to assist Year 9 to 12 students and teachers with their subject studies, providing students with skills development and hand-on learning experiences, and professional development opportunities for teachers. Programs are offered across the University's range of course disciplines and are linked to the secondary school curriculum. Details and registration for these programs should be directed through the Education Programs website:

<http://swin.edu.au/edprograms/>

## **Medical Physics Workshop:**

This hands-on workshop explores the use of Imaging Technologies in Medical Physics and allows VCE students access to equipment and demonstrations that would not be available in a school laboratory. The program may include the use of: Endoscopes, Ultrasound Imaging, Ultrasound Doppler, Radiation Measurement, PET Simulation, X-Ray Densitometry and Laser Tissue Perfusion. A student booklet is provided with the program.

## **VCE Curriculum Lecture - Photonics:**

Photonics deals with light – its generation, manipulation, transport and detection. Join Swinburne's photonics experts for a 1 hour lecture covering several important topics in Optics and Photonics during the Innovation Festival this year.

## **Further Electronics Kits:**

<http://www.swinburne.edu.au/feis/electronics/vce.htm>

Swinburne University has developed an electronics kit that contains a circuit board and all the components required for VCE students studying Unit 3 Detailed Study 3.3 to assemble and test a power supply. Material to support this activity has been written by Electronics and Computer Systems staff at Swinburne, and is available on the web. Purchasers of the kit are provided with the password to access these resources.

Teachers may also sign up for a Professional Development session that will guide them through the construction and use of the kit in the classroom.



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## CSIRO Student Research Scheme

<http://www.csiro.au/csiro/channel/pch9r.html>

This scheme is a national program that allows selected senior secondary students to complete a scientific research project under the supervision of a practicing scientist or engineer. Swinburne University is a keen supporter of this program, nominating a wide range of projects that students can pursue and hosting the end-of-year function at its Hawthorn campus

## Switch on to Physics:

<http://www.vicphysics.org/events/sotp.html>

These workshops are an opportunity for Year 10 students to have a positive first hand experience in physics through a half-day program that compliments the Science Curriculum. The program has been designed to get students excited and interested in physics and is relevant to all Year 10 science students. Students will be involved in making a simple temperature-sensitive alarm (electronics) and a spectroscope (photonics). The Switch On To Physics program is organised by the Australian Institute of Physics subsidised with funds from the National Innovation Awareness Scheme (NIAS), and is provided by Photonics staff from Swinburne University.

## SIEMENS Science Experience:

<http://www.scienceexperience.com.au/>

The SIEMENS science experience for Year 9 students is days of fun with science and technology. Swinburne is a keen supporter of this experience and offers a wide range of workshops and industry visits during its 3 day program in the September school holidays.

To stay informed of upcoming Education Programs in your fields of interest, you might like to subscribe to the relevant mailing lists on the Education Programs website.

## For further information about any of these programs, contact:

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