



**Australian Institute of Physics
NSW Branch (June Public Talk)**

**“The Magnetic Universe Revealed through
Radio Polarimetry”**

**Dr Bryan Gaensler
University of Sydney**

Tuesday 23rd June 2009 @ 6.00PM

At the

Slade Lecture Theatre, School of Physics, University of Sydney

Public talk arranged by: The Australian Institute of Physics (NSW Branch)

Entrance is FREE

Summary of talk:

The evolution, structure and origin of magnetic fields are still open problems in physics and astrophysics. When and how were the first fields generated? Are present-day magnetic fields the result of standard dynamo action, or do they represent rapid or recent field amplification through other processes? What role do magnetic fields play in turbulence, cosmic ray acceleration and galaxy formation? I will explain how radio polarisation surveys have the potential to address these questions. Specifically, I will present new Faraday rotation studies aimed at revealing the three-dimensional magnetic structure of the Milky Way, the Magellanic Clouds and distant galaxies. These studies pave the way to opening the full window to the magnetic Universe with the Square Kilometre Array and other future radio facilities.





Brief Biography of the Speaker:

Bryan Gaensler is a Professor of Physics at The University of Sydney, and is a Federation Fellow of the Australian Research Council. Prof. Gaensler was awarded his PhD in Physics from The University of Sydney in 1999, and subsequently held positions at the Massachusetts Institute of Technology, the Smithsonian Institution and Harvard University, before returning to Australia in 2006. Prof. Gaensler's current research focuses on the origin of magnetism in the Universe, and on the demography of neutron stars and black holes in our Milky Way. Prof. Gaensler was the 1999 Young Australian of the Year, gave the 2001 Australia Day Address

to the nation, and was the recipient of the 2006 Newton Lacy Pierce Prize awarded by the American Astronomical Society. He has authored or co-authored over 150 scientific papers, and has written dozens of popular articles on science and astronomy.



Detailed Schedule for Tuesday, 23rd June 2009:

- **6:00-6.30 pm REFRESHMENTS, Slade Lecture Theatre.**
- **6.35-7.30 pm LECTURE by Dr Bryan Gaensler.**
- **8.00 pm DINNER with the Speaker at Buon Gusto (Italian), 368 Abercrombie Street, Chippendale.**
E-mail Dr Fred Osman (fred_osman@exemail.com.au) if you will be able to join us for dinner.

Travel Directions:

- Train to Redfern station and walk to the **School of Physics**.
- Buses 422, 423, 426, 428, 448, and 450 from Circular Quay to City Road / King, or 412, 435, 438, 470, 483 etc. along Parramatta Road from Circular Quay.
- Drive and park in various parking lots. You will need to pay for parking (**\$6 flat-rate after 4 pm**) and display the ticket in your car. You may also find parking places on public roads outside the Uni.

Event sponsored by:



***The Australian Institute of Physics – NSW Branch
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