



**Australian Institute of Physics
NSW Branch (Boas Medal Public Talk)**

**Challenging Cosmology: Satellite planes
in the Local Universe**

Professor Geraint F Lewis

University of Sydney

Wednesday 15th March 2017 @ 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:

While our current cosmological model, whose mass is dominated by a cold dark matter component, provides a precise description of the large-scale universe, it struggles to account for the properties and distributions of dwarf galaxies within the halos of large galaxies. In this talk I will discuss the latest challenge to the standard cosmological model, the discovery of thin and coherent planes of dwarf galaxies orbiting both the Milky Way and its nearby companion, the Andromeda Galaxy. As well as recounting the discovery of the Andromeda Plane in the Pan-Andromeda Archaeological Survey (PAndAS), I will discuss further observations in searching for other planes in the nearby universe, as well as reviewing the potential solutions that account for the presence of satellite planes, both within standard cosmology, and beyond.





Brief Biography of the Speaker:

Geraint F. Lewis is a Professor of Astrophysics at the Sydney Institute for Astronomy, researching cosmology, gravitational lensing and galactic cannibalism. Geraint F. Lewis heads the Gravitational Astrophysics Group at the Sydney Institute for Astronomy, whose research covers several key areas in modern astrophysics, including deciphering the nature of the dark matter and dark energy which pervade our Universe, and understanding the evolution of galaxies out of the cosmic broth that

existed shortly after the Big Bang. Geraint completed his first degree in Physics and Astronomy at the University of London in 1990, followed a PhD at the University of Cambridge's Institute of Astronomy. He was subsequently a post-doctoral researcher in the USA and Canada, before joining the Anglo-Australian Observatory in 2000. Coming to the University of Sydney in 2002, Geraint has played an active and successful role in the supervision of both undergraduate and graduate students in research projects.

Detailed Schedule for Wednesday, 15th March 2017:

- **6:00-6.30 pm REFRESHMENTS, Slade Lecture Theatre.**
- **6.35-7.30 pm LECTURE by Professor Geraint F Lewis.**
- **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 University.

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