AUSTRALIAN INSTITUTE OF PHYSICS

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AIP Victorian Branch – August Meeting

2009 Women in Physics Public Lecture

To planets or just to the shops: Plasmas pave the path

Assoc. Prof. Christine Charles

Research School of Physical Sciences & Engineering
The Australian National University

6.30pm Thursday 20 August, 2009
(Refreshments provided from 6:00 pm prior to the talk)
Hercus Theatre, David Caro (Physics) Building
University of Melbourne

Plasmas have existed since the very first moments of the Universe. It is the stuff of stars. It fills the space between stars. It gives us the beautiful northern and southern aurorae. Our houses have plasma TV displays, plasma lights [fluorescent tubes]. Everywhere we look, there is plasma. But we stand on solid earth and the solid state accounts for less than one percent of the total mass of the Universe. The rest is plasma, a hot ionised gas containing positive and negative charges. By properly harnessing the plasma state we can make microchips for computers, we can make plasma engines (thrusters) to get to the planets and we can make fuel cells to take people just down to the shops. The discovery in Australia of a current-free electric double layer (a cliff of potential like a river waterfall which energise charged particles falling through them) in a laboratory plasma is the basis of a new space engine: the Australian Helicon Double Layer Thruster.

Members are encouraged to join the speaker and members of the Branch Committee for dinner following the talk at a local restaurant. In order to assist with table reservations please contact the Honorary Secretary (email below) by Friday August 14.

Honorary Secretary
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