

## PhD Studentship with Atmospheric Physics Group

The Atmospheric Physics group at the Physics and Astronomy Department, University of Canterbury has a funded PhD student position available. The position is funded through the New Zealand Marsden Fund project "Evaluating the Impact of Excess Ionization on the Atmosphere", led by Associate Professor Craig J. Rodger at Otago University.

Recent studies show that energetic particles from the sun can cause dramatic changes in the chemical make-up of the atmosphere at high altitudes (near 100 km). Work has also demonstrated that these changes can be transported down towards the Earth surface and can potentially significantly disturb the stratosphere (the area which contains the ozone layer). This project aims to quantify the horizontal and vertical transport in the region between 10 and 100 km above the Earth surface using data from the EOS MLS satellite and state-of-the-art transport models. Directly quantifying the coupling between the upper troposphere and the mesosphere will provide new information on the role of solar variations in climate variability which will enhance the simulation of natural variability in the next generation of climate models.

Initial work in the project will be focused on developing new methods to quantify transport from satellite data and deriving atmospheric transport models in order to improve the quantification of solar variations on the atmosphere. The study will be conducted at the University of Canterbury in collaboration with researchers at Otago University. The project is also likely to involve a research stay outside New Zealand, and may involve an instrument maintenance trip to Antarctica.

Information on the group can be found at its webpage:

<http://www.phys.canterbury.ac.nz/atmos/index.shtml>

**APPLICATIONS:** All applications must include:

- A full Curriculum Vitae, INCLUDING your University transcript (i.e. list of grades awarded).
- The names of at least two referees.
- If English is not your native language, results of a standard English test or other evidence of your English language ability. Candidates who have taken a standard English test should check that they have met the University of Canterbury's criteria at <http://www.canterbury.ac.nz/intstud/admiss/english.shtml>.
- A clear statement about when you would expect to be able to come to NZ.

**QUALIFICATIONS:** Candidates should have received an upper class honours degree (1st or 2(1)) or Masters degree in Physics, Electrical Engineering, or related subject. A candidate is sought with good background in physics with experience in computational modelling and data analysis. The ideal candidate would be proficient in Matlab and have experience in middle atmosphere research.

**SCHOLARSHIP:** The PhD scholarship covers NZ\$25,000 per annum of living expenses for three years, plus University of Canterbury tuition fees for 3-years.

The PhD student position will be open until it is filled.

**FURTHER INFORMATION** on the project: Dr. Adrian McDonald  
<mailto:adrian.mcdonald@canterbury.ac.nz>