



**The Oxford/RAL Spring School in Quantitative Earth Observation
The Role of EO in Earth Radiation and Climate Studies
Oxford, March 18th to March 28th, 2002**

The fourth Oxford/RAL Spring School in Quantitative Earth Observation, sponsored by the UK **Natural Environment Research Council**, the **British Atmospheric Data Centre**, the **NERC Environmental Systems Science Centre** and **Research Systems International**, will be held in Oxford on **March 18th to March 28th, 2002**. The focus of this year's school will be the application of Earth Observation to the study of **earth radiation and climate**.

Course Aims

New and ongoing Earth Observation missions have a key role to play in quantifying the extent of human influence on global climate, improving our understanding of key feedback processes and reducing the uncertainty in future climate change. Effective exploitation of EO requires an understanding of a wide range of disciplines, including atmospheric physics, remote sensing, climate modelling, probability theory and instrument design and calibration. The aim of this school is to provide postgraduate students, postdoctoral researchers and mission scientists working in any of these areas with a quantitative introduction to the issues involved in the use of Earth Observation in climate research. Our emphasis will be on the end-to-end problem of using EO to provide quantitative constraints on specific climate processes, evaluating and improving models used for climate prediction.

The content of the school should be accessible to anyone with a degree in mathematics or physical sciences and some experience of remote sensing or numerical modelling. We particularly encourage the participation of researchers who are involved in climate modelling but not currently using EO data as a research tool, since one of our prime objectives is to sensitize the community to the potential breadth of application of EO. Likewise, our emphasis on understanding climate processes and their representation in climate models should provide mission and instrumentation specialists with useful insight into the context and ultimate objectives of their work.

Teaching will comprise five sets of core lectures, detailed below, supported by lectures on advanced applications from well-known specialists in the field. There will be a programme of computer practicals to allow participants to apply techniques covered in the core programme and develop the skills to transfer these to their own research. Preference will be given to participants wishing to attend for the full two weeks, but if space permits, we will also provide for senior researchers to attend selected modules at a reduced fee - contact the course organisers for further details.

Core Lectures

Principles of Quantitative Model-Data Comparison: 6 lectures

- **Myles Allen** (Department of Physics, University of Oxford and Space Science and Technology Department, RAL)

Atmospheric Remote Sensing and Information Content of Measurements: 6 lectures

- **Clive Rodgers** (Department of Physics, University of Oxford)

Overview of Current and Future Climate-related EO Missions: 2 lectures

- **Brian Kerridge** (Space Science and Technology Department, RAL)
- **John Barnett** (Department of Physics, University of Oxford)

Outstanding Research Issues in Earth Radiation and Climate Change: 9 lectures

- **Don Grainger** (Department of Physics, University of Oxford)
- **Joanna Haigh** (Department of Physics, Imperial College of Science, Technology and Medicine)
- **Keith Shine** (Department of Meteorology, University of Reading)
- **Phil Watts** (Space Science and Technology Department, RAL and European Centre for Medium Range Weather Forecasting)

EO in the Evaluation and Development of Climate Models: 6 lectures

- **Tony Slingo** (Met Office, Bracknell)
- **John Harries** (Department of Physics, Imperial College of Science, Technology and Medicine)

Guest Lectures

Trends in Atmospheric Composition and Transport: the Role of EO

- **Lesley Gray** (Space Science and Technology Department, RAL)

Satellite Observations and Model Simulations of Recent Atmospheric Temperature Trends

- **Ben Santer** (Program in Climate Model Diagnosis and Intercomparison, Lawrence Livermore National Laboratory, California, USA)

Observations of Aerosol and Cloud Forcing of Climate

- **Olivier Boucher** (Laboratoire d'Optique Atmosphérique, Université de Lille, France)

Satellite Data in Meteorological Analyses and Re-analyses

- **John Eyre** (Met Office, Bracknell)

Applications of Earth Observation to Atmospheric Chemistry

- **John Pyle** (Department of Chemistry, University of Cambridge)

Remote Sensing of Changing Land Surface Properties

- **Robert Gurney** (Environmental Systems Science Centre, University of Reading)

Remote Monitoring of Climate Change in the Global Oceans

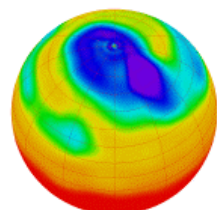
- **Chris Mutlow** (Space Science and Technology Department, RAL)

Further Details

The school is organised by the Space Science and Technology Department, Rutherford Appleton Laboratory (RAL) and hosted by the sub-Department of Atmospheric, Ocean and Planetary Physics, Clarendon Laboratory, University of Oxford, with support from the University School of Geography. Participants will be accommodated in St. John's College in Central Oxford, adjacent to the University Science Area. The cost of the school for participants from academic institutions will be £500, plus £585.00 for 10 nights' full board accommodation in St. John's College. Financial support is available for NERC supported students and researchers. A small number of bursaries covering course fees only are available for non-NERC participants, courtesy of Research Systems International.

Applications should be made online, no later than 15/01/02 at
<http://www.neodc.rl.ac.uk/springschool/>
where further information about the course can be obtained.

Please address all enquiries to
springschool@rl.ac.uk



*British
Atmospheric
Data
Centre*

