

**Job Title:** Research Associate

**Grade:** 7

**Salary:** £34,804 to £40,322 per annum

**Department:** Physics and Astronomy

**Hours/Contract:** Full time, fixed term for 2 years, starting 01/2020 or soon after

**Reference:** 1431

## Role Purpose

The upper troposphere has profound effects on atmospheric composition and global climate. Central to its influence is reactive nitrogen. But there are debilitating gaps in our understanding of reactive nitrogen in the upper troposphere, as evidenced by discrepancies between models and observations. In this project, the successful candidate will obtain global NO<sub>2</sub> concentrations in the upper troposphere from the Sentinel-5P TROPOMI instrument, and interpret and validate the dataset with NASA aircraft observations and the international GEOS-Chem model. This forms part of a larger European Research Council (ERC) funded project, UpTrop (<http://maraisresearchgroup.co.uk/uptrop.html>). The successful candidate will work with the project PI, Dr Eloise Marais, and collaborate with local and international scientists in the NASA ATom Science Team and the GEOS-Chem User Community.

The role includes opportunities to present results at local and international conferences and science meetings, write high-impact scientific publications as lead or co-author, and contribute to mentoring and supervising postgraduate and undergraduate students in Dr Marais' group.

Main Duties and Responsibilities	% Time
Give guidance to other group members and develop and carry out the following research:	
Retrieve NO <sub>2</sub> concentrations in the upper troposphere from the Sentinel-5P TROPOMI instrument.	50
Validate and quality assure the NO <sub>2</sub> retrieval using NASA DC8 aircraft observations and comparison to OMI upper troposphere NO <sub>2</sub> products.	20
Interpret the implications of the results on the nitrogen budget and tropospheric ozone and oxidants using GEOS-Chem.	20
Disseminate results at meetings and conferences and in research publications and contribute to mentoring and supervising junior group members.	10
Internal and External Relationships	
P.I. and wider ERC UpTrop research team and international collaborators	
Planning and Organising	
Plan research activity as outlined in the project proposal.	



Qualifications, Knowledge and Experience

**Essential**

- Hold (or soon to obtain) a PhD in a relevant research field\*
- Lead authorship of a peer-reviewed publication\*
- Experience communicating research results at international conferences\*
- Experience working with satellite observations\*

**Desirable**

- Research experience in atmospheric chemistry
- Experience working with space-based atmospheric composition datasets
- Experience retrieving atmospheric components from spectrometers

Skills, Abilities and Competencies

**Essential**

- Computational skills (Unix/Linux and a computer programming language)
- Familiarity with retrieval of atmospheric composition from satellite observations
- Excellent written\* and oral communication skills

*\*Criteria to be used in shortlisting candidates for interview*

VITAL

The University encourages all staff to live our [VITAL values](#) which are:  
**Valuing People, Innovators, Together, Accountable, Leaders.**

Equality and Diversity

We believe that equality, diversity and inclusion is integral to a successful modern workplace. By developing and implementing policies and systems that challenge stereotypes across all aspects of our work, we have a culture that recognises and values the diverse contributions of our staff which benefits everyone. Our strong values of inclusivity and equality support our efforts to attract a diverse range of high quality staff and students, and identify our University as a progressive and innovative workplace that mainstreams equality, diversity and inclusion.

