

Dr. Rachel Julia Drummond

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Date of Birth: 5 August 1978 **Nationality:** British

Education and Experience:

2002- Dec 2007: Katholieke Universiteit Leuven, Belgium. PhD title: Scientific calibration of COROT mission.

Supervisors: Prof Conny Aerts and Dr Bart Vandenbussche at KULeuven.

Correction of small satellite motion (jitter) and the background gradients to improve the scientific data reduction.

During this PhD I have contributed to the data reduction pipeline and carried out observations using the university telescopes in La Palma and La Silla. I have presented my work at national and international conferences and authored papers in reviewed journals.

Publications: PASP 2007 - Jitter Correction Algorithms for the CoRoT Satellite Mission: Validation with Test Bench Data and MOST On-Orbit Photometry

 PASP 2006 - Jitter correction algorithms for the CoRoT satellite mission;

 ESA Publications 2006 - Extraction of CoRoT photometric information: corrections

2001- 2002: ESTEC Young Graduate in the Technology Harmonisation Section.

The Technology Harmonisation section is responsible for improving the money spent in Europe on research and development activities on space technology. I liaised with technology experts at ESA to produce the reports on technology status and ongoing R&D activities across Europe and communicated with National Delegates to arrange meetings to discuss improvements on a European level. Daily tasks included administrative work, preparation of reports and evaluation of technical reports.

2000 – 2002: Cranfield College of Aeronautics, UK. MSc in Astronautics and Space Engineering.

Group Project work on deorbit devices for nano-satellites. Thesis: Eddington Mission Simulation software analyses. Awarded academic scholarship.

Publication: Conference Proceedings - Eddington mission payload ACS jitter analysis and light distribution study

1996 – 2000: University of Kent at Canterbury, UK.

MPhys Physics with Space Science and Systems with a year in Europe. Awarded First Class Honours degree.

Thesis: Design and construction of a sounding rocket payload that we launched from Australia, July 2000.

First year academic scholarship, and University Award: top of graduating Faculty of Physics.

Including; 1998 – 1999: Université Joseph Fourier, Grenoble, France. Licence de Physique.

1989 – 1996: St. Albans High School for Girls, UK. Secondary School, specialisation in Mathematics, Physics and French. School Leavers Award for the highest grades.

Summer Industrial Placements:

2000: Astrium (UK), Gunnels Wood Road, Stevenage: Materials and Antenna departments, studies of new materials for construction of antenna – analysis of thermal stability of materials in new antenna configuration.

1998: Jet Propulsion Laboratory, NASA/Caltech, Pasadena, USA. Summer Undergraduate Research Fellowship. Study of Mars Pathfinder data. Analysis of ‘dust’ on Sojourner images and rock shapes from IMP images.

1997: Caltech, Pasadena, USA. Summer Undergraduate Research Fellowship. Development of web based mathematical educational software specifically designed for children to use.

Languages:

English (mother tongue), fluent French, fluent Dutch, intermediate Spanish and German.

Skills:**Computing:**

- Experience with PCs, Macs, Unix workstations
- Competent with Windows and Linux platforms
- Proficient with OpenOffice and MS Office for word processing, presentations, spreadsheets
- I maintain 3 personal webpages using html. This includes the use of FTP, ssh, scp
- 6 years IDL programming experience
- Basic knowledge of Fortran and C++
- Have also used Lotus Notes, Paintshop software and LaTeX

Mobility: Full British driving licence, categories B, BE, C1, C1E, D1, D1E

Organisational Experience:

Co-organising first MoonMars workshop, Bremen 2003. The MoonMars workshops are offshoots of the Space Generation Advisory Council meetings that take place each year before the IAC conference. The first conference was organised by myself and 3 other young people in 2003. This is now a yearly event which I try to remain involved with.

Co-organising MoonMars Habitat Design Workshop, ESTEC 2005. I presented the results of this workshop at the IAC conference in Fukuoka, Japan.

Group leader, MoonMars workshop, Fukuoka, Japan, 2005

Chairwoman of the student session of the 4S symposium (Small Satellite Systems and Services) in La Rochelle 2004. Technical Committee member for the 2006 symposium in Chia Laguna, Sardinia; and for Rhodes, Greece 2008.

Other Experience:

Outreach: Science week at the university – showing telescope functions to school pupils.

Representative of Institute of Astronomy of KULeuven at the Flemish Space Days in Oostende 2006.

Duke of Edinburgh's Bronze Award

Space Workshop at Bauman Moscow State Technical University

IAC Winter School – Payload and Mission Definition in Space Science, 17-28 November 2003, Puerto de la Cruz, Tenerife

References:

Prof. Conny Aerts and Dr. Bart Vandenbussche, Instituut voor Sterrenkunde, Katholieke Universiteit Leuven (2002-2007 PhD supervisors)

Dr. Luca Maresi, Technology Harmonisation Section, ESTEC IMT-THH (2001-2002 Supervisor).