William J. Robbins

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Personal Details

Citizenship: United States
Born: 18 June, 1980, in Landstuhl, Germany

Postgraduate Visa (574) valid through 2012
Martial Status: Married, 19 July, 2008

Research Interests

- High energy astrophysics, including supernova remnants and pulsar wind nebulae
- High energy cosmic ray acceleration
- Low-frequency radio antenna design

Skills Summary

Working knowledge of: MIRIAD, XSPEC, ds9, KVIS, NEC-4, Python, C/C++, LabView, ROOT, Matlab, Mathematica, PBS, Unix/Linux, Subversion, LaTex, and PostgreSQL, the qualifying process for electronic circuitry, a variety of photometric devices for analysis, and an array of machine shop tools

Developing knowledge of: CASA, SAS, and VisIt

Rudimentary skills in Spanish and aural French

Education

2012 (expected)	Ph.D., Physics	The University of Sydney
2008	M.S., Physics	The Pennsylvania State University
2006	B.A., Physics	The University of California at Berkeley

Honours and Awards

2008 - present	International Denison Postgraduate Award School of Physics, The University of Sydney
2006 - 2008	Bunton-Waller Graduate Fellowship The Graduate School, The Pennsylvania State University
2006 - 2008	David C. Duncan Graduate Fellowship Department of Physics, The Pennsylvania State University
2005	Conference Travel Grant American Physical Society (APS), Division of Nuclear Physics
2005	Greek Leader of the Year Office of Student Life, The University of California at Berkeley
2004	APS, Division of Plasma Physics Conference Travel Grant Princeton Plasma Physics Laboratory
2004	National Undergraduate Fellow Travel Grant Princeton Plasma Physics Laboratory
2002	United Food and Commercial Workers Union Scholarship
2002	Award for Academic Excellence Marion P. Alves Foundation

Professional Service and Activities

2010-2011	Scientific Organizing Committee, Harley Wood Winter School Astronomical Society of Australia
2007- 2008	President, Physics Graduate Student Association The Pennsylvania State University
2006-2008	Physics Department Computing Infrastructure Committee The Pennsylvania State University
2006- 2007	Treasurer, Physics Graduate Student Association The Pennsylvania State University
2004-2005	Outreach Demonstrator American Physical Society Conferences

Research Experience

2008-Present PhD Student The University of Sydney

- Multi-wavelength analysis of the remnants of cataclysmic stellar explosions
  Supervisors: Bryan Gaensler & Tara Murphy

2008 summer Naval Research Intern U.S. Naval Research Laboratory

- Aided in determination of optimum ground screen to be used beneath each Long Wavelength Array (LWA) antenna element
- Simulated the stability of the LWA antenna response to variations in the environment, and deployment and manufacturing specifications
  Supervisor: Paul Ray

2006-2008 MS/PhD Student The Pennsylvania State University

- Developed a noise rejection technique for the proposed "DeepCore" low-energy extension to the IceCube Neutrino detector (IceCube)
- Established an *in-situ* method for the determination of ice properties within the volume of IceCube
  Supervisors: Doug Cowen & Tyce DeYoung

2004-2006 Undergraduate Student Lawrence Berkeley National Laboratory

- Conducted quality assurance (QA) of circuit boards for use in IceCube
- Designed and implementation of light-tight enclosures for IceCube QA
  Supervisor: Azriel Goldschmidt

2004 summer National Undergraduate Fellow Los Alamos National Laboratory

- Modified the Mach probe discharge response for Flowing Magnetised Plasma (FMP) experiment
- Wrote safety documents for FMP and FRX-L experiments (during lab shutdown)
  Supervisor: Scott Hsu

2003 Research Technician Lawrence Berkeley National Laboratory

- Devised novel heat-dissipation technique for electronic ballasts
- Assisted in development of "Super-Fixture" lighting system
  Supervisors: Michael Siminovitch & Erik Page

Refereed Publications

W.J. Robbins, B.M. Gaensler, T. Murphy, S. Reeves, and A.J. Green, "Discovery of supernova remnant G296.7-0.9", to be submitted to Monthly Notices of the Royal Astronomical Society

R.Abbassi and 242 others in **alphabetical order**, including W.J. Robbins, "The IceCube data acquisition system: signal capture, digitization, and time-stamping", Nuclear Instruments and Methods in Physics Research Section A, vol. 601, Issue 4, pages 294-316, 2009.

R.Abbassi and 242 others in **alphabetical order**, including W.J. Robbins, "Search for Point Sources of High-Energy Neutrinos with Final Data from AMANDA-II," Physical Review D, vol. 79, Issue 6, pages 2001-12, 2009.

R. Abbassi and 242 others in **alphabetical order**, including W.J. Robbins, "Solar Energetic Particle Spectrum on 13 December 2006 Determined by IceTop," Astrophysical Journal, vol. 689, pages L65-8, 2008.

M. Ackermann and 237 others in **alphabetical order**, including W.J. Robbins, "Search for Ultra High-Energy Neutrinos with AMANDA-II," Astrophysical Journal, vol. 675, Issue 2, pages 1014-1024, 2008.

Technical Memoranda

- **W.J. Robbins**, H.R. Schmidtt, P.S. Ray, and N. Paravastu, "Simulations and Final choice of Ground Screen Material", Long Wavelength Array Engineering Memo #GND0005, February 12, 2009.
- N. Paravastu, **W.J. Robbins**, and P.S. Ray, "Field Measurements of Candidate Antenna Designs for LWA-1." Long Wavelength Array Engineering Memo #ANT0009, June 2008.

Observing Proposals & Experience

Westerbork Synthesis Radio Telescope, project R10B/018, primary investigator: 48 hours
Australia Telescope Compact Array, project C2407, primary investigator: 33 hours

Presentations and Posters

2010 "The Re-Discovery of Forgotten Supernova Remnant G296.7-0.9," Astronomical Society of Australia, Hobart, Tasmania, Australia

2005 "Time and Position Calibration of IceCube Optical Modules," Nuclear Science Division meeting of the APS. Kapalua, Maui, Hawai'i, USA.

2004 "Measurement of Plasma Pressure and Flows in the FMP Experiment" Division of Plasma Physics meeting of the APS. Savannah, Georgia, USA.

2003 "Novel Devices to Increase Market-Share of CFL Technology in Kitchen Downlighting Retrofits," Lawrence Berkeley National Laboratory, Berkeley, California, USA.

2003 "A Novel Method for the Mitigation of Heat-Trapping by Encapsulated Ballasts." Lawrence Berkeley National Laboratory, Berkeley, California, USA.

Meetings Attended

2010 Astronomical Society of Australia, Science Meeting
Hobart, Tasmania, Australia
2010 Harley Wood Winter School
Bagdad, Tasmania, Australia
2008 LOFAR and the Transient Radio Sky Workshop
Amsterdam, North Holland, The Netherlands.
2008 11th Synthesis Imaging Summer School
Soccorro, New Mexico, USA.
2005 American Physical Society, Division of Nuclear Physics
Kapalua, Maui, Hawai'i, USA.
2004 American Physical Society, Division of Plasma Physics
Savannah, Georgia, USA.