

STEPHEN REDMAN

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EDUCATION

Pennsylvania State University

University Park, PA

Doctor of Philosophy Candidate, May 2010

- American Astronomical Society, Junior Member

University of Vermont

Burlington, VT

Bachelor of Science, Physics, Magna cum Laude, May 2005

- American Astronomical Society, Junior Member
 - Society of Physics Students, Member
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RESEARCH EXPERIENCE

Pennsylvania State University

University Park, PA

Research Assistant

May 2006–Present

Helped make the highest-precision radial velocities achieved in the near-Infrared to date. This work is essential for finding Earth-sized planets in the habitable zone of M-dwarfs. Made dozens of observations of the Earth's rotation via integrated sunlight, reduced and analyzed data independently and with colleagues. This work has led to three publications thus far and forms the basis of my PhD thesis.

Research Assistant

January 2008–Present

Co-wrote, co-directed, co-edited, and co-starred in 24 astronomy video demonstrations for Astronomy 001 courses. These video demonstrations were designed to improve students performance in web-based astronomy courses and provide these students with an instructor presence. Our subsequent analysis of these data has shown that we accomplished both of these goals, and has led to one publication thus far.

University of Vermont

Burlington, VT

Research Assistant

May 2003–Aug 2005

Studied various pulsar emission phenomenon using over 12,000 lines of my own code. Observed dozens of pulsars during three observing runs at the Arecibo Observatory. This work resulted in two publications and an undergraduate thesis.

TEACHING EXPERIENCE

Pennsylvania State University

University Park, PA

SEECoS Instructor

May-June 2008

Co-organized and taught underprivileged Pennsylvania high school students in a SEECoS (Summer Experience in the Eberly College of Science) course. These students gained a detailed and comprehensive understanding of how astronomers detect extrasolar planets and what we can learn about our own Solar System from these discoveries.

Astronomy 001 Instructor

May-June 2007

Designed and taught a section of Introductory Astronomy with a heavy emphasis on active-collaborative learning (ACL). In addition to utilizing over thirty ACL in-class activities designed by others, I created a half-dozen of my own, and taught students how to use small telescopes.

Teaching Assistant

Sept 2005–May 2008

Taught eight sections of an Introductory Astronomy Lab. Designed six new labs, three of which are now standard additions to the night labs. Advocated for the purchase of 10 new portable telescopes for the lab courses, which are now used for numerous astronomy teaching and outreach events.

University of Vermont

Burlington, VT

Teaching Assistant

Sept 2003–May 2005

Taught four sections of an Introductory Astronomy Lab. Designed and implemented one new lab.

COMMITTEES

- Outreach Committee, Member, 2008-Present
- Graduate Student Summer Programming Seminar, Founder & Chair, 2008-Present
- Black Moshannon Reconstruction Committee, Member, 2008-Present
- Graduate-Faculty Liaison, Chair, 2007-2008
- Social Committee, Member, 2007-2008
- Undergraduate Committee, Member, 2006-2007

OUTREACH

Over 150 hours of volunteer work, including:

- CALL / OLLI, telescope seminar for senior citizens, ~20 visitors/year, Instructor & Organizer, 2007 & 2008
- AstroFest, ~2000 visitors/year, Volunteer, 2006-2008
- Space Day / Exploration Day, ~1000 visitors/year, Volunteer, 2005-2008
- Astronomy Open House, ~200 visitors/year, Volunteer & Organizer, 2005-2008

AWARDS, SCHOLARSHIPS, & FELLOWSHIPS

- NASA Space Grant Fellow, 2006-2008 & 2008-2010
- NASA GSRP Fellow, 2008-2009
- Harold F Martin Graduate Assistant Outstanding Teaching Award, 2008
- Astronomy & Astrophysics TA of the Year Award, 2006
- Zaccheus Daniel Award, 2005 & 2006
- Braddock & Roberts Fellow, 2005-2006
- Juenker Physics Prize, 2005
- HELiX / EPSCoR Summer Internship Award, 2004
- HELiX Award, 2003
- APLE Award, 2003
- Green & Gold Scholar, 2001-2005
- Vermont Honors Scholar, 2001-2002
- Ryan Memorial Scholar, 2001

PUBLICATIONS

- Redman, S L, Rankin, J M, “*On the Randomness of Pulsar Nulls*”. 2009, MNRAS, submitted
- Miller, S, Redman, S, “*Creating an Instructor Presence in an Online Course at the Expense of Your TA's Life (A Small Price to Pay)*”. 2009, 213th AAS Meeting
- Ramsey, L W, Barnes, J, & Redman, S L, *et al*, “*A Pathfinder Instrument for Precision Radial Velocities in the Near-Infrared*”. 2008, PASP, 120, 887
- Miller, S, Redman, S L, & Richards, M, “*Astronomy Video Demonstrations as Portable, Personal, & Educational Media*”. 2008, PSU TLT Symposium
- Redman, S L, & Rankin, J M, “*New Insights into Pulsar Nulling*”. 2008, AIP Conference Proceedings, 983, 94
- Ramsey, L W, Redman, S L, Wolszczan, A, *et al.*, “*The PRVS Pathfinder*”. 2008, 211th AAS Meeting
- Redman, S L, Rankin, J, Wright, G A E, “*Pulsar B2303+30: a single system of drifting subpulses, moding and nulling*”. 2005 MNRAS 357, 859
- Redman, S L, Wright, G A E, & Rankin, J M, “*PSR B2303+30: A single system of drifting subpulses, moding and nulling*”. 2005, 205th AAS Meeting
- Redman, S L, “*Pulsar Nulling, Moding, and Drifting Subpulses*”. 2005, UVM Honors Thesis