

Ryan Terrien

Academic Appointments

- 2017- **Assistant Professor of Physics & Astronomy,**
Carleton College, Northfield, MN.
- 2016-2017 **National Research Council Postdoctoral Fellow,**
National Institute of Standards & Technology, Boulder, CO.
Optical Frequency Measurements Group

Education

- 2015 **Doctor of Philosophy,** *The Pennsylvania State University*, University Park, PA.
Astronomy & Astrophysics
- 2012 **Master of Science,** *The Pennsylvania State University*, University Park, PA.
Astronomy & Astrophysics
- 2009 **Bachelor of Arts,** *magna cum laude*, *Carleton College*, Northfield, MN.
Physics & Astronomy

Selected Honors & Awards

- 2015 PENN STATE ALUMNI ASSOC. DISSERTATION AWARD, Penn State University
- 2013-2014 DOWNSBOROUGH FELLOWSHIP, Penn State University
- 2012-2014 NASA PENNSYLVANIA SPACE GRANT FELLOWSHIP
- 2012, 2014 GRANTS IN AID OF RESEARCH, Sigma Xi
- 2011 BRUMBACH FELLOWSHIP, Penn State University
- 2009 BRAADOCK & ROBERTS FELLOWSHIP, Penn State University

Selected Recent Publications

- J. Skinner, K. Covey, C. Bender, N. Rivera, N. De Lee, D. Souto, D. Chojnowski, N. Troup, C. Badenes, D. Bizyaev, C. Blake, A. Burgasser, C. Cañas, J. Carlberg, Y. Gómez Maqueo Chew, R. Deshpande, S. Fleming, J. G. Fernández-Trincado, D. A. García-Hernández, F. Hearty, M. Kounkel, P. Longa-Peñé, S. Mahadevan, S. Majewski, D. Minniti, D. Nidever, A. Oravetz, K. Pan, K. Stassun, **R. Terrien**, O. Zamora, "Forty-four New and Known M-dwarf Multiples in the SDSS-III/APOGEE M-dwarf Ancillary Science Sample," *The Astronomical Journal*, Vol. 156, 45 (2018).
- D. Jontof-Hutter, V. Truong, E. Ford, P. Robertson, **R. Terrien**, "Dynamical Constraints on Nontransiting Planets Orbiting TRAPPIST-1," *The Astronomical Journal*, Vol. 155, 239 (2018).
- S. Gilhool, C. Blake, **R. Terrien**, C. Bender, S. Mahadevan, R. Deshpande, "The Rotation of M Dwarfs Observed by the Apache Point Galactic Evolution Experiment," *The Astronomical Journal*, Vol. 155, 38 (2018)
- J. Jennings, S. Halverson, **R. Terrien**, G. Ycas, S. Diddams, S. Mahadevan, "Frequency stability characterization of a broadband fiber Fabry-Pérot interferometer," *Optics Express*, Vol. 25, 14 (2017)
- G. Steffanson, F. Hearty, P. Robertson, S. Mahadevan, T. Anderson, E. Levi, C. Bender, M. Nelson, A. Monson, B. Blank, S. Halverson, C. Henderson, L. Ramsey, A. Roy, C. Schwab, **R. Terrien**, "A Versatile Technique to Enable Sub-milli-Kelvin Instrument Stability for Precise Radial Velocity Measurements: Tests with the Habitable-zone Planet Finder," *The Astrophysical Journal*, Vol. 833, 2 (2016)

R. Terrien*, A. Monson, S. Mahadevan, C. Bender, S. Halverson, L. Ramsey, "Measuring extended red sensitivity in a $1.7\mu\text{m}$ -cutoff HgCdTe detector array," Proceedings of the SPIE, Vol. 9915 (2016)

S. Halverson, **R. Terrien**, S. Mahadevan, A. Roy, C. Bender, G. Stefánsson, A. Monson, E. Levi, F. Hearty, C. Blake, M. McElwain, C. Schwab, L. Ramsey, J. Wright, S. Wang, Q. Gong, P. Roberston, "A comprehensive radial velocity error budget for next generation Doppler spectrometers," Proceedings of the SPIE, Vol. 9908 (2016)

R. k. Kopparapu, E. Wolf, J. Haqq-Misra, J. Yang, J. Kasting, V. Meadows, **R. Terrien**, S. Mahadevan, "The Inner Edge of the Habitable Zone for Synchronously Rotating Planets around Low-mass Stars Using General Circulation Models," The Astrophysical Journal, Vol. 819, 84 (2016)

R. Terrien, S. Mahadevan, R. Deshpande, C. Bender, "A Near-Infrared Spectroscopic Survey of 886 Nearby M Dwarfs," The Astrophysical Journal Supplement Series, Vol. 220, 16 (2015)

R. Terrien, S. Mahadevan, C. Bender, R. Deshpande, P. Robertson, "M dwarf luminosity, radius, and α -enrichment from *I*-band spectral features," The Astrophysical Journal Letters, Vol. 802, L10 (2015)

S. Mahadevan, L. Ramsey, **R. Terrien**, S. Halverson, A. Roy, F. Hearty, E. Levi, G. Stefansson, P. Robertson, C. Bender, C. Schwab, M. Nelson, "The Habitable-zone Planet Finder: A status update on the development of a stabilized fiber-fed near-infrared spectrograph for the Hobby-Eberly telescope," Proceedings of the SPIE, Vol. 9147 (2014)

R. Terrien, S. Mahadevan, R. Deshpande, C. Bender, P. Cargile, F. Hearty, M. Cottaar, C. Allende Prieto, S. Fleming, P. Frinchaboy, K. Jackson, J. Johnson, S. Majewski, D. Nidever, J. Pepper, J. Rodriguez, D. Schneider, R. Siverd, K. Stassun, B. Weaver, J. Wilson, "New Red Jewels in Coma Berenices," The Astrophysical Journal, Vol. 782, 61 (2014)

R. Terrien, C. Bender, S. Mahadevan, S. Halverson, L. Ramsey, F. Hearty, "Developments in simulations and software for a near-infrared precision radial velocity spectrograph," Proceedings of the SPIE, Vol. 9152 (2014)

R. Terrien, S. Fleming, S. Mahadevan, R. Deshpande, G. Feiden, C. Bender, L. Ramsey, "The Metallicity of the CM Draconis System," The Astrophysical Journal Letters, Vol. 760, L9 (2012)

R. Terrien, S. Mahadevan, C. Bender, R. Deshpande, L. Ramsey, J. Bochanski, "An H-band Spectroscopic Metallicity Calibration for M Dwarfs," The Astrophysical Journal Letters, Vol. 747, L38 (2012)

Service & Outreach

JOURNAL REFEREE, the Astrophysical Journal, the Astronomical Journal

2018- Carleton College Observatory Open Houses

2009-2015 VOLUNTEER FOR PENN STATE OBSERVATORY OPEN HOUSES AND ASTROFEST

2012-2014 INSTRUCTOR, PENN STATE WORKSHOPS IN ASTRONOMY AND ASTROBIOLOGY

2012,2014 VOLUNTEER FOR USA SCIENCE & ENGINEERING FESTIVAL, Washington, DC

Selected Talks & Posters

2018 THE MEASUREMENT OF M DWARF FE AND Ti ABUNDANCES WITH HABITABLE ZONE PLANET FINDER SPECTRA
Poster Presentation, Cool Stars 20 conference, Boston, MA.

2018 LESSONS LEARNED FROM FIVE YEARS OF STUDENT SELF-DIRECTED EXPERIMENTAL PROJECTS IN THE ADVANCED LAB
Poster Presentation w/ M. Eblen-Zayas, Beyond the First Year conference, Baltimore, MD

- 2018 FABRY-PÉROT ETALON CALIBRATOR FOR THE HABITABLE ZONE PLANET FINDER
Poster Presentation, SPIE Astronomical Telescopes and Instrumentation, Austin, TX
- 2017 LASER FREQUENCY COMBS FOR EXOPLANET DETECTION
Invited talk, Extremely Precise Radial Velocities III Conference, State College, PA
- 2016 CHALLENGES OF PRECISE RV MEASUREMENTS FOR EXOPLANET DISCOVERY
Monthly seminar for the Optical Frequency Measurements group at NIST

Successful Observing and Instrumentation Proposals

- 2018 15 HOURS ON THE HOBBY-EBERLY TELESCOPE HPF SPECTROGRAPH
- 2016-2017 63 HOURS ON THE HOBBY-EBERLY TELESCOPE LRS-2 SPECTROGRAPH
- 2016- COLLABORATOR ON NASA/NSF GRANT (\$9M) FOR THE NEID SPECTROMETER
- 2011- COLLABORATOR ON NSF-MRI GRANT (\$3M) FOR THE HABITABLE ZONE PLANET FINDER (HPF)
- 2010-2013 ~250 HOURS ON THE NASA INFRARED TELESCOPE FACILITY - SPEX SPECTROGRAPH
- 2010-2013 ~6000 FIBER-HOURS ON SLOAN DIGITAL SKY SURVEY - APOGEE SPECTROGRAPH