

Curriculum Vitae: Ryan Challener

Education:

- University of Rochester, Rochester, New York BS Physics and Astronomy 2014
University of Rochester, Rochester, New York BA Mathematics 2014
PhD Student, University of Central Florida, Orlando, Florida 2014 - present

Accepted Publications:

- Hardy, R. A., J. Harrington, M. R. Hardin, N. Madhusudhan, T. J. Loredo, R. C. Challener, A. S. D. Foster, P. E. Cubillos, and J. Blecic, The Atmosphere and Interior Structure of HAT-P-13b from Spitzer Secondary Eclipses, *ArXiv e-prints*, 2017. [1701.00828](#).

Conference Participation:

- Blecic, J., J. Harrington, P. Cubillos, O. Bowman, P. Rojo, M. Stemm, N. B. Lust, R. Challener, A. J. Foster, A. S. Foster, S. D. Blumenthal, and D. Bruce, Bayesian Atmospheric Radiative Transfer (BART) Code and Application to WASP-43b, in *American Astronomical Society Meeting Abstracts*, vol. 227 of *American Astronomical Society Meeting Abstracts*, p. 212.02, 2016.
- Blumenthal, S. D., J. Harrington, A. Mandell, E. Hébrard, O. Venot, P. E. Cubillos, and R. C. Challener, Exploring equilibrium chemistry for hot exoplanets, *DPS* **47**, #504.03, 2015.
- Blumenthal, S. D., J. Harrington, A. Mandell, E. Hébrard, O. Venot, P. E. Cubillos, J. Blecic, and R. C. Challener, Exploring chemical equilibrium in hot Jovians, *AAS* **227**, #128.02, 2016.
- Challener, R. C., J. Harrington, J. Garland, P. E. Cubillos, J. Blecic, and B. Smalley, Analysis of secondary eclipse observations of exoplanet WASP-34b, *DPS* **46**, #210.13, 2014.
- Challener, R. C., J. Harrington, J. Garland, P. E. Cubillos, J. Blecic, and B. Smalley, Analysis of secondary eclipse observations of exoplanet WASP-34b, *AAS* **225**, #257.06, 2015b.
- Challener, R. C., J. Harrington, P. E. Cubillos, J. Garland, A. S. D. Foster, J. Blecic, A. J. Foster, and B. Smalley, Secondary eclipse observations and the atmosphere of exoplanet WASP-34b, *DPS* **47**, #416.05, 2015a.
- Challener, R. C., J. Harrington, P. E. Cubillos, J. Garland, A. S. D. Foster, J. Blecic, A. J. Foster, and B. Smalley, Constraining the atmosphere of exoplanet WASP-34b, *AAS* **227**, #212.03, 2016.
- Challener, R. C., J. Harrington, P. Cubillos, A. S. Foster, D. Deming, and WASP Consortium, Comparison of BiLinearly Interpolated Subpixel Sensitivity Mapping and Pixel-Level Decorrelation, in *AAS/Division for Planetary Sciences Meeting Abstracts*, vol. 48 of *AAS/Division for Planetary Sciences Meeting Abstracts*, p. 122.17, 2016.
- DeLarme, E., J. Harrington, and R. C. Challener, Study of the Retrieval Problem with BART, in *AAS/Division for Planetary Sciences Meeting Abstracts*, vol. 48 of *AAS/Division for Planetary Sciences Meeting Abstracts*, p. 122.07, 2016.
- Foster, A. S. D., J. Harrington, P. E. Cubillos, J. Blecic, R. C. Challener, A. J. Foster, and J. Garland, Atmospheric, orbital and secondary eclipse analysis of HAT-P-30-WASP-51b, *AAS* **227**, #212.05, 2016.
- Garland, J., J. Harrington, P. E. Cubillos, J. Blecic, A. S. D. Foster, M. O. Bowman, and P. F. L. Maxted, Observation and analysis of secondary eclipses of WASP-32b, *DPS* **47**, #416.04, 2015.

Harrington, J., P. E. Cubillos, J. Blečić, R. C. Challener, P. M. Rojo, N. B. Lust, M. O. Bowman, S. D. Blumenthal, A. S. D. Foster, and A. J. Foster, WASP-12b according to the Bayesian Atmospheric Radiative Transfer (BART) code, *DPS* **47**, #504.06, 2015.

Harrington, J., P. Cubillos, J. Blečić, R. Challener, P. Rojo, N. B. Lust, O. Bowman, S. D. Blumenthal, A. S. D. Foster, A. J. Foster, M. Stemm, and D. Bruce, A Random Walk on WASP-12b with the Bayesian Atmospheric Radiative Transfer (BART) Code, in *American Astronomical Society Meeting Abstracts*, vol. 227 of *American Astronomical Society Meeting Abstracts*, p. 212.01, 2016b.

Harrington, J., R. Challener, E. DeLarme, P. Cubillos, J. Blečić, A. Foster, and J. Garland, Tests of Exoplanet Atmospheric Radiative Transfer Codes, in *AAS/Division for Planetary Sciences Meeting Abstracts*, vol. 48 of *AAS/Division for Planetary Sciences Meeting Abstracts*, p. 212.05, 2016a.

McIntyre, K. J., J. Harrington, R. C. Challener, M. R. Hardin, O. O. Bowman, A. S. D. Foster, M. Lenius, J. D. Hartman, G. Bakos, J. Blečić, P. Cubillos, R. Ariston Hardy, and A. Cameron, A Bayesian Atmospheric Retrieval Performed on HAT-P-16b and WASP-11b/HAT-P-10b, in *AAS/Division for Planetary Sciences Meeting Abstracts*, vol. 48 of *AAS/Division for Planetary Sciences Meeting Abstracts*, p. 212.07, 2016.

Research Experience:

University of Rochester, 2013 - 2014. Worked on mineralogy of protoplanetary disks with William Forrest. Responsible for correcting for telescopic pointing errors and reddening. Presented a poster in summer 2013.

University of Central Florida, 2014 - present. Performed several eclipse analyses (see publications and conference participation). Bayesian Atmospheric Radiative Transfer (BART) code developer. Worked on implementation of new features and improvements to current functions. Lead author on code documentation.

Teaching Experience:

University of Central Florida, Fall 2016. Teaching assistant for Advanced Astronomical Data Analysis. Worked one-on-one with students to teach good coding and analysis practices. Occasionally gave lectures.

University of Central Florida, Spring 2017. Teaching assistant for Introduction to Numerical Computing, a beginner-level class to teach coding application for scientists and engineers.

Summer Schools:

University of Rochester, 2013. Research Experience for Undergraduates. Worked with William Forrest (see above).

Cornell University, July 2014. Two weeks spent with Tom Loredó learning about Bayesian statistics and its application to astrophysics research.

California Institute of Technology, July 2015. Sagan Summer Workshop. Learned about various fields in exoplanet research. Applied numerical methods to planet formation and presented findings from the week.

Leadership Experience:

University of Rochester, 2012 - 2014. Co-President and co-founder of Rochester Gaming. Helped to grow the club to several hundred members. Organized events and competitions for the members.

Computer Expertise:

- Proficient in Python, IDL, and C programming languages.
- Experience with open-source development practices and git use.
- Built my own pc.

Relevant Coursework:

MAP 6469, Bayesian Analysis and Approximation Theory, Fall 2015. Studied Bayesian methods. Led a project investigating the validity of pixel-level decorrelation as a method of modeling secondary eclipse data. This work is still ongoing outside of coursework.

AST 5765, Advanced Astronomical Data Analysis, Fall 2014.

AST 5165, Planetary Atmospheres, Spring 2016.