

Timothy Carleton

Curriculum Vitae

Academic Positions

2018–current **Postdoctoral Fellow**, *University of Missouri*, Columbia, MO.

Education

- 2018 **Ph.D., Physics**, *University of California, Irvine*, Irvine, CA, 3.755.
2014 **M.S., Physics**, *University of California, Irvine*, Irvine, CA, 3.755.
2012 **B.S., Physics and Astronomy**, *University of Arizona*, Tucson, AZ, 3.585.

Research Interest

- Ultra-Diffuse Galaxies
- Star formation in $z \simeq 1$ galaxies
- The influence of environment on star-formation activity and morphology

Research Experience

- 2016–2018 **The Origins of Ultra-Diffuse Galaxies**, *Manoj Kaplinghat*.
Testing the hypothesis that severely stripped dark matter halos can produce Ultra-Diffuse Galaxies
- 2013–2016 **The CO-H₂ conversion factor in $z > 1$ galaxies**, *Michael Cooper*.
Studying the CO-H₂ conversion factor in galaxies at $z > 1$ with existing Hubble Space Telescope and IRAM Plateau de Bure observations
- 2010–2012 **Convection in Stars**, *Casey Meakin*.
Compared high precision observations of transiting binary stars to thousands of generated models to study stellar surface convection
- 2011 **Polarimetry of quasars**, *Paul Smith*.
Developed a tool for analyzing polarized spectra in IDL, and used this tool to refute a claim that the angle of optical polarization of the Active Galactic Nuclei 3C279 flipped over an 8 day period
- 2010 **Buckyballs in Space**, *J. D. Smith*.
Analyzed spectra from the Spitzer Space Telescope that was used to discover buckyballs in two reflection nebulae

Teaching/Outreach

- 2014–2018 **Graduate Outreach Coordinator**, *UCI Observatory*.
Hosted public nights at the observatory; scheduled over 50 events with local schools and organizations with programming tailored to meet specific needs
- 2014, 2016, 2017 **COSMOS Teaching Assistant**, *University of California, Irvine*.
2017 Led high school students through a summer research project
- 2017 **Competitive Edge Mentor**, *University of California, Irvine*.
Mentored an incoming physics graduate student during the summer before his first year
- 2012–2016 **Teaching Assistant**, *University of California, Irvine*.
Led discussions and labs for introductory physics and astronomy classes; provided weekly tutoring sessions
- 2014 **Educator Consultant**, *ESCAPE Summer Institute in Earth Science*.
Assisted K-12 educators in the development of new STEM lessons
- 2012 **Public Telescope Operator**, *Raymond E. White Telescope*.
Observed and annotated astronomical objects to general education students and the public
- 2011–2012 **Astronomy Club Mentor**, *University of Arizona Astronomy Club*.
Mentored freshmen and sophomores through a project observing an exoplanet

Honors and Awards

- 2015–2017 **ARCS Scholar**, *University of California, Irvine*.
- 2011–2012 **Astronomy Department Scholarship**, *Steward Observatory*.
- 2009–2011 **Galileo Circle Scholarship**, *University of Arizona*.

Talks

- [1] *The Origins of Ultra-Diffuse Galaxies*. CANDELS Meeting: October 24, 2018.
- [2] *Tidally Disrupted Halos as the Hosts of Ultra-Diffuse Galaxies*. GalFRESCA: August 25, 2017.
- [3] *Searching for Ultra-Diffuse Galaxies in the Bolshoi Simulation*. Santa Cruz Galaxy Workshop: August 10, 2017.
- [4] *The CO-H₂ Conversion Factor at $z < 1.5$* . Multi-Scale Star Formation Conference: April 5, 2017.
- [5] *Star Formation in Young Galaxies*. ARCS Research Symposium: March 16, 2017.
- [6] *The Sky Tonight*. ASUCI Student Night at the UCI Observatory: May 22, 2013.
- [7] *Meteor Showers and Solar System Debris*. Perseid Meteor Shower Visitor Night at the UCI Observatory: August 11, 2013.
- [8] *Using High Precision Stellar Observations to Constrain the Physics of Convection in Stars*. Arizona Space Grant Statewide Symposium: April 9, 2011.

Publications

- [1] *The Formation of Ultra Diffuse Galaxies in Cored Dark Matter Halos Through Tidal Stripping*. 2018. **Carleton** et al. arXiv:180506896C.
- [2] *PHIBSS: exploring the dependence of the CO-H2 conversion factor on total mass surface density at $z < 1.5$* . 2017. **Carleton** et al. MNRAS, 476, 4886.
- [3] *Ground-based near-UV observations of 15 transiting exoplanets: constraints on their atmospheres and no evidence for asymmetrical transits*. 2016. Turner et al. MNRAS, 459, 789.
- [4] *Near-UV and optical observations of the transiting exoplanet TrES-3b*. 2013. Turner et al. MNRAS, 428, 678.
- [5] *Variability of the blazar 4C 38.41 (B3 1633+382) from GHz frequencies to GeV energies*. 2012. Raiteri et al. Astronomy and Astrophysics, 545, A48.
- [6] *The Unusual Variable Hot B Subdwarf LS IV-14°116*. 2011. Green, E. M., Guvenen, B., O'Malley, C. J., O'Connell, C. J., Baringer, B. P., Villareal, A. S., **Carleton, T. M.**, Fontaine, G., Brassard, P., Charpinet, S. ApJ, 734, 59.
- [7] *C₆₀ in reflection nebulae*. 2010. Sellgren, K., Werner, M. W., Ingalls, J. G., Smith, J. D. T., **Carleton, T. M.**, Joblin, C. ApJ Letters, 722, L54..