Timothy Carleton

Curriculum Vitae

Education

2012–Current **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

- Galaxy evolution, Star formation in z≈1 galaxies, Gas content in galaxies, Environmental dependence of star formation

Experience

Research

2016–current **Hα emission in quiescent Galaxies**, *Michael Cooper*.
Investigating the nature of Hα emission in UVJ quiescent galaxies in the 3D-HST survey

2016–current **Satellite quenching at $z = 1$**, *Michael Cooper*.
Statistically measuring the environmental quenching timescale at $z = 1$ using the 3D-HST and UltraVista Surveys

2016–current **The Origins of Ultra-Diffuse Galaxies**, *Manoj Kaplinghat*.
Testing the hypothesis that severly stripped dark matter halos can produce Ultra-Diffuse Galaxies

2013–2016 **The CO-H_2 conversion factor in z=1 galaxies**, *Michael Cooper*.
Studying the CO-H2 conversion factor in galaxies at redshift 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

2011–2012 **Magnetic Fields of Exoplanets**, *University of Arizona Astronomy Club*.
Performed and analyzed observations of an exoplanet transit to find the absence of an expected magnetic field

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

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2010 **Buckyballs in Space**, *J. D. Smith*.
Analyzed spectra from the Spitzer Space Telescope that was used to discover buckyballs in two reflection nebulae

2009–2010 **Globular Clusters in Galaxies**, *Dennis Zaritsky*.
Tested the correlation between a galaxy's globular cluster specific frequency and its position on the fundamental manifold

Teaching/Outreach

2014–Current **Graduate Outreach Coordinator**, *UCI Observatory*.
Hosted bimonthly public nights at the observatory; scheduled events with local schools, organizations, and university classes with tailored programming to meet specific needs

2012–2016 **Teaching Assistant**, *University of California, Irvine*.
Led discussions and labs for introductory Physics and Astronomy classes; provided weekly tutoring sessions

2014, 2016 **COSMOS Teaching Assistant**, *University of California, Irvine*.
Led High School Students through a astronomy project

2014 **Educator Consultant**, *ESCAPE Summer Institute in Earth Science*.
Assisted K-12 educators developing 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

2010 **SALT Tutor**, *Strategic Alternative Learning Techniques Tutor*.
Provided math and science tutoring for students with learning disabilities

Honors and Awards

2015–2017 **ARCS Scholar**, *University of California, Irvine*.

2011–2012 **Astronomy Department Scholarship**, *Steward Observatory*.

2008–2012 **Arizona Excellence Scholarship**, *University of Arizona*.

2009–2011 **Galileo Circle Scholarship**, *University of Arizona*.

2008–2009 **Deans List**, *University of Arizona*.

2008 **Eagle Scout**.

Leadership

2014 **UCI Observatory Graduate Outreach Coordinator**, *UC Irvine*.

2011 **Astronomy Club President**, *University of Arizona*.

Publications

[1] *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.

[2] *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.

[3] *Near-UV and optical observations of the transiting exoplanet TrES-3b.* 2013. Turner et al. MNRAS, 428, 678.

[4] *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.

[5] *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.

[6] *C_{60} 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..

Poster Presentations

[1] Carleton, Timothy; Cooper, M., "The CO-H_2 Conversion Factor in $z < 1.5$ Star-Forming Galaxies", presented at the ARCS Scholar Awards Dinner, Irvine, CA, March, 2016.

[2] Carleton, Timothy; Meakin, C., "Using High Precision Stellar Observations to Constrain the Physics of Convection in Stars", presented at the American Astronomical Society Meeting, Boston, MA, May, 2011.

[3] Turner, et al., "The University of Arizona Astronomy Club Observations of Transiting Extrasolar Planets TrES-3b and TrES-4b", presented at the American Astronomical Society Meeting, Boston, MA, May, 2011.

Talks

[1] *The CO-H2 Conversion Factor at $z < 1.5$.* Multi-Scale Star Formation Conference: April 5, 2017.

[2] *Star Formation in Young Galaxies.* ARCS Research Symposium: March 16, 2017 .

[3] *The Sky Tonight.* ASUCI Student Night at the UCI Observatory: May 22, 2013.

[4] *Meteor Showers and Solar System Debris.* Perseid Meteor Shower Visitor Night at the UCI Observatory: August 11, 2013.

[5] *Using High Precision Stellar Observations to Constrain the Physics of Convection in Stars.* Arizona Space Grant Statewide Symposium: April 9, 2011.