

Teal, Dillon James — Astrophysicist; Software Engineer; Fiber Artist

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Education

B.S. Physics (Astrophysics) (*cum laude*) with a Minor in Pure Mathematics, University of California, Santa Cruz, Winter 2015

M.S. Astronomy, University of Maryland, College Park, 2020

PhD Candidate, University of Maryland, College Park, 2021

Teaching Experience

CalTeach Internship, September-December 2015. Lesson planning and in-class experience teaching Calculus and advanced Algebra.

2 Semesters teaching ASTR101 (Introductory Astronomy with a laboratory component) at the University of Maryland

1 Semester teaching Introductory Calculus at the University of Maryland

Employment

Student researcher, University of California, Santa Cruz, June-September 2014

Summer Intern/Remote contractor, NASA Goddard Space Flight Center, June 2015-December 2016

Junior Specialist, University of California, Santa Cruz, January 2016-December 2016

Research Contractor, NASA Goddard Space Flight Center, January 2017-Present

Teaching Assistant, University of Maryland, August 2018-December 2020

Graduate Assistant, University of Maryland, December 2020-present

Publications

Refereed Publications

D. J. Teal; Eliza M.-R. Kempton, Sandra Bastelberger, Allison Youngblood, Giada Arney. *Effects of UV stellar spectral uncertainty on the chemistry of terrestrial atmospheres*. Accepted January 2022 in the *Astrophysical Journal*.

Mark S. Marley; Didier Saumon; Channon Visscher; Roxana Lupu; Richard Freedman; Caroline Morley; Jonathan J. Fortney; Christopher Seay; Adam J. R. W. Smith; **D. J. Teal**; Ruoyan Wang. *The Sonora brown dwarf atmosphere and evolution models: I. Model Descriptions and Application to cloudless atmospheres in rainout chemical equilibrium*. October 2021.

Melbourne, Katherine; Youngblood, Allison; France, Kevin; ...; **Teal, D. J.**; Tian, Feng; Tilipman, Dennis; Vieytes, Mariela. *Estimating the Ultraviolet Emission of M Dwarfs with Exoplanets from Ca II and H α* . December 2020

Kopparapu, Ravi K.; Hébrard, Eric; Belikov, Rus; Stark, Chris; Domagal-Goldman, Shawn; Mandell, Avi; **Teal, Dillon J.** *Exoplanet Classification and Yield Estimates for Direct Imaging Missions*. Submitted Fall 2017.

Morley, Caroline V.; Knutson, Heather; Line, Michael; Fortney, Jonathan J.; Thorngren, Daniel; Marley, Mark S.; **Teal, Dillon J.**; Lupu, Roxana. *Forward and inverse modeling of the emission and transmission spectrum of GJ 436b; investigating metal enrichment, tidal heating, and clouds*. February 2017.

White Papers

Fortney, Jonathan J.; Robinson, Tyler D.; Domagal-Goldman, Shawn; Skålid Amundsen, David; ...; **Teal, Dillon**; ... *The Need for Laboratory Work to Aid in The Understanding of Exoplanetary Atmospheres*. eprint arXiv:1602.06305. February 2016.

Presentations and Talks

Effects of stellar UV uncertainty on Earth-like atmospheres. November 6, 2019. Given to the SEEC "Rocky Worlds in the era of JWST" Symposium. A discussion of the photochemical differences for planets around host stars with uncertain UV spectra.

Invited Talks

Using local and web-based UIs to increase visibility and potential research. November 13, 2017. Given to a session of the Habitable Worlds 2017 meeting in Laramie, WY. Examination of benefits obtained by investing in different types of user interfaces for complicated models.

Exoplanets: Worlds out of this world. March 25, 2014. Given to the Riverside STEM Academy. Elementary overview of exoplanet observation methods for K-12 students.

Theses

Teal, Dillon J. *Effects of Stellar UV Irradiation on the Chemistry of Earth-like atmospheres*. University of Maryland, College Park. Submitted April 20th, 2020, accepted May 6th, 2020.

Teal, Dillon J. *Retrieving molecular abundances in the presence of hydrocarbon hazes on Saturn's moon Titan*. University of California, Santa Cruz. Submitted November 25th, 2015, accepted December 7th, 2015.

Awards

Philip E. Angerhofer Outstanding Teaching Assistant Award (University of Maryland, College Park Astronomy Department)

Proficiencies and Skills

Programming and Development:

Python, 10 years

Fortran, 8 years

C, 4 years

C++, 2 years

Packages and environments: numpy, pandas, matplotlib, scipy, astropy, Docker

Other Skills:

Excel, 10 years

L^AT_EX, 8 years

HTML/CSS, 2 years

git, 10 years

Visual Studio, 2 years

Technical writing, academic papers and program documentation

Leadership Experience

Co-lead & Co-founder, Astronomy Community Engagement at the University of Maryland Department of Astronomy. June 2019-present

Founder, K12 Classroom Outreach Program, University of Maryland Astronomy Department, August 2019-present

Internal Vice Chair, University of California, Santa Cruz Queer Student Union (now PRISM; Student Coalition for Gender, Sex, and Sexuality). January 2013-May 2014.

Volunteer, Riverside Public Library, Eastside Branch. September 2011-June 2012.

Personal

United States Citizen.