Deryl E. Long

Department of Astronomy
University of Virginia
del6h@virginia.edu
434-924-0686

RESEARCH INTERESTS

I am in interested in studying the origins and characteristics of planetary systems through astrochemical modeling and observations.

EDUCATION

University of Virginia, Charlottesville, VA 2020 - Present
PhD Astronomy, Expected 2025
GPA: 3.93/4.0

University of Michigan, Ann Arbor, MI 2016 - 2020
B.S. Astronomy & Astrophysics, May 2020 *Highest Honors*
Minor: Gender, Race, and Nation
GPA: 3.65/4.00

RESEARCH EXPERIENCE

Department of Astronomy, University of Virginia August 2020 - Present
Advised by Prof. Ilse Cleeves

- Constraining the 2D ionization environments of protoplanetary disks.
- Utilizing the latest ALMA observations of molecular species as well as a 2D chemical code to forward model disks' chemical and physical environments.

Department of Astronomy, University of Michigan May 2019 - August 2020
Honors Thesis Research with Prof. Edwin Bergin

- Studied dust substructures in the GQ Lup system to understand planet formation in compact disks.
- Identified and characterized substructures, uncovering evidence of planet formation at Saturnian distances.

Department of Astronomy, University of Michigan September 2016 - April 2019
Undergraduate Researcher with Prof. Emily Rauscher

- Studied the atmospheric evolution of Uranus through modeling in Python and IDL.
- Developed Python tool coupling 3D global circulation models and radiative transfer to model atmospheres of non-transiting hot Jupiters.

PUBLICATIONS AND PRESENTATIONS

1. **Long, D. E.**, Zhang, K., Teague, R., Bergin, E. 2020 ApJL 895 L46
   Hints of a Population of Solar System Analog Planets from ALMA
2. **Long, D. E.**, Cleeves, L.I.
   Fasten Your Seatbelts: Constraining Ionization in a Turbulent Disk
   Oral Presentation, AAS 238th Meeting, Virtual. June 2021.
3. Malsky, I., Rauscher, E., Kempton, E. -M.R., Roman, M., **Long, D. E.**, Harada, C. K. 2021 ApJ 923 62
   Modeling the high-resolution emission spectra of clear and cloudy non-transiting hot Jupiters
4. **Long, D. E.**, Zhang, K., Teague, R., Bergin, E.
   Hints of a Population of Solar System Analog Planets from ALMA
   Poster Presentation, AAS 235rd Meeting, Honolulu, HI. January 2020.
5. **Long, D.E.**, Rauscher, E., Kempton, E.
   Hidden Gems: Investigating Atmospheric Doppler Signatures in High Resolution Emission Spectra of Non-Transiting Hot Jupiters
   Poster Presentation, AAS 233rd Meeting, Seattle, WA. January 2019.
   Poster Presentation, Astronomy Undergraduate Symposium, University of Michigan, Ann Arbor, MI. April 2019.

6. **Long, D.E.**, Rauscher, E., Roman, M.
Trying to Explain Why a Tilted Planet is So Cold
Poster Presentation, Astronomy Undergraduate Symposium, University of Michigan, Ann Arbor, MI. April 2017.

WORK EXPERIENCE

Museum of Natural History, University of Michigan 2018 - 2020
Docent, Planetarium
· Developed and presented planetarium shows for the public, with the aim of making scientific concepts accessible and exciting for all audiences.

Michigan Research and Discovery Scholars, University of Michigan 2018 - 2019
Resident Advisor (RA)
· Fostered an inclusive residential community through sustained engagement with residents.
· Coordinated and facilitated community events, with a focus on wellness and social justice.

OUTREACH AND ADVOCACY

Graduate Community Advocate 2021 - Present
Department of Astronomy, University of Virginia
· Promoting wellness of the graduate community through advocacy, peer support, and shared resources.

Astro LGBTQ+ Lunch Series 2021 - Present
Department of Astronomy, University of Virginia
· Creating a safe and supportive meeting space for LGBTQ+ astronomers in our community.

Diversity, Equity, and Inclusion (DEI) Committee 2021 - Present
Member; Department of Astronomy, University of Virginia

Dark Skies, Bright Kids 2020 - Present
Member; Department of Astronomy, University of Virginia
· Designing and implementing outreach activities for local elementary school students.

Astronomy Mentoring Program 2020 - Present
Mentor; Department of Astronomy, University of Virginia

Student Astronomical Society, University of Michigan
Advocacy Chair 2019 - 2020
Member 2016 - 2020

Diversity, Equity, and Inclusion (DEI) Committee 2017 - 2020
Member; Department of Astronomy, University of Michigan

TEACHING EXPERIENCE

Teaching Assistant January 2021 - May 2021
Department of Astronomy, University of Virginia
· Astronomy 1210: Introduction to the Sky and the Solar System
· Astronomy 1220: Introduction to the Stars, Galaxies, and the Universe

Learning Assistant, Curriculum Development January 2020 - May 2020
Department of Astronomy, University of Michigan
· Astronomy 404: Exoplanets

OBSERVING PROPOSALS

Atacama Large Millimeter/submillimeter Array (ALMA) Cycle 8
· PI "Constraining Midplane Ionization With H_2D^+ in TW Hya" (Awarded 13.5 hrs)
· CoI "Constraining Ionization in a Diverse Sample of Protoplanetary Disks" (Awarded 14.7 hrs)

SKILLS

Software: Python, Bash/Unix, CASA, Latex, LIME Radiative Transfer
Spoken Languages: English (native), Russian (intermediate)

FELLOWSHIPS AND AWARDS

- Virginia Space Grant Consortium Graduate Fellowship 2022
- National Science Foundation Graduate Research Fellowship 2022
  Honorable Mention
- Comparative Literature First Year Essay Prize 2018
  From the Basement Up: Delegitimizing White Property Rights in Invisible Man
- University of Michigan Honors 2017, 2020