

Deryl E. Long

Department of Astronomy
University of Virginia

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EDUCATION

University of Virginia, Charlottesville, VA 2020 - Present
PhD Astronomy, Expected 2026
M.S. Astronomy, May 2022

University of Michigan, Ann Arbor, MI 2016 - 2020
B.S. Astronomy & Astrophysics, May 2020
Minor: Gender, Race, and Nation

RESEARCH EXPERIENCE

Department of Astronomy, University of Virginia August 2020 - Present
Advised by Prof. Ilse Cleeves
· Studying the chemical and physical evolution of protoplanetary disks using astrochemical models and observations from ALMA and JWST, with a focus on the ionizing properties and influence of the central star and environment.

Department of Astronomy, University of Michigan May 2019 - August 2020
Honors Thesis Research with Prof. Edwin Bergin
· Identified and characterized substructures in a compact protoplanetary disk, revealing evidence of planet formation at Saturnian distances.

Department of Astronomy, University of Michigan September 2016 - April 2019
Undergraduate Researcher with Prof. Emily Rauscher
· Developed Python tool coupling 3D global circulation models and radiative transfer to model atmospheres of non-transiting hot Jupiters.

FELLOWSHIPS AND AWARDS

- Virginia Space Grant Consortium Graduate Fellowship, 2022, 2023
- Page Award, University of Virginia, Queer Alumni Network, 2023
- National Science Foundation Graduate Research Fellowship, *Honorable Mention*, 2022
- University of Michigan Comparative Literature Essay Prize, *From the Basement Up: Delegitimizing White Property Rights in Invisible Man*, 2018
- University of Michigan Honors, 2017, 2020

PUBLICATIONS

1. **Long, D. E.**, Cleeves, L.I., et al., 2024 ApJ 972 88
Exploring the Complex Ionization Environment of the Turbulent DM Tau Disk
2. Zhang, S., Kalscheur, M., Long, F., Zhang, K., **Long, D. E.**, et. al, 2023 ApJ 952 108
Substructures in Compact Disks of the Taurus Star-forming Region
3. Malsky, I., Rauscher, E., Kempton, E., 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. 2020 ApJL 895 L46
Hints of a Population of Solar System Analog Planets from ALMA

ACCEPTED PROPOSALS

- Atacama Large Millimeter/submillimeter Array (ALMA)**
- PI “Disk Ionization Survey to Constrain exoplanet Origins (DISCO)” (Cycle 10, 34.1 hrs)
 - PI “Constraining Midplane Ionization With H₂D⁺ in TW Hya” (Cycle 8, 13.5 hrs)
 - CoI “Constraining Ionization in a Diverse Sample of Protoplanetary Disks” (Cycle 8, 14.7 hrs)

James Webb Space Telescope (JWST)

- CoI “The volatile inventory of the terrestrial planet forming zone: a study of transport from the outer to the inner disk with JWST and ALMA” (Cycle 2, 39.5 hrs)

SELECTED TALKS

- “Cosmic roller coaster: tracing the highs and lows of cosmic-ray ionization in protoplanetary disks”. Invited talk, *Cosmic Rays 3: The Salt of the Star Formation Recipe*, Florence, Italy. October 2024.
- “Mapping Ionization Across and Within Protoplanetary Disks”. *Bob Rood Symposium*, Charlottesville, Virginia. April 2024.
- “Mapping Ionization in Protoplanetary Disks”. Contributed talk, *Virginia Space Grant Consortium Student Research Conference*, Newport News, Virginia. April 2024.
- “Build a World: Predicting Planet Assembly and Composition with ALMA and JWST”. Contributed talk, *Virginia Space Grant Consortium Student Research Conference*, Newport News, Virginia. April 2023.
- “Fasten Your Seatbelts: Constraining Ionization in a Turbulent Disk”. Contributed talk, *The Astrochemical Link*, Berlin, Germany. October 2022.
- “Fasten Your Seatbelts: Constraining Ionization in a Turbulent Disk”. *Bob Rood Symposium*, Charlottesville, Virginia. April 2022.
- “Fasten Your Seatbelts: Constraining Ionization in a Turbulent Disk”. Contributed talk, *AAS 238th Meeting*, Virtual. June 2021.

POSTERS

- “Mapping Ionization Across and Within Protoplanetary Disks”. Poster Presentation, *Protostars and Planets VII*, Kyoto, Japan. April 2023.
- “Hints of a Population of Solar System Analog Planets from ALMA”. Poster Presentation, *AAS 235rd Meeting*, Honolulu, HI. January 2020.
- “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.
- “Trying to Explain Why a Tilted Planet is So Cold”. Poster Presentation, *Astronomy Undergraduate Symposium*, University of Michigan, Ann Arbor, MI. April 2017.

PROFESSIONAL SERVICE

Founder and organizer, Queer Astronomy Lunch Series (QuALS) <i>Department of Astronomy, University of Virginia</i>	2021 - Present
Elected Representative, Graduate Admissions Committee <i>Department of Astronomy, University of Virginia</i>	2023 - 2024
Member, Prospective Grad Visit Planning Committee <i>Department of Astronomy, University of Virginia</i>	2023 - 2024
Lecturer, SpectrumX Workshop <i>National Radio Astronomy Observatory</i>	2022
Graduate Community Advocate <i>Department of Astronomy, University of Virginia</i>	2021 - 2023
Member, Diversity, Equity, and Inclusion (DEI) Committee <i>Department of Astronomy, University of Virginia</i>	2021 - 2023
Member, Diversity, Equity, and Inclusion (DEI) Committee <i>Department of Astronomy, University of Michigan</i>	2017 - 2020

OUTREACH AND ADVOCACY

Dark Skies, Bright Kids <i>Department of Astronomy, University of Virginia</i>	2020 - Present
Girls Exploring the Universe <i>Department of Astronomy, University of Virginia</i>	Summer 2022, 2024
AstroPods Group Mentoring Pilot Program <i>Department of Astronomy, University of Virginia</i>	2021 - 2022
Astronomy Mentoring Program (AMP) <i>Department of Astronomy, University of Virginia</i>	2020 - Present
Student Astronomical Society, University of Michigan <i>Advocacy Chair</i>	2019 - 2020
<i>Member</i>	2016 - 2020

TEACHING EXPERIENCE

Graduate Teaching Assistant <i>Department of Astronomy, University of Virginia</i> <ul style="list-style-type: none">· Astronomy 1210: Introduction to the Sky and the Solar System· Astronomy 1220: Introduction to the Stars, Galaxies, and the Universe	January 2021 - May 2021
Undergraduate Learning Assistant, Curriculum Development <i>Department of Astronomy, University of Michigan</i> <ul style="list-style-type: none">· Astronomy 404: Exoplanets	January 2020 - May 2020

SKILLS

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