

JENNIE PAINE

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EDUCATION

- Ph.D., Astrophysics**, University of Colorado, Boulder May 2023
Thesis: *Probing the Dynamic Universe with the Motions of Stars and Galaxies*
Advisor: Prof. Jeremy Darling
- M.S., Astrophysics**, University of Colorado, Boulder Dec. 2018
- B.S., Physics**, *summa cum laude*, Virginia Tech May 2016
Minors: Astronomy and Mathematics

RESEARCH POSITIONS

- Postdoctoral Research Assistant**, University of Colorado May 2023 - Present
- NSF Graduate Research Fellow**, University of Colorado 2018 - 2023
- Graduate Research Assistant**, University of Colorado 2017 - 2023
- NSF REU Research Student**, Harvard-Smithsonian Center for Astrophysics 2015
- Undergraduate Research Assistant**, Virginia Tech 2014 - 2016

AWARDS AND HONORS

- NSF Graduate Research Fellowship 2018 - 2023
- Ben C. Parmenter Graduate Fellowship, CU Boulder Oct. 2021
- High Pass distinction on Master's Exam, CU Boulder Sept. 2018
- Chambliss Astronomy Achievement honorable mention, AAS June 2018
- Ray Mace Smith Graduate Fellowship, CU Boulder May 2018
- Sigma Xi Honor Society May 2018
- Sigma Pi Sigma Physics Honor Society April 2015
- Robert C. Richardson Scholarship, Virginia Tech Physics April 2015
- Wan-Zia Scholarship, Virginia Tech Physics April 2014
- Frank Leigh Robeson Scholarship, Virginia Tech Physics April 2013

AWARDED OBSERVING TIME

Gravity in the Galactic Center: Precise Stellar Kinematics in the Inner Parsec, Paine, J. & Darling, J., VLA, Priority grade A, 2.15 hours, **Principal Investigator**

3D Positions, Velocities, and Accelerations of SiO Masers in the Inner Parsec, Paine, J. & Darling, J., ALMA, Priority grade A, 0.9 hours, **Principal Investigator**

Co-Investigator on one other successful ALMA proposal, one VLA proposal, and one GBT proposal.

TEACHING EXPERIENCE

Graduate Instructor, University of Colorado Summer 2020
Taught ASTR 1000, The Solar System. Developed class materials for remote instruction and designed a unit on scientific literacy for non-STEM majors.

ISEE Professional Development Program Mar. - July 2019
Several month-long program on inclusive education and professional development training. Co-designed and taught an inquiry activity on buoyancy in nature for incoming freshmen at CU Boulder.

Graduate Teaching Assistant, University of Colorado Boulder Fall 2016
Instructed labs for ASTR 1000, The Solar System.

Undergraduate Teaching Assistant, Virginia Tech Fall 2013 - Spring 2015
Instructed recitations for PHYS 1055 & 1056, Introduction to Astronomy.

MENTORING, SERVICE, AND OUTREACH

Research Mentoring:

Co-advised CU Boulder undergraduate student Anna Nica Spring 2021 - Spring 2022
Co-advised CU Boulder undergraduate student Gus Santaella Fall 2019

Service:

NRAO/GBO Users Committee April. 2022 - present
Graduate Peer Mentor, CU Boulder 2017 - 2018, 2020 - 2021
Graduate Admissions Committee, CU Boulder Dec. 2019 - Feb. 2020
Graduate Curriculum and Concerns Committee, CU Boulder Aug. 2017 - Aug. 2019
Faculty Hiring Committee, CU Boulder Jan. - Mar. 2019
Comprehensive Exam Committee, CU Boulder Aug. 2018 - May 2019
CU-STARs Administrator and mentor to undergraduates Aug. 2017 - May 2018

Outreach:

Taught unit on ancient astronomy to Gifted and Talented elementary students April 2019
Astronomy Day at Sommers-Bauch Observatory volunteer April 2019
Public Observing Host at Sommers-Bausch Observatory 2016 - 2018
Organized “sidewalk astronomy” observing events at Virginia Tech 2012 - 2015

TALKS AND PRESENTATIONS

Contributed talk, IAU Symposium 380 on Cosmic Masers, remote	Mar. 2023
Invited seminar talk, NRAO TUNA Lunch Talks, Charlottesville	Jan. 2023
Contributed dissertation talk, AAS 241, Seattle	Jan. 2023
Invited seminar talk, UCLA Galactic Center Group, remote	Sept. 2022
iPoster, AAS 237 virtual meeting	Jan. 2021
Seminar talk, CU Boulder Black Holes Group	Feb. 2020
Poster, AAS 235, Honolulu	Jan. 2020
Seminar talk, CU Boulder SALT Lunch Talks	Aug. 2018
Poster, AAS 232, Denver	June 2018
Poster, AAS 225, Seattle	Jan. 2015

PUBLICATIONS

First author works in preparation: 1 publication, 1 research note, and 1 conference proceeding

REFEREED PUBLICATIONS

First Author:

- [1] *3D Kinematics of Stellar SiO Masers in the Galactic Center*. **Paine, J.** & Darling, J. 2022, ApJ, 927, 181
- [2] *Secular Extragalactic Parallax: Measurement Methods and Predictions for Gaia*. **Paine, J.**, Darling, J., Graziani, R., & Courtois, H. 2020, ApJ, 890, 146
- [3] *The Gaia-WISE Extragalactic Astrometric Catalog*. **Paine, J.**, Darling, J., & Truebenbach, A. 2018, ApJS, 236, 2

Co-Author:

- [1] *An Updated Reference Frame for the Galactic Inner Parsec*. Darling, J., **Paine, J.**, Reid, M.J., Menten, K.M., Sakai, S., & Ghez, A. 2023, ApJ, submitted
- [2] *Astrometric Limits on the Stochastic Gravitational Wave Background*. Darling, J., Truebenbach, A., & **Paine, J.** 2018, ApJS, 861, 113
- [3] *Extragalactic Proper Motions: Gravitational Waves and Cosmology*. Darling, J. Truebenbach, A., & **Paine, J.** 2018, refereed ngVLA Science Book chapter
- [4] *The Geometry of the Infrared and X-Ray Obscurer in a Dusty Hyperluminous Quasar*. Farrah, D. et al. [including **Paine, J.**] 2016, ApJ, 831, 76

NON-REFEREED PUBLICATIONS

- [1] *Extragalactic Proper Motions: Gravitational Waves and Cosmology*. Darling, J. Truebenbach, A., & **Paine, J.** 2019, Astro2020 Decadal Survey