CURRICULUM VITAE
Lily Larkins

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Research Interests: *My goal is to continue my passion and pursuit of astrobiology research, ultimately obtaining my Ph.D. in the field. I am particularly interested in using observational astronomy for the detection and characterization of exoplanets, as well as the habitability of exoplanets. My previous research experience focuses on the thermodynamic modeling of rocky planet interiors.*

EDUCATION

University of California, Santa Cruz - B.S. in Astrophysics
GPA: 3.37

RESEARCH EXPERIENCE

Undergraduate Research Assistant May 2024 - Current
University of California, Santa Cruz | Advisor: Dr. Artem Aguichine

- Developed and tested Equations of State (EOS) for molten mantle composition.
- Implemented new EOS into the existing Fortran interior structure model to predict new planetary radii.
- Draft in prep for publication in a peer reviewed journal.

Undergraduate Research Assistant January 2024 - June 2024
University of California, Santa Cruz | Advisor: Dr. Francis Nimmo

- Digitized and scaled lunar magnetic field data from Lunokhod 2 rover mission.
- Extrapolated measurements with Python to match lunar coordinates, contributing to comparative lunar studies.

Undergraduate Observational Experience September 2024 - December 2024
University of California, Santa Cruz | Professor: Rebecca Jensen-Clem

- Remote observing experience on the Nickel telescope located at Lick Observatory on Mt. Hamilton.
- In-person observing experience on the Shane telescope, also located at Lick Observatory.

- ❖ Gained experience using the CCD Camera on the Nickel and the spectrograph on the Shane.

TEACHING AND OUTREACH EXPERIENCE

Wyoming Stargazing - Jackson, Wyoming August 2025 - Current
Stargazing Leader & STEM Instructor

- ❖ Lead nightly stargazing programs, guiding the public in observational astronomy, telescope use, and celestial navigation.
- ❖ Served as a STEM Instructor in local schools, tutoring AVID students in physics, astronomy, and mathematics.
- ❖ Promoted science outreach and education by bridging classroom learning with real-world astronomical experiences.

AWARDED POSITIONS

Postbaccalaureate Research Assistant August 2025 – August 2026
(Position on hold due to 2025 NASA funding constraints)
NASA SURA CRESST II, Goddard Space Flight Center | Advisor: Dr. Avi Mandell

- ❖ Selected for funded research under Dr. Mandell on exoplanet spectroscopy modeling with the Planetary Spectrum Generator.
- ❖ Work planned on an open-access exoplanet database (EMAC). Position paused due to funding cuts.

Accepted for Graduate Program
(Deferred due to national funding constraints)
Florida Tech University, Space Sciences Program

SKILLS

- ❖ Programming: Python (NumPy, SciPy, Matplotlib), Fortran (basic).
- ❖ Data Analysis: Spectroscopic reduction, EOS modeling, photometric extraction.
- ❖ Software: Microsoft Office, Google Suite.

MEMBERSHIPS

- ❖ Society of Physics Students at UC Santa Cruz
- ❖ Woman in Physics and Astrophysics at UC Santa Cruz
- ❖ American Astronomical Society
- ❖ Project Management Institute (PMI)

PUBLICATIONS

- Larkins, L., Aguichine, A. Thermal effects on the bulk density of rocky planets: the Earth-like composition band. (in prep.)

ORAL SCIENTIFIC CONTRIBUTIONS

- Contributed talk at the Other Worlds Laboratory Workshop "Modeling Interiors of Molten Rocky Exoplanets" Santa Cruz, California USA, 100 participants — July 2025

OTHER COMMUNITY INVOLVEMENT

- Regular Attendee, UCSC Planetary Science Research Meetings — Fall 2024 - Spring 2025