

KRIS LAFERRIERE

Curriculum Vitae
klaferri@purdue.edu

EDUCATION

Purdue University, West Lafayette, IN Expected: May 2025
Department of Earth, Atmospheric, and Planetary Science, PhD in Planetary Science
Thesis: Mars Spiral Polar Troughs as Paleoclimate Recorders

University of Maryland, College Park, MD May 2020
B.S. in Astronomy (High Honors) and Physics GPA : 3.46
Honors Thesis: Exploring Spatial and Temporal Changes in Hydration across the Lunar South Pole

RESEARCH EXPERIENCE

Purdue University, Department of Earth, Atmospheric, and Planetary Science Fall 2020 - Present
PhD
Advisor: Dr. Ali Bramson
Project Title: Mapping Mars' Polar Spiral Trough Migration Paths with 3D Radar from SHARAD

University of Maryland, Department of Astronomy Fall 2019 - Fall 2020
Academic Honors Thesis
Advisor: Dr. Lori Feaga and Dr. Jessica Sunshine
Project Title: Determining the evolution of water signatures from the Lunar South Pole utilizing Deep Impact HRI-IR

NASA Marshall Space Flight Center Summer 2019
Meteoroid Environment Office (Code EV44)
Advisor: Dr. Althea Moorehead
Project Title: Survey of low speed meteor showers using NASA All Sky Fireball Network

University of Maryland, Department of Astronomy Spring 2018 - Spring 2019
Advisor: Dr. Lori Feaga and Dr. Jessica Sunshine
Project Title: Exploring the morphology of the CO₂ and dust coma of Comet 9P with DCT and Spitzer-IRAC

PAPERS

- 1 **Laferriere, K. L.**, Sunshine, J. M., Feaga, L. M., Farnham, T., "Spatial and Temporal Variation of 3 micron hydration feature across the Lunar South Pole", 2022, *in prep.*
- 2 **Laferriere, K. L.**, Bramson, A. M., Smith, I. B., "Mars' North Polar Spiral Trough Migration Paths 3D Radar Mapping and Interpretations", 2022, *in prep.*

POSTERS PRESENTED

- 1 **Laferriere, K. L.**, Bramson, A. M., Smith, I. B. (2022), "Mars North Polar Spiral Trough Migration Paths Variations Revealed by 3D Radar Mapping", *LPSC 2022*

- 2 **Laferriere, K. L.**, Bramson, A. M., Smith, I. B. (2021), Mars' North Polar Spiral Trough Migration Paths as Revealed through 3D Radar Mapping, *AGU Fall Meeting*
- 3 **Laferriere, K. L.**, Sunshine, J. M., Feaga, L. M. (2021), Spatial and temporal variability of lunar hydration across the southern hemisphere as observed by Deep Impact, *AGU Fall Meeting*
- 4 **Laferriere, K. L.**, Bramson, A. M., Smith, I. B., (2021), 3D Mapping of Migration Paths of Mars' North Polar Spiral Troughs, *LPSC 2021*
- 5 **Laferriere, K.** Moorehead, A., (2019), Survey of low speed meteor showers
 - NASA Marshall Space Flight Center Poster Expo August 6 2019
 - Conference for Undergraduate Women in Astronomy November 1 2019
 - Conference for Undergraduate Women in Physics January 17 2020

TALKS PRESENTED

1. Bambic, C., Carvajal, V., Hinrichs, C., **Laferriere, K.** (Spr. 2018), Probing Metallicity of Open Star Clusters Using Beat Cepheids, *ASTR498S, Dr. Suvi Gezari, Department of Astronomy, University of Maryland*
2. Harada, C., Sitaram, M., **Laferriere, K.** (Fall 2017), Exploring the Cepheid PM-Relation in M31 with iPFT ASTR310, Dr. Melissa Hayes-Gehrke, University of Maryland Observatory Open House

TEACHING AND MENTORING EXPERIENCE

- Teaching Assistant** Fall 2020
Purdue University, Department of Earth, Atmospheric, and Planetary Science
EAPS111 - Physical Geology 120 (2 Lab sections)
- Academic Peer Mentor** Fall 2019
University of Maryland, Department of Astronomy
ASTR120 - The Solar System (Majors course)
- Astronomy Peer Mentor (APM Program)** Fall 2018 - Spring 2018
University of Maryland, Department of Astronomy
- Residential Counselor** Summer 2018
Upward Bound: Math and Science at Fitchburg State University

OUTREACH

- *Apr 2017-Spring 2020*: Panelist for 10 CMNS Open Houses as a CMNS Recruitment Ambassador
- *Fall 2018-Spring 2020*: Met with 5 of prospective students in Physics and Astronomy
- *Apr 19 2019*: Held Q&A with middle school students from Chapel Hill-Carrboro City Schools NC on STEM at UMD
- *Nov 3 2018*: CMNS Representative at College Fair by Family Development Samaritan Foundation
- *Summer 2018* Residential Counselor (TA, Tutor, Mentor) Upward Bound Math and Science and Fitchburg State University

HONORS AND AWARDS

1. Department Teaching Honor Roll, (Fall 2020), *Department of Earth, Atmospheric, and Planetary Science, Purdue University*
2. High Honors in Astronomy, (Spring 2020), *Department of Astronomy, University of Maryland, College Park*

SKILLS

Programming: Python, C, IDL, MatLab, L^AT_EX

Software: Microsoft Office, SAO DS9, SeisWare

Methods: N-Body, Numerical Integration (ex. Euler, RK4), Monte Carlo Integration, Image Calibration, Data Visualization

UNDERGRADUATES ADVISED

- Ashwin Nomi (Purdue AAE), **Main Advisor: Ali Bramson**, *Fall 2021 - present*

SERVICE

- Equity, Diversity, and Inclusion Committee (Grad Rep.), *Purdue EAPS*, Fall 2021 - present
- Diversity, Equity, and Inclusion Committee (Undergrad Rep.), *UMD Astronomy*, 2017-2020

DECLARATION

I hereby declare that all the details furnished above are true to the best of my knowledge and belief.