Kiersten M. Boley

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Research Interests

Planet formation and habitability, Influences of stellar abundances on planet formation, Exoplanet detection and characterization using the transit method, Evolution of terrestrial planet interiors and plate tectonics

Education

The Ohio State University — Columbus, OH
Ph.D. *in* ***Astronomy*** — *expected May 2024*
Master's in ***Astronomy*** — August 2021
Advisors: Ji Wang & Wendy Panero

Georgia Institute of Technology — Atlanta, GA
Bachelor of Science *in* ***Physics*** — *May 2019*
Concentration in Astrophysics
Minor in German

Georgia Highlands College — Rome, GA
Associate of Science *in* ***Physics*** — *May 2015*

Research Experience

NSF Graduate Research Fellow, *Advisor: Ji Wang & Wendy Panero* — August 2021 – present
The Ohio State University — *Columbus, OH*

- Constraining mass and a radius for hydrous magma ocean planets and planet occurrence with respect to metallicity

IPAC Visiting Graduate Student Fellow, *Advisor: Jessie Christiansen* — January 2022 – August 2022
California Institute of Technology, IPAC — *Pasadena, CA*

- Constraining planet occurrence around metal-poor stars

Graduate Student Researcher, *Advisor: Ji Wang* — August 2019 – August 2021
The Ohio State University — *Columbus, OH*

- Constrained hot Jupiter planet occurrence in the metal-poor regime (-2.0 $\leq$ [Fe/H] $\leq$ -0.6) using TESS data

Student Researcher, *Advisor: William Dawson* — May 2018–August 2019
Lawrence Livermore National Laboratory — *Livermore, CA*

- Investigated the predicted counter images of a high redshift (z $\sim$10) lensed galaxy candidate, SPT0615-JD, using a maximum likelihood detection method

Student Research Intern — January 2018–May 2018
Georgia Tech Research Institute — *Atlanta, GA*

- Created procedures for radiation and environmental testing of various materials and designed containers for storage radioactive materials

Research and Development Intern — January 2015– May 2015
Mohawk Industries — *Lyerly, GA*

- Developed adhesives for carpet backing using various heating methods and machinery to test durability

Honors & Awards

ExoExplorers 2022 Program	January 2022
Beth Brown Memorial Award	November 2021
IPAC Visiting Graduate Student Fellowship	October 2021
Gaudi-Stanek Award	August 2021
NSF Graduate Research Fellowship	March 2021
Two Sigma PhD Research Grant ($2000)	March 2021
Two Sigma Diversity Fellowship Finalist	March 2021
Dean's Distinguished Graduate Fellowship	May 2019
National Defense Committee Medal	May 2019
The Nation Society of the Daughters of the American Revolution	
James F. Towers Scholarship	August 2018
Lawrence Livermore National Laboratory, Deputy Director's coin	August 2018
Segal Americorps Educational Award	June 2018
The Armed Forces Communications and Electronics Association, Honor Award	May 2018
Army ROTC Scholarship	September 2016
Hope Scholarship	August 2014

Invited Talks & Colloquia

"Hot Jupiter Occurrence within the Metal-Poor Regime" — February 2021
Two Sigma, Finalist Reception — *Virtual due to COVID-19*

Presentations & Posters

"Impacts on Planet Formation: Hot Jupiter Occurrence around Metal-Poor Stars" — November 2021
Great Lakes Exoplanet Area Meeting 2021 — *Ann Arbor, MI*

"Constraining Hot Jupiter Occurrence around Metal-Poor Stars" — November 2021
National Society of Black Physicist 2021 — *Virtual due to COVID-19*

"Hot Jupiter Occurrence around Halo Stars" — July 2021
Sagan Exoplanet Workshop 2021 — *Virtual due to COVID-19*

"Constraining the Metallicity required for Planet Formation" — May 2021
Emerging Researchers in Exoplanet Science 2021 — *Virtual due to COVID-19*

"Hot Jupiter Occurrence within the Metal-Poor Regime revisited by TESS" — April 2021
Space Telescope Science Institute, 2021 Spring Symposium — *Virtual due to COVID-19*

"The Occurrence of Hot Jupiters in the Metal-Poor Regime revisited by TESS" — January 2021
American Astronomical Society, 237th Meeting — *Virtual due to COVID-19*

"Raiders of Lost Arcs: Faint Galaxy Detection" — August 2018
Lawrence Livermore National Laboratory, 2018 Summer Symposium — *Livermore,CA*

Publications

1. **Boley, K.**, Wang, J., Zinn, J., et al., "Searching For Transiting Planets Around Halo Stars. II. Constraining the Occurrence Rate of Hot Jupiters", 2021, AJ, 162, 85

Observing Experience

LBT, MODS/LBC, Mount Graham International Observatory, (Queue Observing) — 2 nights

Employment

Executive Officer | *U.S. Army* May 2019 – Present

- Responsible for planning and scheduling all training for the entire 676^{th} Ground Ambulance Company (∼100 soldiers)
- Responsible for ∼24 million dollars worth of equipment

Dance Instructor | *Baird Ballet* July 2011 –December 2017

- Created and implemented ballet, jazz, and contemporary dance curriculum for students between the ages of 3-16 years old

Office Manager | *Techwood Consulting* July 2015 – December 2015

- Performed administrative and office management duties necessary to support corporate officers

Lead Teller | *Suntrust* June 2014 – January 2015

- Accurately processed customer cash, check, transfer, and statement transactions, with a balanced or reconciled drawers

Outreach & Service

Invited Speaker | *NPR-The Short Wave podcast* August 2021
Discussed the constellation Canis Major, Sirius, and the summer night sky

Academic Facilitator | *URSA Program* March 2021 – Present
Creates Astronomy and Physics Curriculum and teaches incoming undergraduate students from under-represented groups

Graduate Representative | *AIP TEAM-UP Workshop* December 2020 - Present
Represented the OSU Astronomy Department at this workshop that educates on strategies to recruit and retain African-American undergraduate students in Astronomy and Physics by creating an inclusive environment

Mentor | *Polaris Mentorship Program* August 2020 – Present
Provides mentorship to under-represented undergraduates in Physics and Astronomy

Mentor | *SciAccess Zenith Mentorship Program* February 2021 – April 2021
Provides mentorship for blind and visually impaired high-school students that are interested in astronomy

Panelist | *Monthly Movie Nights - Science Fiction vs Science Fact* February 2021
Served as a panelist for the Q&A webinar for the movie "2001: A Space Odyssey"

Volunteer Coordinator | *Jumpstart* August 2017 – May 2019
Recruited, managed, and trained 190 recruited volunteers to serve 2 preschools for assorted Jumpstart service projects

Team Leader | *Jumpstart* August 2016–August 2017
Led 5 peers to provide developmentally appropriate educational activities, with a focus on language and literacy, to young children

Corps Member | *Jumpstart* August 2015–August 2016
Implemented early childhood curriculum, supported family involvement, promoted children's language and literacy skills through ongoing relationships with 20 children, and increased adult support in the learning environment

Volunteer | *Mission is Possible* August 2013–May 2015
Served in various roles from working with disabled children to cleaning elderly couple's homes to improve the community in Rome,GA

Computational Skills

Python, MATLAB, HTML/CSS, LaTeX

Scholarly Memberships

American Astronomical Society — Junior Member
National Society of Black Physicists — Full Member
Phi Theta Kappa — Member