

**Education**

- **Doctor of Philosophy:** Planetary Sciences, Department of Planetary Sciences & Lunar and Planetary Laboratory, University of Arizona, (Expected graduation: December 2022; Thesis Advisors: Drs. Ilaria Pascucci, Gijs D. Mulders)
  - **Master of Science:** Planetary Sciences, Department of Planetary Sciences & Lunar and Planetary Laboratory, University of Arizona, 2017 - 2019 (Thesis Advisor: Dr. Ilaria Pascucci)
  - **Bachelor of Science:** Dual Major in Astrophysics and Physics, Department of Physics, University of Cincinnati, 2013 - 2017 (Thesis Advisor: Dr. Michael L. Sitko)
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**Employment / Research Experience**

- NASA's Nexus for Exoplanet System Science (NExSS) Alien Earths Team Member: 2021 - present
  - ExoExplorer, ExoPAG Executive Committee and the NASA's Exoplanet Exploration Program, 2021
  - Caltech/IPAC Visiting Graduate Fellow, 2020
  - Graduate Research Associate, Department of Planetary Sciences & Lunar and Planetary Laboratory, University of Arizona, 2019 - present
  - NASA's Nexus for Exoplanet System Science (NExSS) Earths in Other Solar Systems (EOS) Team Member: 2017 - 2021
  - Graduate Research Assistant, Department of Planetary Sciences & Lunar and Planetary Laboratory, University of Arizona, 2017 - 2019
  - Teaching Assistant, Department of Planetary Sciences & Lunar and Planetary Laboratory, University of Arizona, 2017 - 2019
  - Undergraduate Research Assistant, University of Cincinnati, 2014 - 2017
  - Women In Science and Engineering Summer REU, University of Cincinnati, 2015
  - Teaching Assistant, Department of Physics, University of Cincinnati, OH, 2015 - 2017
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**Refereed Publications**

1. **Fernandes, R. B.**, Mulders, G. D., Pascucci, I. et al. 2021, in prep: *pterodactyls: A Uniform Search for Young Transiting Planets in TESS Primary Mission FFIs*
2. Bergsten, G. J., ....., **Fernandes, R. B.** et al. 2021, in prep: *A Stellar Mass Dependence in the Abundance of Small Kepler Planets*
3. Koskinen, T. T., ....., **Fernandes, R. B.** et al. 2021, ApJ, submitted: *Mass loss by atmospheric escape from extremely close-in planets*
4. Bennett, David P., Ranc, Clément & **Fernandes, R. B.** 2021, AJ, in press: *No Sub-Saturn Mass Planet Desert in the CORALIE/HARPS Radial Velocity Sample*

5. Mulders, G. D., ....., **Fernandes, R. B.** 2021, ApJ, in press: *The Mass Budgets and Spatial Scales of Exoplanets and Protoplanetary Disks*
6. Pikhartova, M, ....., **Fernandes, R. B.**, et al. 2021, ApJ, in press: *Variability of Disk Emission in Pre-Main Sequence and related Stars. V. Occultation Events from the innermost disk region of the Herbig Ae Star HD 163296*
7. Noonan, J. W., ....., **Fernandes, R. B.**, et al. 2019, AJ, 158, 313: *Search for the H chondrite parent body among the Three Largest S-type Asteroids: (3) Juno, (7) Iris and (25) Phocaea*
8. Reddy, V., ....., **Fernandes, R. B.**, et al. 2019, Icarus, 326,133-150: *Near-Earth asteroid 2012 TC4 campaign: Results from global planetary defense exercise*
9. **Fernandes, R. B.**, Mulders, G. D., Pascucci, I. et al. 2019, ApJ, 874, 81: *Hints of a Turnover at the Snowline in the Giant Planet Occurrence Rate*
10. Long, Z. C., Akiyama, E., **Fernandes, R. B.** 2018, ApJ, 858, 112L: *Differences in the gas and dust distribution in the pre-transitional disk of a sun-like young star PDS 70*
11. Pascucci, I., Mulders, G. D., Gould, A. & **Fernandes, R. B.** 2018, ApJ, 856L, 28P: *A Universal Break in the Planet-to-Star Mass-Ration Function of Kepler MKG stars*
12. **Fernandes, R. B.**, Long, Z. C. et al. 2018, ApJ, 856, 103F: *Variability of Dust Emission in Pre-main Sequence and Related Stars. IV. Investigating the Structural Changes in the Inner Disk Regions of MWC 480*
13. Long, Z. C., **Fernandes, R. B.**, Sitko, M.L., Wagner, K. et al. 2017, ApJ, 838, 62: *The Shadow Knows: Using Shadows to Investigate the Structure of the Pretransitional Disk of HD 100453*
14. Cheng, A. F., ....., Sitko, M. L., **Fernandes, R. B.**, et al. 2017, Icarus, 281, 404-416: *Stratospheric balloon observations of comets C/2013 A1 (Siding Spring), C/2014 E2 (Jacques), and Ceres*

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**Talk/Poster Contributions** (\*invited talks, +posters)

1. “*pterodactyls: A Uniform Search for Young Transiting Planets in TESS Primary Mission FFIs*”, NASA’s (NExSS) Alien Earths All Hands Team Meeting - January 2022
2. “*pterodactyls: A Uniform Search for Young Transiting Planets in TESS Primary Mission FFIs*”, NASA ExoPAG 25 Virtual Meeting - January 2022
3. “*Exoplanet Demographics Beyond Kepler: Giant Planets with Radial Velocity & Young Planets with TESS*”, Carnegie Institution for Science - November 2021\*
4. “*pterodactyls: A Uniform Search for Young Transiting Planets in TESS Primary Mission FFIs*”, Jet Propulsion Laboratory, Pasadena, California - October 2021\*
5. “*Using TESS to Unearth the Frequency of Habitable Zone Earth-size Planets*”, TESS Science Conference II, #26 - July 2021<sup>+</sup>
6. “*Demographics of Small Kepler Planets and their Dependence on Stellar Mass*”, TESS Science Conference II, #42 - July 2021<sup>+</sup>

7. *“Exoplanet Demographics Beyond Kepler: Giant Planets with Radial Velocity & Young Planets with TESS”*, Exoplanet Explorers (ExoExplorers) Science Series - May 2021\*
8. *“Understanding the Impact of Stripped sub-Neptune cores on EtaEarth using TESS”*, Quantitative Habitability Science Workshop, Tucson, Arizona - December 2020
9. *“Unearthing the Earths: Using TESS and Kepler to Reveal the Primordial Population of Short-Period Planets”*, Exoplanet Demographics, Pasadena, California - November 2020
10. *“Understanding the Impact of Stripped sub-Neptune cores on EtaEarth using TESS”*, Lunar & Planetary Laboratory Conference, Tucson, Arizona - August 2020
11. *“The Frequency of Habitable Zone Earth-size Planets”*, Exoplanets III, Heidelberg, Germany - July 2020
12. *“The Impact of Stellar Multiplicity on the Detection of Young Transiting Planets”*, Caltech/IPAC VGF Lunch Seminar, Pasadena, California - July 2020
13. *“EPOS: The Exoplanet Population Observation Simulator”*, TESS Science Conference I, Cambridge, Massachusetts, #51 - July/August 2019<sup>+</sup>
14. *“Hints of a Turnover at the Snowline in the Giant Planet Distribution”*, 3rd Advanced School for Exoplanetary Science: Demographics of Exoplanetary Systems, Vietri sul Mare, Salerno, Italy - May 2019
15. *“Hints of a Turnover at the Snowline in the Giant Planet Distribution”*, Jet Propulsion Laboratory, Pasadena, California - April 2019
16. *“Variability of Dust Emission in Pre-main Sequence and Related Stars. IV. Investigating the Structural Changes in the Inner Disk Regions of MWC 480”*, Undergraduate Thesis Defense - May 2017
17. *“The Structure and Dynamics of Inner Regions of the Planet-building Disk around HD 31648”*, 229th AAS Meeting, #345.11 - January 2017<sup>+</sup>
18. *“The Structure and Dynamics of Inner Regions of the Planet-building Disk around HD 31648”*, AAS Regional Meeting, Kentucky - October 2016<sup>+</sup>

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### **Observational Experience**

- 11 nights using SpeX at NASA’s Infrared Telescope Facility (PIs: M. Sitko, V. Reddy, K. Hardegree-Ullman)
- 5 nights using PHARO (200”) at Palomar Observatory (PI: D. Ciardi)
- 2 nights using Goodman Spectrograph on SOAR, Chile (PI: K. Hardegree-Ullman)
- Experience photometrically observing exoplanet transits using 14” Meade LX200 (University of Cincinnati) and RAPTORS (University of Arizona)

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### **Programming / Software Experience**

- Python, SQL, IDL, R, C++, Mathematica, LaTeX, UNIX/LINUX
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### **Professional Affiliations / Honors**

- TESS Working Group member, 2020 - present
  - Exoplanet Program Analysis Group (ExoPAG) Science Interest Group 2 (SIG2) member, 2019 - present
  - American Astronomical Society, Junior Member: 2016 - presents
  - Sigma Pi Sigma (Physics Honors Society), University of Cincinnati Chapter Member: April 2016 - 2018
  - President, Society of Physics Students, University of Cincinnati Chapter: 2015 - 2017
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### **Selected Community Outreach**

- NASA's Universe of Learning's Exoplanet Watch Citizen Science Project: 2021 - present
  - Project-Based Learning Opportunities and Exploration of Mentorship for Students with Visual Impairments in STEM (POEM), The University of Arizona: 2021 - present
  - Lunar and Planetary Laboratory Department Life Committee, The University of Arizona: 2019 - present
  - College of Science Outreach Coordinator, The University of Arizona: 2019
  - Planetary Science Education Outreach at Sahuarita Middle School, Tucson, AZ: 2019
  - Astrobiology Education Outreach for visiting High School Students, Tucson, AZ: 2018
  - Volunteer for University of Cincinnati Department of Physics Annual Outreach Program at the Cincinnati Observatory Center - ScopeOut: 2014 - 2017
  - Volunteer for TechOlympics, Cincinnati: 2014 - 2017
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### **Scholarships / Awards**

- Curson Travel Award (2019)
  - Galileo Circle Scholar Fellowship (2018, 2019)
  - Sarah Blank Greenholz Scholarship (2016)
  - The University of Cincinnati, Department of Physics, Physics Scholarship (2015-2016)
  - Women In Science and Engineering (WISE) Grant (2015)
  - International Outreach Scholarship (2013 - 2017)
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### **Undergraduate Students Mentored**

- Dakotah B. Tyler, University of Cincinnati: 2016 - 2020
  - Ammar Bayyari, University of Cincinnati: 2016 - 2019
  - David Luria, University of Cincinnati: 2016 - 2017
  - Monika Pikhartova, University of Cincinnati: 2015 - 2018
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