William R. Saunders

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EDUCATION

Boston University, Boston, MA
Ph.D. in Astronomy — (anticipated) May 2023
Advisor: Paul Withers
GPA: 3.93/4

Boston University, Boston, MA
M.A. in Astronomy — May 2020

University of Pennsylvania, Philadelphia, PA
B.A. in Physics & Astronomy, *summa cum laude* with honors — May 2018
Advisor: Gary Bernstein
Senior Honors Thesis: *Development of Efficiency Simulator for Detecting Planet Nine using the Dark Energy Survey*
Minors: Mathematics, History
GPA: 3.81/4

RESEARCH POSITIONS

Graduate Research Fellow — Sept. 2018 - Present
Boston University, Boston MA
Advisor: Paul Withers (BU), Michael Person (MIT)
Topics: Stellar occultations, Mars atmosphere, Uranus atmosphere

Undergraduate Researcher — Sept. 2015 - May 2018
University of Pennsylvania, Philadelphia, PA
Advisor: Gary Bernstein
Topic: Transient search using the Dark Energy Survey

Summer Researcher — June 2017 - Aug. 2017
NASA Ames Research Center, Moffett Field, CA
Advisor: Uma Gorti
Topic: Protoplanetary disk simulations

High School & Undergraduate Researcher — Aug. 2012 - June 2015
University of Pennsylvania, Philadelphia, PA
Advisor: James Aguirre
Topic: Supernova remnant search with PAPER radiotelescope

High School Summer Researcher — May 2014 - Aug. 2014
American Museum of Natural History, New York, NY
Advisor: Emily Rice
Topic: Brown dwarfs

HONORS AND AWARDS

NSF Graduate Research Fellowship Honorable Mention — April 2020
AGU Outstanding Student Presentation Award (awarded to top 3.5%) — Dec. 2019
NASA Pennsylvania Space Grant Scholarship — 2017 - 2018

University Scholar	2015 - 2018
Dean's List	2014 - 2018
University Physics Competition Silver Medalist	Jan. 2016
National Merit Scholar	2014

PEER-REVIEWED PUBLICATIONS

First Author

1. **Saunders, W.**, Person, M., Withers, P., (*submitted*). Re-Analysis of the 1976 Mars Occultation of Epsilon Geminorum: Detection of Gravity (Buoyancy) Waves. The Astronomical Journal.

Co-Author

2. Bernardinelli, P., Bernstein, G., Sako, M., Hamilton, S., Gerdes, D., Adams, F., **Saunders, W.**, ... (*submitted*). Testing the Isotropy of the Dark Energy Survey's Extreme Trans-Neptunian Objects. AAS Journals.
1. Bernardinelli, P., Bernstein G., Sako, M., Liu, T., **Saunders, W.**, ... 2020. Trans-Neptunian Objects Found in the First Four Years of the Dark Energy Survey. The Astrophysical Journal.

CONFERENCE PRESENTATIONS

4. *Re-Analysis of the 1976 Mars Occultation of Epsilon Geminorum* — Dec. 2019
AGU Winter Meeting, San Francisco, CA (poster)
Outstanding Student Presentation Award
3. *Initial Results of a Re-Analysis of the 1976 Mars Occultation of Epsilon Geminorum* — July 2019
Ninth International Conference on Mars, Pasadena, CA (poster)
2. *Impact of Ice on the Evolution of Protoplanetary Disks and Formation of Planetary Systems* — Jan. 2018
AAS Winter Meeting, Washington, D.C. (poster)
1. *Optimizing Difference Imaging to Identify Trans-Neptunian Objects using the Dark Energy Survey* — Aug. 2016
Astrophilly Conference, Villanova, PA (talk)

INVITED TALKS & COLLOQUIA

4. *Creating the astro[sound]bites Podcast* (webinar) — April 2020
Astronomy Dept. Seminar Series , Boston Univ.
3. *Re-Analysis of a Stellar Occultation: Finding Waves in Ancient Data* (talk) — Nov. 2019
Astronomy Dept. Seminar Series, Boston Univ., Boston, MA
2. *Impact of Ice on the Evolution of Protoplanetary Disks and Formation of Planetary Systems* (talk) — Aug. 2017
Meeting of the National Astrobiology Institute,
NASA Ames Research Center, CA
1. *Optimizing Difference Imaging to Identify Trans-Neptunian Objects using the Dark Energy Survey* (plenary talk) — Feb. 2017
Yale Undergraduate Research Conference, New Haven, CT

OUTREACH TALKS

1. *Hey, You're in the Way: Measuring Planet Atmospheres When They Align with Stars* — May 2020
CAS Public Talks (webinar), Boston University, Boston, MA

SCIENCE OUTREACH

***Brainspace* Magazine Astronomy Contributor** Aug. 2019 - Present

- *Brainspace* is a science magazine aimed at children ages nine to fourteen with a readership of approximately 40,000.
- It is published quarterly.

Published Works

"Bringing Home a Piece of Mars" Winter 2019 - 2020
"Solar Storms" Fall 2019

Astrobites Contributor Jan. 2019 - Present

- Astrobites is a graduate-student run website that summarizes recent astronomy research at an undergraduate level.
- Writers publish monthly, and peer-review others' publications.

astro[sound]bites Podcast Founder and Co-Host Nov. 2019 - Present

- astro[sound]bites is a bi-weekly podcast companion to Astrobites.org.
- Malena Rice, Alex Gagliano, and I discuss research, themes, stories, and personal experiences in astronomy in a relaxed and approachable format.
- Can be found on Apple Podcasts, Google Play, SoundCloud, and Spotify.

TEACHING

Carnegie Prep 2018 - Present
Tutor for high school and college math and physics courses.

Dept. of Physics & Astronomy, University of Pennsylvania 2015 - 2018
Tutor for introductory physics and astronomy courses.

PROFESSIONAL MEMBERSHIP

American Astronomical Society
Division of Planetary Sciences of the AAS
American Geophysical Union
National Association of Science Writers