

# William R. Saunders

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<b>EDUCATION</b>	<b>Boston University</b> , Boston, MA Ph.D. in Astronomy Advisor: Paul Withers GPA: 3.93/4	(anticipated) May 2023
	<b>Boston University</b> , Boston, MA M.A. in Astronomy	May 2020
	<b>University of Pennsylvania</b> , Philadelphia, PA B.A. in Physics & Astronomy, <i>summa cum laude</i> with honors Advisor: Gary Bernstein Senior Honors Thesis: <i>Development of Efficiency Simulator for Detecting Planet Nine using the Dark Energy Survey</i> Minors: Mathematics, History GPA: 3.81/4	May 2018
<b>RESEARCH POSITIONS</b>	<b>Graduate Research Fellow</b> Boston University, Boston MA Advisor: Paul Withers (BU), Michael Person (MIT) Topics: Stellar occultations, Mars atmosphere, Uranus atmosphere	Sept. 2018 - Present
	<b>Undergraduate Researcher</b> University of Pennsylvania, Philadelphia, PA Advisor: Gary Bernstein Topic: Transient search using the Dark Energy Survey	Sept. 2015 - May 2018
	<b>Summer Researcher</b> NASA Ames Research Center, Moffett Field, CA Advisor: Uma Gorti Topic: Protoplanetary disk simulations	June 2017 - Aug. 2017
	<b>High School &amp; Undergraduate Researcher</b> University of Pennsylvania, Philadelphia, PA Advisor: James Aguirre Topic: Supernova remnant search with PAPER radiotelescope	Aug. 2012 - June 2015
	<b>High School Summer Researcher</b> American Museum of Natural History, New York, NY Advisor: Emily Rice Topic: Brown dwarfs	May 2014 - Aug. 2014
<b>HONORS AND AWARDS</b>	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 (For Advanced Undergraduate Researchers)	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

**Astrobiters Contributor** Jan. 2019 - Present

- Astrobiters 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 Astrobiters.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 &  
MENTORSHIP**

**Carnegie Prep** 2018 - Present

Tutor for high school and college math and physics courses.

**Center for Undergraduate Research and Mentorship** 2016 - 2018

Undergraduate Peer Research Mentor.

**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