

William R. Saunders

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EDUCATION	Boston University , Boston, MA Ph.D. in Astronomy Advisor: Paul Withers GPA: 3.93/4	(anticipated) May 2023
	Boston University , Boston, MA M.A. in Astronomy	May 2020
	University of Pennsylvania , 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
RESEARCH POSITIONS	Graduate Research Fellow Boston University, Boston MA Advisor: Paul Withers (BU), Michael Person (MIT) Topics: Stellar occultations, Mars atmosphere, Uranus atmosphere	Sept. 2018 - Present
	Undergraduate Researcher University of Pennsylvania, Philadelphia, PA Advisor: Gary Bernstein Topic: Transient search using the Dark Energy Survey	Sept. 2015 - May 2018
	Summer Researcher NASA Ames Research Center, Moffett Field, CA Advisor: Uma Gorti Topic: Protoplanetary disk simulations	June 2017 - Aug. 2017
	High School & Undergraduate Researcher University of Pennsylvania, Philadelphia, PA Advisor: James Aguirre Topic: Supernova remnant search with PAPER radiotelescope	Aug. 2012 - June 2015
	High School Summer Researcher American Museum of Natural History, New York, NY Advisor: Emily Rice Topic: Brown dwarfs	May 2014 - Aug. 2014
	Instructor of Record Boston University, Boston MA AS 102: The Astronomical Universe	(anticipated) July - Aug. 2022
TEACHING POSITIONS		

Teaching Fellow Jan. 2021 - May 2021
 Boston University, Boston MA
 AS 100: Cosmic Controversies

Teaching Fellow Sep. 2021 - Dec. 2021
 Boston University, Boston MA
 AS 102: The Astronomical Universe

HONORS AND AWARDS

DPS Outreach and Education Grant, astro[sound]bites	2021 - 2022
AGU Sharing Science Grant, astro[sound]bites	2021
Summer Professional Development Fellowship, Boston University	May - Aug. 2021
DPS Outreach and Education Grant, astro[sound]bites	2020 - 2021
Massachusetts Space Grant Consortium Graduate Fellowship	May - Aug. 2021
Massachusetts Space Grant Consortium Graduate Fellowship	May - Aug. 2020
NSF Graduate Research Fellowship Honorable Mention	April 2020
AGU Outstanding Student Presentation Award (awarded to top 3.5%)	Dec. 2019
Pennsylvania Space Grant Consortium Undergraduate 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

2. **Saunders, W.**, Person, M., Withers, P., Sayanagi, K., Young, C., Randall, C., Valle, T.(in press). Assessment of the Feasibility of Space-Based Stellar Occultation Observations of Uranus and Neptune. *Planetary and Space Science*.
1. **Saunders, W.**, Person, M., Withers, P., (2021). Observations of Gravity Waves in the Middle Atmosphere of Mars. *The Astronomical Journal*.

Co-Author

2. Bernardinelli, P., Bernstein, G., Sako, M., Hamilton, S., Gerdes, D., Adams, F., **Saunders, W.**, ... (2021). Testing the Isotropy of the Dark Energy Survey's Extreme Trans-Neptunian Objects. *The Planetary Science Journal*.
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

First Author, Research

8. (Poster) *The Feasibility of Space-Based Stellar Occultation Observations of Uranus and Neptune* Dec. 2021
 AGU Winter Meeting, New Orleans, LA.
7. (Invited Talk) *Observations of Gravity Waves in the Middle Atmosphere of Mars* Dec. 2020
 AGU Winter Meeting, virtual
6. (Talk) *Measuring the Stratospheric Temperature of Uranus Using Archival Stellar Occultations* Dec. 2020
 AGU Winter Meeting, virtual.

5. (Talk) *Re-Analysis of the 1976 Mars Occultation of Epsilon Geminorum: Detection of Gravity (Buoyancy) Waves* Oct. 2020
EPSC Meeting, virtual.
4. (Poster) *Re-Analysis of the 1976 Mars Occultation of Epsilon Geminorum* Dec. 2019
AGU Winter Meeting, San Francisco, CA
Winner of the Outstanding Student Presentation Award
3. (Poster) *Initial Results of a Re-Analysis of the 1976 Mars Occultation of Epsilon Geminorum* July 2019
Ninth International Conference on Mars, Pasadena, CA
2. (Poster) *Impact of Ice on the Evolution of Protoplanetary Disks and Formation of Planetary Systems* Jan. 2018
AAS Winter Meeting, Washington, D.C.
1. (Talk) *Optimizing Difference Imaging to Identify Trans-Neptunian Objects using the Dark Energy Survey* Aug. 2016
Astrophilly Conference, Villanova, PA

Outreach

4. (Talk) *Astro[sound]bites: A new audio resource for* Nov. 2021
emphinformal education
Workshop on Astronomy Beyond the Common Senses, virtual.
3. (Talk) *Astro[sound]bites: A new audio resource for* May 2021
emphconveying recent astronomy research
Communicating Astronomy with the Public, virtual.
2. (iPoster and Talk) *Astro[sound]bites: A new audio resource for* Jan. 2021
conveying recent astronomy research
AAS Winter Meeting, virtual
Conference proceeding in the Bulletin of the AAS
1. (Talk) *Astro[sound]bites: A new audio resource for* Oct. 2020
conveying recent astronomy research
DPS Annual Meeting, virtual.

INVITED TALKS & COLLOQUIA

8. *The Shadow Chaser: A Mission Concept to Observe Uranus and Neptune Stellar Occultations* Jan. 2022
NASA Langley Research Center, Hampton, VA
7. *The Shadow Chaser: A Mission Concept to Observe Uranus and Neptune Stellar Occultations* Nov. 2021
Hampton Univ., Hampton, VA
6. *The Shadow Chaser: A Mission Concept to Observe Uranus and Neptune Stellar Occultations* Oct. 2021
Astronomy Dept. Seminar Series, Boston Univ., Boston, MA
5. *Review of Observations of Uranus and Neptune* Mar. 2021
Astronomy Dept. Seminar Series, Boston Univ., Boston, MA
4. *Creating the astro[sound]bites Podcast* April 2020
Astronomy Dept. Seminar Series, Boston Univ., Boston, MA
3. *Re-Analysis of a Stellar Occultation:
Finding Waves in Ancient Data* Nov. 2019
Astronomy Dept. Seminar Series, Boston Univ., Boston, MA

	2. <i>Impact of Ice on the Evolution of Protoplanetary Disks and Formation of Planetary Systems</i>	Aug. 2017
	Meeting of the National Astrobiology Institute, NASA Ames Research Center, CA	
	1. <i>Optimizing Difference Imaging to Identify Trans-Neptunian Objects using the Dark Energy Survey</i> (plenary talk)	Feb. 2017
	Yale Undergraduate Research Conference, New Haven, CT	
OUTREACH TALKS	2. <i>Hey, You're in the Way: Measuring Planet Atmospheres When They Align with Stars</i>	July 2020
	Astronomy on Tap – Lansing, MI	
	1. <i>Hey, You're in the Way: Measuring Planet Atmospheres When They Align with Stars</i>	May 2020
	CAS Public Talks, Boston University, Boston, MA	
SCIENCE OUTREACH	astro[sound]bites Podcast Founder and Co-Host	Nov. 2019 - Present
	• Bi-weekly podcast companion to Astrobites.org.	
	• Co-hosted by Malena Rice, Alex Gagliano, and I.	
	• Each episode features two Astrobites posts, discussion, and a “space sound”.	
	• Available on astrosoundbites.com, Apple Podcasts, Google Play, SoundCloud, and Spotify.	
	• Over 10,000 total downloads in over 50 countries.	
	Brainspace Magazine Astronomy Contributor	Aug. 2019 - Present
	• <i>Brainspace</i> is a quarterly science magazine aimed at children ages nine to fourteen with a readership of approximately 40,000.	
	<u>Published Works</u>	
	“Thinking Small: The CubeSat Revolution”	Fall 2021
	“Cloudy with a Chance of Bacteria”	Spring 2021
	“Where did the Moon Come From?”	Fall 2020
	“Bringing Home a Piece of Mars”	Winter 2019 - 2020
	“Solar Storms”	Fall 2019
	ComSciCon Flagship	Aug. 2021
	• Flagship science communication conference for graduate students.	
	• Selected as attendee in 2021.	
	Astrobites Administrative Committee	Sep. 2021 - Present
	• Developed the first Astrobites webinar panel event: “How to Find an Advisor” in March 2021.	
	• Panel attended and viewed by over 40 participants.	
	Astrobites Undergraduate Chair	Sep. 2020 - Aug. 2021
	• Developed the first Astrobites webinar panel event: “How to Find an Advisor” in March 2021.	
	• Panel attended and viewed by over 40 participants.	
	Astrobites Writing Contributor	Jan. 2019 - Jan. 2021
	• Astrobites is a graduate-student run website that summarizes recent astronomy research at an undergraduate level.	

- Writers publish monthly, and peer-review others' publications.

Research Peer Advisor Aug. 2016 - May 2018

- Center for Undergraduate Research and Fellowships, University of Pennsylvania
- Advise undergraduates on first steps to beginning original research.

MEDIA REACH, a Science Podcast for Kids Jan. 2022

APPEARENCES Recorded a segment on artificial satellites and the CubeSat revolution. Listen to REACH: <https://podcasts.apple.com/us/podcast/id1513671470>.

Guest Presenter on In Plain English podcast Nov. 2021

Listen to In Plain English: inplainenglishpod.org.

GBH Guest Appearance Sep. 2021

Helped explained the celestial origin of the phrase "dog days of summer" in a segment that aired on GBH. Watch the segment here: <https://youtu.be/CZerMXwQJxU>.

TUTORING & Ben Connect 2020 - 2021

MENTORSHIP Mentoring two undergraduates as part of the University of Pennsylvania alumni mentorship program.

Physics Unlimited August 2020

Hosted two "facilitator sessions" for international high school students in the Physics Unlimited summer program to discuss physics and learn about academia.

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 AMERICAN ASTRONOMICAL SOCIETY
MEMBERSHIP Division for Planetary Sciences of the AAS
 American Geophysical Union
 National Association of Science Writers
 Sigma Xi Scientific Research Honor Society
 Sonification World Chat