

Phillip H. Phipps, PhD

Curriculum Vitae

Center for Space Physics, Boston University
725 Commonwealth Avenue, Room 406b
Boston, MA 02215

email: phhipps at bu dot edu
website: philliphipps.space
orcid: <http://orcid.org/0000-0002-4323-4400>

Education

Ph.D. Astronomy, Department of Astronomy, Boston University	2019
M.A. Astronomy, Department of Astronomy, Boston University	2015
B.S. Physics with Honors, North Carolina State University	2013
B.S. Applied Mathematics with Honors, North Carolina State University	

Research Experience

Postdoctoral Researcher Advisor: Prof. Paul Withers Center for Space Physics, Boston University, Boston, MA Juno radio occultations of the Io plasma torus around Jupiter.	May 2019 – Present
Graduate Researcher Advisor: Prof. Paul Withers Department of Astronomy, Boston University, Boston, MA Research on the Io Plasma Torus around Jupiter.	Summer 2015 – April 2019
JPL Summer 2017 Internship Advisor: Dr. Kamal Oudrhiri and Dustin Buccino Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA Worked with Juno radio science instrument team to analyze Juno radio occultations.	Summer 2017
Graduate Researcher Advisor: Prof. John T. Clarke Department of Astronomy, Boston University, Boston, MA Image analysis of Jupiter and Saturn aurora.	Summer 2014 – May 2015
Undergraduate Researcher Advisor: Prof. John M. Blondin Department of Physics, NC State University, Raleigh, NC Simulations of white dwarf accretion disks using parallelized Astrophysics hydrodynamic FORTRAN	Fall 2010 – Spring 2013

Teaching Experience

1. Lecturer, AS 102 – The Astronomical Universe Department of Astronomy, Boston University, Boston, MA Taught introductory Astronomy to summer students during Boston University's Summer Session II.	July 1- Aug 9 2019
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For the following Teaching Fellow positions, I led discussion sessions and labs, graded homework and exams, and led night labs during the evenings.

2. Teaching Fellow, AS202 – Principles of Astronomy I Department of Astronomy, Boston University, Boston, MA	Fall 2015
3. Teaching Fellow, AS203 – Principles of Astronomy II Department of Astronomy, Boston University, Boston, MA	Spring 2015

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| 4. Teaching Fellow, AS202 – Principles of Astronomy I
Department of Astronomy, Boston University, Boston, MA | Fall 2014 |
| 5. Teaching Fellow, AS109 – Cosmology
Department of Astronomy, Boston University, Boston, MA | Spring 2014 |
| 6. Teaching Fellow, AS 105 – Alien Worlds
Department of Astronomy, Boston University, Boston, MA | Fall 2013 |
| 7. Physics Tutor
Department of Physics, NC State University, Raleigh, NC
Tutored undergraduate physics for Engineers and non-majors | Spring 2012 – Spring 2013 |

Outreach

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| 1. Boston University Open Nights
Helped run BU public open nights at Judson B. Coit Observatory | Spring 2015 – Present |
| 2. Science for kids
Helped run a science event run by the Center for Space Physics, Boston University | June 15, 2018 |
| 3. Science by the pint
Event put on by Harvard Universities Science in the news to discuss science with the general public over a pint.
http://sitn.hms.harvard.edu/science-by-the-pint/ | January 2016 |
| 4. Open night for Metropolitan College group
Managed an open night for the Boston University honor society of metropolitan college. | December 2015 |
| 5. Lunar eclipse viewing
Managed a BU public event for the viewing of the Lunar eclipse at Boston University's Coit Observatory. | September 2015 |

Observational Experience

Lowell Observatory, Happy Jack, Arizona, Discovery Channel Telescope, 4.3m Telescope
Judson B. Coit Observatory, Boston University, Boston, MA, 14", 10", 8" reflectors and 6" refractor

Computer Experience

Languages: Python, MatLab, IDL, some Fortran
Research tools: NAIF/SPICE, DS9, MaximDL
Document Preparation: LaTeX, Windows Office
Operating Systems: Linux (Ubuntu), Windows, Mac

Memberships

American Geophysical Union, Member	2016 – present
American Astronomical Society, Member	2010 - present
Society of Physics Students	2009-2015

Awards/Grants

AAS International Travel Grant (\$2535.53) For travel to MOP 2019 in Sendai, Japan	April 2019
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Magnetospheres of Outer Planets (MOP) Travel Grant (\$1500)	April 2017
For Travel to MOP 2017 meeting in Uppsala, Sweden	
JPL Summer 2017 Internship, June 26 th - Sept 2 nd (\$8000)	March 2017
Astronomy Department Teaching Award (\$250)	April 2016
Massachusetts Space Grant Consortium Grant (\$1800)	January 2016
AAS International Travel Grant (\$983)	April 2015
For travel to IAU meeting in Honolulu, Hawaii, August 2015	

Seminars

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| 1. Juno Observations of the Io plasma torus,
GSFC Solar System Exploration Spring Seminar Series | April 17, 2019 |
| 2. Juno Observations of the Io plasma torus, JPL seminar | October 15, 2018 |

Abstracts

- Phipps, P.H.**, Withers, P., Buccino, D. R., Yang, Y-M., Parisi, M., Hinton, P. C., & Bagenal, F. (2019), Juno Radio Occultations of the Io Plasma Torus, NEROC Symposium, MIT Haystack Observatory, Westford, MA, Nov 1
- Phipps, P.H.**, Withers, P., Hinton, P. C., Bagenal, F., Buccino, D. R., Yang, Y-M., & Parisi, M. (2019), The Centrifugal Equator as Seen by Juno Radio Occultations of the Io Plasma Torus, Magnetospheres of the Outer Planets meeting, Sendai, Japan, 3-7 June.
- Phipps, P.H.**, Withers, P., Buccino, D. R., Yang, Y-M., Hinton, P. C., & Bagenal, F. (2018), Variability in the Io Plasma Torus as Seen by Juno Radio Occultations, Abstract 438966 presented at 2018 Fall Meeting, AGU, Washington, DC, 10-14 Dec.
- Phipps, P.H.**, Withers, P., Buccino, D. R., Yang, Y-M., Hinton, P. C., & Bagenal, F. (2018), Io plasma torus geometry from *Juno* radio occultations, Magnetospheres of Outer Planets meeting, Boulder, CO, 9-13 Jul
- Phipps, P. H.**, Withers, P., Buccino, D. R., Yang, Y-M., & Hinton, P. C. (2017). Juno Perijove 1 radio occultation of the Io plasma torus, Abstract 279802 presented at 2017 Fall Meeting, AGU, New Orleans, LA, 11-15 Dec.
- Phipps, P.H.** & Withers, P. (2017), Radio occultations of the Io plasma torus with the *Juno* Spacecraft: A study of feasibility, Magnetospheres of Outer Planets meeting, Uppsala, Sweden, 12-16 June
- Phipps, P.H.** & Withers, P. (2016). Feasibility of Juno radio occultations of the Io plasma torus, Abstract 178300 presented at 2016 Fall Meeting, AGU, San Francisco, Calif., 12-16 Dec.
- Phipps, P.H.** & Clarke, J.T. (2015). Calculation of the Auroral Color Ratio of the Gas Giants Using Images, IAU General Assembly, Meeting #29, #2258018

Publications

- Phipps, Phillip H.**, Withers, Paul, Vogt, Marissa, Buccino, Dustin R., Yang, Yu-Ming, Parisi, Marzia, Ranquist, Drake, Kollmann, Peter, and Bolton, Scott (submitted), Testing Jupiter magnetic field models with Juno radio occultation observations of the Io plasma torus, *J. Geophys. Res. Space Physics*
- Phipps, Phillip H.**, Withers, Paul, Buccino, Dustin R., Yang, Yu-Ming, and Parisi, Marzia (2019), Variations in the density distribution of the Io plasma torus as seen by radio occultations on Juno Perijoves 3, 6, and 8, *J. Geophys. Res. Space Physics*, 124, DOI: 10.1029/2018JA026297
- Phipps, Phillip H.**, Withers, Paul, Buccino, Dustin R., and Yang, Yu-Ming (2018), Distribution of plasma in the Io plasma torus during *Juno* Perijove 1, *J. Geophys. Res. Space Physics*, 123, DOI:10.1029/2017JA025113

4. **Phipps, Phillip H.** and Withers, Paul (2017), Radio occultations of the Io plasma torus by *Juno* are feasible, J. Geophys. Res. Space Physics, 122, DOI: 10.1002/2016JA023447