

Riley McGlasson

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Education

Purdue University

PhD, Planetary Sciences, 3.93/4.0

West Lafayette, IN

2020 – Present

Macalester College

Bachelor of Arts in Physics (with Astronomy emphasis) and Mathematics minor, 3.77/4.0

Saint Paul, MN

2016 – 2020

Acquincum Institute of Technology, Budapesti Műszaki Egyetem

Semester in Computer Science Abroad, 4.67/5.0

Budapest, Hungary

Fall 2018

Research Experience and Professional Preparation

Purdue University

Advisor: Dr. Ali Bramson

West Lafayette, IN

August 2020 – Present

- Analyzing SHARAD radar observations of ice deposits in Martian craters.

Astronomy Ranger Intern

Advisors: Dr. Anil Seth and Todd Cullins

Bryce Canyon National Park, Utah

Summer 2019

- Developed and presented astronomy interpretive programs.
- Led educational “telescope tours” of planets, constellations, and deep sky objects to visitors of Bryce Canyon National Park.
- Led monthly full moon hikes into Bryce Canyon while educating hikers about the science and cultural importance of our moon.
- Presented “A Message to the Universe”, a public talk about the Voyager missions, at the Bryce Canyon Annual Astronomy Festival.

Arecibo Observatory REU

Advisors: Dr. Sean Marshall and Dr. Flaviane Venditti

Arecibo, Puerto Rico

Summer 2018

- Developed a shape model for the potentially hazardous asteroid Midas.
- Performed approximately 50 radar observations of near-Earth asteroids using the Arecibo 305 meter radio telescope.

University of Alabama in Huntsville/NASA MSFC Heliophysics REU

Advisor: Dr. Navdeep Panesar

Huntsville, AL

Summer 2017

- Studied the magnetic origins of solar coronal jets.

First Characterization of the Neutral ISM in Two Local Volume Dwarf Galaxies

Advisor: Prof. John Cannon

Saint Paul, MN

Spring 2017

- Imaged two nearby dwarf galaxies in the HI 21cm spectral line.

Arecibo Pisces-Perseus Supercluster Survey

Advisor: Prof. John Cannon

Saint Paul, MN

Spring 2017

- Determined cluster membership for galaxies around the Pisces-Perseus Supercluster.

Peer-Reviewed Publications

1. Sori, M.M., Becerra, P., Bapst, J., Byrne, S., and McGlasson, R. A. (2022, in press). Orbital forcing of Martian climate revealed in an outlier ice deposit. *Geophysical Research Letters*.
2. McGlasson, R. A., Marshall, S. E., Venditti, F., et al. (2022). Radar and Lightcurve Observations and a Physical Model of Potentially Hazardous Asteroid 1981 Midas. *The Planetary Science Journal*, 3, 35.
3. McGlasson, R. A., Panesar, N. K., Sterling, A. C., Moore, R. L., 2019. Magnetic Flux Cancellation as the Trigger Mechanism of Solar Coronal Jets. *The Astrophysical Journal*, 882, 16.
4. Cannon, J.M., Shen, Z., et al. (incl. McGlasson, R. A.), 2018. Delayed Stellar Mass Assembly in the

- Low Surface Brightness Dwarf Galaxy KDG 215. The Astrophysical Journal Letters, 864, L14.
- Bralts-Kelly, L., Bulatek, A. M., et al. (incl. **McGlasson, R. A.**), 2017. First Characterization of the Neutral ISM in Two Local Volume Dwarf Galaxies. The Astrophysical Journal Letters, 848, L10.

Conference Posters and Presentations

* Indicates McGlasson is presenting author

† Indicates oral presentation

- * **McGlasson, R. A.**, Sori, M. M., Bramson, A. M., (2022). A Significant Periodicity of NPLD Layers as Revealed by SHARAD Observations. 53rd Lunar and Planetary Science Conference, #2063.
- *†**McGlasson, R. A.**, Bramson, A. M., Morgan, G. A., Sori, M. M., (2021). Subsurface Radar Observations of Outlier Polar Ice Deposits on Mars. American Geophysical Union Fall Meeting 2021, #P32D-05.
- *†**McGlasson, R. A.**, Bramson, A. M., Morgan, G. A., Sori, M. M., (2021). Subsurface Radar Observations of Outlier Polar Ice Deposits on Mars. 52nd Lunar and Planetary Science Conference, #1649.
- Repp, D. W., Marshall, S. E., et al. (incl. **McGlasson, R. A.**), (2020). Shape modeling of potentially hazardous asteroid 2015 DP155 from radar and lightcurve observations. 51st Lunar and Planetary Science Conference, #2897.
- Taylor, P. A., Rivera-Valentín, E. G., (incl. **McGlasson, R. A.**), (2019). Radar and Optical Observations of Equal-Mass Binary Near-Earth Asteroids (190166) 2005 UP156 and 2017 YE5. 50th Lunar and Planetary Science Conference, #2945.
- ***McGlasson, R. A.**, Marshall, S. E., et al., (2019). Shape Model of Potentially Hazardous Asteroid (1981) Midas from Radar and Lightcurve Observations. American Astronomical Society Meeting #233, 255.03.
- Taylor, P. A., Brozovic, M., et al. (incl. **McGlasson, R. A.**), (2018). Radar and Optical Observations of Equal-Mass Binary Near-Earth Asteroid 2017 YE5. American Astronomical Society Division of Planetary Sciences meeting #50, 508.07.
- Marshall, S. E., Cobb, A., et al. (incl. **McGlasson, R. A.**), (2018). Using Bayesian Optimization to Find Asteroids' Pole Directions. American Astronomical Society Division of Planetary Sciences meeting #50, 505.01D.
- ***McGlasson, R. A.**, Panesar, N. K., Sterling, A. C., Moore, R. L., (2017). Magnetic Flux Cancellation as the Trigger Mechanism of Solar Coronal Jets. American Geophysical Union Fall Meeting 2017, #SH43A-2796.

Awards and Grants

Purdue TA Honor Roll:	Fall 2021
Purdue Student Service-Learning Grant:	2021
<i>In support of development of the Astronomy on Tap program</i>	
NSF Graduate Research Fellowship Program, Honorable Mention:	2021
Lunar and Planetary Institute Career Development Award:	2021
<i>52nd Lunar and Planetary Science Conference</i>	
Chambliss Astronomy Achievement Award Student Prize:	2019
<i>American Astronomical Society 233rd meeting</i>	
Minnesota Space Grant Consortium Scholarship:	2018
Mobil Scholarship:	Fall 2017 – Spring 2020
DeWitt Wallace Distinguished Scholarship:	Fall 2016 – Spring 2020

Technical Skills

Python | IDL | Latex | Java | Perl | Mathematica | Bash | Microsoft Office | ArcGIS

Teaching Experience

- EAPS 100: Planet Earth Teaching Assistant:** *Spring 2022*
○ Undergraduate TA for Purdue introductory Earth science class
- EAPS 111: Physical Geology Teaching Assistant:** *Fall 2020, Fall 2021*
○ Undergraduate Lab TA for Purdue introductory geology class
- Astronomy Preceptor:** *Spring 2020*
○ Undergraduate preceptor for Macalester upper-level observational astronomy course
- Astronomy Preceptor:** *Spring 2019*
○ Undergraduate preceptor for Macalester introductory Modern astronomy course

Volunteer Service and Outreach

- Prospective Student Expo Coordinator:** Organized the prospective student interview weekend for Purdue EAPS. *2022*
- Astronomy on Tap Organizer:** Established and serve as primary organizer for the Lafayette, IN satellite series of "Astronomy on Tap". *Fall 2021 – Present*
- Radio Host:** Radio Astronomy – Macalester College's astronomy talk show *Fall 2017 – Spring 2020*
- Host and Telescope Operator:** Macalester College Public Observing Nights *Fall 2017, Fall 2019*
- Arecibo Observatory Noche de Observación:** "Ask a Scientist" booth *Summer 2018*
- NASA in the Park Presenter:** Presented vacuum chamber experiments to the public at the annual NASA in the Park event, Huntsville, AL *June 2017*
- Astronomy Guest Speaker:** Minnetonka Middle School East 8th grade science classes *Spring 2018*
- Astronomy Presenter:** Eden Prairie High School AP Physics classes *Spring 2017*
- Destination Imagination Volunteer:** judge for Destination Imagination, a global creative problem solving competition *January 2017 – January 2020*