

# Riley McGlasson

✉ rmcglass@purdue.edu • 📄 rmcglass.github.io

## 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

### Graduate Research Assistant

Purdue University

Advisor: Dr. Ali Bramson

- Analyzing SHARAD radar observations of ice deposits in Martian craters.
- Developing Martian radar analog lab capabilities for the Bramson Lab.

West Lafayette, IN

August 2020 – Present

### Astronomy Ranger Intern

Bryce Canyon National Park

Advisors: Dr. Anil Seth and Mr. Todd Cullins

- Developed and presented astronomy interpretive programs.
- Led educational “telescope tours” of planets, constellations, and deep sky objects to visitors of Bryce Canyon National Park.
- Presented “A Message to the Universe”, a public talk about the Voyager missions, at the Bryce Canyon Annual Astronomy Festival.

Bryce, Utah

Summer 2019

### REU Student

Arecibo Observatory

Advisors: Dr. Sean Marshall and Dr. Flaviane Venditti

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

Arecibo, Puerto Rico

Summer 2018

### REU Student

University of Alabama in Huntsville/NASA MSFC

Advisor: Dr. Navdeep Panesar

- Studied the magnetic origins of solar coronal jets.

Huntsville, AL

Summer 2017

### Undergraduate Research Assistant

Macalester College

Advisor: Dr. John Cannon

- Performed the first characterization of the neutral ISM in two local volume dwarf galaxies using the HI 21cm spectral line.
- Determined cluster membership for galaxies around the Pisces-Perseus Supercluster, as part of the Arecibo Pisces-Perseus Supercluster Survey.

Saint Paul, MN

Spring 2017

## Peer-Reviewed Publications

1. McGlasson, R. A., Bramson, A. M., Morgan, G. A., Sori, M. M. (submitted). Varied Histories of Outlier Polar Ice Deposits on Mars. *Journal of Geophysical Research: Planets*.
2. Virkki, A. K., Marshall, S. E., Venditti, F., et al. (incl. McGlasson, R. A.). (2022). Arecibo Planetary Radar Observations of Near-Earth Asteroids: 2017 December - 2019 December. *Planetary Science Journal*, 3, 222.
3. Sori, M.M., Becerra, P., Bapst, J., Byrne, S., and McGlasson, R. A. (2022). Orbital forcing of Martian climate revealed in an outlier ice deposit. *Geophysical Research Letters*, 49, e2021GL097450.

4. **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.
5. **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.
6. 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.
7. 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 R. A. McGlasson is presenting author

† Indicates oral presentation

1. \* **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.
2. \*†**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.
3. \*†**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.
4. 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.
5. 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.
6. \***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.
7. 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.
8. 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.
9. \***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

---

<b>Purdue TA Honor Roll:</b>	Fall 2021
<b>Purdue Student Service-Learning Grant:</b>	2021
<i>In support of development of the Astronomy on Tap program</i>	
<b>NSF Graduate Research Fellowship Program, Honorable Mention:</b>	2021
<b>Lunar and Planetary Institute Career Development Award:</b>	2021
<i>52nd Lunar and Planetary Science Conference</i>	
<b>Macalester Physics Department's Dr. Sherman W. Schultz Memorial Award:</b>	2020
<i>For academic excellence and outstanding research</i>	

**Chambliss Astronomy Achievement Award Student Prize:**  
*American Astronomical Society 233rd meeting*

2019

## Technical Skills

---

Python | IDL | Latex | Bash | Microsoft Office | ArcGIS | ENVI | Ground Penetrating Radar

## Teaching Experience

---

**EAPS 111: Physical Geology Teaching Assistant:** *Fall 2020, Fall 2021, Fall 2022*

- Lab TA for Purdue introductory geology class

**EAPS 100: Planet Earth Teaching Assistant:**

*Spring 2022*

- TA for Purdue introductory Earth science class

**Observational Astronomy Preceptor:**

*Spring 2020*

- Undergraduate preceptor for Macalester upper-level observational astronomy course

**Modern Astronomy Preceptor:**

*Spring 2019*

- Undergraduate preceptor for Macalester introductory Modern astronomy course

## Volunteer Service and Outreach

---

**"Leading Women to Space Careers" Mentor:** Graduate student mentor for pilot mentorship program in the Purdue Honors College *2022*

**EAPS Graduate Student Mentorship Program Coordinator:** Organized mentorship pairs and development programs to support incoming graduate students in Purdue EAPS. *2022*

**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 Observaci3n:** "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*