

Emileigh S. Shoemaker

Contact Information

Address: Lunar and Planetary Laboratory, University of Arizona, Kuiper Space Sciences Building, 1629 E University Blvd., Tucson, AZ 85721

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Research and Teaching Experience

2018-Present, Graduate Research Associate, **Lunar and Planetary Laboratory**, University of Arizona

Fall 2021, Graduate Teaching Associate, **Lunar and Planetary Laboratory**, University of Arizona, The Universe and Humanity (PTYS 170B2)

Summer 2020, Intern, **NASA Goddard Space Flight Center**, Greenbelt, Maryland

2017-2018, Intern, **NASA Goddard Space Flight Center**, Greenbelt, Maryland

Summer 2017, Intern, **NASA Goddard Space Flight Center**, Greenbelt, Maryland

Summer 2016, Intern, **NASA Goddard Space Flight Center**, Greenbelt, Maryland

2015-2017, Undergraduate Research Assistant, **Towson University**, Towson, Maryland

2015-2017, Teaching Assistant, **Towson University**, Towson, Maryland, Introduction to Astronomy I: Lecture and Laboratory (ASTR 161)

Education

2018- Present, Lunar and Planetary Laboratory, **University of Arizona**, Graduate Program in Planetary Sciences, Working Dissertation Title: "*Orbital and Ground Penetrating Radar Investigations of Volcanic Materials on Earth and Mars*," Advisor: Lynn M. Carter

2021, MSc, Planetary Sciences, **University of Arizona**

2013-2017, BS, Physics, Astrophysics Concentration, **Towson University**, Capstone: "*Quasar Absorption Lines and SDSS Galaxies*," Advisor: Jennifer E. Scott

Field Experience

2021, NASA Goddard Space Flight Center, Goddard Instrument Field Team-led campaign to Askja Volcano, Iceland

2019, NASA Goddard Space Flight Center, Goddard Instrument Field Team-led campaign to 2014-2015 Holuhraun eruption site and Askja Volcano, Iceland

2019, Planetary analogs and geophysical field methods trip to the Zuni-Bandera Volcanic Field, New Mexico

2019, Planetary analogs field trip to the Flagstaff area, Arizona

2018, Volcanology field methods trip to the Superstition Mountains, Arizona

2018, Planetary analogs field trip to Canyon de Chelly, Painted Desert, and Petrified National Forest, Arizona

Awards and Scholarships

2022, Curson Education Plus Fund in Planetary Sciences and LPL Travel Award

2022, Galileo Circle Scholar

2022, Graduate and Professional Student Council Travel Grant

2020, John C. Mather Nobel Scholar

2017, Society of Physics Students Marsh W. White Outreach Award, Project Lead, Outreach Proposal: “*Science After Hours*”

2016, Towson University, Pelham Award, Physics Junior of the Year

2013-2017, Towson University Department of Physics, Astronomy, and Geosciences Scholarship

2013-2017, Towson University Provost Scholarship

Publications in Preparation

Shoemaker, E. S., Carter, L. M., Garry, W. B., Morgan, G. A. (in review) Investigating the Subsurface Northwest of Ascraeus Mons Using Radar Sounding.

Shoemaker, E. S., Baker, D. M. H., Richardson, J. A., Scheidt, S. P., Carter, L. M., Whelley, P. L., Young, K. E. (in prep.) Mapping Buried Ice and Pyroclasts Using Ground-Penetrating Radar at Askja Volcano, Northern Iceland.

Peer Reviewed Publications

Scott, J. E., **Shoemaker, E. S.**, and Hamill, C. D. (2021). Identifying Circumgalactic Medium Absorption in QSO Spectra: A Bayesian Approach. *The Astrophysical Journal*, 923(1), 44. doi: 10.3847/1538-4357/ac2954

Shoemaker, E. S., Baker, D. M. H., and Carter L. M. (2018). Radar Sounding of Open Basin Lakes on Mars. *Journal of Geophysical Research: Planets*, 123(6), 1395-1406. doi: 10.1029/2018JE005591.

Selected Conference Publications

Shoemaker, E. S., Baker, D. M. H., Richardson, J. A., Scheidt, S. P., Carter, L. M., Whelley, P. L., & Young, K. E., (2022). A Multi-Frequency Investigation of Buried Ice Deposits at Askja Volcano, Northern Iceland. Accepted to the GPR 2022 Conference in June 2022, Golden, CO.

Shoemaker, E. S., Baker, D. M. H., Richardson, J. A., Scheidt, S. P., Carter, L. M., Whelley, P. L., & Young, K. E., (2022). Multi-Frequency Ground Penetrating Radar Surveys of Tephra and Buried Ice at Askja Volcano, Northern Iceland. 53rd LPSC Meeting, Abstract 2699.

Shoemaker, E. S., Baker, D. M. H., Richardson, J. A., Scheidt, S. P., Whelley, P., Carter, L. M., & Young, K. E., (2021). A Multi-Frequency Ground Penetrating Radar Investigation of Buried Ice Beneath Pyroclastic Deposits at Askja Volcano, Northern Iceland. AGU Fall Meeting 2021.

Shoemaker, E. S., Baker, D. M. H., Richardson, J. A., Scheidt, S. P., Whelley, P., & Carter, L. M., (2020). Investigating Buried Ice at Askja Volcano, Northern Iceland using Ground Penetrating Radar: A Planetary Analog Perspective. AGU Fall Meeting 2020.

Shoemaker, E. S., Carter, L. M., Garry, W. B. & Morgan, G. A., (2020). Radar Sounding of Lava Flows Northwest of Ascraeus Mons, Mars. 51st LPSC Meeting, Abstract 2752.

Richardson, J. A., Baker, D. M. H., **Shoemaker, E. S.,** Scheidt, S. P., Whelley, P. L., Young, K. E., Graff, T. G., Achilles, C. N., Carter, L. M., Hamilton, C. W., (2020). Prospecting Buried Ice with Ground Penetrating Radar at Askja Volcano, Northern Iceland. 51st LPSC Meeting, Abstract 2326.

Shoemaker, E. S., Baker, D. M. H., Richardson, J. A., Scheidt, S. P., Whelley, P. L. & Carter, L. M., (2020). Subsurface Structure of the 1961 Lava Flows at Askja, Iceland. 51st LPSC Meeting, Abstract 2741.

Shoemaker, E. S., Carter, L. M., Garry, W. B., (2019). Radar Sounding of Lava Flows in the Tharsis Province, Mars. 50th LPSC Meeting, Abstract 2611.

Shoemaker, E. S., Baker, D.M.H., Carter, L.M., (2018). Radar Sounding of Open Basin Lakes on Mars, 49th LPSC Meeting, Abstract 1612.

Shoemaker, E. S., Baker, D.M.H., Carter, L.M., (2017). SHARAD Radar Survey of Ancient Basin Stratigraphy on Mars, 48th LPSC Meeting, Abstract 1658.

Shoemaker, E. S., Scott, J.E., Oldak, K. (2017). Quasar Absorption Lines and SDSS Galaxies, 229th AAS 2017 Winter Meeting.

Shoemaker, E. S., Laubner, D., Scott, J. E. (2016). A Bayesian method for finding galaxies that cause quasar absorption lines, 227th AAS 2016 Winter Meeting.