

SOPHIE MARTINE SILVER

University of Pennsylvania Department of Earth and Environmental Science
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Driven and curious experimentalist with a particular interest in planetary fracture mechanics, particle attrition, icy satellite surface dynamics, and robotic instrumentation for extraplanetary data acquisition

EDUCATION

University of Pennsylvania

Ph.D. Earth Science

- GPA: 3.98

Philadelphia, PA
Sept 2020 – Present

Temple University

B.S. Geology

- GPA: 3.31

Philadelphia, PA
Aug 2015 – May 2019

RESEARCH EXPERIENCE

University of Pennsylvania

Primary advisor: Dr. Douglas J. Jerolmack

Current Research: Fracture network geometric analysis, planetary analog fractured systems, brittle-to-ductile transition mechanics

Temple University

Primary advisor: Dr. Alexandra Krull Davatzes

Research: microCT imaging, point counting, and CAMSIZER analysis of impact deposits

Summer 2019 – Spring 2020

PUBLICATIONS

- [1] **Silver, S.**, Regos, K., Domokos, G., Jerolmack, D.J. (2024) Decoding planetary surfaces by counting cracks. <in revision at *Proceedings of the National Academy of Science*>
<https://arxiv.org/abs/2406.07376>

CONFERENCE PRESENTATIONS & CHAIRED SESSIONS

- [1] **Silver, S.**, Regos, K., Domokos, G., Jerolmack, D.J. (2023) *Counting cracking across the solar system – tales told by fractured films*. Presented at LPSC 2023 Annual Meeting, Houston, TX
- [2] **Silver, S.**, Regos, K., Domokos, G., Jerolmack, D.J. (2023) *Decoding planetary surfaces by counting cracks*. Presented at AGU 2023 Annual Meeting, San Francisco, CA

- [3] Reber, J. E., Hill K. M., Hansen L. N., **Silver S. (early career convener)**, Cúñez D., and Deshpande, N.. *Granular and Fluid Physics on Earth and Other Planetary Bodies*. AGU 2023 Annual Meeting, San Francisco, CA
- [4] Dong, T. Y., Hunter, B., Morey, S., **Silver, S.** *Earth and Planetary Surface Processes General Contributions*. AGU 2023 Annual Meeting, San Francisco, CA
- [5] **Silver, S.**, Regos, K., Domokos, G., Jerolmack, D.J. (2022) *Evolution & Memory of Fractured Planetary Shells: Insights from Mud Crack Analog Experiments*. Presented at AGU 2022 Annual Meeting, Chicago, IL
- [6] **Silver, S.**, Regos, K., Domokos, G & Jerolmack, D.J. (2022) *Counting cracking across the solar system: how fracture network topology informs process*. Presented at Penrose PRF Conference June 2022, Flat Rock, NC
- [7] **Silver, S.**, Regos, K., Domokos, G & Jerolmack, D.J. (2021) *Counting cracking across the solar system: how fracture network topology informs process*. Presented at AGU 2021 Annual Meeting, New Orleans, LA
- [8] **Silver, S.**, Souders, K., & Davatzes, A. (2019) *A Comparison of Spherule Diameter Measurement Techniques*. Presented at AGU 2019 Annual Meeting, San Francisco, CA

TEACHING

EESC 1060 – Natural Disturbances & Disasters, <i>Teaching Assistant</i>	Fall 2023
EESC 2600 – Stratigraphy & Sedimentology, <i>Instructor</i>	Fall 2022
Geology 100 – Introduction to Geology, <i>Teaching Assistant</i>	Fall 2021
Geology 125 – Earth and Life Through Time, <i>Teaching Assistant</i>	Spring 2021

GRANTS & AWARDS

Grants

NASA, Planetary Science and Technology through Analog Research (Named PhD Student) Summer 2022 – Present

LASSIE: Legged Autonomous Surface Science in Analog Environments
PI: Feifei Qian, University of Southern California

Awards

Henry Carville Louis Graduate Fellowship	Fall 2022-Spring 2023
Penrose Conference Assist Fund	Spring 2022
Ahuja Family Graduate Fellowship	Fall 2021 – Spring 2022
Benjamin Franklin Fellowship	Fall 2020 – Spring 2024
Indiana University Bloomington Anadarko Scholarship	Summer 2018

PROFESSIONAL AFFILIATIONS & HONOR SOCIETIES

Penn SAS Graduate Student Government, *VP of Finance* Fall 2022 – Present

Penn University Council, <i>Voting Member</i>	Fall 2023 – Spring 2024
Penn Student Health Insurance Advisory Committee (SHIAC), <i>Member</i>	Fall 2022 – Spring 2023
Unlearning Racism in Geosciences (URGE), <i>PennEES Pod Secretary</i>	Fall 2021 – Spring 2022
Graduate Women in Science (GWIS), <i>Member</i>	Fall 2020 – Present
American Geophysical Union, <i>Member</i>	Fall 2019 – Present
Sigma Gamma Epsilon Theta Rho Chapter, <i>President</i>	Summer 2018 – Spring 2019