Sarah A. Silverman

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EDUCATION

McGill University, Expected May 2026
Master of Science in Earth and Planetary Sciences (Thesis)
Columbia University, Graduated May 2024
Bachelor of Arts in Astrophysics, Concentration in Earth Science, *cum laude* (GPA 3.99/4.00)

HONORS/AWARDS

Robert Wares Fellowship in Earth and Planetary Science, McGill University (2024)
Stewart D. Memorial Fellowship, McGill University (2024)
Senior Marshal, Columbia University (2024)
Columbia Spirit Award, Columbia University (2024)
Dean's List (7x), Columbia University (2020-2023)

RESEARCH EXPERIENCE

McGill Exoplanet Characterization Alliance, McGill University
Graduate student researcher, August 2024 – Present
Advisors: Dr. Nic Cowan, Dr. Natalya Gomez

- Using numerical simulations to study deep-water cycling and ice sheet formation on M-dwarf planets.

Lamont-Doherty Earth Observatory: Seismology, Geology, Tectonophysics
Undergraduate student researcher, September 2023 – August 2024
Advisor: Dr. Andrew Lloyd

- Developed Python code to examine elastic sea level fingerprints associated with water mass changes in Earth System models.
- Benchmarked two software codes[1] to strengthen their reliability and ensure their robustness for future analysis of sea level dynamics.

Lamont-Doherty Earth Observatory: Climate Extremes Research Group
Undergraduate student researcher, June 2023 – December 2023
Advisor: Dr. Radley Horton

- Assessed the frequency, trends, and mechanisms behind cold air outbreaks in the subtropics/tropics.
- Led literature review of prior work in field (30+ papers) that is serving as the basis for the introduction of our paper currently in preparation.
- Used Python to analyze large datasets, including ERA5, across a range of variables including global temperature, specific humidity, and surface pressure.

[1] https://github.com/da380/SLReciprocityGJI and https://github.com/jaustermann/SLcode

NuSTAR High-Energy Astrophysics Research Group, **Columbia University**
Undergraduate student researcher, June 2021 – August 2022
Advisors: Dr. Charles Hailey, Dr. Kaya Mori

- Conducted multi-wavelength timing, imaging, and spectral analysis on a pulsar wind nebula using data from NuSTAR, XMM-Newton, HESS, and HAWC observatories.
- Participated in, and presented at, monthly meetings for the Galactic TeV Source Collaboration.

PUBLICATIONS

Kim, C., J. Park, J. Woo, **S. Silverman**, H. An, A. Bamba, K. Mori, S.P. Reynolds, S. Safi-Harb, Xray characterization of the pulsar PSR J1849−0001 and its wind nebula G32.64+0.53 associated with TeV sources detected by H.E.S.S., HAWC, Tibet ASγ, and LHAASO. *ApJ* (2023).

TEACHING EXPERIENCE

Department of Earth and Planetary Sciences, McGill University
Teaching Assistant, September 2024 – Present

- Responsible for grading 36 students' assignments in "Introduction to Natural Disasters."

Department of Mathematics, Columbia University
Teaching Assistant, September – December 2022

- Held office hours twice per week, graded 57 students' weekly homework, and proctored two exams for Calculus I course.

LEADERSHIP/VOLUNTEER EXPERIENCE

Trottier Space Institute Outreach, McGill University
Volunteer, September 2024 – Present

- Work in weekly after-school program, leading science activities for young students.
- Led science activities for 100+ students at the "Planets to Particles: An Exploration Mini-Fair" event.

Undergraduate Recruitment Committee, Columbia University
Visitors Center Intern/Tour Captain, March 2022 – April 2024

- Provided up to four weekly campus tours to prospective students (~200 people per week).
- Led Columbia Admissions information sessions (~120 people per session).

Reading Team Math
Volunteer math tutor, September 2020 – April 2024

- Provided weekly tutoring sessions to elementary school students in an after-school program to enhance their math skills.

Storytelling and Improv Workshop for Scientists, American Museum of Natural History
Participant/Performer, February – April 2023

- Participated in a workshop designed to cultivate creative and confident public-speaking skills, and performed an original story at the spring showcase "Life of a Scientist."

Blueshift Undergraduate Astronomy Club, Columbia University
Public Relations Director, December 2020 – December 2022

- Designed flyers for club events and managed four social media/messaging platforms (Instagram, Facebook, Twitter, Discord) to promote club engagement.
- Sent updates about weekly meetings.

SKILLS

Computer: Python, Linux, GeoMapApp, HEASoft, SAOImageDs9
Language: French (intermediate)