Amanda Stricklan, Ph.D

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Education

2025 **Ph.D., New Mexico State University,** Astronomy
Dissertation: *On the origin of catastrophic cooling in coronal loops*
Advisor: James McAteer & Tim Waters

2019 **M.S., University of Georgia,** Physics
Thesis: *Isolated Molecular Clumps at the CO-boundary of a Diffuse Molecular Cloud.*
Advisor: Loris Magnani

2017 **B.S., University of Georgia,** Phyiscs and Astronomy
Minor: *Archaeological Anthropology*.

Employment History

2025-present **Los Alamos National Laboratory (LANL), Staff Scientist**
Develop and apply magnetohydrodynamic (MHD) and hydrodynamic models for detonator systems and astrophysical plasmas using in-house simulation codes, with a focus on radiative instabilities and code development.

2024-2025 **Los Alamos National Laboratory (LANL), Graduate Research Assistant**
Developed MHD models of coronal loops and thermal instabilities using Athena++, and contributed to maintaining and advancing the MHD capabilities of laboratory hydrodynamics codes.

2020-2023 **New Mexico State University, Graduate Research Assistant**
Combining space and ground-based observations to study fine scale solar structures and trace them through the solar atmosphere. This research utilizes image alignment and processing of large data sets, spectral and polarimetric analysis, and comparing results with numerical simulations.

2019-2020 **Los Alamos National Laboratory, Post-Master's Graduate Assistant**
Used high energy particle data from GPS satellites for tracing particle trajectories to study their reaction to Earth's magnetosphere and simulate geomagnetic storms, used machine learning techniques to create a geomagnetic cutoff model.

Research Publications and Conferences

Publications

1. **A. Stricklan**, T. Waters, and J. Klimchuk, "On the Stability Analysis of Astrophysical Cooling Functions," *Astrophysical Journal*, vol. 992, no. 1, 101, p. 101, Oct. 2025. DOI: 10.3847/1538-4357/adf960. arXiv: 2505.13178 [astro-ph.SR].
2. T. Waters and **A. Stricklan**, "Catastrophic Cooling Instability in Optically Thin Plasmas," *Solar Physics*, vol. 300, no. 1, 5, p. 5, Jan. 2025. DOI: 10.1007/s11207-024-02417-5.
3. M. Carver, S. K. Morley, and **A. Stricklan**, "Gps constellation energetic particle measurements," in *2020 IEEE Aerospace Conference*, 2020, pp. 1–10. DOI: 10.1109/AERO47225.2020.9172652.
4. **A. Stricklan**, "Isolated molecular clumps at the co-boundary of a diffuse molecular cloud," M.S. thesis, University of Georgia, 2019.

Non-Peer Reviewed

1. **A. Stricklan**, S. Hlubik, R. Kinyanjui, D. Braun, G. Oppenheim, and O. Ben Brahim, *The search for early fire: A phytolithic study of site fxjj 20 ab*, Special Research Programs, Koobi Fora Field School, student paper, 2021.

Conferences

1. **A. Stricklan**, T. Waters, and J. Klimchuk, "A new explanation for coronal rain formation," 246th Meeting of the American Astronomical Society, 2025.
2. **A. Stricklan** and T. Waters, "On the analysis of optically thin cooling functions," 11th Coronal Loops Workshop, 2024.
3. **A. Stricklan**, S. Morley, and M. Carver, "Using gps particle measurements to model geomagnetic cutoff," American Meteorological Society Conference, poster/oral presentation, 2021.

Technical Skills

Programming Languages	Python, Fortran, C/C++, IDL, Latex, HTML
Developer Tools	git, VS Code, Kokkos, HPC clusters/supercomputing environments
Visualization Software	matplotlib, Paraview, Bokeh
Scientific Codes	astropy, sunpy, spacepy, plasmapy, SolarSoft, Athena++, HAZEL, MESA

Miscellaneous Experience

Awards and Achievements

2023-2024	New Mexico Space Grant Consortium Graduate Fellowship
2023	Los Alamos Vela Graduate Fellowship
2020-2022	New Mexico State University Webber Scholarship

Workshops

2024	11th Coronal Loops Workshop, Tenerife, Canary Islands, Spain
2023	Los Alamos National Laboratory Space Weather Summer School, competitive admission
2022	Inaugural Python in Heliophysics Summer School (PyHC), participant
	Heliophysics Summer School, participant, competitive admission

Outreach

2022-2023	Letters to a pre-Scientist correspondent
	Mission2Mars at the Las Cruces Museum of Nature and Science
2022	Sun Space Art at the Alamogordo Public Library
	Las Cruces Museum of Nature and Science Space Festival