

Tamar Ervin (she/her/hers)

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EDUCATION

Ph.D. University of California, Berkeley, Physics. *Expected Graduation 2028.*

B.S. University of California, Los Angeles, Honors College. **Astrophysics, Atmospheric and Oceanic Science.** 2022.

PROFESSIONAL EXPERIENCE

University of California, Berkeley, Space Sciences Lab (SSL) Berkeley, CA
Parker Solar Probe (PSP) Science Working Group (SWG), Advisor: Dr. Stuart D. Bale August 2022 - Present
FIELDS Suite Principal Investigator (PI) – OCHRE Sounding Rocket, Advisor: Dr. John W. Bonnell July 2024 - Present
Solar Orbiter Origins and Connection Science Working Group January 2023 - Present
FOXSI-4 Sounding Rocket, Advisor: Dr. Juan Camilo Buitrago-Casas January 2023 - May 2024

NASA Jet Propulsion Laboratory Pasadena, CA
Solar Physics and Exoplanet Research Intern, Advisor: Dr. Samuel Halverson June 2021 – June 2022

Predictive Science Inc. San Diego, CA
Solar Physics Intern, Advisor: Dr. Cooper Downs May 2020 – June 2021

TEACHING AND MENTORING

University of California, Berkeley, Space Sciences Lab Berkeley, CA
Student Mentor August 2023 - Present
■ Mentored: Maya Savani [Jan 26 - Present], Kai Jaffarove [Aug 23 - Aug 26], Jack Collard [June 24 - Aug 26], Esrom Abraham [Summer 2026], Sebastian Park [Summer 2025], Angel Reyna [Summer 2024]

University of California, Berkeley, Department of Physics Berkeley, CA
Physics Directed Reading Program, Lead Organizer and Mentor January 2023 - Present
■ Mentored: Ines Pajot, Maya Savani, Jack Collard, Bhoomi Naithani, Orestis Sabatai

Head Graduate Student Instructor (HGSi) January 2023 - May 2023
■ Support ~500 students and 12 graduate student instructors

Graduate Student Instructor (GSI) August 2022 – January 2023
■ Instructor to 50 students for four times weekly, two-hour discussion and lab sections lecturing on mechanics topics

COMMUNITY SERVICE

ApJ, ApJL, A&A, GRL Berkeley, CA
Peer Reviewer October 2024 - Present

Parker Heliophysics Scholars Series Berkeley, CA
Science Organizing Committee (SOC) Lead January 2024 - Present

Advancing Space Science through Undergraduate Research Experience (ASSURE) Berkeley, CA
Summer Research Program Coordinator December 2023 - Present

UC Berkeley Physics Directed Reading Program (PDRP) Berkeley, CA
Program Coordinator August 2023 - Present

COFFIES Drive Center Stanford, CA
Beans (Early Career Program) Steering Committee; COFFIES Effectiveness Team (CET) Member January 2024 - March 2025

AWARDS

- **AAS/SPD Metcalf Award**, AAS/SPD. *July 2025.*
- **AAS/SPD Zirin Studentship Award**, AAS/SPD. *May 2025.*
- **Robert J. Collier Trophy**, National Aeronautic Association. *2024.*
- **NASA Group Achievement Award**, NASA. *November 2023.*
- **Lin Fellowship**, UC Berkeley Space Sciences Lab. *June 2023.*
- **The Chuck Lorre Foundation Big Bang Theory Graduate Fellowship**, UCLA. *August 2022 - Present*
- **Phi Beta Kappa**, UCLA. *June 2022.*
- **UCLA Undergraduate Research Prize in STEM, 2nd Place**, UCLA. *June 2021.*
- **UC Regents Scholar**, UCLA. *August 2018.*
- **Big Bang Theory Undergraduate Scholarship**, UCLA. *August 2018 - June 2022.*

PUBLICATIONS

- **Ervin T.** Bowen T.A., Mallet A., et al. "Intermittent Turbulence as the Driven of Stochastic Heating in the near-Sun Solar wind.", *Astrophysical Journal Letters*. In Review.
- **Ervin T.** Bowen T.A., Mallet A., et al. "Direct Measurement of Diffusion Coefficients: Evidence for diffusive stochastic heating in collisionless plasmas.", *Physical Review Letters*. August 2026.

- **Ervin T.** "On the source region characteristics associated with highly Alfvénic solar wind streams.", *Proceedings of the International Astronomical Union*, August 2026.
- **Ervin T.** Nakhleh A.J., Bharati Das S. "The Sun as a driver of the inner heliosphere: Modern investigations of fundamental plasma processes.", *Comment, Nature Communications*. May 2026.
- **Ervin T.** Mallet A., Erickson S., et al. "The impact of Alfvénic shear flow on reconnection and turbulence.", *Astrophysical Journal Letters*. October 2025.
- **Ervin T.**, Jaffarove K., Badman S.T., et al. "Characteristics and Source Regions of the Slow Alfvénic Wind Observed at Parker Solar Probe.", *Astrophysical Journal*. September 2024.
- **Ervin T.**, Bale S.D., Badman S.T., et al. "Near subsonic solar wind emerging from an active region.", *Astrophysical Journal*. July 2024.
- **Ervin T.**, Bale S.D., Badman S.T., et al. "Compositional metrics of fast and slow Alfvénic solar wind emerging from coronal holes and their boundaries.", *Astrophysical Journal*. June 2024.
- **Ervin T.**, Halverson S., et al. "Leveraging space-based data from the nearest Solar-type star to better understand stellar activity signatures in radial velocity data.", *Astronomical Journal*. May 2022.
- **Ervin T.** et al., "Coronal Hole Detection using Machine Learning Techniques." *UC E-Scholarship*. May 2021.
- Collard J, **Ervin T.**, Dewey R., et al. "Proton specific entropy as a proxy for the oxygen charge state ratio as a function of heliocentric distance.", *Astrophysical Journal*. In Review.
- Bowen T.A, **Ervin T.**, Mallet A., et al. "Stochastic heating in the sub-Alfvénic solar wind.", *Physical Review Letters*. Dec 2025.
- Mallet A., ..., **Ervin T.** et al. "Perpendicular ion heating in turbulence and reconnection: magnetic moment breaking by coherent fluctuations.", *Physics of Plasmas*. Feb 2026.
- Huang Z., ..., **Ervin T.** et al. "Evidence of 5 minute oscillations from Parker Solar Probe.", *Astrophysical Journal Letters*. Mar 2026.
- Martinez Oliveros J.C., Krupar V., **Ervin T.** et al. "Multiwavelength Multipoint Observations of the October 28, 2021 Type III Radio Burst.", *Solar Physics*. Apr 2026.
- Cattell C., ..., **Ervin T.** et al. "Correlated Quasiperiodic Pulsations in Type III Radio Bursts and Solar EUV Emission, Jetlets and Magnetic Fields: Comparisons of Intervals with and without Type III Storms.", *Astrophysical Journal*. Jan 2026.
- Powers B., ..., **Ervin T.** et al. "Observing Cusp High-Altitude Reconnection and Electrodynamics: The TRACERS Student Rocket.", *Space Science Reviews*. July 2025.
- Huang J., Larson D., **Ervin T.** et al. "The Temperature Anisotropy and Helium Abundance Features of Alfvénic Slow Solar Wind Observed by Parker Solar Probe, Helios, and Wind Mission.", *ApJ*. June 2025.
- Riley P., ..., **Ervin T.** et al. "Understanding the global structure of the September 5, 2022, coronal mass ejection using sunRunner3D." *JSWSC*. May 2025.
- Rivera Y. J., ..., **Ervin T.** et al. "Differentiating the Acceleration Mechanism in the Slow and Alfvénic Slow Solar Wind.", *Astrophysical Journal*. February 2025.
- Rivera Y. J., ..., **Ervin T.** et al. "Mixed Source Region Signatures Inside Magnetic Switchback Patches Inferred by Heavy Ion Diagnostics." *Astrophysical Journal*. October 2024.
- Sioulas N., ..., **Ervin T.** et al. "Scale-Dependent Dynamic Alignment in MHD Turbulence: Insights into Intermittency, Compressibility, and Imbalance Effects." *Astrophysical Journal*. In Review.
- Romeo O., ..., **Ervin T.** et al. "Near In Situ and Remote Sensing Observations of a Coronal Mass Ejection and its Effect on the Heliospheric Current Sheet.", *Astrophysical Journal*. September 2023.
- Downs C., Turtle J., **Ervin T.**, Issan O., Caplan R., Linker J. "Coronal Hole Mapping, Identification, and Tracking: Methods", *In Preparation*.
- Tsan T. ..., **Ervin T.** et al. "The Effects of Inclination on a two-stage pulse tube cryocooler for use with a groundbased observatory.", *Cryogenics*. July 2021.

SELECTED RECENT PRESENTATIONS

- **Solar Wind 17 (Solicited)**, "Observational Constraints on Collisionless Heating in the Solar Wind". *June 2026*.
- **AGU Fall Meeting 2025 (Oral)**, "Suppression of Magnetic Reconnection via Shear Flow". *Dec 2025*.
- **IAGA 2025 (Invited Talk)**, "Turbulence and Heating of the Alfvénic Solar Wind". *Sept 2025*.
- **AOGS 2025 (Invited Talk)**, "Turbulence and Source Regions of the Slow Alfvénic Wind". *July 2025*.
- **IAUS 400 (Metcalf Lecture)**, "Source Regions and Characteristics of the Slow Alfvénic Wind". *July 2025*.
- **AAS/SPD Meeting 2025 (Oral)**, "Empirical Measurement of Diffusive Heating in the Solar Wind". *June 2025*.
- **AAS/SPD Meeting 2025 (Oral)**, "Sources and In-Situ Characteristics of the Alfvénic Solar Wind". *June 2025*.
- **EGU 2025 (Oral)**, "Empirical Measurement of Diffusive Heating across Earth's Bowshock". *April 2025*.
- **AGU Fall Meeting 2024 (Oral)**, "Empirical Measurement of Diffusive Heating in the Solar Wind". *December 2024*.
- **AGU Fall Meeting 2023 (Poster)**, "In situ measurement of slow solar wind from a pseudostreamer". *December 2023*.
- **Solar Orbiter Origins and Connections Science Working Group (Invited)**, "Unlocking Solar Wind Source Regions: Insights from Parker Solar Probe and Solar Orbiter Conjunctions". *November 2023*.
- **NASA Center for Geospace Storms 2021 Workshop (Invited)**, "Unsupervised and Supervised Machine Learning Methods for Coronal Hole Detection". *November 2021*.
- **UCLA Library Prize Ceremony**, "Coronal Hole and Active Region Detection using Machine Learning Methods". *June 2021*.
- **Astronomy on Tap, San Diego**, "Data Analysis and Reduction for Imaging a Black Hole". *August 2019*.

OPEN SOURCE CODE

Space Physics Data Access Tutorials¹: Python tutorials to access and analyze multi-spacecraft space physics data in Python
SolAster²: Python package to independently derive ‘Sun-as-a-star’ radial velocity variations and magnetic observables
CHMAP: Coronal Hole Mapping and Analysis Pipeline³: Python package for the detection, mapping, tracking, and general analysis of solar coronal holes

¹ <https://github.com/tamarervin/tutorials>

² <https://github.com/tamarervin/SolAster>

³ <https://github.com/predsci/CHMAP>