

Kristoff Paulson

Education

Spring 2022 *Heliophysics Mission Design School*, Virtual
July 2015 *Heliophysics Summer School*, Boulder, CO
July 2014 *ISR Summer School*, Arecibo, PR

2011 – 2018 **PhD**
Physics
University of New Hampshire

Work Experience

Astrophysicist

Current, from June 2022

Center for Astrophysics | Harvard and Smithsonian

Instrument Scientist - Parker Solar Probe, HelioSwarm

- Responsible for Parker Solar Probe - Solar Probe Cup instrument commanding and SWEAP housekeeping data monitoring/validation as well as addressing and mitigating anomalous behaviors.
- Refined previous operational modes to account for false anomalous data and developed new operational modes to address specific science questions from the community.
- Applying instrumental operational knowledge to HelioSwarm Faraday Cup design and science investigation plans.
- Developing procedures and generating interface requirement documents necessary for HelioSwarm Faraday Cup testing and calibration.
- Developed concept of operations and presented functional plan at design review for HelioSwarm Faraday Cup.

Research Scientist

- Continued mentorship of student researchers in the Solar REU program as well as postdoctoral research projects examining wave-particle interactions and particle distribution function evolution/reconstruction.
- Developed wave analysis data processing routines to automatically generate files incorporated into statistical property and distribution analyses. These properties are compared to plasma measurements to assess wave-particle driven heating and acceleration.

Postdoctoral Researcher

April 2019 to June 2022

Center for Astrophysics | Harvard and Smithsonian

- Served as mentor for several undergraduate student researchers as participating in our NSF-funded REU program.
- Developed temperature anisotropy measurement technique using the Faraday cup (SPC) on board the Parker Solar Probe Spacecraft (PSP).
- Analyzed ion-scale wave data using the FIELDS instrument on PSP to compare to observations of thermal plasma velocity space diffusion.
- Contributed to data qualification and file testing in preparation for release.
- Reconstructed the orientation and cross-section of magnetic flux ropes observed by various solar wind spacecraft using the Grad-Shafranov method.

Mentoring/Organizational Experience

2022-2025	Overseeing support scientist with tasks such as housekeeping operations monitoring and data validation
2021-2025	AGU Fall Meeting session organizer and primary convener
2021	URSI NRSN session organizer, Heliospheric Observations of Waves in Plasmas, virtual
2021-2025	PSP Ion Working Group chair, virtual
2020-2022	PSP Scholars Science Organizing Committee member, virtual
2020	AGU Fall Meeting session organizer, virtual
2019-2025	Served in a mentorship role for 6 student research projects for undergraduates participating in the NSF-funded REU program at the Smithsonian Astrophysical Observatory. All have gone on to present their work at the AGU Fall Meeting and other scientific conferences.

Awards

Research Funding

- 2021 **NASA PSP-GuestInvestigator: 20-PSPGI20-0050 - \$165,355**
NASA
- 2016 **UNH NASA Space Grant Fellowship**
NASA

Misc. Travel

- 2015 **NRSM Travel Fellowship Award**
USNC-URSI and NSF
- 2015 **IUGG Travel Award**
IUGG General Assembly
- 2014 **Ming/Chen Scholarship**
Physics Department - University of New Hampshire
- 2014, 2015, 2018 **UNH Travel Grant**
University of New Hampshire

Publications/Referee

Publications

A bibliography of publications can be found at this link:

<https://ui.adsabs.harvard.edu/public-libraries/gGw5f82eSJmGn6awtoMQnw>

Citation metrics

h-Index 19

i10-Index 24

Reviews

Manuscript referee for:

- Geophysical Research Letters
- Journal of Geophysical Research: Space Physics

External Panel Reviewer for NASA