

Jacob Parker

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Current position

2014- Present *Graduate Research Assistant*, Montana State University Physics

Areas of specialization

Image Data Analysis • Correlation
Physics • Magnetic Reconnection
Opto-mechanical Design and Simulation
Telescope Alignment and Focus
Sounding Rocket Science

Research Experience

2011-2014 Undergraduate Research Assistant: Work with the *Multi-Order Solar Extreme Ultraviolet Spectrograph* (MOSES) sounding rocket on mechanical ground support and instrument calibration
2014-2016 Identifying Extra Spectral Content in MOSES images using cross-correlation and CHIANTI.
2015-2016 Created a linear MHD model of the Tearing Mode instability with equilibrium shear flow with Dana Longcope to analyze elliptical motions in a flare ribbon observed by IRIS.
2016-2019 Managing the mechanical design team for the *Extreme-Ultraviolet Snapshot Imaging Spectrograph* (ESIS) a sounding rocket mission.
2017-2019 Focus, Alignment, and Optical Testing of ESIS.
2019 Integration, Testing, and Launch of the ESIS Sounding Rocket at White Sands Missile Range
Present Early analysis of ESIS Sounding Rocket Data

Education

2014 BS in Physics (Highest Honors), Montana State University
2016 MS in Physics, Montana State University

Fellowships

Fall 2017 Montana Space Grant Consortium Graduate Fellowship

Publications & talks

JOURNAL ARTICLES

- 2017 Jacob Parker and Dana Longcope (2017), “Modeling A Propagating Sawtooth Flare Ribbon Structure as a Tearing Mode in the Presence of Velocity Shear”, *ApJ* [LINK](#)
- Present Jacob Parker and Charles Kankelborg, “Determining the Spectral Content of MOSES images”, *In preparation for Solar Physics*

POSTERS

- 2016 Jacob Parker and Charles Kankelborg (2016), “Determining the Spectral Content of MOSES images”, AAS/Solar Physics Division Meeting, Number 47. [LINK](#)
- 2017 Jacob Parker and Dana Longcope (2017), “Modeling A Propagating Sawtooth Flare Ribbon Structure as a Tearing Mode in the Presence of Velocity Shear”, IRIS-8/Hinode-11 Meeting [LINK](#)
- 2018 Jake Parker and Charles C. Kankelborg (2018) “Identifying Extra Spectral Content In MOSES Images Using Cross Correlation”, AGU 2018 [LINK](#)
- 2019 Jake Parker, Charles C. Kankelborg, Roy Smart, Hans Courrier, Amy Winebarger, Ken Kobayashi, and Laurel Rachmeler (2019) “A Preliminary Survey of Data From the ESIS Sounding Rocket Flight on Sept 30th 2019”, AGU 2019 [LINK](#)

TALKS

- 2017 Jacob Parker, Dana Longcope, and Sean Brannon “Modeling A Propagating Sawtooth Flare Ribbon Structure as a Tearing Mode in the Presence of Velocity Shear”, 48th Annual SPD Conference (Portland Oregon)