

# YINGJIE ZHU

(朱英杰)

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## EDUCATION

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**B.S., Peking University, Beijing, China**

*Sep 2015 - July 2019*

School of Earth and Space Sciences

Thesis Topic: Radiative Hydrodynamics Modeling of Eruptive Events on the Sun and M Dwarfs

**Ph.D., University of Michigan, Ann Arbor, MI**

*Sep 2019 - Dec 2023*

Department of Climate and Space Sciences and Engineering

Dissertation Topic: New Insights into the Coronal Heating Problem: Analysis of Spectral Line Widths in the Solar Corona

## EXPERIENCE

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**Peking University, Beijing, China**

*Apr 2017 - July 2019*

*Undergraduate research supervised by Dr. Hui Tian*

- Investigation of an S-shape Flare Ribbon with SDO and NVST observations
- Spectroscopic Diagnostics of IRIS data

**National Solar Observatory, Boulder, CO**

*July 2018 - Sep 2018*

*Summer research supervised by Dr. Adam F. Kowalski*

- Radiative Hydrodynamics Modeling of Mg II Lines at Solar Flare Ribbons

**University of Michigan, Ann Arbor, MI**

*Sep 2019 - Dec 2023*

*Advisor: Dr. Enrico Landi*

- Spectral Line Widths at Polar Off-limb Corona Observed by Hinode/EIS
- Ion Temperatures in a Polar Coronal Hole Observed by Hinode/EIS and SOHO/SUMER

**Institute for Astronomy, University of Hawaii, Honolulu, HI**

*July 2022*

*Short visiting working with Dr. Shadia Habbal and Dr. Adalbert Ding*

- Spectroscopic Observations during the 2017 Total Solar Eclipse

**Physikalisch-Meteorologische Observatorium Davos/World Radiation Center (PMOD/WRC), Switzerland**

*Jan 2024 - Present*

*Postdoctoral Researcher supervised by Prof. Louise Harra*

- Upflows at Active Region Boundaries

## PUBLICATIONS

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**Zhu, Y.**, Habbal, S. R., Adalbert, D., Yamashiro, B., Landi, E., Benjamin, B., Constantinou, S., Nassir, M., “Spectroscopic Observations of the Solar Corona during the 2017 August 21 Total Solar Eclipse: Comparison of Spectral Line Widths and Doppler Shifts between Open and Closed Magnetic Structures”, 2024, *ApJ*, 966, 122

**Zhu, Y.**, Szente, J., Landi, E., “Estimating Ion Temperatures at the Polar Coronal Hole Boundary”, 2023, *ApJ*, 948, 90

**Zhu, Y.**, Szente, J., Landi, E., “Fe XII and Fe XIII Line Widths in the Polar Off-limb Solar Corona up to 1.5 Solar Radii”, 2021, *ApJ*, 913, 74

**Zhu, Y.**, Kowalski, A. F., Tian, H., Uitenbroek, H. *et al.* “Modeling Mg II h, k and Triplet Lines at Solar Flare Ribbons”, 2019, *ApJ*, 879, 19.

Yang, Z., Tian, H., Bai, X., Chen, Y., Guo, Y., **Zhu, Y.** *et al.* “Can We Detect Coronal Mass Ejections through Asymmetries of Sun-as-a-star Extreme-ultraviolet Spectral Line Profiles?”, *ApJS*, 2022, 260, 36.

Yang, Z., Tian, H., **Zhu, Y.**, Xu, Y., Chen, L., Sun, Z., “Is It Possible to Detect Coronal Mass Ejections on Solar-type Stars through Extreme-ultraviolet Spectral Observations?”, *ApJ*, 2024, 966, 24.

## ACADEMIC AWARD

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Outstanding Student Presentation Award (OSPA), AGU 2022 Fall Meeting	2022
Outstanding Student Poster Award, 2 <sup>nd</sup> China-Europe Solar Physics Meeting	2019

## ACADEMIC ACTIVITIES

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### Referee for

- Astronomy & Astrophysics (A&A) and The Astrophysical Journal (ApJ)

### Talks

- “Spectroscopic Observations of the Corona in the Visible and Extreme Ultraviolet during the 2017 August 21 Total Solar Eclipse”, SPD 2023 Aug 2023
- “Spectroscopic Observations of the Corona in the Visible and Extreme Ultraviolet during the 2017 August 21 Total Solar Eclipse”, AGU 2022 Fall Meeting Dec 2022
- “Ion Temperature Diagnostics at the Off-limb Coronal Hole Boundary and Post-flare Loops”, TESS 2022 Meeting Aug 2022
- “Modeling Mg II h, k and Triplet Lines at Solar Flare Ribbons”, ISSI/ISSI-BJ International Team Workshop: Diagnosing Heating Mechanism in Solar Flares Through Spectroscopic Observations of Flare Ribbons Oct 2018
- “An S-shape Flare Ribbon Observed by NVST and SDO/AIA”, The 2017 Annual Meeting of Chinese Geoscience Union (CGU) Oct 2017

### Posters

- “Heating of Heavy Ions in Active Regions Observed by SUMER: Flares, Loop brightening, and Coronal Rain”, AGU 2023 Fall Meeting Dec 2023
- “Spectroscopic Observations of the Solar Corona in the Visible, Extreme Ultraviolet, and Near-Infrared during the 2017 Total Solar Eclipse”, Hinode-16/IRIS-13, Niigata, Japan Sep 2023
- “Active Region Heating: Flares, Loop brightening, and Coronal Rain”, SHINE Workshop 2023, Aug 2023
- “Estimating Ion Temperatures at the Polar Coronal Hole Boundary”, SHINE Workshop 2022, June 2022
- “Ion Temperature Diagnostics at the Off-limb Coronal Hole Boundary and Post-flare Loops”, AGU 2021 Fall Meeting Dec 2021
- “Fe XII and Fe XIII Line Widths in the Polar Off-limb Solar Corona up to 1.5 Solar Radii”, Hinode-14/IRIS-11 Meeting Oct 2021
- “Fe XII and Fe XIII Line Widths in the Polar Off-limb Solar Corona up to 1.5 Solar Radii”, SHINE 2021 Jul 2021
- “Fe XII and Fe XIII Line Widths in the Polar Off-limb Solar Corona up to 1.5 Solar Radii”, AGU 2020 Fall Meeting Dec 2020

- “*Modeling Mg II h, k, and Triplet Lines at Solar Flare Ribbons*”, The 2<sup>nd</sup> China-Europe Solar Physics Meeting *May 2019*
- “*An S-shape Flare Ribbon Observed by NVST and SDO/AIA*”, The 4<sup>th</sup> Chinese Space Weather Conference *Aug 2017*

## GRADUATE COURSES

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**Fall 2019:** Advanced Fluid Dynamics, Advanced Space Instrumental Lab, Space Physics; **Winter 2020:** Modern Astronomical Techniques, Radiative Transfer, Space Weather Modeling; **Fall 2020:** Computational Fluid Dynamics I, Space Plasma Physics, Advanced Quantum Mechanics I; **Winter 2021** Advanced Quantum Mechanics II, Space Instrumentation, COLLAGE 2021: Solar Spectral Line Diagnostics (NSO/CU); **Winter 2022** Sun & Heliosphere