

Hao Ran

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RESEARCH INTERESTS

- Solar flares, coronal mass ejections, filaments, active regions.
- Solar wind, space plasma physics, interplanetary magnetic field.
- Statistical methods, observational methods, and machine learning methods in solar physics and space science.

EDUCATION

2024.09 - present Ph.D. Candidate at **Mullard Space Science Laboratory, Department of Climate and Space Physics, University College London**

2021.09 - 2024.06 Master's Degree at **National Space Science Center, CAS & University of Chinese Academy of Sciences** (GPA: 3.79/4.0(overall), 3.94/4.0 (core))

2017.09 - 2021.06 Bachelor's Degree at **School of Astronomy and Space Science, Nanjing University** (GPA: 4.07/5.0(overall), 4.11/5.0(core), Rank (6/17))

PEER-REVIEWED PUBLICATIONS

- Hao Ran**, Ying D. Liu, Yang Guo, and Rui Wang (Sept. 2022). "Relationship between Successive Flares in the Same Active Region and SHARP parameters". In: *The Astrophysical Journal* 937.1, p. 43. URL: <https://iopscience.iop.org/article/10.3847/1538-4357/ac80fa>.
- Liu, Ying D., **Hao Ran**, Huidong Hu, and Stuart D. Bale (Feb. 2023). "On the Generation and Evolution of Switchbacks and the Morphology of the Alfvénic Transition: Low Mach-number Boundary Layers". In: *The Astrophysical Journal* 944.2, p. 116. DOI: [10.3847/1538-4357/acb345](https://doi.org/10.3847/1538-4357/acb345). URL: <https://dx.doi.org/10.3847/1538-4357/acb345>.
- Cheng, Wenshuai, Ying D. Liu, **Hao Ran**, Yiming Jiao, Michael L. Stevens, and Justin C. Kasper (Apr. 2024). "Origin and Properties of the Near Subsonic Solar Wind Observed by Parker SolarProbe". In: *the Astrophysical Journal* 967, p. 58. URL: <https://iopscience.iop.org/article/10.3847/1538-4357/ad3b98>.
- Hao Ran**, Ying D. Liu, Chong Chen, and Parisa Mostafavi (Feb. 2024). "The Alpha-Proton Differential Flow in the Alfvénic Young Solar Wind: From Sub-Alfvénic to Super-Alfvénic". In: *the Astrophysical Journal* 963, p. 82. URL: <https://doi.org/10.3847/1538-4357/ad2069>.
- Jiao, Yiming, Ying D. Liu, **Ran, Hao**, and Wenshuai Cheng (Jan. 2024). "Properties of Steady Sub-Alfvénic Solar Wind in Comparison with Super-Alfvénic Wind from Parker Solar Probe Measurements". In: *The Astrophysical Journal* 960.1, p. 42. DOI: [10.3847/1538-4357/ad0dfe](https://doi.org/10.3847/1538-4357/ad0dfe). URL: <https://iopscience.iop.org/article/10.3847/1538-4357/ad0dfe>.
- Liu, Ying D., Bei Zhu, **Hao Ran**, Huidong Hu, Mingzhe Liu, Xiaowei Zhao, Rui Wang, Michael L. Stevens, and Stuart D. Bale (Feb. 2024). "Direct In Situ Measurements of a Fast Coronal Mass Ejection and Associated Structures in the Corona". In: *the Astrophysical Journal* 963, p. 85. URL: <https://doi.org/10.3847/1538-4357/ad1e56>.

TALKS

- 2023.04 **20th National Solar-Terrestrial Space Science Seminar**
Relationship between Successive Flares in the Same Active Region and SHARP Parameters
Fuzhou, Fujian Province, China.
- 2023.10 **1st ASO-S and CHASE Joint Conference**
The Alpha-proton Differential Flow in the Young Solar Wind: From Sub-Alfvénic to Super-Alfvénic
Wuxi, Jiangsu Province, China.

RESEARCH EXPERIENCE

2024.07-2024.09	Research Inter	Nanjing Institute of Astronomical Optics Technology, CAS
2019.07-2019.08	Undergraduate Inter	University of Hong Kong

AWARDS AND HONORS

2024.04	STFC Studentship	UK Research and Innovation
2024.04	UCL International Student Award	University College London
2023.10	National Scholarship for Graduate Students	Chinese Academy of Sciences
2023.04	Excellent Paper for Young Researchers (4/57)	20th National Solar-Terrestrial Space Science Seminar
2021.09	The Undergraduates' Scholarship	National Space Science Center, Chinese Academy of Sciences
2019.04	The People's Scholarship in China	Nanjing University

SKILLS

English TOEFL 102, IELTS Academic 7.0, College English Test Band 6 (CET-6) 582
Programming Python (proficient), IDL, C, C++, Fortran, R, MATLAB, L^AT_EX

OUTRESEARCH EXPERIENCE

1. **Volunteer teaching in rural areas.** (Guizhou & Sichuan) 2018.07 & 2019.07
 - Responsible for the *Introduction to Astronomy* Course.
 - Obtained the "Most Welcomed Teacher" award.
2. **Amateur soccer player.** (Nanjing University) 2017.09 - 2021-06
 - Second place in the Nanjing University Champions League. (Season 2018-2019)
 - First place in the Nanjing University Champions Cup. (Season 2017-2018)

REFERENCE

- **Prof. Ying Liu**
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- **Prof. Yang Guo**
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- **Dr. Daniel Verscharen**

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