

Yixin Sun

Date of birth: Apr. 1995

Nationality: China

Gender: Female

PhD. Tutor: Q.-G. Zong

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Research area

Space physics, Magnetosphere, Giant planets, Radiation belt, Energetic Particle Acceleration

Education

Peking University

Sep.2013 - Jul.2017

Bachelor of Space Science and Technology, School of Earth and Space Science

Peking University

Sep.2017 - Jul.2022

Doctor of Space Physics, Institute of Space Physics and Applied Technology

Work Experience

Peking University

Jul.2022 – April. 2026

Boyaa Postdoc, Institute of Space Physics and Applied Technology

Macau University of Science and Technology

Jul.2022 – April. 2026

Associate Professor

Research Experience

Max Planck Institute for Solar System Research (MPS), Germany

Jan. 2020 - Mar. 2020

Visiting Researcher

Project: Acceleration Processes in Saturn's Radiation Belts

Max Planck Institute for Solar System Research (MPS), Germany

Oct. 2018 - Jan. 2019

Visiting Researcher

Project: Spectral Properties of Saturn's Electron Radiation Belts

Publications

Total Publications:23 | First-Author Papers:9 (H-index 8)

First-Author Papers:

1. Sun, Y.X., Roussos, E., Krupp, N., Zong, Q.G., Kollmann, P., & Zhou, X.Z. (2019). Spectral Signatures of Adiabatic Electron Acceleration at Saturn Through Corotation Drift Cancellation. *Geophysical Research Letters (GRL)*. IF: 5.576. Citations:20. Q1.
2. Hao, Y.X., Sun, Y.X.(co-first author), Roussos, E., et al. (2020). The Formation of Saturn's and Jupiter's Electron Radiation Belts by Magnetospheric Electric Fields. *The Astrophysical Journal Letters (ApJL)*. IF: 7.9. Citations:40. Q1.
3. Sun, Y.X., Roussos, E., Hao, Y.X., Zong, Q.G., et al. (2021). Saturn's Inner Magnetospheric Convection Viewed via Zebra Stripe Patterns in Energetic Electron Spectra. *Journal of Geophysical Research: Space Physics (JGR)*. IF: 2.799. Citations:14. Q2.
4. Sun, Y.X., Hao, Y.X., Roussos, E., Zong, Q.G., Liu, Y., Zhou, X.Z., Yue, C., & Krupp, N. (2022). Zebra Stripe Patterns in Energetic Ion Spectra at Saturn. *GRL*. IF: 5.576. Citations:7. Q1.

5. Yin, Z.F., Sun, Y.X.(co-first author), Zhou, X.Z., Pan, D.X., Yao, Z.H., & Yue, C. (2023). Trapped and Leaking Energetic Particles in Injection Flux Tubes of Saturn's Magnetosphere. *GRL*. IF: 5.576. Citations:5. Q1.
6. Sun, Y.X., Zong, Q.G., Liu, Y., Ye, Y.G., Zou, H., & Yue, C. (2023). Dawn-Dusk Asymmetry of Energetic Electrons at LEO During a Storm: FY3E Observations. *JGR*. IF: 2.799. Citations:7. Q2.
7. Sun, Y., Zhao, J., Hou, C., & Jiao, W. (2023). Highlight Advances in Planetary Physics in The Solar System: In Situ Detection Over the Past 20 Years. *Space: Science & Technology*. IF: 3.3. Citations:7. Q2.
8. Sun, Y., Liu, Y., Zong, Q.G., Hao, Y.X., Zou, H., & Ye, Y.G. (2025). Radiation Belt Electron Wisp Inside South Atlantic Anomaly from Terrestrial VLF Transmitter Observed by MSS-1. *Science China Earth Sciences*. IF: 6.0. Citations:0. Q1.
9. Sun, Y.-X., Liu, Y., Zong, Q.-G., Ye, Y.-G., Zou, H., Miyoshi, Y., et al. (2026). Violation of the impenetrable barrier: MSS-1 and Arase observations of MeV electrons in the inner radiation belt during the May 2024 Geomagnetic Storm. *Journal of Geophysical Research: Space Physics*, 131, e2025JA034419. <https://doi.org/10.1029/2025JA034419>

Co-authored Publications(Selected):

1. Li, Y., Yue, C., Sun, Y., Jia, X., Zong, Q.G., & Zhou, X.Z. (2024). ENA Imaging Reveals Saturn's ~11-Year Ring Current Cycle. *Nature Communications*. IF: 17.646. Citations:0. Q1.
2. Zhang, C., Nilsson, H., Ebihara, Y., ..., Sun, Y., et al. (2023). Detection of Magnetospheric Ion Drift Patterns at Mars. *Nature Communications*. IF: 17.646. Citations:11. Q1.

Textbook

1. Introduction to Space Science and Technology, Wei-Xin Jiao and Yi-Xin Sun, 2024, Peking University Press.

Fundings

Principal Investigator:

1. Chinese Postdoctoral Science Foundation: Dynamic Variations of Radiation Belt Environment at Polar LEO Using Fengyun Satellite Data (¥80,000).
2. NSFC Youth Program: Energetic Electron Precipitation in the Magnetosphere Using LEO Satellite Data (¥300,000).

Key Participant:

1. National Administration of Defense Science and Technology: Key Scientific Objectives of Giant Planetary Systems (¥6.7M).
2. NSFC Major Project: Acceleration, Transport, and Effects of Energetic Particles in Heliospheric Space (¥12M).
3. Ministry of Science and Technology: Critical Problems in Sun-Earth and Heliospheric Boundary Coupling (¥20M).

Awards & Honors

Peking University National Scholarship (2013–2014)

Outstanding Student Award (2014–2015, 2019)

Li Zhengdao Scholarship (2015–2016)

Longruan Technology Scholarship (2016–2017)

Outstanding Graduate, School of Earth and Space Sciences (2017)

Guangyao Wanglaoji Scholarship (2018–2019)

Conferences & Presentations

2025: APCG (Singapore, oral), Asia-Pacific Plasma Physics Conference (Fukuoka, invited).

2024: National Planetary Science Conference (Suzhou, invited), Macao Forum on Space & Planetary Science (oral), Youth Geophysics Conference (Xi'an/Macau, oral).

2023: Workshop on Jupiter Science (Shenzhen, oral), National Space Physics Symposium (Fuzhou, poster).

2021–2020: National Planetary Science Conference (Suzhou, oral), AGU Fall Meeting (virtual, oral).

2017–2019: AGU Chapman Conference (Chengdu, oral), Key Processes in Solar-Terrestrial Physics (Hawaii, oral), Outer Magnetospheres Meeting (Sendai, poster).

Professional Service

Session Convener: JpGU-AGU Joint Meeting, AOGS Annual Meeting.

Reviewer: Geophysical Research Letters, Journal of Geophysical Research.

Teaching Assistant: Introduction to Earth Science, Fundamentals of Space Science, Science in the Solar System.