

Zijian Zhang

(last updated 2025.12.10)

PERSONAL INFORMATION

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EDUCATION

- **PhD student in Astronomy, PKU, Beijing, China** Sept 2023 - Present
Advisor: Linhua Jiang
- **BS in Astronomy, Nanjing University, Jiangsu, China** Sept 2019 - June 2023
Advisor: Bin Luo, Linhua Jiang

RESEARCH INTERESTS

- **Little red dots & high-redshift AGNs:** Using JWST, HST, and ground-based telescope to investigate the nature and evolution of little red dots
- **AGNs and host galaxies:** Using multi-wavelength observations (from X-ray to radio) to study the physical properties and evolution of AGNs and host galaxies
- **Machine learning and data-driven methods:** I am currently developing large language model-based method to visually inspect JWST slitless spectra

Publications (as of 2025/12): 7 first-author and 10 contributing-author papers; 156 total citations; h-index = 6

OBSERVING & DATA REDUCTION EXPERIENCE

- ~ **8 nights** 4 m Nicholas U. Mayall Telescope, DESI (remote observation)
- **JWST Data Reduction:** NIRCam imaging and wide-field slitless spectroscopy, NIRISS imaging and grism, NIRSpec MOS spectroscopy; photometry and catalog construction
 - **X-ray Data Reduction:** Chandra (based on CIAO), XMM-Newton (based on SAS), X-ray spectral analysis (using XSPEC)

HONORS AND AWARDS

- **Presidential Scholarship**, Peking University, 1/100 2025
- **Liqibin Scholarship**, Peking University 2024
- **Lin-bridge Prize for Excellent Undergraduate Research (First Prize)**, Peking University 2023
- **Outstanding Graduate** of Nanjing University 2023
- **First Prize** of Jiangsu Province Outstanding Undergraduate Thesis, 1/300 2023
- **Top Award** of the Dongliang Scholarship, Nanjing University, 1/1000 2022
- **Provincial Merit Student**, Jiangsu Province, 1/100 2022
- **National Scholarship**, Ministry of Education, 1/50 2021

MENTORSHIP

- **Yihe Wang**, Peking University, Undergraduate 2025–present
Research topic: Properties of merging galaxies using JWST slitless spectra
- **Chenxi Bao**, Peking University, Undergraduate 2025–present
Research topic: Selection of little red dots using machine-learning methods

SERVICES

- **Referee**, ApJL 2025–present
- **Organizer**, weekly lunch discussion with the KIAA Colloquium speaker 2025–present
- **Undergraduate Class Advisor for the 2024 Honors Class**, School of Physics, Peking University 2024–present

PUBLICATION LIST

All papers on [ADS Link](#): 17 papers in total, including 7 first-author papers

First Author

1. **Zhang, Z.**, Li, M., Oguri, M., et al. 2026, *Little red dot variability over a century reveals black hole envelope via a giant Einstein cross*, [submitted](#)
2. Fu, S.^{*}, **Zhang, Z.**^{*}, Jiang, D., et al. 2026, *Discovery of two little red dots transitioning into quasars*, [submitted](#)
^{*} These authors contributed equally.
3. **Zhang, Z.**, Jiang, L., Liu, W., et al. 2025, *JWST Insights into Narrow-line Little Red Dots*, [submitted](#)
4. **Zhang, Z.**, Jiang, L., Liu, W., et al. 2025, *Analysis of Multi-epoch JWST Images of ~ 300 Little Red Dots: Tentative Detection of Variability in a Minority of Sources*, [ApJ](#), **985**, 119
5. **Zhang, Z.**, Luo, B., Jiang, L., et al. 2025, *On the Extremely X-Ray Variable Active Galactic Nuclei in the XMM-LSS Field*, [ApJ](#), **983**, 36
6. **Zhang, Z.**, Yin, Y., Wang, C., et al. 2023, *GRB 220408B: A Three-episode Burst from a Precessing Jet*, [RAA](#), **23**, 11
7. **Zhang, Z.**, Luo, B., Brandt, W. N., et al. 2023, *XMM-Newton Observations of Two Archival X-Ray Weak Type 1 Quasars: Obscuration Induced X-Ray Weakness and Variability*, [ApJ](#), **954**, 159

Contributing Author (Selected)

8. Zhou, S., Sun, M., **Zhang, Z.**, et al. 2023, *On the Variability Features of Active Galactic Nuclei in Little Red Dots*, [ApJ](#), **991**, 137
9. Chen, J., Jiang, L., Sun, S., **Zhang, Z.**, et al. 2025, *Estimating Bolometric Luminosities of Type 1 Quasars with Self-organizing Maps*, [ApJ](#), **988**, 204

SCIENTIFIC PRESENTATIONS

1. **Talk**, EREBUS & COSMOS-3D collaboration meeting, Bologna 06/2025
2. **Talk, Poster (Outstanding Poster Award)**, Guoshoujing Symposium, Changsha 05/2025
3. **Talk (Outstanding Oral Presentation Award)**, Symposium on Galaxy Evolution and Cosmology with CSST, Suzhou 11/2024
4. **Talk**, AGN Feedback Symposium, Shanghai 10/2024
5. **Talk**, EREBUS collaboration meeting, Hilo 09/2024