

# Zijian Zhang

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## PERSONAL INFORMATION

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## EDUCATION

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- **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

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- **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

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~ 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

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- **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

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- **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

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- 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

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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

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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