

吕兵 Lyu Bing

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Employment

- 2022/07 – Now ···· 📌 **Postdoc** KIAA at Peking University.
- 2023/03 – 2026/03 ···· 📌 **LAMOST fellow** KIAA at Peking University.

Education

- 2016-09 to 2022-06 📌 **Ph.D. student (Astrophysics)** Huazhong University of Science and Technology
Thesis title: *Multi-wavelength variability and spectral evolution of changing-look active galactic nuclei.*
- 2019-04 to 2022-06 📌 **Joint Ph.D. student** Shanghai Astronomical Observatory
- 2012-09 to 2016-06 📌 **Undergraduate (Physics)** Huazhong University of Science and Technology

Research Interests

- CLAGN Study the mechanism of optical and X-ray changing-look active galactic nuclei (CLAGN) with multi-waveband observations
Study the link between Black hole X-ray Binary (XRB) and CLAGN
- LAMOST QSO survey Report the quasar properties from Data Release 10 to 12 in the series of the Large Sky Area Multi-Object Fiber Spectroscopic Telescope (LAMOST) Quasar Survey
Search for rare AGNs such as Bowen Fluorescence Flares (BFFs), broad absorption line quasars (BAL), and extremely variable quasars (EVQs)
- Search for Rare AGN Search for dying AGNs and try to understand the lifecycles of AGNs and their impact on galaxy formation and evolution

Skills

Languages	Reading, writing and speaking competencies for English
Instruments	UV/X-ray (Swift, XMM, NuStar, Chandra) Radio imaging (VLA, MWA) MIR (WISE, JWST) Optical (ZTF, LAMOST, SDSS, Xinglong-2.16m, and Lijiang-2.4m telescope)
Analysis	X-ray Spectral fitting (heasoft, BXA) Optical spectral fitting (pyQSOfit, QSOfitmore) Radio imaging (CASA) Timing analysis (stingray, Javelin, pyccf, lomb-scargle) Catalog cross-match (astroML)
Tools	Python, L ^A T _E X, astropy, astroquery, pymongo, UltraNest, emcee

Research Publications

- 1 Wu, J., Wu, Q., Hu, C., **Lyu, B.**, Bai, H.-R., Fu, Y.-X., ... Cao, X. (2025). A Composite Broad-line Region in SDSS J1609+4902: A Double-peaked Disk Component and a Gaussian Component. *ApJ*, 987(1), 14. [doi:10.3847/1538-4357/ade2cc](https://doi.org/10.3847/1538-4357/ade2cc). arXiv: 2506.07161 [astro-ph.GA]
- 2 Huo, Z.-Y., Fu, Y., Huang, Y., Yuan, H., Wu, X.-B., Xiang, M., ... Jin, J. (2025). Finding Quasars behind the Galactic Plane. III. Spectroscopic Identifications of ~1300 New Quasars at $|b| \leq 20$ degree from LAMOST DR10. *ApJS*, 278(1), 6. [doi:10.3847/1538-4365/adba52](https://doi.org/10.3847/1538-4365/adba52). arXiv: 2502.05480 [astro-ph.GA]
- 3 **Lyu, B.**, Yan, Z., Wu, X.-b., Wu, Q., Yu, W., & Liu, H. (2025). The NuSTAR view of five changing-look active galactic nuclei. *MNRAS*, 537(2), 1099–1114. [doi:10.1093/mnras/staf109](https://doi.org/10.1093/mnras/staf109). arXiv: 2501.09602 [astro-ph.HE]
- 4 Pang, Y., Wu, X.-B., Fu, Y., Zhu, R., **Lyu, B.**, Wang, H., & Feng, X. (2025). A Pilot Study for the CSST Slitless Spectroscopic Quasar Survey Based on Mock Data. *ApJ*, 980(2), 223. [doi:10.3847/1538-4357/adabdc](https://doi.org/10.3847/1538-4357/adabdc). arXiv: 2501.12665 [astro-ph.GA]
- 5 **Lyu, B.**, Wu, X.-B., Pang, Y., Wang, H., Zhu, R., Fu, Y., ... Wang, F. (2025). The changing-look AGN SDSS J10152.98+544206.4 is returning to a type I state. *A&A*, 693, A173. [doi:10.1051/0004-6361/202451699](https://doi.org/10.1051/0004-6361/202451699). arXiv: 2412.16879 [astro-ph.HE]
- 6 Wu, J., Wu, Q., Jin, C., Wu, J., Lei, W., Cao, X., ... **Lyu, B.** (2024). The Weakness of Soft X-Ray Intensity: Possible Physical Reason for Weak-line Quasars. *ApJ*, 965(1), 84. [doi:10.3847/1538-4357/ad2a53](https://doi.org/10.3847/1538-4357/ad2a53). arXiv: 2402.10414 [astro-ph.HE]
- 7 Kang, S.-J., **Lyu, B.**, Wu, Q., Zheng, Y.-G., & Fan, J. (2024). The Physical Properties of Changing-look Blazars. *ApJ*, 962(2), 122. [doi:10.3847/1538-4357/ad0fdf](https://doi.org/10.3847/1538-4357/ad0fdf). arXiv: 2403.00078 [astro-ph.HE]

- 8 Shi, Z., Wu, Q., Yan, Z., **Lyu, B.**, & Liu, H. (2023). A new variability pattern in GRS 1915+105 with NICER and Insight-HXMT observations. *MNRAS*, 525(1), 1431–1442. [doi:10.1093/mnras/stad2061](https://doi.org/10.1093/mnras/stad2061). arXiv: 2307.07954 [astro-ph.HE]
- 9 Wu, J., Wu, Q., Xue, H., Lei, W., & **Lyu, B.** (2023). Steep Balmer Decrement in Weak AGNs May Not Be Caused by Dust Extinction: Clues from Low-luminosity AGNs and Changing-look AGNs. *ApJ*, 950(2), 106. [doi:10.3847/1538-4357/acce9e](https://doi.org/10.3847/1538-4357/acce9e). arXiv: 2304.09435 [astro-ph.GA]
- 10 Liu, H., Wu, Q., & **Lyu, B.** (2022). Coevolution of Broad Emission Lines and X-Ray Spectrum in Changing-look AGNs. *ApJ*, 930(1), 46. [doi:10.3847/1538-4357/ac5fa5](https://doi.org/10.3847/1538-4357/ac5fa5). arXiv: 2206.02011 [astro-ph.HE]
- 11 **Lyu, B.**, Wu, Q., Yan, Z., Yu, W., & Liu, H. (2022). WISE View of Changing-look Active Galactic Nuclei: Evidence for a Transitional Stage of AGNs. *ApJ*, 927(2), 227. [doi:10.3847/1538-4357/ac5256](https://doi.org/10.3847/1538-4357/ac5256). arXiv: 2202.02718 [astro-ph.HE]
- 12 **Lyu, B.**, Yan, Z., Yu, W., & Wu, Q. (2021). Long-term and multiwavelength evolution of a changing-look AGN Mrk 1018. *MNRAS*, 506(3), 4188–4198. [doi:10.1093/mnras/stab1581](https://doi.org/10.1093/mnras/stab1581). arXiv: 2106.03059 [astro-ph.HE]