

RUANCUN LI

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Max Planck Institute for Extraterrestrial Physics ◇ Gießenbachstraße 1 85748 Garching Germany

WORK EXPERIENCE

Postdoctoral fellowship, **Max Planck Institute for Extraterrestrial Physics**
Garching

2025 - present

EDUCATION

Ph.D., Astrophysics, **Peking University**, Beijing
Thesis: “Spectral Energy Distribution of Active Galactic Nuclei”
Advisor: Prof. Luis C. Ho

2019 - 2025

B.S., Physics, **Peking University**, Beijing

2014 - 2019

RESEARCH INTERESTS

High energy astrophysics

- Black hole; Accretion disks; Tidal disruption events

Galaxy evolution and structures

- AGN/Galaxy/Feedback; Galactic dynamics

TECHNICAL STRENGTHS

Computer Languages	Python, C++, Shell, Fortran
Imaging Analysis	Image processing, Photometry, Structure decomposition
Spectra Analysis	Line decomposition; Modelling broad emission lines
Time Series Analysis	Gaussian process, Auto regression
Machine Learning	Random forest, CNN

HONORS

2023 Leo KoGuan Scholarship, Peking University
2022 Benz Scholarship, Peking University
2020 Second-class scholarship, Peking University
2016 NAOC scholarship

PUBLICATIONS

First/Corresponding Author Journal Publications
Citation: 108

1. **Li, R.**, Ho, L. C., Ricci, C., et al. (2022). The Host Galaxy and Rapidly Evolving Broad-line Region in the Changing-look Active Galactic Nucleus 1ES 1927+654. *ApJ*, 933(1):70.
2. Ding, Y., **Li, R.***, Ho, L. C., and Ricci, C. (2022). Accretion Disk Outflow during the X-Ray Flare of the Super-Eddington Active Nucleus of I Zwicky 1. *ApJ*, 931(2):77.

3. **Li, R.**, Ricci, C., Ho, L. C., et al. (2024). The Interplay between the Disk and Corona of the Changing-look Active Galactic Nucleus 1ES 1927+654. *ApJ*, 975(1):140.
4. **Li, R.**, Ho, L. C., Ricci, C., and Trakhtenbrot, B. (2024). A Two-zone Accretion Disk in the Changing-look Active Galactic Nucleus 1ES 1927+654: Physical Implications for Tidal Disruption Events and Super-Eddington Accretion. *ApJ*, 975(1):50.
5. **Li, R.**, Ho, L. C., Chen, C. H. (2026). The Dichotomy in the Nuclear and Host Galaxy Properties of High-redshift Quasars. *ApJ*, 999 70

Contributed Author Journal Publications

Citation: 745

1. Shangguan, J., Ho, L. C., **Li, R.**, et al. (2018). Interstellar medium and star formation of starburst galaxies on the merger sequence. *ApJ*, 870(1):104
2. Trakhtenbrot, B., Arcavi, I., MacLeod, C. L., et al. (2019). 1ES 1927+654: an AGN caught changing look on a timescale of months. *ApJ*, 883(1):94.
3. Ricci, C., Kara, E., Loewenstein, M., et al. (2020). The destruction and recreation of the X-ray corona in a changing-look active galactic nucleus. *ApJL*, 898(1):L1.
4. Ricci, C., Loewenstein, M., Kara, E., et al. (2021). The 450 Day X-ray monitoring of the changing-look AGN 1ES 1927+654. *ApJS*, 255(1):7.
5. Tortosa, A., Ricci, C., Tombesi, F., et al. (2022). The extreme properties of the nearby hyper-Eddington accreting active galactic nucleus in IRAS 04416+1215. *MNRAS*, 509(1):3599.
6. Hou, M., Li, Z., Liu, X., et al. (2023). NOEMA Detection of Circumnuclear Molecular Gas in X-Ray Weak Dual Active Galactic Nuclei: No Evidence for Heavy Obscuration. *ApJ*, 943(1):50.
7. Tortosa, A., Ricci, C., Ho, L. C., et al. (2023). Systematic broad-band X-ray study of super-Eddington accretion onto supermassive black holes—I. X-ray continuum. *MNRAS*, 519(1):6267.
8. Li, Y. A., Ho, L. C., Shangguan, J., et al. (2023). Panchromatic Photometry of Low-redshift, Massive Galaxies Selected from SDSS Stripe 82. *ApJS*, 267(1):17.
9. Kawamuro, T., Ricci, C., Yamada, S., et al. (2023). Coevolution and Nuclear Structure in the Dwarf Galaxy POX 52 Studied by Multiwavelength Data from Radio to X-Ray. *ApJ*, 960(1):15.
10. Sun, W., Ho, L. C., Zhuang, M. Y., et al. (2024). The Structure and Morphology of Galaxies during the Epoch of Reionization Revealed by JWST. *ApJ*, 960(1):104.
11. Du, R., Ding, Y., Ho, L. C., **Li, R.** (2024). The Reliability of Accretion Disk Inclination Derived from X-Ray Spectroscopy of Active Galaxies. *ApJ*, 863(1):152.
12. Yao, Y., Guolo, M., Tombesi, F., et al. (2024). Sub-relativistic Outflow and Hours-Timescale Large-amplitude X-ray Dips during Super-Eddington Accretion onto a Low-mass Massive Black Hole in the Tidal Disruption Event AT2022lri. *ApJ*, 976(1):34.
13. Gupta, K. K., Ricci, C., Temple, M. J., et al. (2024). BASS. XLIII: Optical, UV, and X-ray emission properties of unobscured Swift/BAT active galactic nuclei. *A&A*, 691:A203.
14. Chen, C. H., Ho, L. C., **Li, R.**, Zhuang, M. Y. (2025). The Host Galaxy (If Any) of the Little Red Dots. *ApJ*, 983(1):60.
15. Chen, S. J., Buchner, J., Liu, T. (2025). The Average Soft X-ray Spectra of eROSITA Active Galactic Nuclei. *A&A*, 701:A144.

16. Du, R., Ding, Y., Ho, L. C., **Li, R.** (2025), On the Relation between the Inclination Angle of the Accretion Disk and the Broad-line Region in Active Galactic Nuclei, *ApJ*, 988(1):18.
17. Chen, S. J., Buchner, J., Liu, T. (2025), The Average Soft X-ray Spectra of eROSITA Active Galactic Nuclei, *A&A*, 701:A144.
18. Chen, C. H., Ho, L. C., **Li, R.** (2025), The Physical Nature of the Off-centered Extended Emission Associated with the Little Red Dots, *ApJL*, 989(1):15.
19. Son, S., Kim, M., Ho, L. C., **Li, R.** (2025), Probing the Physical Origin of the Balmer Decrement in the Broad-line Region of Nearby Active Galactic Nuclei via Spectral Variability, *ApJ*, 995(1):37
20. Ding, Y., Koss, M. J., Gillette, J., et al. UGC 2369S: a Kpc Scale Triple Merger Candidate Identified in a Nearby Luminous Infrared Galaxy, *ApJ*, submitted.
21. GRAVITY+ Collaboration, (2026), Spatially resolved broad line region in a quasar at $z = 4$ Dynamical black hole mass and prominent outflow, *A&A*, 706:A99.
22. Zhou, Q., Wang, X., Zhou, H., et al., (2026) Discovery of a gas-enshrouded broad-line AGN at $z \sim 7$, *ApJL*, 999:L17.
23. Li, Z., Zou, S., Lyu, J., et al., COSMOS-3D: Two obscured X-ray AGNs with hot dust and He, I λ 10830 absorption at $z \sim 3$, *ApJ*, submitted.
24. Chen, Y. X., Liu, H., **Li, R.** et al., Spectral Appearance of Self-gravitating AGN Disks Powered by Stellar Objects: Universal Effective Temperature in the Optical Continuum and Application to Little Red Dots, *ApJ*, submitted.
25. Fei, Q., Fujimoto, S., Brammer, G., et al., Direct pathway to the Early Supermassive Black Holes: A Red Super-Eddington Quasar in a Massive Starburst Host at $z = 7.2$, *ApJ*, submitted

PROFESSIONAL SERVICES

Referee: *ApJL*, *A&A*

MENTORING

2025-present: Han Zhang (undergrad at Peking University)
 2025-present: Ziyi Zhou (undergrad at Sun Yat-sen University)
 2024-2025: Yuanzhe Jiang (undergrad at Peking University $\rightarrow$ PhD student at University of Illinois at Urbana-Champaign)
 2024-2025: Yichen Liu (undergrad at University of Illinois at Urbana-Champaign $\rightarrow$ PhD student at University of Arizona)
 2022-2025: Rong Du (undergrad at Peking University)
 2021-2023: Yuanze Ding (undergrad at Wuhan University $\rightarrow$ PhD student at Caltech)