

Qinxun Li

✉ qinxun.li@utah.edu

🆔 0000-0003-3616-6486

🌐 <https://qxli2333.github.io/>

Education

2023-

📖 Ph. D. student in physics (Astronomy track)

Department of Physics and Astronomy, **University of Utah**

Research Advisor: Prof. Kyle Dawson

Research Topic: Systematic Error Evaluation of Baryon Acoustic Oscillation

2019-2023

📖 Bachelor of Science in Astronomy

Department of Astronomy, **University of Science and Technology of China (USTC)**

Research Advisor: Prof. Huiyuan Wang & Prof. Wentao Luo

Thesis: *Constraining Satellite Galaxy-Subhalo Connection with Weak Gravitational Lensing*

Research Interests

Observational Cosmology

📖 Baryon Acoustic Oscillation (BAO), Galaxy Clustering, Gravitational Lensing, Galaxy Groups and Clusters, Dark Energy

Galaxy Evolution

📖 Galaxy-Black Hole Co-evolution, Galaxy-Halo Connection

Publications

Metrics: Total (first-author) number: **18 (1)** Total (first-author) citations: **563 (12)** H-index: **9**.

[Link to an updated list of my publications: ui.adsabs.harvard.edu/user/libraries/i25FBgobQbKAeoJoK_SaRQ](https://ui.adsabs.harvard.edu/user/libraries/i25FBgobQbKAeoJoK_SaRQ)

First Author Papers






- 1 **Li, Qinxun**, Martin Kilbinger, Wentao Luo, Kai Wang, Huiyuan Wang, et al. “Black Hole–Halo Mass Relation from UNIONS Weak Lensing”. In: *Astrophysical Journal Letters* 969.2, L25 (July 2024), p. L25.
🔗 DOI: 10.3847/2041-8213/ad58b0.

Contributing Papers with Major Contribution

- 1 Andrade, U., E. Paillas, J. Mena-Fernández, **Qinxun Li**, A. J. Ross, et al. “Validation of the DESI DR2 Measurements of Baryon Acoustic Oscillations from Galaxies and Quasars”. In: *arXiv e-prints*, arXiv:2503.14742 (Mar. 2025), arXiv:2503.14742. arXiv: 2503.14742 [astro-ph.CO].
- 2 DESI Collaboration, M. Abdul Karim, J. Aguilar, S. Ahlen, S. Alam, et al. “DESI DR2 Results II: Measurements of Baryon Acoustic Oscillations and Cosmological Constraints”. In: *arXiv e-prints*, arXiv:2503.14738 (Mar. 2025), arXiv:2503.14738. arXiv: 2503.14738 [astro-ph.CO].

Other Contributing Papers




- 1 Fernández-García, E., F. Prada, A. Smith, J. DeRose, A. J. Ross, et al. “DESI DR2 reference mocks: clustering results from Uchuu-BGS and LRG”. In: *arXiv e-prints*, arXiv:2507.01593 (July 2025), arXiv:2507.01593. 🔗 DOI: 10.48550/arXiv.2507.01593. arXiv: 2507.01593 [astro-ph.GA].
- 2 Garcia-Quintero, C., H. E. Noriega, A. de Mattia, A. Aviles, K. Lodha, et al. “Cosmological implications of DESI DR2 BAO measurements in light of the latest ACT DR6 CMB data”. In: *arXiv e-prints*, arXiv:2504.18464 (Apr. 2025), arXiv:2504.18464. arXiv: 2504.18464 [astro-ph.CO].
- 3 Brodzeller, A., M. Wolfson, D. M. Santos, M. Ho, T. Tan, et al. “Construction of the Damped Ly α Absorber Catalog for DESI DR2 Ly α BAO”. In: *arXiv e-prints*, arXiv:2503.14740 (Mar. 2025), arXiv:2503.14740. arXiv: 2503.14740 [astro-ph.CO].

- 4 Casas, L., H. K. Herrera-Alcantar, J. Chaves-Montero, A. Cuceu, A. Font-Ribera, et al. “Validation of the DESI DR2 Ly α BAO analysis using synthetic datasets”. In: *arXiv e-prints*, arXiv:2503.14741 (Mar. 2025), arXiv:2503.14741. arXiv: 2503.14741 [astro-ph.IM].
- 5 DESI Collaboration, M. Abdul Karim, J. Aguilar, S. Ahlen, C. Allende Prieto, et al. “DESI DR2 Results I: Baryon Acoustic Oscillations from the Lyman Alpha Forest”. In: *arXiv e-prints*, arXiv:2503.14739 (Mar. 2025), arXiv:2503.14739. arXiv: 2503.14739 [astro-ph.CO].
- 6 Elbers, W., A. Aviles, H. E. Noriega, D. Chebat, A. Menegas, et al. “Constraints on Neutrino Physics from DESI DR2 BAO and DR1 Full Shape”. In: *arXiv e-prints*, arXiv:2503.14744 (Mar. 2025), arXiv:2503.14744. arXiv: 2503.14744 [astro-ph.CO].
- 7 Gwyn, Stephen, Alan W. McConnachie, Jean-Charles Cuillandre, Ken C. Chambers, Eugene A. Magnier, et al. “UNIONS: The Ultraviolet Near-Infrared Optical Northern Survey”. In: *arXiv e-prints*, arXiv:2503.13783 (Mar. 2025), arXiv:2503.13783. arXiv: 2503.13783 [astro-ph.GA].
- 8 Lodha, K., R. Calderon, W. L. Matthewson, A. Shafieloo, M. Ishak, et al. “Extended Dark Energy analysis using DESI DR2 BAO measurements”. In: *arXiv e-prints*, arXiv:2503.14743 (Mar. 2025), arXiv:2503.14743. arXiv: 2503.14743 [astro-ph.CO].
- 9 Lin, S., W. Luo, Y. F. Cai, Q. Guo, L. Wei, et al. “The density profile of Milky Way dark matter halo constrained from the OGLE microlensing sky map”. In: *Astronomy and Astrophysics* 693, L8 (Jan. 2025), p. L8.  DOI: 10.1051/0004-6361/202452408.
- 10 Mo, Geyu, Qingqing Wang, Xin Ren, Weitong Yan, **Qinxun Li**, et al. “Testing Cotton gravity as dark matter substitute with weak lensing”. In: *Science China Physics, Mechanics, and Astronomy* 68.240412 (Jan. 2025), p. 40412.  DOI: 10.1007/s11433-024-2582-7.
- 11 Luo, Wentao, John D. Silverman, Surhud More, Andy Goulding, Hironao Miyatake, et al. “Dark Matter Halos of Luminous Active Galactic Nuclei from Galaxy–Galaxy Lensing with the HSC Subaru Strategic Program”. In: *Astrophysical Journal* 977.1, 59 (Dec. 2024), p. 59.  DOI: 10.3847/1538-4357/ad86b5.
- 12 Guo, Qi, Leyao Wei, Wentao Luo, Shurui Lin, **Qinxun Li**, et al. “Static Microlensing: Concept, Method and Candidates”. In: *arXiv e-prints* (Nov. 2024). arXiv: 2411.02161 [astro-ph.GA].
- 13 Zhang, Ziwen, Martin Kilbinger, Fabian Hervas Peters, **Qinxun Li**, Wentao Luo, et al. “Point spread function errors for weak lensing – density cross-correlations: Application to UNIONS”. In: *Astronomy & Astrophysics* 691, A75 (Nov. 2024), A75.  DOI: 10.1051/0004-6361/202450623.
- 14 Zhang, Ziwen, Huiyuan Wang, Wentao Luo, Houjun Mo, Jun Zhang, et al. “Halo Mass-observable Proxy Scaling Relations and Their Dependencies on Galaxy and Group Properties”. In: *Astrophysical Journal* 960.1, 71 (Jan. 2024), p. 71.  DOI: 10.3847/1538-4357/ad0892.




Books (translation)

- 1 Zee, A. *Chinese version of A. Zee's Quantum field theory in a nutshell*. Trans. by Jiaqqi Cai, Yijun He, Jiajun Li, Zeyang Li, Hao Liang, et al. Hefei, China: USTC Press, 2022. ISBN: 9787312051890.

Skills

Observational	 Galaxy Clustering Measurement & Modeling, Weak Lensing Measurement & Modeling, Cosmology Parameter Estimation/Constraint, ...
Coding	 Python, IDL, L ^A T _E X, ...
Data Analysis	 Monte Carlo, Machine learning, ...








Membership

- DESI  Dark Energy Spectroscopic Instrument, the state-of-the-art spectroscopic survey
- UNIONS  the Ultraviolet Near-Infrared Optical Northern Survey, the last Stage-III imaging survey
- XCS  XMM Cluster Survey / X-ray Cluster Science, a cluster cosmology collaboration working on archival XMM and eROSITA data

Honors & Awards

- 2024  Swigart First-Year Summer Graduate Research Fellowship, *University of Utah*
- 2023  Outstanding Graduate, *University of Science & Technology of China*
- 2022  Excellent Poster Prize, Undergraduate Research Symposium, *University of Science & Technology of China*
-  Linbridge Prize for Excellent Undergraduate Research Projects in Astronomy and Astrophysics, *Kavli Institute on Astronomy and Astrophysics, Peking University*
-  National Astronomical Observatory of China Fellowship
- 2021  Silver Prize, USTC Scholarship for Excellent Student, *University of Science & Technology of China*
- 2020  First Prize and the Best Record Winner, Astronomy Competition for College Students in South China, *Sun Yat-Sen University*
- 2018  Silver Medal, China National Astronomy Olympiad, *Beijing Planetarium*

Talks & Presentations

- Jul. 2025  **BAO Validation for Uchuu Reference Mock**, *DESI Collaboration Meeting at Berkeley*
- Jun. 2025  **DESI BAO and Evolving Dark Energy**, *Southern University of Science & Technology 3rd Student Physics & Mathematics Workshop, invited*
- Mar. 2025  **DESI DR2 BAO Results and Cosmological Implications**, *Graduate Student Journal Club, USTC, invited*
- Dec. 2024  **Introduction to Modern Cosmology**, *Southern University of Science & Technology 2nd Student Physics & Mathematics Workshop, invited*
- Dec. 2023  **Introduction to Modern Astrophysics**, *Southern University of Science & Technology 1st Student Physics & Mathematics Workshop, invited*
- Jun. 2023  **Stellar-Subhalo Mass Relation as a Probe to Galaxy-Subhalo Connection**, *China Gravitational Lensing Workshop XI, Qingdao*
- Oct. 04, 2022  **Subhalo Properties in SDSS DR7 with Galaxy-galaxy Lensing**, *Cluster Seminar at Department of Astronomy, University of Michigan*
- Sept. 23, 2022  **Subhalo Properties from SDSS Weak Lensing**, *2022 PKU-DoA Undergraduate Astronomy Symposium at Kavli Institute on Astronomy and Astrophysics, Peking University*
- Jun. 11, 2022  **Dark Matter Halo Mass Measurement with Weak Lensing**, *Undergraduate Academic Annual Conference, Department of Astronomy, USTC*

Teaching Experience






- 2024 SP  (Discussion) Teaching Assistant ASTR1060 *The Universe*
- 2023 FA  Grader ASTR3070 *Foundations of Astronomy*

Teaching Experience (continued)

2022 SP  Teaching Assistant

Observational Astronomy

Service & Outreach

- Sep. 2021–Sep. 2022  ‘Questing For Truth’ Natural Science Club, *Club President*
- Dec. 2020–Sep. 2021  United Academic Forum of Basic Science for Undergraduates, *Council Member*
- Feb.–Mar., 2021  Online Seminar on General Relativity and Cosmology for Undergraduates, *Organizer and Speaker*
- Sep. 20, 2021  Popular Physics Lecture for Freshmen, *Organizer and Speaker*
- Jan. 2021  Series Lectures on Popular Astronomy in Huaifu High School, *Lecturer*