

JIAXUAN LI

PERSONAL INFORMATION

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| Name: | Jiaxuan Li (李嘉轩) | Address: | 012 Peyton Hall, 4 Ivy Lane, Princeton, NJ 08544 |
| Email: | jiaxuanl@princeton.edu | GitHub: | AstroJacobLi |
| Homepage: | http://jiaxuanli.me/ | ORCID: | orcid.org/0000-0001-9592-4190 |

RESEARCH INTERESTS

- Low surface brightness astrophysics: galaxy outskirts, ultra-diffuse galaxies, intracluster/intragroup lights.
- Galaxy evolution: quenching, star formation scaling relations, galaxy-halo connection.
- Stellar population synthesis: photo- z , initial mass function, star formation history.
- Statistical methods and machine learning in astrophysics: simulation-based inference.

EDUCATION

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| Graduate Student , Department of Astrophysical Sciences, Princeton University, U.S. | Aug 2021 – Now |
| Bachelor of Science (highest honor), Department of Astronomy, Peking University, China | Sept 2016 – July 2020 |
| • Major: Astrophysics GPA: 3.80/4.00 Rank: 2 / 28 | |
| Thesis: <i>Probing low surface brightness features in the NGC 1052 field with Dragonfly Telephoto Array</i> | |
| Advisors: Pieter van Dokkum & Luis C. Ho | |

RESEARCH POSITIONS

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| Research Assistant, KIAA, Peking University, China | Sept 2020 – Aug 2021 |
| Undergraduate Research Intern, Yale University, U.S. | June 2019 – Sept 2019 |
| Undergraduate Research Fellow, University of California, Santa Cruz, U.S. | Oct 2018 – Jan 2019 |
| Undergraduate Research Assistant, Peking University, China | July 2017 – June 2020 |

REFERENCES

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|---|---|
| Prof. Jenny Greene ✉ jgreene@astro.princeton.edu | Princeton University |
| Prof. Yingjie Peng ✉ yjpeng@pku.edu.cn | Kavli Institute for Astronomy and Astrophysics, Peking University |
| Prof. Alexie Leauthaud ✉ alexie@ucsc.edu | University of California, Santa Cruz |

PUBLICATIONS

1. **Li J.**, Greene J., Greco J., Huang S., Melchior P., Beaton R., Casey K., Danieli S., Goulding A., Joseph R., Kado-Fong E., Kim J., MacArthur L., [Beyond Ultra-Diffuse Galaxies I: Mass-Size Outliers Among the Satellites of Milky Way Analogs](#), *ApJ* submitted.
2. **Li J.**, Huang S., Leauthaud A., Moustakas J., Danieli S., Greene J., Abraham R., Ardila F., Kado-Fong E., Lokhorst D., Lupton R., Price P., [Reaching for the Edge I: Probing the Outskirts of Massive Galaxies with HSC, DECaLS, SDSS, and Dragonfly](#), *MNRAS* 515, 4 (2022).
3. Greene J. et al. (including **Li J.**), [ELVES III: Environmental Quenching by Milky Way-Mass Hosts](#), *ApJ* submitted.
4. Greene J. et al. (including **Li J.**), [The Nature of Low Surface Brightness Galaxies in the Hyper Suprime-Cam Survey](#), *ApJ* 933, 150 (2022).
5. Shi J., et al. (including **Li J.**), [Cold Gas in Massive Galaxies as A Critical Test of Black Hole Feedback Models](#), *ApJ*, 927, 2 (2022).

6. Danieli S., et al. (including [Li J.](#)), [NGC5846-UDG1: A galaxy formed mostly by star formation in massive, extremely dense clumps of gas](#), *ApJL* 927, 2 (2022).
7. Liu Q., Abraham R., Gilhuly C., van Dokkum P., Martin P. G., [Li J.](#), Greco J. P., et al., [A Method To Characterize the Wide-Angle Point Spread Function of Astronomical Images](#), *ApJ* 925, 2 (2022).
8. Keim M. A., van Dokkum P., Danieli S., Lokhorst D., [Li J.](#), Shen Z., Abraham R., et al., [Tidal Distortions in NGC1052-DF2 and NGC1052-DF4: Independent Evidence for a Lack of Dark Matte](#), arXiv:2109.09778, ApJ submitted.
9. Miller T. B., van Dokkum P., Danieli S., [Li J.](#), Abraham R., Conroy C., Gilhuly C., Greco J. P., Liu Q., Lokhorst D., Merritt A., [The Dragonfly Wide Field Survey. II. Accurate Total Luminosities and Colors of Nearby Massive Galaxies and Implications for the Galaxy Stellar Mass Function](#), *ApJ*, 909, 74 (2021).
10. van Dokkum P., Lokhorst D., Danieli S., [Li J.](#), Merritt A., Abraham R., Gilhuly C., Greco J. P., [Multi-resolution filtering: an empirical method for isolating faint, extended emission in Dragonfly data and other low resolution images](#), *PASP*, 132, 1013 (2020).
11. Danieli S. et al. (including [Li J.](#)), [The Dragonfly Wide Field Survey. I. Telescope, Survey Design and Data Characterization](#), *ApJ*, 894, 2 (2020).

HONORS AND AWARDS

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| Outstanding Undergraduate Thesis Award in Beijing (北京市本科优秀毕业论文) | Sept 2020 |
| Weiming Bachelor (“未名学士” 称号) | June 2020 |
| Outstanding Graduate of General Colleges and Universities in Beijing (北京市普通高校优秀毕业生) | June 2020 |
| Outstanding Graduate of Peking University (北京大学优秀毕业生) | June 2020 |
| PKU Scholar in Physics (未名物理学子) | 2017 – 2020 |
| Tang Li-Xin Scholarship (10,000 RMB per year, most competitive scholarship in PKU) | May 2019 |
| AEON Scholarship , Peking University (10,000 RMB, 2/202) | Sept 2018 |
| Leo KoGuan Scholarship , Peking University (10,000 RMB, 4/202) | Oct 2017 |
| Lin-bridge Prize for Excellent Undergraduate Research (2,800 RMB, endowed by Prof. Douglas Lin) | Sept 2018 |
| Merit Student, Peking University | 2017, 2018 |
| First Prize, 8 th China Undergraduate Physicists Tournament | Aug 2017 |
| Meritorious Winner in Mathematical Contest In Modeling (MCM/ICM) | Apr 2018 |
| Silver Medal, 9 th International Olympiad on Astronomy and Astrophysics (IOAA) | Aug 2015 |
| Gold Medal & Best Result, China National Astronomy Olympiad | 2014, 2015 |
| Gold Medal (3 rd place), 1 st Princeton University Physics Competition | Jan 2015 |

COMPUTER SKILLS

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| Skilled in: | Python, \LaTeX , Mathematica, Shell/Bash, Git. |
| Experienced with: | <ul style="list-style-type: none"> • Significant experience with HSC, DECaLS, Dragonfly, MaNGA, IllustrisTNG • Manipulating catalogs, analyzing dataset and visualization • Photometry for galaxies and low surface brightness features |
| Often-used Packages: | Astropy , IRAF , SExtractor , SWarp , The tractor , GalSim , emcee , PyTorch . |
| Software Contributions: | <ul style="list-style-type: none"> • mrf: Multi-Resolution Filtering – a method for isolating faint extended emission in Dragonfly data and other low resolution images • kungpao: Photometric analysis library for Hyper Suprime-Camera images • unagi: For searching and downloading data from Hyper Suprime-Camera • More work can be found on my Github: @AstroJacobLi |

TEACHING, ADVISING, AND SERVICE EXPERIENCE

- Teaching Assistant of AST 303 (Research Methods in Astrophysics) 2022 Fall
- Co-advised Vivek Vijayakumar (undergraduate student, Princeton) 2022 Summer

OBSERVATION EXPERIENCE

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| Clay/LDSS3 on Magellan telescope: 1 full night spectroscopy | PI, 2022B |
| TITLE: Redshift confirmation of Ultra-Diffuse Galaxies hosted by Milky-Way analogs at $0.01 < z < 0.04$ | |
| Clay/IFU-M on Magellan telescope: 4 half nights spectroscopy | Co-I, 2022B (PI: S. Danieli) |
| TITLE: High-resolution $H\alpha$ rotation curves of star-forming ultra-diffuse galaxies | |
| Merian Survey with 4-m Blanco telescope and DECam: 8 nights | 2021-2022 |
| Shane 3-m Telescope, UCO Lick Observatory: 2 nights observation of spectroscopy. | Jan 2019 |
| Xinglong 2.16-m Telescope (NAOC): 2 nights observation of photometry. | Oct 2019 |
| Peking University 40-cm Telescope (PKUFT): photometry and spectroscopy | 2017 – 2019 |

OUTREACH EXPERIENCE

- President of Peking University [Youth Astronomy Society](#) (largest academic student association at PKU).
I organized and also gave public talks on topics in astrophysics.
- Mentor of the Chinese Astronomy Olympiad National Team, and wrote a [textbook](#) on Astronomy Olympiad.
- Invited to a television show “Voice” (开讲啦) on CCTV-1 as a youth representative.
I talked about the public outreach of astronomy in China and the future of Chinese astronomy. [▶](#)