Jiaxuan Li

Personal Information

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Research Interests

- Low surface brightness astrophysics: galaxy outskirts, intracluster/intragroup lights, ultra-diffuse galaxies.
- Galaxy evolution: quenching, formation of massive galaxies, star formation scaling relations, galaxy-halo connection.
- Statistical methods in astrophysics.
- Deep sky surveys, astronomical data reduction.

Education

Graduate Student, Department of Astrophysical Sciences, Princeton University, U.S. — Starting from Aug 2021

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 | Detailed Transcript

  Thesis: *Probing low surface brightness features in the NGC 1052 field with Dragonfly Telephoto Array*

  Advisor: Pieter van Dokkum & Luis C. Ho

Research Positions

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

Prof. Jenny Greene — Princeton University
✉ jgreene@astro.princeton.edu

Prof. Yingjie Peng — Kavli Institute for Astronomy and Astrophysics, Peking University
✉ yjpeng@pku.edu.cn

Prof. Alexie Leauthaud — University of California, Santa Cruz
✉ alexie@ucsc.edu

Prof. Pieter van Dokkum — Yale University
✉ pieter.vandokkum@yale.edu

Publications

1. 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).
2. 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).
3. Danieli S., Lokhorst D., Zhang J., Merritt A., van Dokkum P., Abraham R., Conroy C., Gilhuly C., Greco J., Janssens S., **Li J.**, Liu Q., Miller T., Mowla L., The Dragonfly Wide Field Survey. I. Telescope, Survey Design and Data Characterization, *ApJ*, 894, 2 (2020).

Honors and Awards

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
Undergraduate Research & Training Program (10,000 RMB)	May 2019
Lin-bridge Prize for Excellent Undergraduate Research (2,800 RMB, endowed by Prof. Douglas Lin)	Sept 2018
Merit Student, Peking University	2017, 2018
Innovation Prize, Peking University	Oct 2017
First Prize, 8th China Undergraduate Physicists Tournament	Aug 2017
Meritorious Winner in Mathematical Contest In Modeling (MCM/ICM)	Apr 2018
8th Place in Beijing Division, AI Challenger: Searching Supernovae in Sky Survey	Apr 2019
Silver Medal, 9th International Olympiad on Astronomy and Astrophysics (IOAA)	Aug 2015
Gold Medal & Best Result, China National Astronomy Olympiad	2014, 2015
Gold Medal (3rd place), 1st Princeton University Physics Competition	Jan 2015

Computer Skills

Skilled in: Python, LaTeX, Mathematica, Shell/Bash, Git.

Experienced with:
- Significant experience with HSC, DECaLS, Dragonfly, MaNGA, IllustrisTNG
- Manipulating catalogs, analyzing dataset and visualization
- Photometry of galaxies and low surface brightness features

Often-used Packages: `Astropy`, `IRAF`, `SExtractor`, `SWarp`, `The tractor`, `GalSim`, `emcee`, `PyTorch`.

Basic Knowledge: SQL/ADQL, C/C++, Lightroom, Photoshop.

Software Contributions:
- `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 works can be found on my Github: `@AstroJacobLi`

Observational Experience

Peking University 40-cm Telescope (PKUFT): photometry and spectroscopy	2017 – 2019
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

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.

Activities and Talks

Presentation at HSC galaxy group telecon	June 2019
Theoretical Problems Designer, 12th IOAA	Nov 2018
PKU Undergraduate Astronomy Symposium	Sept 2018, 2020
Mentor, Training for Chinese Astronomy Olympiad National Team	July 2018
PKU Representative, "Young Talent Plan" 10 Year Anniversary Symposium, USTC	July 2018
Asian Science Camp, Kampar, Malaysia	Aug 2017
Pacific Astronomy and Engineering Summit, Hawaii, U.S.	Aug 2014

Leadership Experience

President of Peking University Youth Astronomy Society (YAS)	May 2017 – May 2018
Monitor of Undergraduate Class 2016, Department of Astronomy	Sept 2016 – Now