

Jiaxuan Li

PERSONAL INFORMATION

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EDUCATION

SEPTEMBER 2016– Undergraduate Student in DEPARTMENT OF ASTRONOMY,
Peking University, China
Major: Astrophysics
GPA: 3.85/4 | [Detailed Transcript](#)

AUGUST 2013–JUNE 2016 Senior High School, **Dingxi NO.1 Middle School**, Dingxi, Gansu

AUGUST 2010–JUNE 2013 Junior High School, **Gongyuan Road Middle School**, Dingxi, Gansu

SEPTEMBER 2004–JUNE 2010 Primary School, **Dacheng Primary School**, Dingxi, Gansu

FIELD OF INTEREST

- General formation and evolution of galaxies
- Quenching process of spiral galaxies
- Probing outskirts of galaxies using deep sky surveys
- Explosion mechanism of Type Ia supernova and supernova surveys

RESEARCH EXPERIENCE

SEPT. 2018-	Reaching for the Edge: the Outskirts of Massive Galaxies with HSC, DECaLS, and Dragonfly
SUPERVISOR: ALEXIE LEAUTHAUD	Probing the outskirts of massive galaxies can reveal the relation between galaxy itself and its dark matter halo. To push the detection limit of galaxy outskirt forward, we are using Hyper Suprime-Cam Subaru Strategic Survey (HSC-SSP) images and already get down to 29 mag/arcsec ² and ~ 150 kpc. Furthermore, we compare HSC with Dark Energy Camera Legacy Survey (DECaLS) and Dragonfly Telephoto Array, try to find the difference between surveys as a correction. This work may help correct the previous galaxy mass measurements, and examine the existed relations on galaxy-halo connection.
JULY 2017-	Inside-out quenching galaxies with H α ring-like structures
SUPERVISOR: YINGJIE PENG	We investigated galaxies with H α emission ring-like structures in Mapping Nearby Galaxies at APO (MaNGA) survey, with stellar mass in the range $9 < \log(M/M_{\odot}) < 12$. These galaxies are almost located in the green valley on SFR-stellar mass plane. The radius of H α rings are measured and good linear relations between bar length and H α ring radius are found. We reveal that the appearance of H α star-forming ring-like structure has a strong correlation with bar-induced activities. The majority of our H α ring galaxy sample are galaxies which are classified as LINER with $EW(H\alpha) < 3\text{\AA}$. Low luminosity AGN possibly plays a role in inside-out quenching accompanying with H α ring-like structure.

HONORS AND AWARDS

- NOVEMBER 2018 WEIMING PHYSICS OUTSTANDING STUDENT (未名物理学子) (7,000 RMB) , Peking University, China.
- OCTOBER 2018 MERIT STUDENT, Peking University, China.
- SEPTEMBER 2018 AEON SCHOLARSHIP (10,000 RMB), Peking University, China.
- SEPTEMBER 2018 Second Prize (1800 RMB) of [LINBRIDGE PRIZE](#) FOR EXCELLENT UNDERGRADUATE RESEARCH PROJECTS IN ASTRONOMY AND ASTROPHYSICS, Peking University, China.
- APRIL 2018 MERITORIOUS WINNER IN MATHEMATICAL CONTEST IN MODELING (MCM/ICM).
- MARCH 2018 EXCELLENT MEMBER OF COMMUNIST YOUTH LEAGUE (优秀共青团员), Peking University, China.
- NOVEMBER 2017 WEIMING PHYSICS OUTSTANDING STUDENT (未名物理学子) (7,000 RMB) , Peking University, China.
- OCTOBER 2017 LEO KOGUAN SCHOLARSHIP (10,000 RMB), Peking University, China.
- OCTOBER 2017 MERIT STUDENT, Peking University, China.
- OCTOBER 2017 INNOVATION PRIZE, Peking University, China.
- AUGUST 2017 First Prize, 8th CHINA UNDERGRADUATE PHYSICISTS' TOURNAMENT, Harbin, China.
- JANUARY 2016 Bronze Medal (6th place) & Innovation Prize, 2nd PRINCETON UNIVERSITY PHYSICS COMPETITION, Princeton, US.
- NOVEMBER 2015 Bronze Medal, 32nd CHINA PHYSICS OLYMPIAD, Changsha, China.
- AUGUST 2015 Silver Medal, 9th INTERNATIONAL OLYMPIAD ON ASTRONOMY AND ASTROPHYSICS, Maglang, Indonesia.
- APRIL 2015 Gold Medal & Best Result, 11th CHINA NATIONAL ASTRONOMY OLYMPIAD, Weihai, China.
- JANUARY 2015 Gold Medal (3rd place), 1st PRINCETON UNIVERSITY PHYSICS COMPETITION, Princeton, US.
- AUGUST 2014 Bronze Medal, 8th INTERNATIONAL OLYMPIAD ON ASTRONOMY AND ASTROPHYSICS, Suceava, Romania.
- APRIL 2014 Gold Medal & Best Result, 10th CHINA NATIONAL ASTRONOMY OLYMPIAD, Beijing, China.
- NOVEMBER 2013 Gold Medal, 9th ASIA-PACIFIC ASTRONOMY OLYMPIAD, Tomohon, Indonesia.
- APRIL 2013 Gold Medal, 9th CHINA NATIONAL ASTRONOMY OLYMPIAD, Kunming, China.

LEADERSHIP EXPERIENCE

- MAY 2017-MAY 2018 | President of [Youth Astronomy Society \(YAS\)](#), Peking University
Youth Astronomy Society is aiming at broadcasting astronomy knowledge to public, especially to students in Peking University. Youth Astronomy Society holds *Routine Observations*, *Scientific Outreach Lectures*, *Tuantu Series Lectures*, *Countryside Observations*, etc. There are also several groups, like Astrophotography Group, Meteor Group, etc. We produced a short video called "[The Unknown Secrets of the Universe – Astronomy in Peking University](#)", which aims at showing the journey of a astronomy student at Peking University, and also conveying the spirit of PKUer.
- SEPT 2016- | Monitor of Undergraduate Class 2016, Department of Astronomy

COMPUTER SKILLS

- Skilled Languages:** Python, \LaTeX , Mathematica, Linux, Git.
- Experienced with:**
- Manipulating catalogs, analyzing dataset and visualization
 - Photometry of galaxies and image reduction
- Often-used Packages:** [emcee](#), [astroML](#), [PyTorch](#), [Astropy](#), [The tractor](#), [GalSim](#).
- Basic Knowledge:** IRAF, SQL, Excel, Word, PowerPoint, Photoshop.
- Software Contributions:**
- [kungpao](#): Photometric analysis library for Hyper Suprime Camera images
 - [unagi](#): Search and download data from Hyper Suprime Camera Subaru Strategic Survey (HSC-SSP)
 - Some of my works can be found on Github: [@AstroJacobLi](#)

OBSERVATIONAL EXPERIENCE

- Peking University 40-cm Telescope (PKUFT)
- Shane 3-m Telescope, UCO Lick Observatory: 2 nights observation of spectroscopy.

LANGUAGES

ENGLISH: Fluent.
TOEFL iBT: [109 \(Jan 05, 2019\)](#)
Reading: 29; Listening: 28; Speaking: 24; Writing: 28.

ACTIVITIES AND TALKS

- NOV 2018 [THEORETICAL PROBLEMS DESIGNER](#), 12TH INTERNATIONAL OLYMPIAD ON ASTRONOMY AND ASTROPHYSICS (IOAA), Beijing, China.
- SEPT 2018 SDSS IV MANGA: INSIDE-OUT QUENCHING GALAXIES WITH $H\alpha$ RING-LIKE STRUCTURES, presented in PKU Undergraduate Astronomy Symposium.
- JULY 2018 Mentor, TRAINING FOR CHINESE NATIONAL ASTRONOMY OLYMPIAD TEAM, Beijing Planetarium, Beijing, China.
- JULY 2018 PKU Student Representative, "YOUNG TALENT PLAN" 10 YEAR ANNIVERSARY SYMPOSIUM, USTC, Hefei, China.
- JUNE 2018 SDSS IV MANGA: INSIDE-OUT QUENCHING GALAXIES WITH $H\alpha$ RING-LIKE STRUCTURES, presented in KIAA Interstellar Medium Group Meeting.
- AUGUST 2017 ASIAN SCIENCE CAMP, Kampar, Malaysia.
- AUGUST 2014 PACIFIC ASTRONOMY AND ENGINEERING SUMMIT, Hawaii, U.S.

REFERENCES

- Prof. Yingjie Peng** Kavli Institute on Astronomy and Astrophysics, Peking University
✉ yjpeng@pku.edu.cn
- Prof. Alexie Leauthaud** University of California, Santa Cruz
✉ alexie@ucsc.edu
- Dr. Song Huang** University of California, Santa Cruz
✉ shuang89@ucsc.edu

Undergraduate Student's Transcript

Major: ASTROPHYSICS

Grades

EXAM	GPA	CREDIT
Introduction to Computation	3.77	3
Language, Culture and Communication	3.88	2
Fundamental Astronomy	3.85	3
Linear Algebra (B)	3.97	4
Lectures on The Frontiers of Modern Physics (I)	Pass	2
Mechanics	3.73	4
Advanced Mathematics (B)(I)	4.00	5
Military Theory	3.63	2
Outline of Chinese Modern History	3.88	2
Rings, Fields and Galois Theory	3.97	2
Chaos and Fractal in Natural Science	3.89	2
Electromagnetism	3.73	4
Methods of Mathematical Physics (I)	3.93	3
Advanced Mathematics (B)(II)	3.63	5
Thermal Physics	3.94	3
Data Structure and Algorithm	3.52	3
The Logic of Life	3.93	2
Theoretical Mechanics (A)	3.88	4
Swimming	3.52	1
Equilibrium Statistical Physics	3.88	4
Atomic Physics	3.97	3
General Physics Experiment (I)	3.85	3
Methods of Mathematical Physics (II)	3.93	3
Optics	3.63	4
Basics of Cosmological Physics	3.98	3
Astrophysics	3.95	3
Electrodynamics (A)	3.88	4
Special Topics of Methods of Mathematical Physics	3.99	3
An Introduction to Ideological & Moral Culture and Laws	3.73	2
General Physics Experiment (II)	3.98	3
Seminar for Astrophysics	3.96	2
	Total	93
	GPA	3.85
