

# Jiaxuan Li

## PERSONAL INFORMATION

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HOMEPAGE:	<a href="https://astrojacobli.github.io/">https://astrojacobli.github.io/</a>	ORCID:	<a href="https://orcid.org/0000-0001-9592-4190">orcid.org/0000-0001-9592-4190</a>

## EDUCATION

SEPTEMBER 2016–	Undergraduate Student in DEPARTMENT OF ASTRONOMY, <b>Peking University</b> , China Major: Astrophysics GPA: 3.85/4 <a href="#">  Detailed Transcript</a>
AUGUST 2013–JUNE 2016	Senior High School, <b>Dingxi NO.1 Middle School</b> , Dingxi, Gansu
AUGUST 2010–JUNE 2013	Junior High School, <b>Gongyuan Road Middle School</b> , Dingxi, Gansu
SEPTEMBER 2004–JUNE 2010	Primary School, <b>Dacheng Primary School</b> , 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: <a href="#">ALEXIE LEAUTHAUD</a>	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 <sup>2</sup> and $\sim 150$ 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 $\alpha$ ring-like structures
SUPERVISOR: <a href="#">YINGJIE PENG</a>	We investigated galaxies with H $\alpha$ 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 $\alpha$ rings are measured and good linear relations between bar length and H $\alpha$ ring radius are found. We reveal that the appearance of H $\alpha$ star-forming ring-like structure has a strong correlation with bar-induced activities. The majority of our H $\alpha$ 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 $\alpha$ ring-like structure.

## HONORS AND AWARDS

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NOVEMBER 2018	WEIMING PHYSICS OUSTANDING 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 <a href="#">LINBRIDGE PRIZE</a> 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 MEMEBER OF COMMUNIST YOUTH LEAGUE (优秀共青团员), Peking University, China.
NOVEMBER 2017	WEIMING PHYSICS OUSTANDING 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, 8 <sup>th</sup> CHINA UNDERGRADUATE PHYSICISTS' TOURNAMENT, Harbin, China.
JANUARY 2016	Bronze Medal (6th place) & Innovation Prize, 2 <sup>nd</sup> PRINCETON UNIVERSITY PHYSICS COMPETITION, Princeton, US.
NOVEMBER 2015	Bronze Medal, 32 <sup>nd</sup> CHINA PHYSICS OLYMPIAD, Changsha, China.
AUGUST 2015	Silver Medal, 9 <sup>th</sup> INTERNATIONAL OLYMPIAD ON ASTRONOMY AND ASTROPHYSICS, Maglang, Indonesia.
APRIL 2015	Gold Medal & Best Result, 11 <sup>th</sup> CHINA NATIONAL ASTRONOMY OLYMPIAD, Weihai, China.
JANUARY 2015	Gold Medal (3rd place), 1 <sup>st</sup> PRINCETON UNIVERSITY PHYSICS COMPETITION, Princeton, US.
AUGUST 2014	Bronze Medal, 8 <sup>th</sup> INTERNATIONAL OLYMPIAD ON ASTRONOMY AND ASTROPHYSICS, Suceava, Romania.
APRIL 2014	Gold Medal & Best Result, 10 <sup>th</sup> CHINA NATIONAL ASTRONOMY OLYMPIAD, Beijing, China.
NOVEMBER 2013	Gold Medal, 9 <sup>th</sup> ASIA-PACIFIC ASTRONOMY OLYMPIAD, Tomohon, Indonesia.
APRIL 2013	Gold Medal, 9 <sup>th</sup> CHINA NATIONAL ASTRONOMY OLYMPIAD, Kunming, China.

## LEADERSHIP EXPERIENCE

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MAY 2017-MAY 2018	President of <a href="#">Youth Astronomy Society</a> (YAS), Peking University  Youth Astronomy Society is aiming at broadcasting astronomy knowledge to public, especially to students in Peking University. Youth Astronomy Society holds <i>Routine Observations</i> , <i>Scientific Outreach Lectures</i> , <i>Tuantu Series Lectures</i> , <i>Countryside Observations</i> , etc. There are also several groups, like Astro-photography Group, Meteor Group, etc. We produced a short video called " <a href="#">The Unknown Secrets of the Universe –Astronomy in Peking University</a> ", 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

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- Skilled Languages:** Python,  $\text{\LaTeX}$ , Mathematica, Linux, Git.
- Experienced with:**
- Manipulating catalogs and analyzing dataset
  - 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](#)

## LANGUAGES

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- ENGLISH: Fluent.  
TOEFL iBT: 103 (Jan 28, 2018)  
Reading: 30; Listening: 26; Speaking: 22; Writing: 25.
- CHINESE MANDARIN: Mothertongue
- INTEREST: German, Hebrew.

## ACTIVITIES AND TALKS

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- 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

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| <b>Prof. Yingjie Peng</b><br>✉ <a href="mailto:yjpeng@pku.edu.cn">yjpeng@pku.edu.cn</a> | Kavli Institute on Astronomy and Astrophysics, Peking University |
| <b>Prof. Alexie Leauthaud</b><br>✉ <a href="mailto:alexie@ucsc.edu">alexie@ucsc.edu</a> | University of California, Santa Cruz                             |
| <b>Dr. Song Huang</b><br>✉ <a href="mailto:shuang89@ucsc.edu">shuang89@ucsc.edu</a>     | University of California, Santa Cruz                             |

# 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
<b>Basics of Cosmological Physics</b>	3.98	3
<b>Astrophysics</b>	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
<b>General Physics Experiment (II)</b>	3.98	3
<b>Seminar for Astrophysics</b>	3.96	2
Total		93
GPA		3.85