

Zhuofu (Chester) Li

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EDUCATION

UNIVERSITY OF WASHINGTON

Seattle, WA

Ph.D. Astronomy, Astrobiology, and Data Science

Sep 2022 - Present

- **GPA:** 4.00/4.00

THE UNIVERSITY OF CALIFORNIA, LOS ANGELES (UCLA)

Los Angeles, CA

B.S. Astrophysics and B.S. Geophysics

Sep 2018 - June 2022

- **GPA:** 3.88/4.00

AWARDS & HONORS

- UW Astronomy Jacobsen Fund 2022
- UCLA Department of Earth, Planetary, and Space Sciences Salutatorian 2022
- UCLA Highest Honors in Astrophysics 2022
- UCLA Highest Honors in Geophysics 2022
- UCLA Chancellor's Service Award 2022
- UCLA Latin Honors - Cum Laude 2022
- UCLA Dean's Honor List 2018 - 2022
- Caltech Astronomy Summer Undergraduate Research Fellowship 2021
- UCLA Astronomy Research Experience for Undergraduates Fellowship 2020

PUBLICATIONS

Z. Li, J. van Roestel, S. R. Kulkarni, et al., *A Systematic Search for Short Orbital Period Cataclysmic Variables Using the Zwicky Transient Facility*, in preparation.

Z. Li and R. M. Rich, *A Multiwavelength Investigation of Galaxies with XUV Disk*, in preparation.

J. Roman, et al. (including **Z. Li**), *A Giant Cold Stellar Stream in the Coma Galaxy Cluster*, submitted to Nature.

J. L. Margot, et al. (including **Z. Li**), *A Search for Technosignatures Around 32 TESS Exoplanets with the Green Bank Telescope at 1.15--1.73 GHz*, in preparation.

RESEARCH EXPERIENCE

Studying Jupiter Trojans Using the Zwicky Transient Facility

UW

Sep 2022 - Present

Mentored by Prof. Zeljko Ivezic

- Develop a Python code to analyze the lightcurves of 2813 Jupiter Trojans and find their rotation periods.
- Investigate and compare the Trojans located in the two Lagrange points, L4 and L5.
- Determine the shapes of the Trojans using the ZTF lightcurves.

A Systematic Search for Short Orbital Period Cataclysmic Variables Using the Zwicky Transient Facility

Caltech

March 2021 – Sep 2022

Mentored by Prof. Shrinivas R. Kulkarni and Dr. Jan van Roestel

- Developed a Python code (capable of recovering periods from data with extreme variability) to analyze 200,000 white dwarf light curves from ZTF.
- Discovered 177 new periodic white dwarfs, including 50 candidate CVs.
- Conducted follow-up to obtain spectra and confirmed the orbital periods of newly discovered cataclysmic variables.
- Set up a database, gave an oral presentation, and wrote a refereed article.

A Multiwavelength Investigation of Galaxies with XUV Disks

UCLA

June 2020 – Sep 2022

Mentored by Dr. R. Michael Rich

- Used SAOImage DS9 and PixInsight to inspect the faintest emissions of galaxies at different wavelengths.
- Produced 40 first-ever multicolor images that combined data of deep optical, FUV, and WISE 4.
- Ongoing spectral analysis of the spatial distribution of star formation detected in the mid-IR and FUV.

The Halos and Environments of Nearby Galaxies (HERON) Project

UCLA

May 2019 – Sep 2022

Mentored by Dr. R. Michael Rich

- Used PyRAF to calibrate raw images and removed the uneven sky gradients of galaxy images.
- Highlighted galactic halos of galaxies using SAOImage DS9 and Photoshop.
- The final images that I produced are stored on the HERON website at IRSA.
- Classified the collected data for use in journal papers.

UCLA Search for Extraterrestrial Intelligence (SETI)

UCLA

Apr 2020 – June 2020

Mentored by Prof. Jean-Luc Margot and Dr. Paul Pinchuk

- Proposed an extrasolar planetary system to observe using the 100m Green Bank Telescope.
- Performed spectral analysis of time-series data with the Fast Fourier Transform.
- Used Python-based graphical tools to present the results of data analysis.

TELESCOPE/OBSERVING EXPERIENCE

The Halos and Environments of Nearby Galaxies (HERON) Project

June 2020 – Sep 2022

Frazier Park, CA

- More than 1 year as the primary observer.
- Automated the image acquisition for a 0.7m telescope using SGPro.
- Conducted functional checks before an observation.
- Controlled, monitored, and troubleshooted the telescope during an observation.
- Mentored a UCLA freshman on telescope scheduling and observing.
- Collected data for various projects, such as
 - Extended H-alpha Emission in Nearby Galaxies (PI P. Ogle, STScI)
 - Period Measurements for Cataclysmic Variable Stars Candidates From the ZTF Survey (PI J. van Roestel, Caltech)
 - The HERON Project: A Survey of Low Surface Brightness Structures in Nearby Galaxies (PI R. M. Rich, UCLA)

Lick Observatory

Mt Hamilton, CA

2021

- 5 nights as the primary observer.
- Certified observer of the 3m C. Donald Shane telescope.
- Had training on the adaptive optics system on the 3m C. Donald Shane telescope.

- Used the Kast Double Spectrograph for follow-up of potentially new cataclysmic variable stars, rotating/pulsating white dwarfs, and supernovae from ZTF.

SKILLS

- Programming Languages: Python, HTML, C++, Java, and R
- Operating Systems: IOS, Windows, and Linux
- Remote Telescope Scheduling and Observing
- Data Reduction and Image Post-Processing
- Photometric Measurement
- Orbital Period Finding Using the Lomb-Scargle Algorithm

LEADERSHIP

The Astronomical Society at UCLA

Los Angeles, CA

President, Chief Telescope Operator, and Astrophotographer

Sept 2018 – Sep 2022

- Teach people (not majoring in astronomy) about operating and calibrating telescopes.
- Research and select the celestial objects to be viewed during a weekly public telescope show.
- Give a public astronomy talk every week.
- Image deep-sky objects using a 0.36m Schmidt–Cassegrain Telescope.

The Society of Sigma Gamma Epsilon, UCLA (The National Honor Society for the Earth Sciences)

Los Angeles, CA

President

Sept 2020 – Sep 2022

- Provide overall leadership and direction to the club organization.
- Plan and organize field trips, outreach, minerals displays, etc.
- Give talks to elementary school students, middle school students, and high school students.

OUTREACH

Planetarium at UW

Speaker

- The Physics and Astronomy Building at UW, *Weekly Planetarium Show*. Sept 2022 – Present

Astronomical Society at UCLA

Organizer, Speaker

- The Mathematical Sciences Building at UCLA, *Weekly Public Telescope Show*. Sept 2018 – Sep 2022

The Society of Sigma Gamma Epsilon, UCLA (The National Honor Society for the Earth Sciences)

Outreach Committee Member, Speaker

- Hillcrest Elementary School, *Asteroids and Comets*. 2021
- Eldorado Elementary School, *Cretaceous–Paleogene Extinction Event*. 2021

TALKS

Let's Hunt Some Little Green Men

Seattle, WA

University of Washington

Astronomy on Tap

Dec 2022

<p><i>A Systematic Search for Short Orbital Period Cataclysmic Variables Using the Zwicky Transient Facility</i> Santa Barbara, CA Kavli Institute for Theoretical Physics White Dwarfs from Physics to Astrophysics Conference</p>	Nov 2022
<p><i>A Systematic Search for Short Orbital Period Cataclysmic Variables Using the Zwicky Transient Facility</i> Pasadena, CA Caltech Student-Faculty Programs Summer Seminar Day</p>	Aug 2021
<p><i>A Multiwavelength Investigation of Galaxies with XUV Disks</i> Los Angeles, CA UCLA Summer Research Symposium</p>	Aug 2020

EXTRACURRICULAR ACTIVITIES

BruinLife

Los Angeles, CA

Photojournalist

Sept 2019 – Sep 2022

- Attend editorial meetings and suggest story/photo ideas.
- Take pictures and videos for news outlets.
- Use Photoshop to edit and enhance images.

The Westwood Enabler

Los Angeles, CA

Graphic Designer

Sept 2020 – Sep 2022

- Pitch "news in pictures" headlines during weekly meetings.
- Use Photoshop to create graphics for satirical articles.