(347) 417-0808 Norman, OK haikunxue@gmail.com linkedin.com/in/haikun-xue

Haikun Xue

Education

2025 – Present **University of Oklahoma, Norman, OK**
PhD in Astrophysics

2018 – 2022 **University of Washington, Seattle, WA**
BS in Astronomy & Physics
Multiple Dean's List honors

Research Experience

Jan 2026 – Present
Graduate Researcher, University of Oklahoma, Norman, OK

- Model a strong O VI absorption system at $z \approx 0.47$ to investigate the physical conditions of circumgalactic gas.
- Use CLOUDY and CMBM to explore photoionization and collisional ionization models, including the potential influence of radiation from a nearby quasar.

Aug 2024 – Jul 2025
Research Assistant, Purple Mountain Observatory, Nanjing, China
Advisor: Jiangtao Li

- Analyzed high-redshift ($z \gtrsim 4$) quasar spectra for the HIERARCHY project to study the Lyα forest and thermal history of the intergalactic medium.
- Processed and calibrated Magellan/MIKE spectroscopic data using CarPy and PypeIt.
- Supported the installation, commissioning, and calibration of the PANDASMART 0.5 m telescope prototype in Qinghai, China.

2021 – 2022
Undergraduate Research Assistant, University of Washington, Seattle, WA
Advisor: Jessica Werk

- Investigated the relationship between galaxy environment and circumgalactic gas metallicity using COS-Halos and CGM^2 survey data.
- Developed Python tools to identify neighboring galaxies and visualize their spatial distributions along quasar sightlines.

Teaching Experience

2025 – Present
Graduate Teaching Assistant, University of Oklahoma, Norman, OK

- Lead undergraduate astronomy laboratory and physics discussion sections, and grade assignments for an undergraduate astronomy course.

2022 – Jul 2024
Lead STEM Teacher, Success Academy, New York, NY

- Taught middle-school science and mathematics, achieving a 90%+ student pass rate through data-driven instruction.
- Mentored new STEM teachers and provided individualized academic support to students.

2021 – 2022
Teaching Assistant, University of Washington, Seattle, WA

- Led introductory physics laboratory and quiz sections.

Observational Experience

Apr 2026
Apache Point Observatory 3.5 m Telescope, New Mexico (On-site)

- Conducted three nights of observations of white dwarfs and variable stars using ARCTIC and KOSMOS as part of a graduate astronomy course.
- Participated in data acquisition, quality checks, and scientific analysis.

Oct 2024 – Jul 2025
PANDASMART 0.5 m Telescope, Qinghai, China (On-site and Remote)

- Performed telescope calibration, including optical alignment and focusing.
- Developed observing documentation and supported remote telescope operations and troubleshooting.

Oct 2024
MDM 1.3 m Telescope, Kitt Peak, Arizona (Remote)

- Conducted two weeks of remote observations of quasars and standard stars using the Templeton CCD.

Public Talks

Nov 2024
Purple Mountain Observatory Journal Club, Nanjing, China

- Presented "Galactic Hurricane: JWST Observation of Intense Warm AGN Outflow."

Mar 2022
University of Washington Planetarium, Seattle, WA

- Presented "Galaxy Query" for ASTR 270.

Community Service & Outreach

2025 – Present
Star Party Organizer, University of Oklahoma, Norman, OK

- Organize and lead weekly public astronomy events, introducing visitors to the night sky through observations and discussions.

2024
Volunteer, Wild Bird Fund, New York, NY

- Helped rescue and rehabilitate local birds and small animals, including feeding and maintaining aviary habitats.

2022
Volunteer, Hunger Intervention, Seattle, WA

- Prepared meals for elderly and unhoused community members and provided translation support for Chinese-speaking visitors.

Technical Skills

Programming & Data Analysis	Python, NumPy, SciPy, Astropy, Matplotlib, Pandas, Photutils
Astronomical Software	CLOUDY, CMBM, IRAF, PypeIt, DS9
Computing	High-performance computing (HPC), remote computing
Telescope Operations	MaxIm DL, TheSkyX, PHD2, ASCOM, VNC

Languages

English	Fluent
Mandarin Chinese	Native
Cantonese Chinese	Intermediate