

JIE LI(李杰)

Research Interests: Exoplanet; Direct Imaging; Astrometry; Radial Velocity; AGN

✉ Jie.Li@utsa.edu · ☎ (+1) 210-708-3152 · 🔗 <https://orcid.org/0000-0003-2426-3852>

EDUCATION

The University of Texas at San Antonio

Aug. 2025 – Present

Ph.D. in Physics

Yunnan University

Sep. 2018 – Jun. 2022

B.S. in Astronomy

PUBLICATIONS

First-Author:

- **Jie Li**, Zhong-Xiang Wang, Dong Zheng, Ju-Jia Zhang, et al., (2023). AT2021acak: a Candidate Tidal Disruption Event Found in the Zwicky Transient Facility Survey. *Research in Astronomy and Astrophysics*, doi: [10.1088/1674-4527/acae6f](https://doi.org/10.1088/1674-4527/acae6f).
- **Jie Li**, Zhong-Xiang Wang, Dong Zheng, (2023). Three cases of optical periodic modulation in Active Galactic Nuclei. *Monthly Notices of the Royal Astronomical Society*, doi: [10.1093/mnras/stad1168](https://doi.org/10.1093/mnras/stad1168).

Co-Author:

- Li-Tao Zhu, Zhong-Xiang Wang, P. U. Devanand, ..., **Jie Li**, et al., (2024). Testing Colour-magnitude Pattern as A Method in the Search for Changing-Look AGNs. *Monthly Notices of the Royal Astronomical Society*, doi: [10.1093/mnras/stae2774](https://doi.org/10.1093/mnras/stae2774).
- Li-Tao Zhu, **Jie Li**, Zhong-Xiang Wang, Ju-Jia Zhang, (2024). Four changing look active galactic nuclei found from optical variations. *Monthly Notices of the Royal Astronomical Society*, doi: [10.1093/mnras/stae1044](https://doi.org/10.1093/mnras/stae1044).
- Yi Xing, Zhong-Xiang Wang, Dong Zheng, **Jie Li**, (2023). On the Gamma-Ray Emission of the Andromeda Galaxy M31. *The Astrophysical Journal Letters*, doi: [10.3847/2041-8213/acbf4f](https://doi.org/10.3847/2041-8213/acbf4f).

CONFERENCE PRESENTATIONS

Talks:

- **Jie Li**, Yiting Li, Thayne Currie, Mona El Morsy. “Using Astrometry and RV to Identify New Exoplanets and Brown Dwarfs Amenable to High-Contrast Imaging From the Ground and Space”. *UTSA-SwRI Space Physics Symposium, Southwest Research Institute, San Antonio, TX*, April, 2026.

Posters:

- **Jie Li**, Yiting Li, Thayne Currie, Mona El Morsy. “Using Astrometry and RV to Identify New Exoplanets and Brown Dwarfs Amenable to High-Contrast Imaging From the Ground and Space”. *Spirit of Lyot 6, California Institute of Technology, Pasadena, CA*, February, 2026.
- **Jie Li**, Yiting Li, Thayne Currie, Mona El Morsy. “Using Astrometry and RV to Identify New Exoplanets and Brown Dwarfs Amenable to High-Contrast Imaging From the Ground and Space”. *GSAW Symposium, University of Texas at San Antonio, San Antonio, TX*, April, 2026.

- **Jie Li**, Yiting Li, Thayne Currie, Mona El Morsy. “Using Astrometry and RV to Identify New Exoplanets and Brown Dwarfs Amenable to High-Contrast Imaging From the Ground and Space”. *COS Symposium, University of Texas at San Antonio, San Antonio, TX*, April, 2026.

RESEARCH EXPERIENCES

Project: Using Astrometry and RV to Identify New Exoplanets and Brown Dwarfs Amenable to High-Contrast Imaging From the Ground and Space 2025 – Present

Advisor: Dr. Thayne Currie

- Searched for stars exhibiting significant astrometric accelerations using the Hipparcos–Gaia Catalogue of Accelerations (HGCA).
- Identified systems with both astrometric acceleration signals and long-term radial-velocity trends.
- Jointly modeled radial-velocity measurements and precision astrometry from HGCA using the orbit-fitting code *orvara*, constraining the dynamical masses and orbital parameters of the companions.
- Evaluated the detectability of these companions with current and future direct imaging facilities, including ground-based extreme adaptive optics systems and space-based high-contrast imaging missions.

Project: Understanding Long-Term Large Flux Variations Seen in AGNs 2021 – 2024

Advisor: Dr. Zhongxiang Wang

- Identified Fermi-LAT blazars counterparts based on the correlation of gamma and optical light curves.
- Discovered three AGNs with optical periodic modulation based on ZTF and CRTS light curves, suggesting merging supermassive black hole binary. One of the AGNs even showed potential periodic modulation in X-rays.
- Identified a rare candidate AGN TDE based on the light curves from ZTF, ATLAS, and NEOWISE, which exhibited the emergence of coronal lines after optical flare.
- Identified four changing-look AGNs. Several of them were previously classified as type 2 AGNs in SDSS spectra but exhibited bluer-when-brighter behavior in recent light curves, which is the characteristic of type 1 AGNs.
- Proposed a new method to identify changing-look AGNs by searching for type 2 AGNs in SDSS spectra that exhibit bluer-when-brighter behavior in recent light curves (Color-magnitude Pattern). Follow-up observations demonstrated its high efficiency.

Project: Systematic Searching for Dual AGNs 2020 – 2022

Advisor: Dr. Yang Huang

(15,000 CNY, Funded by College Student Innovation and Entrepreneurship Training Program Project)

- Searched for optical dual-core objects accompanied by radio or X-ray radiation as dual AGNs candidates.
- Applied the Lijiang 2.4m telescope to obtain two-dimensional spectra of dual AGNs candidates.
- Identified three new dual AGNs.

Project: Development of LHAASO-WFCTA Camera 2020 – 2022

Advisor: Dr. Maomao Ge

- Tested SiPM linearity and assembled the LHAASO-WFCTA camera.
- Proposed the potential impact of skylight background on SiPM linearity.
- Constructed SiPM linearity function under varying skylight background conditions.

TEACHING EXPERIENCES

Undergraduate Course: Algebra-based Physics I Laboratory Spring 2026

- The University of Texas at San Antonio
- Graduate Teaching Assistant
- Supervisor: Mr. Christopher Dunn

Undergraduate Course: Algebra-based Physics I Laboratory

Fall 2025

- The University of Texas at San Antonio
- Graduate Teaching Assistant
- Supervisor: Mr. Christopher Dunn

Undergraduate Course: Introduction to High Energy Astrophysics

Fall 2021

- Yunnan University
- Teaching Assistant
- Supervisor: Dr. Zhongxiang Wang

ACADEMIC CONFERENCES

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| • Spirit of Lyot 6, <i>Pasadena, USA</i> | Feb. 2026 |
| • Multi-Messenger Astronomy Frontier Symposium, <i>Kunming, China</i> | Dec. 2023 |
| • Changing-look Active Galactic Nucleus Symposium, <i>Hangzhou, China</i> | Dec. 2023 |
| • The 1st LHAASO Symposium, <i>Chengdu, China</i> | May 2023 |
| • Light Curve Research Symposium on Active Galactic Nuclei, <i>Xiamen, China</i> | Mar. 2023 |
| • HXMT Workshop on Satellite Data Processing, <i>Kunming, China</i> | Oct. 2020 |

AWARDS AND HONORS

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| • Graduate Study Scholarship, University of Science and Technology of China | 2022 – 2025 |
| • “Xiong Qinglai” Astronomy Special Scholarship, Yunnan University | 2022 |
| • Excellent Student Scholarship, Yunnan University | 2019 – 2021 |

SKILLS

- Language: Mandarin, English
- Astronomical tool: orvara, Linux, LaTeX, IRAF, HEASoft, CIAO, Fermi, CLOUDY, TOPCAT, DS9
- Programming Language: Python, SQL, Docker