Ruo-Yu Guan

(+86) 18604511940
ruoyuguan.physics@gmail.com
ruoyuguan.github.io

Education

School of Physics, Huazhong University of Science and Technology Wuhan, China
Ph.D. in Physics (Theoretical Physics) (in progress) Sep. 2025 – Jun. 2029 *(expected)*

- Supervisor: Prof. Yan Wang
- Research Focus: gravitational-wave astrophysics (galactic double white dwarfs)
- Affiliation: National Gravitation Laboratory (NGL), Huazhong University of Science and Technology (HUST)

Department of Physics, The University of Hong Kong (HKU) Hong Kong SAR, China
M.Sc. in Physics Sep. 2023 – Jul. 2024; degree conferred Nov. 2024

- Supervisor: Assoc. Prof. Stephen Chi-Yung Ng
- Capstone Project: *Identifying Sources in Cygnus OB2 Using Multiwavelength Observations*

Department of Materials Science, Jilin University Changchun, China
B.Sc. in Materials Physics Sep. 2018 – Jun. 2022

- Graduation Thesis: *Study on the Prompt Emission of Gamma-ray Bursts and its Polarization*
- Research Mentor: Prof. Mi-Xiang Lan (Center for Theoretical Physics and College of Physics, Jilin University)

Experience

Department of Astronomy, HUST Wuhan, China
Research Assistant (contract) Nov. 2024 – Jun. 2025

- Supervisor: Prof. Yuan-Chuan Zou
- Gamma-ray bursts: light-curve time-series analysis and correlation studies in `Python`; led to a first-author peer-reviewed publication (see Publications)

Publications

1. **Ruo-Yu Guan** and Mi-Xiang Lan. Interpreting time-integrated polarization data of gamma-ray burst prompt emission. *Astronomy & Astrophysics*, **670**, A160 (2023). doi: 10.1051/0004-6361/202243805.
2. **Ruo-Yu Guan**, Fei-Fei Wang, and Yuan-Chuan Zou. Hurst index of gamma-ray burst light curves and its statistical study. *Journal of High Energy Astrophysics*, **51**, 100559 (2026). doi:10.1016/j.jheap.2026.100559.

Research Projects

Galactic Structure Inference with Double White Dwarfs as Multi-Messenger Probes
Ph.D. research, HUST (NGL) (Supervisor: Prof. Yan Wang) Jul. 2025 – Present

Time-Series and Correlation Analysis of Gamma-Ray Burst Light Curves
Research project, HUST (Supervisor: Prof. Yuan-Chuan Zou); supported by National SKA Program of China (Grant No. 2022SKA0130100) Oct. 2024 – Jan. 2026

Gamma-Ray Burst Prompt Emission and Polarization
B.Sc. research, Jilin University (Mentor: Prof. Mi-Xiang Lan); supported by National Natural Science Foundation of China (Grants No. 11903014 and 12147217) 2022 – Feb. 2023

Skills

Languages: Chinese (Mandarin: native; Cantonese: conversational); English (IELTS 6.5, 2023; completed an English-taught M.Sc. at HKU).

Programming: `Python` (primary); `MATLAB`, `Mathematica`, `R`, `IDL`, `C++` (familiar).

Tools & systems: `NumPy`, `SciPy`, `Pandas`, `Matplotlib`; `Jupyter`; LaTeX; `Git`; Windows; macOS; Linux (Ubuntu); HPC (remote Linux servers; batch jobs).