

Yi-Han Iris Yin

Homepage: <https://irishellenyin.github.io/irisyin.github.io/>

I am currently a second-year graduate student at Nanjing University majoring in astrophysics. My primary research interest centers on gamma-ray burst (GRB) central engines and their associated astrophysical phenomena. The focus of my recent researches has been on analyzing and interpreting GRB observations, especially of the peculiar ones, such as GRB 211211A, GRB 230307A and GRB 231115A. In addition, I am actively involved in studying fast X-ray transients detected by the Einstein Probe Mission.

EDUCATION

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| 2023 – PRESENT | Graduate student in Astronomy
School of Astronomy and Space Science
<i>Nanjing University</i> |
| 2019 – 2023 | B.S. in Physics
School of Physics
<i>Nanjing University</i> |

RESEARCH EXPERIENCE

NJU GRB Group *Member*

JAN 2022 – PRESENT

As a member of Professor Bin-Bin Zhang's GRB research team, I have participated in several research projects and am keen to discover new and exciting GRB events. Specifically, I have been deeply involved with the data analysis and follow-up GW-related research of GRB 211211A (Yin et al., 2023, ApJL), which is a peculiar long-duration burst with kilonova emission (Yang et al., 2022, Nature, participant). Moreover, I led a project to analyze MGF GRB 231115A and confirmed its origin as the second extragalactic magnetar giant flare with a Comptonized fireball model (Yin et al., 2024, ApJL).

Einstein Probe Mission *Associate STP Member*

MARCH 2023 – PRESENT

The Einstein Probe is a mission of the Chinese Academy of Sciences dedicated to time-domain high-energy astrophysics. Its first detection of a bright X-ray transient, EP240219a, is confirmed to be an untriggered GRB (Yin et al., 2024, accepted by ApJL). I serve as the EP Transient Advocate and involved in the data analysis and discussion of many LEIA/EP-detected fast X-ray transients, e.g., GRB 230307A/LXT230307a (Sun et al., 2024, National Science Review, participant), EP240315a (Liu et al., 2024, accepted by Nature Astronomy, participant), and EP240414a.

GRID Project *Member*

DEC 2020 – PRESENT

Named Gamma-Ray Integrated Detectors (GRID), the mission forms a full-time all-sky one gamma-ray detection network that monitors the transient gamma-ray sky in the multi-messenger astronomy era. Two upgraded CubeSats developed by our NJU team have been successfully launched. I co-led projects analyzing GRBs detected by GRID, including GRB 220408B (Zhang et al., 2023, RAA) and GRB 230812B (Wang et al., 2024, submitted to ApJ).

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RESEARCH INTEREST

Fast X-ray transients
Progenitors and central engines of GRBs
Data and observation-oriented research on GW-related astrophysical phenomena

FIRST-AUTHOR PUBLICATIONS

- 2024 **Triggering the Untriggered: The First Einstein Probe-Detected Gamma-Ray Burst GRB 240219A and Its Implications.** Y.-H. I. Yin, B.-B. Zhang, et al., accepted by ApJL, arxiv: [2407.10156](#)
- **A Comptonized Fireball Bubble Fits the Second Extragalactic Magnetar Giant Flare GRB 231115A.** Y.-H. I. Yin, Z. J. Zhang, et al., ApJL, doi: [10.3847/2041-8213/ad2839](#)
- 2023 **GRB 211211A-like Events and How Gravitational Waves May Tell Their Origins.** Y.-H. I. Yin, B.-B. Zhang, et al., ApJL, doi: [10.3847/2041-8213/acfo4a](#)

CO-AUTHORED PUBLICATIONS

- 2024 **Bridging the Gap: GRB 230812B – A Three-Second Supernova-Associated Burst Detected by the GRID Mission.** C.-Y. Wang, Y.-H. I. Yin, et al., submitted to ApJ, arxiv: [2409.12613](#)
- **Soft X-ray prompt emission from a high-redshift gamma-ray burst EP240315a** Y. Liu, H. Sun, et al., accepted by Nature Astronomy, arxiv: [2404.16425](#)
 - **Prospects for detecting neutron star-white dwarf mergers: early warnings from decihertz gravitational-wave observatories.** Y. Kang, C. Liu, et al. MNRAS, doi: [10.1093/mnras/stae340](#)
- 2023 **Magnetar emergence in a peculiar gamma-ray burst from a compact star merger.** H. Sun, C.-W. Wang, et al., accepted by National Science Review, arxiv: [2307.05689](#)
- **Synchrotron Radiation Dominates the Extremely Bright GRB 221009A.** J. Yang, X.-H. Zhao, et al., ApJL, doi: [10.3847/2041-8213/acc84b](#)
 - **GRB 220408B: A Three-Episode Burst from a Precessing Jet.** Z. Zhang, Y.-H. I. Yin, et al., RAA, doi: [10.1088/1674-4527/acfa59](#)
- 2022 **A long-duration gamma-ray burst with a peculiar origin.** J. Yang, S. Ai, et al, Nature, doi: [10.1038/s41586-022-05403-8](#)
- 2021 **GRB 210121A: A Typical Fireball Burst Detected by Two Small Missions.** X. I. Wang, X. Zheng, et al., ApJ, doi: [10.3847/1538-4357/ac29bd](#)

SCHOLARSHIPS AND HONORS

2024	National Scholarship for Graduate Student <i>(Most prestigious scholarship for graduate student in China)</i>
2023	First Class Academic Scholarship
2023	Outstanding Graduate
2021, 2022	The People's Scholarship of China

PROFESSIONAL EXPERIENCE/ACTIVITIES

2024	Teaching Assistant , Gamma-Ray Bursts: From Devices and Data to Science, Nanjing University
	• Oral Talk , COSPAR 2024, Busan, Korea
	• Volunteer/Oral Talk/Poster/Ice-breaking Organizer , The Third Nanjing GRB Conference, Suzhou, China
	• Teaching Assistant , Gravitational Wave and Related Astrophysics, Nanjing University

LANGUAGE

NATIVE	Chinese
PROFICIENCY	English (CET4:639, CET6:548, IELTS:7.5)