Gong, Xingwei

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Education

Nanjing University, Nanjing, China

Bachelor of Science in Astronomy (Elite Program) — Sep 2021 - Present

- Overall GPA: 4.509/5.0 (90.2/100); Ranking: 2/31 (6.4%)
- Awards: People's Scholarship 1st Prize (2023); Annual Scholarship of National Astronomical Observatories (2022); Elite Program Scholarship 2nd Prize (2022, 2023)

Pennsylvania State University, State College, United States

Visiting Research Student, Department of Astronomy and Astrophysics — Feb 2024 - Jun 2024

Research Experience

Department of Astronomy and Astrophysics, Pennsylvania State University

Researcher, supervised by Prof. Derek B. Fox — Apr 2024 - Jun 2024

Project: Development of a Coincidence Searching Method for IceCube Real-Time Alerts

- Developed code for Monte-Carlo pseudo experiments.
- Edited the *AlertsCoincidence* page on the IceCube Collaboration Wiki, added method description and preliminary results.

Department of Astronomy and Astrophysics, Pennsylvania State University

Researcher, supervised by Prof. Derek B. Fox — Feb 2024 - Apr 2024

Project: A Proposal for Observing X-ray Broad Absorption Feature in TXS 0506+056 with XRISM

- Reviewed findings on ultra-fast outflows and broad absorption features in AGN.
- Performed spectrum simulation and jet dilution estimation.
- Co-authored an observation proposal for XRISM.

School of Astronomy & Space Science, Nanjing University

Researcher, supervised by Prof. Ruo-Yu Liu — Jun 2023 - Present

Project: Stochastic Acceleration in Gamma-Ray Burst Afterglow

- Reviewed key findings on stochastic acceleration and quasi-linear theory, adapted the stochastic acceleration model to analyze the electron-proton environment in GRB afterglows.
- Developed code for numerical computation; Performed parameter tuning and result analysis.
- Authored and presented a poster on the 2nd LHAASO Collaboration Conference in 2024.
- First Author. Manuscript in preparation *A Second Relativistic Particle Component in GRB Afterglow: Insights from LHAASO's Observation on GRB 221009A*

School of Astronomy & Space Science, Nanjing University

Team Leader, supervised by Prof. Ruo-Yu Liu and Dr. Hai-Ming Zhang — Dec 2022 - Present

Project: A Machine Learning Approach of Enhancing the Angular Resolution of LHAASO

- Simulated observed counts map, generated training dataset; Model training, optimization, analysis and data visualization.
- Team collaboration and project management, authored project documentation, presentations and reporting.
- Co-authored a poster on the 2nd LHAASO Collaboration Conference in 2024.

Skills

Programming Skills	Python (NumPy/SciPy), C++, C, Fortran (Learning)
Tools and Software	PyTorch, LaTeX, Git, Linux, HEASoft, XSPEC, Fermi, SAS, IRAF
Computing Methods	Machine Learning
	Numerical methods (Finite Difference, Monte Carlo, MCMC...)
	Parallel programming with python (multiprocessing)
Communication Skills	Mandarin Chinese (native)
	English (TOEFL iBT: R30, L28, S25, W28)
	German (Deutsches Sprachdiplom der KMK, C1)