



TONG BAO

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EDUCATION

- **Nanjing University** Sep 2019 – June 2024
Ph.D., Astrophysics Advisor: Prof. Zhiyuan Li
- **Nanjing University** Sep 2015 – June 2019
B.S., Astronomy

RESEARCH INTERESTS

- Stellar populations and dynamics in Globular clusters
- Quasi-periodic oscillations/eruptions of AGNs
- Origins and X-ray populations of nuclear star clusters

ACADEMIC VISITS AND COLLABORATIONS

- **Member of the The High Energy X-ray Probe (HEX-P) Collaboration** 2023-
Pillar 3 – Resolved Populations/Supernova Remnants
- **Columbia University** April 2023 - April 2023, New York
Talk: Periodic X-ray sources and exotic binaries in dense environment Host: Prof. Charles J. Hailey & Dr. Kaya Mori
- **Columbia University** June 2018 - September 2018, New York
Research Assistant Host: Prof. Charles J. Hailey
– NuSTAR hard X-ray sources in the Galactic center: HMXB candidates

AWARDS AND HONORS

- **President's Exceptional Scholarship** Nanjing university, 2019
Annually awarded to the top 10% doctoral student.
- **Scholarship of National Astronomical Observatories** Chinese Academy of Sciences, 2017
Awarded to undergraduate students with strong research experience.
- **People's Scholarship** Nanjing university, 2017
Second class, annually awarded to the top 10% undergraduate students.
- **People's Scholarship** Nanjing university, 2016
Third class, annually awarded to the top 20% undergraduate students.

ORAL PRESENTATIONS

- **Seminar talk, Department of Physics, Columbia University** New York, USA
Periodic X-ray sources: diagnosing the nature and evolution for exotic binaries in dense environment 2023
- **eROSITA Scientific Exploitation Workshop** Suzhou, China
Exploring the Outskirts of Globular Clusters with eROSITA 2023
- **Research on the Variations of Active Galactic Nuclei** Xiamen, China
Searching for Quasi-periodic Oscillations in Active Galactic Nuclei of the Chandra Deep Field South 2023
- **Structure, Formation, and Evolution of Star Clusters** Zhuhai, China
Diagnosing dynamical formation and evolution of cataclysmic variables in globular clusters 2023
- **The 60th Anniversary of X-Ray Astronomy** Beijing, China
Searching for Quasi-periodic Oscillations in Active Galactic Nuclei of the Chandra Deep Field South 2022
- **2021-2022 Academic Annual Meeting of Jiangsu Astronomical Society** Nanjing, China
Periodic X-ray Sources in the Galactic Center/Bulge – Application of the Gregory-Loredo Algorithm 2022
- **Chandra Data Science: Novel Methods in Computing and Statistics for X-ray Astronomy** Online
Searching for Quasi-periodic Oscillations of Active Galactic Nuclei in the Chandra Deep Field South 2021

- **The 4th X-ray binary Multi-Band research Symposium** *Kunming, China*
Diagnosing dynamical origin of exotic binaries in the massive globular cluster 47 Tucanae 2021
- **Chandra Frontiers in Time-Domain Science** *Online*
Periodic X-ray Sources in the Galactic Center/Bulge – Application of the Gregory-Loredo Algorithm 2020
- **The 3rd X-ray binary Multi-Band research Symposium** *Jinan, China*
Periodic X-ray Sources in dense environment 2020

TEACHING AND MENTORING

- **Teaching Assistant** *Nanjing university*
Course: "An Introduction to X-ray Astronomy" 2020, 2021, 2022
– X-ray data processing training project (https://github.com/baotong6/xray_astronomy), teaching students how to reduce the X-ray data, analyze the spectrum and light curves of CVs, X-ray binaries, ULXs, AGNs, etc.
- **Students mentoring** *Nanjing university*
2021-2022
– Jiachang Zhang, Undergraduate thesis: "Searching for periodic X-ray binaries in M31 bulge"
– Jiachang Zhang & Yufan Zhou, Research projects during semesters, "Detecting Emission Line Point Sources in M31 bulge"

PUBLICATIONS

- [1] **Bao, T.**, Li, Z., Cheng, Z., Belloni, Diogo. 2024, MNRAS, 527, 7173, "A Chandra Survey of Milky Way Globular Clusters – IV. Periodic X-ray sources"
- [2] **Bao, T.**, Li, Z., & Cheng, Z. 2023, MNRAS, 521, 4257, "Periodic X-ray sources in the massive globular cluster 47 Tucanae: Evidence for dynamically formed cataclysmic variables"
- [3] **Bao, T.**, & Li, Z. 2022, MNRAS, 509, 3504, "Searching for quasi-periodic oscillations in active galactic nuclei of the Chandra Deep Field South"
- [4] **Bao, T.**, & Li, Z. 2020, MNRAS, 498, 3513, "Periodic X-ray sources in the Galactic bulge: application of the Gregory-Loredo algorithm"
- [5] Zhang, J, **Bao, T.**, Li, Z., 2024, "A Chandra Search for Periodic X-ray Sources in the Bulge of M31", 2024, MNRAS, 530, 2096.
- [6] Mondal, S., Ponti, G., **Bao, T.**, et al., 2024, "Periodicity from X-ray sources within the inner Galactic disk", 2024, A&A, 686, 125.
- [6] Mondal, S., Ponti, G., Filor, L., **Bao, T.**, et al., 2024, "XMM-Newton and NuSTAR discovery of a likely IP candidate XMMU J173029.8-330920 in the Galactic Disk", accepted by A&A.
- [7] Yu, Z.-l., Xu, X.-j., Li, X.-D., **Bao, T.**, et al. 2018, ApJ, 853, 182, "An empirical correlation of $T_{\max} - M_{\text{WD}}$ of dwarf novae and the average white dwarf Mass in cataclysmic variables in the Galactic bulge"
- [8] Mori, K., Ponti, G., Bachetti, M., Bodaghee, A., Grindlay, J., Hong, J., Kuznetsov, E., Mandel, S., and Rodriguez, A., Stel, G., Zhang, S., **Bao, T.**, et al. 2023, "The high energy x-ray probe (HEX-P): resolving the nature of Sgr A* flares, compact object binaries and diffuse x-ray emission in the galactic center and beyond", In: Frontiers in Astronomy and Space Sciences 10, 1303197 (Dec. 2023), p. 1303197.

PUBLIC OUTREACH

- **"Astronomical Night for the Public" Activity of Zuo Dijiang Observatory** *Nanjing*
Volunteer 2021, 2022, 2023
- **Summer Camp for High School Students at the School of Astronomy and Space Science** *Nanjing*
Volunteer 2022
- **Undergraduate Summer Camp at the School of Astronomy and Space Science** *Nanjing*
Volunteer 2021
- **Zuo Dijiang Observatory Open Day Activities** *Nanjing*
Lecture Speaker 2020