

Curriculum Vitae

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Research Interests

- Identifications of X-ray counterparts to neutron stars, millisecond pulsars (MSPs), etc., and understanding the nature of X-ray emission from these systems;
- General studies of MSPs in the Galactic globular clusters;
- Phenomena that might be related to pulsars, such as the Galactic Center gamma-ray excess, magnetars, long-period transients, and fast radio bursts.

Education

- **Ph.D. in Astrophysics (Expected)**, University of Alberta, Canada
Thesis Title: “The Fascinating in X-rays: Millisecond Pulsars, Globular Clusters, and Beyond”
Supervisor: Prof. Craig Heinke
Major: Astrophysics, Summer, 2025
- **M.Sc. in Physics**, University of Alberta, Canada
Thesis Title: “X-ray Millisecond Pulsars in the Galactic Globular Cluster”
Supervisor: Prof. Craig Heinke
Major: Astrophysics, September, 2021
- **B.Sc. in Physics**, Southwest University, China
Major: Physics, June, 2018

Employment

- **Teaching Assistant**, University of Alberta (September, 2019 – December, 2021)
Teaching assistant of *Physics of Energy, Modern Physics, Galactic & Extragalactic Astrophysics*, etc.

Publications

(with my name in bold and supervisor’s name underlined)

1. **Zhao, J.**, Heinke, C. O., & Fu, S. (2025). A deep Chandra study confirms diffuse non-thermal X-ray emission from the globular cluster Terzan 5. *Astronomy & Astrophysics*, 693, A107. doi: [10.1051/0004-6361/202451217](https://doi.org/10.1051/0004-6361/202451217). arXiv: [2412.03788](https://arxiv.org/abs/2412.03788).

2. Zhao, Y., D'Antona, F., Milone, A. P., Heinke, C., **Zhao, J.**, Lugger, P., & Cohn, H. (2024). Exploration of faint X-ray and radio sources in the massive globular cluster M14: A UV-bright counterpart to Nova Ophiuchus 1938. *Monthly Notices of the Royal Astronomical Society*, 527(4), 11491-11506. doi: [10.1093/mnras/stad3980](https://doi.org/10.1093/mnras/stad3980). arXiv: [2401.02854](https://arxiv.org/abs/2401.02854).
3. Zhang, L., Freire, P. C., Ridolfi, A., Pan, Z., **Zhao, J.**, Heinke, C. O., ... & Li, D. (2023). Discovery and Timing of Millisecond Pulsars in the Globular Cluster M5 with FAST and Arecibo. *The Astrophysical Journal Supplement Series*, 269(2), 56. doi: [10.3847/1538-4365/acfb03](https://doi.org/10.3847/1538-4365/acfb03). arXiv: [2312.05835](https://arxiv.org/abs/2312.05835).
4. **Zhao, J.**, & Heinke, C. O. (2023). A Chandra X-ray study of millisecond pulsars in the globular cluster Omega Centauri: a correlation between spider pulsar companion mass and X-ray luminosity. *Monthly Notices of the Royal Astronomical Society*, 526(2), 2736-2753. doi: [10.1093/mnras/stad2930](https://doi.org/10.1093/mnras/stad2930). arXiv: [2309.13189](https://arxiv.org/abs/2309.13189).
5. Lugger, P. M., Cohn, H. N., Heinke, C. O., **Zhao, J.**, Zhao, Y., & Anderson, J. (2023). Exotica in the Globular Cluster M4, Studied with Chandra, HST, and the VLA. *Monthly Notices of the Royal Astronomical Society*, doi: [10.1093/mnras/stad1887](https://doi.org/10.1093/mnras/stad1887). arXiv: [2306.11770](https://arxiv.org/abs/2306.11770).
6. **Zhao, J.**, & Heinke, C. O. (2022). A census of X-ray millisecond pulsars in globular clusters. *Monthly Notices of the Royal Astronomical Society*, 511(4), 5964-5983. doi: [10.1093/mnras/stac442](https://doi.org/10.1093/mnras/stac442). arXiv: [2202.07040](https://arxiv.org/abs/2202.07040).
7. **Zhao, J.**, Zhao, Y., & Heinke, C. O. (2021). Chandra and HST studies of six millisecond pulsars in the globular cluster M13. *Monthly Notices of the Royal Astronomical Society*, 502(2), 1596-1604. doi: [10.1093/mnras/stab117](https://doi.org/10.1093/mnras/stab117). arXiv: [2101.07986](https://arxiv.org/abs/2101.07986).

Seminars & Conference Presentations

- “Chandra X-ray study of millisecond pulsars in the globular cluster Omega Centaur” (poster), CASCA Annual General Meeting, Penticton, BC, Canada (June 2023)
- “X-ray millisecond pulsars in globular clusters” (30-minute talk), Clusters Workshop at McMaster University, Hamilton, ON, Canada (August, 2022)
- “A census of X-ray millisecond pulsars in globular clusters” (poster), CASCA Annual General Meeting, Online (May 2022)
- “Chandra X-ray observations of 6 millisecond pulsars in the globular cluster M13” (poster), CASCA Annual General Meeting, Online (May 2020)

Awards and Fellowships

- **China Scholarship Council Scholarship**, China Scholarship Council (September 2021–August 2025), 26,400 CAD stipend per year plus tuition costs
- **Hanhong Scholarship**, Hanhong College, Southwest University (2020), 5,000 RMB
- **University of Alberta Graduate Fellowship**, University of Alberta (September 2019–August 2020), 8,000 CAD

Skills

- **Programming:** Python, HTML
- **Software:** CIAO, SHERPA, ds9, BXA, TOPCAT, etc.