Qiaoya Wu
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Education

- **University of Illinois Urbana-Champaign** — Champaign, IL
  Graduate student in Astronomy — *Aug 2021 - present*
- **Xiamen University** — Xiamen, China
  Bachelor of Astronomy; GPA: 3.84/4.0 — *Sep 2017 - Jun 2021*

Selected Honors and Awards

Outstanding Undergraduate Student Awards, Xiamen University — *Jun 2021*
Caiwenzhong Fellowship, College of Physics Science and Technology, Xiamen University — *Apr 2020*
Academic Excellence Scholarship, Department of Astronomy, Xiamen University — *October 2019*
Guangqi Fellowship, Shanghai Astronomical Observatory, CAS — *May 2019*
National Scholarship, Ministry of Education of PRC — *Nov 2018*

Research Experience

- **Quasar Spectral Analysis** — University of Illinois Urbana-Champaign
  Associate Prof. Yue Shen — *Aug 2021 - Present*
  - **Broad-line Region Study with UV spectroscopy**: Analyze UV spectra from the Space Telescope Imaging Spectrograph mounted on the Hubble Space Telescope; collect UV sepctra of local AGNs as comparison; model the broad-line region clouds.
  - **SDSS spectral analysis**: Use PyQSOFit to measure the spectroscopic properties from public surveys, such as SDSS-IV, SDSS-V, eFEDs quasars.
- **Multiwavelength observations of black holes** — Xiamen University
  Prof. Jianfeng Wu — *Oct 2018 - Jul 2021*
  - **Data Reduction**: Processed raw observational data from the Very Large Telescope, Hale telescope of Palomar Observatory, Nanshan wide-field telescope and the Las Cumbres Observatory Global Telescope.
  - **Black Hole Binary**: Developed code to find the parameter space of the secondary star in the black hole binary system; measured the radial velocity and calculated the dynamical properties of black hole binary system MAXIJ1820+070 and A0620-00.
  - **Gamma-Ray Integrated Detectors Project**: Worked in the Gamma-Ray Integrated Detectors Project, dedicated to monitoring the transient gamma-ray sky.
- **Cosmological N-body Simulation** — Xiamen University
  Associate Prof. Haoran Yu — *Nov 2019 - Jul 2021*
  - **CUBE Simulation Code**: Participated in the development of the high-functional cosmological N-body simulation code CUBE; improved the dark matter halo properties computation.
  - **Angular Momentum of Halos**: Construct equations to describe the angular momentum of dark matter halos; analyzed the behaviors of rotating-supported halos using CUBE.
- **Black Hole Accretion Simulation** — Shanghai Astronomical Observatory
  Prof. Feng Yuan — *May 2019 - Sep 2019*
  - **ZEUS MHD Simulation**: Modified programs to simulate 2-D hydrodynamical non-radiative accretion flows in black hole via magnetohydrodynamics code ZEUS-2D.

Technical Skills

- **Data Experience**: Hubble space telescope, Sloan Digital Sky Survey telescope, Very Large Telescope, Hale telescope, the Las Cumbres Observatory Global Telescope and Nanshan wide-field telescope.
- **Languages/Packages**: Python, Fortran, Matlab, Iraf/Pyraf, Xspec, CLOUDY, CUBE, ATHENA++, ZEUS, SAOImage DS9, IDL, CIAO, C++.

Lists of Publications

- Wan-Min Zheng, **Qiaoya Wu**, Jianfeng Wu, Song Wang, Mouyuan Sun, Jing Guo, Junhui Liu, Tuan Yi, Zhi-Xiang Zhang, Wei-Min Gu, Junfeng Wang, Lijun Gou, Jifeng Liu, Paul J. Callanan, Luis C. Ho, Penélope Longa-Peña, Jerome A. Orosz, and Mark T. Reynolds (2022). **The Disk Veiling Effect of the Black Hole Low-mass X-Ray Binary A0620-00***. The Astrophysical Journal, 925(1), 83.
- **Qiaoya Wu**, Hao-Ran Yu, Shihong Liao, Min Du (2021). **Spin mode reconstruction in Lagrangian space**. Physical Review D, 103(6), 063522.
- Shenggan Cheng, Hao-Ran Yu, Derek Inman, Qiucheng Liao, **Qiaoya Wu** and James Lin (2020, May). **CUBE–Towards an Optimal Scaling of Cosmological N-body Simulations**. In 2020 20th IEEE/ACM International Symposium on Cluster, Cloud and Internet Computing (CCGRID) (pp. 685-690). IEEE.

Lists of Presentations

The 23rd Guoshoujing Galaxy and Cosmology Academic Conference Zhejiang University
Contributed talks *May, 2021*

- **Talk**: Correlations between halo spins and primordial perturbations.
- **Paper**: Spin mode reconstruction in Lagrangian space