Yuanze Luo

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EDUCATION

Johns Hopkins University *Aug 2019 - present*
Ph.D candidate in Astronomy and Astrophysics

University of Illinois at Urbana-Champaign *Aug 2015 - May 2019*
Bachelor of Science in Physics Overall GPA: 3.97/4.0
Bachelor of Science in Astronomy
Minor in Computer Science

RESEARCH INTERESTS

- Behaviors (e.g., luminosity variability) of active galactic nuclei (AGN) and quasars
- Coevolution of galaxies and its central black hole, and how do AGN/quasar activities affect the host galaxy

SKILLS

Technical	Python, Java, C++, LaTeX
Languages	English, Mandarin, Japanese
Hobbies	Piano, Violin

EXPERIENCE

Department of Physics and Astronomy at JHU
Graduate Research *Aug 2019 - present*

- Look for evidence of gas accretion by measuring and analyzing the N/O and O/H abundance ratios of anomalously low-metallicity regions in late-type star-forming galaxies from the Sloan Digital Sky Survey IV - Mapping Nearby Galaxies at Apache Point Observatory (MaNGA) survey
  Supervisor: Prof. Tim Heckman
- Study behaviors of post-starburst galaxies focusing on the effects of AGN and outflows, utilizing multiwavelength observations from X-ray to radio
  Supervisor: Dr. Kate Rowlands, Dr. Katherine Alatalo, Prof. Tim Heckman

Graduate Teaching Assistant *Aug 2019 - May 2020*

- Lead problem-solving sections, office hours for students taking undergraduate general physics courses. Additional duties include proctoring exams, grading homework, writing homework solution manuals, and reviewing exam problems.
- Lead mechanics lab sections for students taking undergraduate general physics courses. Additional duties include grading lab reports, preparing presentation slides, and holding additional office hours to answer students' questions.

Astronomy Department at UIUC
Undergraduate Research *Jun 2017 - Jun 2019*

- Create visualizations for 126 galaxies in Extragalactic Database for Galaxy Evolution survey (EDGE) using Python packages yt and Plotly. Details can be found at http://mmwave.astro.illinois.edu/edgedata/
  Supervisors: Prof. Tony Wong, Dr. Mattew Turk
  NSF Award number: 1616199
- Work on improving the signal-to-noise ratio of CO detections using Hα velocity information, and generating radial profiles using the improved CO data for the 126 EDGE galaxies. Organize results in a series of Python notebooks
  Supervisor: Prof. Tony Wong
  NSF Award number: 1616199
- Analyze differences in aspects such as light curve shapes and emission line properties for 977 extreme variability quasars selected from Sloan Digital Sky Survey and Dark Energy Survey data. Fit point-source-point-lens microlensing model to about a dozen selected quasar light curves
  Supervisor: Prof. Yue Shen

Department Grader *Aug 2016 - May 2019*

- Grade various assignments for 100-level and 200-level astronomy courses; answer students' questions about the homework
- Help hold night and solar observing sections at the school observatory for students taking astronomy courses
- Proctor exams for some astronomy and physics courses

NetMath at UIUC
Grader *Jun 2016 - Aug 2016*

- Grade online Mathematica-based assignments for students taking Calculus online courses
- Cooperate with course teaching assistants to help students progress in the courses

PUBLICATIONS

- **Luo, Y.**, Shen, Y, Yang, Q, *Characterization of optical light curves of extreme variability quasars over a 16-yr baseline*, 2020, MNRAS, 494, 3686
- **Luo, Y.**, Heckman, T; Hwang, H et al., *Evidence for the Accretion of Gas in Star-forming Galaxies: High N/O Abundances in Regions of Anomalously Low Metallicity*, 2021, ApJ, 908, 183
- Sazonova, E., ... **Luo, Y** et al., *Are all post-starbursts mergers? HST reveals hidden disturbances in the majority of PSBs*, 2021, ApJ, 919, 134
- Abdurro'uf, ... **Luo, Y** et al., *The Seventeenth Data Release of the Sloan Digital Sky Surveys: Complete Release of MaNGA, MaStar, and APOGEE-2 Data*, 2022, ApJS, 259, 35
- **Luo, Y.**, Rowlands, K; Alatalo, K et al., *A Multiwavelength view of IC 860: What Is in Action inside Quenching Galaxies*, arXiv:2208.08379

ACADEMIC ACHIEVEMENTS

- Chambliss Astronomy Achievement Student Award Honorable Mention, 240th American Astronomical Society (AAS) meeting
- Summa Cum Laude and Highest Distinction in Physics Department at University of Illinois at Urbana-Champaign

- Summa Cum Laude and High Distinction in Astronomy Department at University of Illinois at Urbana-Champaign
- Bronze Tablet at University of Illinois at Urbana-Champaign upon graduation
- Member of James Scholar Honor Program at University of Illinois at Urbana-Champaign since Aug 2015
- Selected for College of Liberal Arts & Sciences Dean's List at University of Illinois at Urbana-Champaign in Fall 2015 semester, Spring 2016 semester, Fall 2016 semester, Fall 2017 semester

RELEVANT COURSES

Core Courses
Relativity & Math applications (UIUC)
Classical Mechanics I, II (UIUC)
Electromagnetic Fields I, II (UIUC)
Quantum Physics I, II (UIUC)
Thermal & Statistical Physics (UIUC)
Modern Experimental Physics (UIUC)
Stellar Astrophysics (UIUC)
Astronomical Techniques (UIUC)
Galaxies and the Universe (UIUC)
Scientific Writing for Astronomy (UIUC)
Scientific Writing for Astronomy (UIUC)
Radiative Astrophysics (JHU)
Interstellar Medium and Astrophysical Fluid Dynamics (JHU)
Stellar Structure and Evolution (JHU)
Astrophysical Dynamics (JHU)

Other Courses
Calculus I, II, III (UIUC)
Intro to Differential Eq Plus (UIUC)
Applied Linear Algebra (UIUC)
Statistics and Probability I (UIUC)
Data Structures (UIUC)
Numerical Methods I (UIUC)
Artificial Intelligence (UIUC)
Intro to Data Science (JHU)

EXTRA-CIRRUCULAR

- Violin player in Johns Hopkins Homewood Chamber Music Seminar
- Active member of University of Illinois Astronomy Society. Responsibilities include helping organize open house events, setting up telescopes, and participating telescope maintenance work
- Active member of Krannet Center Student Association. Volunteer usher at Krannert Center for the Performing Arts
- Tutor at Urbana High School. Worked with a local teacher in her homeroom and assisted students with homework problems in scientific subjects