

Rachael Merritt

Curriculum Vitæ

Department of Physics and Astronomy
Georgia State University
25 Park Place, #605, Atlanta, GA
✉ merritt@astro.gsu.edu

Education

- 2022 **PhD (expected)**, *Astronomy*, Georgia State University, Atlanta, GA.
Advisor: Professor Misty Bentz
- 2017 **MS**, *Physics*, Wayne State University, Detroit, Michigan.
Thesis: *Crustal cooling in the neutron star low-mass X-ray binary KS 1731–260*
Advisor: Professor Edward Cackett
- Defended: April 2017
- 2015 **BA**, *Astronomy*, Wayne State University, Detroit, Michigan.
- 2015 **BS**, *Physics*, Wayne State University, Detroit, Michigan.
- 2015 **BA**, *Classics*, Wayne State University, Detroit, Michigan.

Experience

Research

- 2017-present **Research Assistant**, *Georgia State University*, Atlanta, GA, Advisor: Misty Bentz.
Spectral Energy Distributions of Reverberation Mapped Active Galactic Nuclei
- 2015-2017 **Research Assistant**, *Wayne State University*, Detroit, MI, Advisor: Edward Cackett.
Modeling cooling curves of LMXB KS 1731-260 in quiescence.
- 2013-2014 **Undergraduate Research Assistant**, *Wayne State University*, Detroit, MI, Advisor: David Cinabro.
Electronics fabrication for Belle II detector.
- 2012 **Research Experience for Undergraduates**, *Wayne State University*, Detroit, MI, Advisor: David Cinabro.
Comparison of Field Galaxies and Supernova Host Galaxies in SDSS Stripe 82.

Awards of Competitive Observing Time

- June 2019 **WIYN 3.5m telescope - Kitt Peak National Observatory**, Tuscon, AZ.
2 nights 2019A-0077 - *The Host Galaxies of Reverberation-Mapped AGNs in the Near-Infrared*
- January 2019 **WIYN 3.5m telescope - Kitt Peak National Observatory**, Tuscon, AZ.
2 nights 2018B-0209 - *The Host Galaxies of Reverberation-Mapped AGNs in the Near-Infrared*

Teaching

- 2020 **Online Curriculum Development**, *ASTR 1010 - Solar System Astronomy*, *ASTR 1020 - Stellar & Galactic Astronomy* - developed online course curriculum, formatted materials for online accessibility, and created iCollege lab modules used for all lab sections, Georgia State University, Atlanta, GA.
- 2017-present **Teaching Assistant - Lab Instructor**, *ASTR 1010 - Solar System Astronomy*, *ASTR 1020 - Stellar & Galactic Astronomy*, Georgia State University, Atlanta, GA.

- 2015-2017 **Teaching Assistant - Lab Instructor**, *AST 2011 - Descriptive Astronomy Laboratory, PHY 3100 - The Sounds of Music Laboratory*, Wayne State University, Detroit, MI.
- 2012 **Supplemental Instructor**, *BIO 1030 - Biology Today*, Wayne State University, Detroit, MI.
- 2011-2017 **Planetarium Coordinator**, *Scheduled and presented planetarium shows for introductory physics and astronomy courses, science education courses, and general public*, Wayne State University, Detroit, MI.

Presentations

Talks

- 2021 **NO HOSTS ALLOWED! Revisiting RM AGN SEDs**, *Young Astronomers on Galactic Nuclei (YAGN) 2021*, Hybrid – Niels Bohr Institutet (Denmark)/Zoom.
- 2021 **NO HOSTS ALLOWED! Revisiting RM AGN SEDs**, *237th Meeting of the American Astronomical Society*, Online.
- 2017 **The thermal state of KS 1731-260 after 14.5 years in quiescence**, *The X-ray Universe 2017*, Rome, Italy.
- 2017 **The thermal state of KS 1731-260 after 14.5 years in quiescence**, *Compact Objects in Michigan 5*, East Lansing, MI.
- 2017 **The thermal state of KS 1731-260 after 14.5 years in quiescence**, *JINA-CEE Frontiers in Nuclear Astrophysics: Junior Researchers Workshop*, East Lansing, MI.
- 2016 **The thermal state of KS 1731-260 after 14.5 years in quiescence**, *JINA - INT workshop on the "Physics and Astrophysics of Neutron Star Crusts"*, Institute for Nuclear Theory, Seattle, WA.
- 2016 **The thermal state of KS 1731-260 after 14.5 years in quiescence**, *COSPAR*, Istanbul, Turkey - COSPAR was unfortunately canceled due to a military coup.

Posters

- 2016 **The thermal state of KS 1731-260 after 14.5 years in quiescence**, *Stellar Remnants at the Junction: Comparing Accreting White Dwarfs, Neutron Stars, and Black Holes*, Junction, TX.

Workshops/Summer Schools

- 2021 **Leadership Experience for Women**, *Georgia State University*, Atlanta, GA.
- 2020 **American Association for the Advancement of Science - Catalyzing Advocacy in Science and Engineering Workshop**, *Washington, DC*, I was selected as one of two AAS representative for this workshop. Unfortunately it was cancelled due to COVID-19.
- 2016 **JINA - INT workshop on the "Physics and Astrophysics of Neutron Star Crusts"**, *Institute for Nuclear Theory*, Seattle, WA.
- 2016 **Centre for Research in Astrophysics of Québec Summer School**, *Topic: The Astrophysics of Compact Objects*, Université de Montréal & McGill University, Montréal, QC, Canada.

Publications

2016 **The thermal state of KS 1731-260 after 14.5 years in quiescence**, *Merritt et al.*, 2016, *ApJ* **833(2)**, 186.

Memberships

2020-present **National Science Policy Network.**
2019-present **American Association for the Advancement of Science.**
2016-present **Joint Institute for Nuclear Astrophysics - Center for the Evolution of the Elements.**
2014-present **Sigma Pi Sigma.**
2013-present **American Indian Science and Engineering Society.**
2011-present **American Astronomical Society.**
2011-present **American Physical Society.**

Awards

2021-2022 **Georgia Space Grant Fellowship.**
2019 **Graduate Teaching Assistant Award in Astronomy**, *Department of Physics and Astronomy*, Georgia State University, Atlanta, GA.
2018 **Ford Predoctoral Fellowship Honorable Mention.**
2017 **Gavin Lawes Memorial Scholarship**, *Department of Physics and Astronomy*, Wayne State University, Detroit, MI.
2015 **Maria Mitchell Endowed Scholarship**, *Department of Physics and Astronomy*, Wayne State University, Detroit, MI.
2014 **Sigma Pi Sigma Inductee.**
2014 **Dr. Alvin M. and Harriet B. Saperstein Physics & Society Endowed Scholarship**, *Department of Physics and Astronomy*, Wayne State University, Detroit, MI.
2013 **Professors Henry Bohm and Melbourne Stewart Endowed Undergraduate Scholarship**, *Department of Physics and Astronomy*, Wayne State University, Detroit, MI.
2012-2013 **Hellenic Studies Fellowship**, *Department of Classical and Modern Languages, Literatures, and Cultures*, Wayne State University, Detroit, MI.
2011-2014 **Physics and Astronomy Undergraduate Scholarship**, *Department of Physics and Astronomy*, Wayne State University, Detroit, MI.

Computer skills

Intermediate IDL, python, IRAF, XSPEC, CAIO, SAS, bash
Basic C++, fortran

Activities

2021 **Atlanta Science Festival**, *Organized and presented virtual event for Department of Physics & Astronomy*, Georgia State University, Atlanta, GA.
2019-2020 **Women in Physics**, *President*, Georgia State University Chapter, Atlanta, GA.

- 2019-present **Astronomy Peer Advising Leaders program (AstroPAL)**, *Mentor*, Georgia State University, Atlanta, GA.
- 2018-present **Summer Undergraduate Research Program**, *Organizer and near-peer mentor - meet weekly with undergraduate researchers, organize professional development activities*, Georgia State University, Atlanta, GA.
- 2018-present **Undergraduate Research Committee**, *Astronomy graduate student member*, Georgia State University Chapter, Atlanta, GA.
- 2018-2019 **Women in Physics**, *Secretary*, Georgia State University Chapter, Atlanta, GA.
- 2016-2017 **Conference for Undergraduate Women in Physics**, *Organizing committee member*, Wayne State University, Detroit, MI.
- 2014-2015 **Michigan Science Center**, *Presenter, NASA Grant Participant (Sunstruck)*, Detroit, MI.
- 2014-2015 **Society of Physics Students**, *President*, Wayne State University Chapter, Detroit, MI.
- 2013-2016 **Science Under the Dome**, *Organizer and Host*, Wayne State University Planetarium, Detroit, MI.
- 2013-2016 **Camp Cosmos**, *Camp Director*, Wayne State University Planetarium, Detroit, MI.
- 2013-2014 **Society of Physics Students**, *Secretary*, Wayne State University Chapter, Detroit, MI.
- 2011-2015 **Society of Physics Students**, *Member*, Wayne State University Chapter, Detroit, MI.

References

Misty Bentz, *Professor*, Department of Physics and Astronomy, Georgia State University, Atlanta, GA. bentz@astro.gsu.edu.

Edward Cackett, *Associate Professor*, Department of Physics and Astronomy, Wayne State University, Detroit, MI. ecackett@wayne.edu.

Mike Crenshaw, *Professor*, Department of Physics and Astronomy, Wayne State University, Detroit, MI. crenshaw@astro.gsu.edu.

Sebastien Lepine, *Chair, Professor*, Department of Physics and Astronomy, Georgia State University, Atlanta, GA. slepine@gsu.edu.