

Julia Falcone

Department of Physics and Astronomy, Georgia State University

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EDUCATION

Georgia State University, Atlanta, GA

Ph.D., Astronomy (Expected Spring 2026)

Fall 2020 - Present

Advisor: Dr. D. Michael Crenshaw

Thesis: *A Spatially-Resolved, Multiphase Analysis of AGN-Driven Feedback and Outflows in NGC 3227*

M.S., Physics with Astronomy Concentration

Summer 2022

Case Western Reserve University, Cleveland, OH

Bachelor of Science, Astronomy

Fall 2016 - Spring 2020

Advisor: Dr. Stacy McGaugh

Thesis: *A Dynamical Substitute for Abundance Matching*

Secondary Major, Physics

Fall 2016 - Spring 2020

ADDITIONAL RESEARCH EXPERIENCE

American Museum of Natural History

New York City, NY

Volunteer Researcher and Mentor in the Y/Dim Collaboration

Summer 2020 - Summer 2024

Advisor: Dr. Charles Liu

REFEREED PUBLICATIONS

★ = first-author publication

- ★ • **Falcone, J.**, Crenshaw, D. M., Revalski, M., [...]. “*Spatially Resolved, Multiphase Mass Outflows of the Seyfert 1 Galaxy NGC 3227*”, 2026, [ApJ](#), **997**, 68.
- Tutterow, J., Ferree, N., Crenshaw, D. M., **Falcone, J.**, et al. “*The Shape of AGN-driven Winds in the Seyfert Galaxy NGC 3516*”, 2025, [ApJ](#), **990**, 2.
- Revalski, M., Crenshaw, D. M., Polack, G., [...] **Falcone, J.**, et al. “*Quantifying Feedback from Narrow Line Region Outflows in Nearby Active Galaxies. V. The Expanded Sample*”, 2025, [ApJ](#), **984**, 1.
- ★ • **Falcone, J.**, Crenshaw, D. M., Fischer, T.C., Meena, B., Revalski, M., Shea, M., Davis, M., and Riffel, R. “*An Analysis of AGN-Driven Outflows in the Seyfert 1 Galaxy NGC 3227*”, 2024, [ApJ](#), **971**, 17.
- Meena, B., Crenshaw, D. M., Schmitt, H. R., Revalski, M., [...] **Falcone, J.**, et al. “*Investigating the Narrow Line Region Dynamics in Nearby Active Galaxies*”, 2023, [ApJ](#), **943**, 98.
- Revalski, M., Crenshaw, D. M., Rafelski, M., Kraemer, S., [...] **Falcone, J.**, et al. “*Quantifying Feedback from Narrow Line Region Outflows in Nearby Active Galaxies. IV. The Effects of Different Density Estimates on the Ionized Gas Masses and Outflow Rates*”, 2022, [ApJ](#), **930**, 14.
- Bentz, M. C., Duffee, M., Erfani, D., **Falcone, J.**, et al. “*Broad-band Photometric Monitoring of 1226 Golia and 6349 Acapulco*”, 2022, [The Minor Planet Bulletin](#), **49**, 4.

OTHER PUBLICATIONS

- Ludwig, E., **Falcone, J.**, et al. “*The Relation between Gas-phase Metallicity and Stellar Mass Surface Density in Post-starburst E+A and E+A+ Galaxies within the Coma Cluster Observed by the SDSS-IV MaNGA Survey*”, 2022, [RNAAS](#), **6**, 12, 259.

- Quayum, R., **Falcone, J.**, Greenfield, S., and Liu, C. “*E+A Galaxy Candidates in and around the Leo Cluster*”, 2021, [RNAAS](#), 5, 3, 53.
- **Falcone, J.**, Wurmser, S., Kerrison, N., et al. “*E+A Galaxies in and Around Nearby Rich Clusters of Galaxies*”, 2021, [RNAAS](#), 5, 3, 67.

RESEARCH TALKS

- **Falcone, J.** “*Resolving the AGN-Driven Gas Evacuation in the Seyfert 1 Galaxy NGC 3227*”. Talk presented at the 245th Meeting of the American Astronomical Society, National Harbor, MD, January 2025. ([Click here to view abstract](#))
- **Falcone, J.** “*Analyzing the AGN-Driven Outflows in the Seyfert 1 Galaxy NGC 3227*”. Talk presented at the Space Telescope Science Institute Galaxies and AGN journal club, Baltimore, MD, November 2024.
- **Falcone, J.** “*Multiwavelength Analysis of the Outflows and Feedback Processes in the Seyfert 1 Galaxy NGC 3227*”. Talk presented at Galaxies at Crossroads: Outflows and IMF in the VLT/ELT/ALMA/JWST Era, Brno, Czech Republic, September 2024. ([Click here to view abstract](#))
- **Falcone, J.**, Crenshaw, D.M., Fischer, T.C., et al. “*Multiwavelength Analysis of the Outflows and Rotation in the Seyfert 1 Galaxy NGC 3227*”. Talk presented at the 243rd Meeting of the American Astronomical Society, New Orleans, LA, January 2024. ([Click here to view abstract](#))
- **Falcone, J.**, Crenshaw, D.M., Revalski, M., [...]. “*Disentangling Outflows and Rotation in the Star-Forming Seyfert 1 Galaxy NGC 3227*”. Talk presented at AGN Winds on the Chesapeake, Easton, MD, June 2023.
- Revalski, M., Crenshaw, D. M., [...], **Falcone, J.**, et al. “*The Effects of Different Density Profiles on Spatially Resolved Outflow Energetics*”. Talk presented at AGN Winds on the Chesapeake, Easton, MD, June 2023.
- Meena, B., Crenshaw, D. M., Schmitt, H., Revalski, M., Fischer, [...] **Falcone, J.**, et al. “*The Origins and Driving Mechanisms of Narrow-Line Regions Outflows*”. Talk presented at AGN Winds on the Chesapeake, Easton, MD, June 2023.
- Fischer, T. J., Johnson, M., Secrest, N., [...] **Falcone, J.**, et al. “*Let’s Talk About Jets: Analyzing Extranuclear Radio Sources in NGC 1068 and Friends*”. Talk presented at AGN Winds on the Chesapeake, Easton, MD, June 2023.
- Ferree, N., Crenshaw, D.M., **Falcone, J.**, et al. “*Gas Outflow Kinematics in NGC 3516*”. Talk presented at AGN Winds on the Chesapeake, Easton, MD, June 2023.
- Ludwig, E., **Falcone, J.**, Marinelli, M., et al. “The Effects of Star Formation Rates on the Mass-Metallicity Relation in E+A Galaxies within the Coma Cluster Observed with the SDSS-IV MaNGA Survey”. Talk presented at the 241st Meeting of the American Astronomical Society, Seattle, WA, January 2023.

CONFERENCE POSTERS

- Tutterow, J., Ferree, N., Crenshaw, D.M., **Falcone, J.** et al. “*The Shape of AGN-Driven Winds in the Seyfert Galaxy NGC 3516*.” 245th Meeting of the American Astronomical Society, National Harbor, MD, January 2025. ([Click here to view poster](#))

- Patel, K., Crenshaw, D. M., Revalski, M., **Falcone, J.** et al. “*Searching for Extended Ionized Outflows in the Quasar IRAS F11119+3257.*” 245th Meeting of the American Astronomical Society, National Harbor, MD, January 2025. ([Click here to view poster](#))
- Greene, O., **Falcone, J.** et al. “*The E+A Galaxy (Olivia's Version): Refined, Cataloged & Investigated using SDSS-IV MaNGA.*” 245th Meeting of the American Astronomical Society, National Harbor, MD, January 2025. ([Click here to view poster](#))
- Davis, M., Crenshaw, D.M., Shea, M., **Falcone, J.**, et al. “*Disentangling the Kinematics of NGC 4258.*” 243rd Meeting of the American Astronomical Society, New Orleans, LA, January 2024. ([Click here to view poster](#))
- **Falcone, J.**, Crenshaw, D. M., Fischer, T., Meena, B., Revalski, M., Shea, M., Chapman, Z., Polack, G. “*Disentangling Outflows and Rotation in the Star-Forming Seyfert 1 Galaxy NGC 3227.*” 241st Meeting of the American Astronomical Society, Seattle, WA, January 2023. ([Click to view poster](#))
- Ferree, N., Crenshaw, D. M., **Falcone, J.**, et al. “*Gas Outflow Kinematics in NGC 3516.*” 241st Meeting of the American Astronomical Society, Seattle, WA, January 2023. ([Click to view poster](#))
- Shea, M., Crenshaw, D., **Falcone, J.**, et al. “*Ionized Gas Flows in the Compact Galaxy Group Stephan's Quintet and its Active Galaxy NGC 7319.*” 241st Meeting of the American Astronomical Society, Seattle, WA, January 2023. ([Click to view poster](#))
- Chapman, Z., Crenshaw, D., **Falcone, J.**, et al. “*NGC 4395: The Little AGN That Could.*” 241st Meeting of the American Astronomical Society, Seattle, WA, January 2023. ([Click to view poster](#))
- Greene, O., **Falcone, J.**, Marinelli, M., et al. “*Investigating Quenching in a Spatially Resolved Catalog of E+A Galaxies from SDSS-IV MaNGA.*” 241st Meeting of the American Astronomical Society, Seattle, WA, January 2023. ([Click to view poster](#))
- **Falcone, J.**, Crenshaw, D. M., Fischer, T., Meena, B., Revalski, M., Polack, G., Shea, M., Chapman, Z. “*An Analysis of AGN-Driven Outflows in the Seyfert 1 Galaxy NGC 3227.*” 240th Meeting of the American Astronomical Society, Pasadena, CA, June 2022. ([Click to view poster](#))
- **Falcone, J.**, Greenfield, S., Joyce, M., et al. “*E+A Galaxies In and Around Nearby Rich Clusters of Galaxies*”, 237th Meeting of the American Astronomical Society, January 2021. ([Click to view poster](#))
- Joyce, M. L., Greenfield, S., **Falcone, J.**, et al. “*E+A Galaxies With Companions In The Field And In Nearby Rich Clusters Of Galaxies*”, 237th Meeting of the American Astronomical Society, January 2021. ([Click to view poster](#))
- Williams, R. H., **Falcone, J.**, Greenfield, S., et al. “*E+A Galaxies And Candidates In And Around The Hercules Supercluster*”, 237th Meeting of the American Astronomical Society, January 2021. ([Click to view poster](#))
- Liu, A. G., Kerrison, N., Wurmser, S., **Falcone, J.**, et al. “*Virtual Reality Mapping of E+A Galaxies and Candidates in the Coma Cluster and Other Nearby Rich Clusters of Galaxies*”, 237th Meeting of the American Astronomical Society, January 2021. ([Click to view poster](#))
- Marinelli, M., Kerrison, N., Wurmser, S., **Falcone, J.**, et al. “*SDSS-MaNGA: Spatially Resolved Spectroscopy of E+A Galaxy Candidates in the Coma Cluster*”, 237th Meeting of the American Astronomical Society, January 2021. ([Click to view poster](#))
- Quayum, R., Greenfield, S., Wurmser, S., **Falcone, J.**, et al. “*E+A Galaxies And Candidates In And Around The Leo Cluster (Abell 1367)*”, 237th Meeting of the American Astronomical Society, January 2021. ([Click to view poster](#))

- Wurmser, S., **Falcone, J.**, Greenfield, S., et al. “*E+A Galaxies And Candidates In And Around The Virgo Cluster*”, 237th Meeting of the American Astronomical Society, January 2021. ([Click to view poster](#))
- Ostling, W. B., Kerrison, N., Wurmser, S., **Falcone, J.**, et al. “*Eight E+A Galaxies Located Inside A Large-Scale Filament In The Coma Cluster*”, 237th Meeting of the American Astronomical Society, January 2021. ([Click to view poster](#))
- **Falcone, J.**, Corbitt, T., and Cripe, J. “*Improving Thermal Noise Measurements in Crystalline AlGaAs Mirrors*”. 23rd Annual Summer Undergraduate Research Forum, Baton Rouge, Louisiana, July 2017.
- Wally, M., Weaver, O., Anderson, M., Liu, A., **Falcone, J.**, Wallack, N., James, O., and Liu, C. “*A Study of E+A Galaxies Through SDSS-MaNGA Integral Field Spectroscopy*”. 229th Meeting of the American Astronomical Society, Grapevine, Texas, January 2017.
- Weaver, O., Anderson, M., Wally, M., James, O., **Falcone, J.**, Liu, A., Wallack, N., and Liu, C. “*Spectral Analysis, Synthesis, & Energy Distributions of Nearby E+A Galaxies Using SDSS-IV MaNGA*”. 229th Meeting of the American Astronomical Society, Grapevine, Texas, January 2017.

MENTORING

- | | |
|--|---------------------------|
| • Daijha Sankey - Undergraduate Student, Georgia State University | Summer 2025 - Present |
| • Barbara Carson - Undergraduate Student, Georgia State University | Summer 2025 - Present |
| • Kesha Patel - REU Student, Georgia State University | Summer 2024 - Spring 2025 |
| • Jacob Tutterow - Masters Student, Georgia State University | Spring 2024 - Summer 2025 |
| • Madeline Davis - REU Student, Georgia State University | Summer 2023 |
| • Nicolas Ferree - REU Student, Georgia State University | Summer 2022 |
| • Eric Ludwig - Undergraduate Student, CUNY College of Staten Island | Summer 2021- 2023 |

AWARDS AND SCHOLARSHIPS

- | | |
|---|-------------------------|
| Travel Support Award | Fall 2025 |
| <i>ZIHUAGN: central kpc region conference</i> | \$1000 |
| Graduate Scholar Travel Award | Fall 2025 |
| <i>Georgia State University</i> | \$500 |
| 2025 Collaborative Call for Proposals Award, Co-I | |
| <i>Georgia Space Grant Consortium</i> | Spring 2025 |
| Funds to host AsTroPalooza: The Astronomy of ATL Showcase | \$30,000 |
| Career Development Fellowship | Spring 2024 |
| <i>Out to Innovate (formerly known as NOGLSTP)</i> | \$3,450 |
| Support for travel to an international conference. | |
| Travel Support Award | Summer 2023 |
| <i>AGN Winds on the Chesapeake Conference</i> | \$1,200 |
| Rod Nave Educator Award for Outstanding Teaching Assistantship | Spring 2023 |
| <i>Dept. of Physics and Astronomy, Georgia State University</i> | |
| Georgia Space Grant Consortium Fellowship | Fall 2022 - Spring 2026 |
| <i>Georgia Space Grant Consortium</i> | |
| Chambliss Astronomy Achievement Student Award, Honorable Mention | Summer 2022 |
| <i>American Astronomical Society</i> | |

Jason J. Nassau Prize
Dept. of Astronomy, Case Western Reserve University

Spring 2020

Richard L. Garwin Award
Dept. of Physics, Case Western Reserve University

Spring 2020

OBSERVING EXPERIENCE

Astrophysical Research Consortium (ARC) 3.5-meter Telescope Summer 2021 - Present
Apache Point Observatory, Sunspot, NM Total: 230 hours (180 remote, 50 in-person)

- Lead observing sessions by assisting in planning, and facilitating calibration and science measurements on the KOSMOS spectrograph.

Hard Labor Creek Observatory Spring 2021
Georgia State University-owned telescope located in Rutledge, GA Total: 30 hours

- Observed the photometric movements of two asteroids
- Calibrated and analyzed the raw data using IRAF

TECHNICAL SKILLS

Below lists my familiarity with various tools and software based on how often I use them.

COMFORTABLE USING EVERY DAY	FAMILIAR USING SEMI-MONTHLY	COULD LEARN AGAIN IT'S BEEN A COUPLE YEARS
Python (including standard packages like NumPy, Astropy, etc.)	Bash	FORTRAN
LaTeX	SAO DS9	MATLAB
IDL	IRAF	SQL
	GSU's high-performance computing (HPC) facilities	TOPCAT

TEACHING EXPERIENCE

Instructor of Record, ASTR1010 "Astronomy of the Solar System"	Georgia State University Fall 2025
Teaching Assistant, ASTR1010 (Lab) "Astronomy of the Solar System"	Georgia State University 3 classes, spread between 2020 - 2021
Teaching Assistant, ASTR1020 (Lab) "Stellar and Extragalactic Astronomy"	Georgia State University 10 classes, spread between 2020 - 2024
Teaching Assistant, PHYS 2211 (Lab) "Principles of Physics I"	Georgia State University 1 class, 2023
Teaching Assistant, PHYS 1122K (Lab) "Introductory Physics II"	Georgia State University 1 class, 2023

SERVICE AND OUTREACH

..... Committees and Extended Commitments

Astronomy Peer Advising Leaders (AstroPAL)

Fall 2022 - present

Mentor and member

Atlanta, GA

- (Fall 2022 - present) As a **member**, I help organize and lead focus groups and workshops for junior Astronomy grad students. I also attend the monthly department faculty meetings and represent the graduate students by voicing any concerns or issues to the faculty.
- (Fall 2022 - Spring 2024) As a **mentor**, I am a peer advisor for a first or second year grad student in the Astronomy program. We have monthly one-on-one meetings to discuss navigating research, classes, and life in grad school.

GSU Graduate Council for the College of Arts and Sciences

Fall 2022 - Fall 2025

Graduate Representative

Atlanta, GA

- Provide a graduate student perspective on issues related to topics such as graduate stipends and graduate student benefits.
- Advocate for better conditions for graduate students by dialoguing with the graduate directors and deans about the hardships that many graduate students face at GSU.

Georgia Outreach Team for Space (GOT Space)

Summer 2021 - Fall 2025

Graduate Outreach Lead

Atlanta, GA

- Coordinate and participate in astronomy-based outreach events with educators in the Atlanta area.
- Collaborate with graduate students and educators at Georgia Institute of Technology to develop presentations and activities for outreach events.

GSU Physics and Astronomy Dept. Publicity & Outreach Committee

Fall 2021 - Spring 2024

Co-representative

Atlanta, GA

- Coordinate outreach requests received through faculty or the university.
- Contribute updates on outreach initiatives to the yearly department newsletter.

CWRU Women in Physics and Astronomy Club

Fall 2018 - Spring 2020

Cofounder and President

Cleveland, OH

- Organize events such as workshops and lectures by female professors centering around women interested in careers in physics and astronomy.
- Encourage participation in physics and astronomy among undergraduate students by attending off-campus lectures and events by women in physics and astronomy.
- Foster an environment of support for women studying physics and astronomy to help overcome the challenges of working in a male-dominated field.

Cleveland Museum of Natural History

Fall 2016 - Spring 2019

Volunteer at the Educator Resource Center

Cleveland, OH

- Organized and stored the various educational kits being sent to and from Cleveland's schools.
- Collaborated with the museum's astronomers to improve outdated astronomy kits by designing supplemental activities.

..... Individual Service/Outreach Events

- “What Sort of Light Do We Get From the Sun?” Talk presented to elementary school students at Indian Creek Elementary School, Atlanta, Georgia, May 2025.
- “The Physics of Time Travel: An Introduction to Einstein’s Theory of Special Relativity”. Public outreach talk given for Astronomy on Tap Atlanta, Atlanta, Georgia, January 2025.

- Executive secretary for a NASA Astrophysics Data Analysis Program (ADAP) review panel. Took notes of the discussion and helped facilitate voting processes. August 2024.
- *“Starts With a Bang #109 - Launching a galactic cone”*. Guest appearance on the Starts With a Bang podcast, September 2024. ([Click to listen](#))
- *“AGN Feedback and Outflows”*. Talk presented at “From Galaxies to Gluons” lunch talk series, Atlanta, Georgia, June 2024.
- *“Supermassive Black Holes and Their Feedback Processes: Understanding the Universe’s Rowdiest Partiers”*. Public outreach talk given for the Three Taverns Lecture Series, Atlanta, Georgia, May 2024.
- *“Georgia Outreach Team for Space”*. Talk presented at the Georgia Space Grant Affiliates meeting, Atlanta, Georgia, April 2024.
- *“Star of Our World”*. Talk presented to elementary school students at Usher-Collier Elementary School, Atlanta, Georgia, September 2023.
- *“AGN Feedback in NGC 3227”*. Talk presented at “From Galaxies to Gluons” lunch talk series, Atlanta, Georgia, August 2023.
- *“From Cosmic Rays to Food: How Does Nuclear Physics Affect My Life?”* Volunteer at the nuclear physics booth at the Atlanta Science Festival, Atlanta, Georgia, April 2023.
- *“What Aliens Might Exist in Our Solar System?”* Talk presented to elementary school students at M. Agnes Jones Elementary School, Atlanta, Georgia, September 2022.
- *“From Cosmic Rays to Food: How Does Nuclear Physics Affect My Life?”* Volunteer at the nuclear physics booth at the Atlanta Science Festival, Atlanta, Georgia, April 2022.
- *“How Do Galaxies Change Over Time?”* Virtual talk presented to elementary school students at the International School of Brooklyn, December 2021.
- *“Fly to Planets and Build a Solar System with GOT Space!”* Volunteer and coordinator of GOT Space’s booth for Space Day Atlanta, Atlanta, Georgia, September 2021.