YUNCHONG ZHANG

Department of Physics and Astronomy and PITT PACC, Thaw Hall 210 yuz369@pitt.edu
University of Pittsburgh (773) 236-5407
3943 O'Hara St, Pittsburgh, PA 15260, USA https://orcid.org/0000-0001-6454-1699

EDUCATION

The University of Pittsburgh, Pittsburgh, PA 2023 - 2028 *(expected)*
Ph.D in Physics
Advisor: Dr. Rachel Bezanson

The University of Pittsburgh, Pittsburgh, PA 2025
M.S. in Physics

The University of Chicago, Chicago, IL 2018 - 2022
B.S. in Astrophysics
Advisors: Dr. Irina Zhuravleva, Dr. Congyao Zhang
Thesis: Shock and Bubble Interactions in the Intracluster Medium

RESEARCH EXPERIENCE

UNCOVER Collaboration April 2024 – Present
- Leading the construction of galaxy morphology catalog in the cluster lensing field of Abell 2744.
- a first-author publication in prep.

RUBIES Collaboration April 2024 – Present
- Leading a project that characterizes the number density of massive quiescent galaxies at $2 < z < 5$.
- Resulted in a first-author publication accepted to ApJ.

DESI Collaboration July 2023 – Present
- Led a project that characterizes the structures of massive spectroscopically identified post-starburst galaxies at $1 < z < 1.3$.
- Resulted in a first-author publication on ApJ.

COOL–LAMPS Collaboration January 2021 – March 2023
- Led a project that characterizes the properties of strongly lensed star-forming galaxies at $3 < z < 4$ through Magellan Telescope and Nordic Optical Telescope.
- Resulted in a first-author publication on ApJ.

Department of Astronomy & Astrophysics, University of Chicago December 2020 – March 2023
- Led a project that investigates the interactions between bubbles and N-waves through hydrodynamic simulations and their potential association with radio relics in galaxy clusters.
- Resulted in an undergraduate honors thesis.

Deepskies Collaboration June 2019 – October 2020
- Led a project that applies a self-supervised deep-learning algorithm to astronomical image reduction.
- Resulted in a first-author publication on Res. Notes AAS.

ACCEPTED OBSERVING PROGRAMS

- **ALMA, Cycle 12, PI: Zhang**, 2025.1.01579.S - "Are the earliest dead galaxies dead?", 31.9 hrs.
- **NOEMA, Winter 2025, co-PIs: de Graaff, Zhang**, W25DO - "Checking Vital Signs in the Earliest 'Dead' Galaxies", 25 hrs.
- ALMA, Cycle 12, PI: Donofrio, **Co-I: Zhang**, 2025.1.01006.S - "What's Left Behind: A Census of the Cold

ISM in the First Massive Quiescent Galaxies", 12.7 hrs.

PUBLICATIONS

4. **Y. Zhang,** A. de Graaff, D. J. Setton, S. H. Price, R. Bezanson et al., *"RUBIES spectroscopically confirms the high number density of quiescent galaxies from* $2 < z < 5$*",* 2025arXiv250808577Z.
3. **Y. Zhang,** D. J. Setton, S. H. Price, R. Bezanson, G. Khullar, J. A. Newman et al., *"DESI Massive Post-Starburst Galaxies at* $z \sim 1.2$ *have compact structures and dense cores",* ApJ, 976, 36 (2024).
2. **Y. Zhang,** V. Manwadkar, M. Gladders, G. Khullar, H. Dahle, K. Napier, G. Mahler, K. Sharon et al., *"COOL–LAMPS.IV.A Sample of Bright Strongly-Lensed Galaxies at* $3 < z < 4$*",* ApJ, 950, 58 (2023).
1. **Y. Zhang**, B. Nord, A. Pagul, & M. Lepori, *"Noise2Astro: Astronomical Image Denoising With Self-Supervised Neural Networks",* Res. Notes AAS, 6, 187 (2022).

Contributing author:

9. I. McConachie, A. de Graaff, M. V. Maseda et al., (including **Y. Zhang**), *"Where Galaxies Go to Die: The Environments of Massive Quiescent Galaxies at* $3 < z < 5$*",* 2025arXiv251025024M.
8. K. A. Suess, A. G. Beverage, M. Kriek et al., (including **Y. Zhang**), *"Cold Gas in a Post-starburst Pair in the* $z \sim 1.4$ *HeavyMetal Survey: Major Mergers as a Pathway to Retain Gas in Quenched Galaxies",* ApJ, 993, 158 (2025).
7. V. R. D'Onofrio, J. S. Spilker, R. Bezanson et al., (including **Y. Zhang**), *"Quenching through Tidal Gas Removal: Molecular Gas and Star Formation in Tidal Tails of* $z \sim 0.7$ *Post-starburst Galaxies",* ApJ, 990, 166 (2025).
6. R. Pan, K. A. Suess, D. Marchesini, B. Wang et al., (including **Y. Zhang**), *"UNCOVER/MegaScience: No Evidence of Environmental Quenching in a* $z \sim 2.6$ *Proto-cluster",* ApJL, 990, L24 (2025).
5. D. J. Setton, J. E. Greene, J. S. Spilker, C. C. Williams et al., (including **Y. Zhang**), *"A confirmed deficit of hot and cold dust emission in the most luminous Little Red Dots",* ApJL, 991, L10 (2025).
4. K. E. Whitaker, S. E. Cutler, R. Chandar, R. Pan et al., (including **Y. Zhang**), *"Discovery of Ancient Globular Cluster Candidates in The Relic, a Quiescent Galaxy at* $z = 2.5$*",* 2025arXiv250107627W.
3. A. P. Cloonan, G. Khullar, K. Napier, M. Gladders et al., (including **Y. Zhang**), *"COOL-LAMPS VIII: Known wide-separation lensed quasars and their host galaxies reveal a lack of evolution in* M_{BH}/M_* *since* $z \sim 3$*",* ApJ, 987, 194 (2025).
2. S. D. Mork, M. Gladders, G. Khullar, K. Sharon et al., (including **Y. Zhang**), *"COOL-LAMPS. VII. Quantifying Strong-lens Scaling Relations with 177 Cluster-scale Gravitational Lenses in DECaLS",* ApJ 979 184 (2025).
1. K. Napier, M. Gladders, K. Sharon, H. Dahle, A. P. Cloonan, G. Mahler et al., (including **Y. Zhang**), *"COOL–LAMPS. V. Discovery of COOL J0335-1927, a Gravitationally Lensed Quasar at* $z = 3.27$ *with an Image Separation of 23".3",* ApJL, 954, L38 (2023).

TALKS & POSTERS

Too Many Dead Galaxies at Cosmic Morning
- Northwestern Weekly Observer Meeting - Evanston, IL — Talk, May 2025

Morphologeur Catalog Release
- UNCOVER Collaboration Meeting - Boulder, CO — Talk, February 2025

Hunting Post-Starburst Galaxies in DJA
- RUBIES Collaboration Meeting - Madison, WI — Talk, July 2024

Post-Starburst Galaxy Structure with HST
- DESI Galaxy and Quasar Group Telecon - Virtual — Talk, April 2024

Shock and Bubble Interactions in the Intracluster Medium
- B.S. Astrophysics Honors Thesis Presentation - Chicago, IL — Talk, May 2022

FOURSTAR data reduction pipeline
- 2021 COOL-LAMPS Collaboration Meeting - Virtual — Talk, July 2021

Astronomical Image Denoising With Self-Supervised Neural Networks
- 2021 University of Chicago Undergraduate Research Symposium - Virtual — Poster, May 2021
- LSST 2019 Project & Community Workshop - Tucson, AZ — Poster, August 2019

TEACHING EXPERIENCE

Teaching Assistant, University of Chicago

- ASTR 12610, Black Holes — July 2022
- ASTR 12700, Stars — June 2022 - July 2022
- ASTR 29002, Field Course in Astronomy and Astrophysics II — April 2022 - June 2022
- ASTR 29001, Field Course in Astronomy and Astrophysics I — January 2022 - March 2022
- ASTR 20500, Introduction to Python Programming with Applications to Astro Statistics — September 2021 - December 2021

AWARDS

Andrew W. Mellon Predoctoral Fellowship — University of Pittsburgh, September 2025
Kenneth P. Dietrich School of Arts & Sciences Fellowship — University of Pittsburgh, September 2023
College Summer Research Fellowship — University of Chicago, June 2020
Jeff Metcalf Award — University of Chicago, June 2019

TECHNICAL SKILLS

Programming: Python, Fortran 90, R
Software & Tools: DS9, GALFIT, Lenstool, FLASH code (for hydrodynamics simulation)
Languages: Mandarin Chinese (Native), English (Fluent), Russian (Conversational)