# NICOLAS MAZZIOTTI

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## Education

**University of Arizona** Tucson, AZ

Bachelor of Science in Astronomy and Physics, Minor in Italian 08/2021 - 05/2025 (expected)

- Cumulative GPA: 4.0
- Student of W.A. Franke Honors College

## Publications

- Jones, M. G., S. Janowiecki,..., **N. Mazziotti**,...et al., *"Dark no more: The low luminosity stellar counterpart of a dark cloud in the Virgo cluster"* (Preprint)
- (In prep.) **Mazziotti, N.** et al., *"Blobs and Blurs: Extreme Galaxies identified in the Fornax Cluster through Citizen Science"*

## Research Experience

**University of Arizona NASA Space Grant Program** Tucson, AZ

Research Intern, Department of Astronomy & Steward Observatory 08/2022 - Present

- Mentored by Prof. David Sand and Dr. Michael Jones
- Built citizen science project on Zooniverse titled *Blobs and Blurs: Extreme Galaxies in Clusters* to visually identify diffuse dwarf galaxies and "blue blobs" in nearby galaxy clusters
- Identified 50 diffuse galaxies in the Fornax Cluster not found by automated searches and 4 previously unknown candidates
- Fitted structural parameters of diffuse galaxies (nucleated and non-nucleated) with GALFIT

**NSF-REU at University of Florida** Gainesville, FL

Research Intern, Department of Astronomy 05/2023 - 08/2023

- Mentored by Prof. Jaehan Bae
- Generated molecular line cubes from planet-disk simulations with RADMC-3D radiative transfer code, varying planet mass and disk geometry
- Analyzed gas perturbations from a 0.1-3 Jupiter mass planet in 2D kinematic maps with MCMC sampling
- Demonstrated strength of line width moment maps by localizing the radius and azimuth of a simulated planet in the disk HD 163296 within 20 AU and 10°, respectively

## Presentations

- **NOIRLab Rare Gems in Big Data Conference** (poster): *Identifying Diffuse Galaxies through Citizen Science*—May 2024 (upcoming)
- **33rd Arizona NASA Space Grant Consortium Statewide Symposium** (talk): *Utilizing Citizen Science to Identify Diffuse Galaxies*—April 2024 (upcoming)
- **243rd Meeting of the American Astronomical Society** (iPoster): *Developing a planet-searching tool with kinematic detection methods*—January 2024
- **UofA College of Science Galileo Circle Scholars Celebration** (poster): *Identifying Extreme Galaxies through Citizen Science*—October 2023
- **University of Florida REU Final Presentation** (talk and YouTube video): *Developing a planet-searching tool with Machine Learning*—August 2023
- **32nd Arizona NASA Space Grant Consortium Statewide Symposium** (talk): *Identifying Diffuse Galaxies through Citizen Science*—April 2023

## Science Communication and Outreach

**Intern Advisor** Tucson, AZ

University of Arizona NASA Space Grant Program 08/2023 - Present

- Oversee monthly progress of 10 Space Grant interns majoring in STEM as they complete their year-long research project
- Organize engaging events for interns focused on career development and networking

**Research Panelist** Tucson, AZ

UofA College of Engineering's Honors Undergraduate Research Workshop 10/2023

- Discussed experience as an astronomy student in Space Grant with audience of honors engineering undergraduates looking for research opportunities

**Zooniverse Moderator** Remote

*Blobs and Blurs: Extreme Galaxies in Clusters* 06/2023 - Present

- Assist volunteers with galaxy classification by responding to inquiries on the project's talk boards
- Update project's "Results" page to keep volunteers informed on their exciting discoveries

## Awards

- **Galileo Circle Scholarship**, University of Arizona—*October 2023*
- **Academic Year Highest Academic Distinction**, University of Arizona—*2022, 2023*
- **Dean's List with Distinction**, University of Arizona—*Fall 2021, Spring 2022, Fall 2023*
- **Arizona Distinction Tuition Scholarship**, University of Arizona—*2021, 2022, 2023*

## Technical Skills

- **Programming languages:** Python, Java, JavaScript, LaTeX
- **Software:** SAOImageDS9, TOPCAT, CARTA, Legacy Survey Sky Browser