Magdalena I. Sammut

msammut@arizona.edu | LinkedIn Magdalena Sammut

Education

Aug 2023 - present **University of Arizona**

Bachelor of Science in Astronomy with a minor in physics

- Relevant Coursework: Astronomy Dynamics, Mechanics, Optics and Thermodynamics, Electricity and Magnetism, Quantum Mechanics, Theoretical Mechanics, Math Techniques in Physics, Vector and Multivariable Calculus, Differential Equations, Computer Programming I

Bachelor of Arts in Arabic

- Intermediate proficiency

Research Experience

July 2025 - present **Undergraduate Research Assistant** — University of Arizona
Mentors: Christa DeCoursey & Dr. Eiichi Egami — Tucson, AZ

- Examined JWST data for high-redshift transients with SAOImage DS9 and code pipelines
- Performed aperture photometry to determine supernova candidates' apparent magnitudes
- Assigned redshifts to supernovae candidates
- Reported a total of 24 supernovae candidates from two data sets
- Published 2 AstroNotes on the Transient Name Server

May 2025- Aug 2025 **Schaibley Lab Intern** — University of Arizona
Mentor: Mark Coopershylak — Tucson, AZ

- Exfoliated graphene and hexagonal boron nitride (hBN) using the scotch tape method
- Searched for mono- and bi- layer graphene, graphite backgate candidates, and hBN flakes
- Probed samples' surface-quality using atomic force microscopy
- Constructed a three layer heterostructure for chiral induced spin selectivity research
- Evaporated gold onto device for its contacts
- Scheduled to deliver a presentation about my work to UA students and faculty on September 3rd, 2025

Aug 2024 - Aug 2024 **Undergraduate Research Assistant** — University of Arizona
Mentor: Dr. Tim Eifler — Tucson, AZ

- Forecasted the science of performance of the Roman Space Telescope (launch 2026) to optimize cosmological analysis, and constraints on dark energy
- Used the CoCoA (Cobaya CosmoLike Architecture) software framework to run simulated MCMC analyses on UA High Performance Computers

    - CoCoA is a combined C and Python software framework that models cosmological observables and uses Bayesian Inference to calculate constraints on cosmological parameters
- Presented a poster about my research to astronomers, faculty, and colleagues at the 2025 TIMESTEP Research Apprenticeship Symposium

Skills

Aug 2024 - May 2025 **TIMESTEP Research Apprenticeship Program** University of Arizona, Tucson, AZ

- Selected as one of thirteen students for a paid research position during the 2024-2025 academic year
- Participated in extensive hand-on workshops encompassing scientific paper review, keeping research notes, Linux, GitHub, high-performance computing, Astropy, NumPy, secure shell (ssh), Raspberry pi, and curve fitting astronomical data

Research Notes

Magdalena Sammut *et al.*, *Discovery of 4 Supernova Candidates (zhost = 0.35 - 2.92) in GOODS-S using JWST Program 3215 and OASIS JWST/NIRCam Images*, **AstroNotes (TNS)**, 2025. https://www.wis-tns.org/astronotes/astronote/2025-338

Magdalena Sammut *et al.*, *Discovery of 20 Supernova Candidates (zhost = 0.072 - 3.087) using NGDEEP JWST/NIRCam Images*, **AstroNotes (TNS)**, 2025. https://www.wis-tns.org/astronotes/astronote/2025-339

Awards and Scholarships

Apr 2023 - present **Arizona Excellence Tuition Scholarship**
$20,000 per year, 4 years

- Awarded to incoming freshmen who completed high school with a GPA of 3.75-3.89 and maintain a GPA of at least 3.0

May 2024 - present **Dean's List** University of Arizona

- Awarded to students with a GPA of 3.50-3.99 at the end of the semester

May 2024 - present **Academic Distinction: 2023 - 2024** University of Arizona

- Awarded to students with a GPA of 3.500 - 3.999 at the close of the academic year

Dec 2023 - May 2024 **Dean's List with Distinction** University of Arizona

- Awarded to students with a 4.0 GPA at the end of the semester