Jasmine M. Khalil

Astrophysics and Cosmology Master's Student - UniBo | Space and Astronomy Freelance Writer | Portfolio

Website | jasmine.khalil@studio.unibo.it | +39 344 597 6176 | ORCID

Education

- MSc in Astrophysics and Cosmology - **Bologna University, Italy** 2024 - 2027
- Qualifying Program in Astronomy, Space Science and Meteorology - **Cairo University, Giza, Egypt.** 2021 - 2022
- BEng. Electronics and Electrical Communications - **Ain Shams University, Cairo, Egypt.** Graduation Project:*"Water Quality Analyzer, A MEMS-based device"*. Dissertation 2014 - 2019

Research Experience

The MPIA Summer Internship - Max Planck Institute for Astronomy- Heidelberg - Germany

- *Under the supervision of Dr. Francesco Zagaria and Dr. Alice Somigliana:* June 2026 - July 2026
  - Cleaning and producing images of class 0/I proto-planetary disks using ALMA data.
  - Modeling and analyzing class 0/I disk parameters and comparing them to class II

ASPIRE Astrophysics Summer Research Program - University of Amsterdam, Remotely

- *Under the supervision of Dr. Jan Van Roestel:* Jul 2023 - Dec 2023
  - Analysing data from the Zwicky Transient Facility survey to detect AM CVn binary systems
  - Studying the properties of eclipsing ultra-compact systems discovered and delivering the findings in a letter

Research Student - Cairo University, Giza, Egypt

- *Under the supervision of Prof. Alaa Ali:* July 2022 - Jan 2023
  - Searching for and characterizing wide multiple star systems at the center of planetary nebulae using Gaia DR3
  - Applying the necessary photometry and astrometry analysis using the VOSA Analyzer

Undergraduate Researcher - Ain Shams University, Cairo, Egypt 2018 - 2019

- *Under the supervision of Prof. Diaa Khalil and Dr. Yasser M. Sabry:*
  - **MEMS Separation Devices:** Contributed to designing **M**icro **E**lectrical **M**echanical **S**ystems to separate 1μm to 10μm plastic particles using L-edit & Comsol MultiPhysics softwares as part of my graduation project in the Optics Lab.
  - **Plastic detection in Water:** Worked on detecting both plastic sheets and microplastic particles in water using Fourier Transform Infrared (FTIR) spectroscopy as part of my graduation project in the Optics Lab.

ACADEMIC PAPERS/LETTERS

- Ali, A., **J. M. Khalil,** Mindil, A.: *"Detection of wide binary and multiple nuclei of planetary nebulae using the Gaia DR3."*

  Published in the **Astrophysics and Space Science Journal**, arxiv

- **J. M. Khalil,** J. van Roestel, et al.: *"Four new eclipsing accreting ultracompact white dwarf binaries found with the Zwicky Transient Facility"*

  Published in **Astronomy & Astrophysics Journal**, aanda

TECHNICAL SKILLS

- **Fluent Programming Languages**: bash, C, Python (**Libraries & Environments:** AstroPy, astrobase, SciPy, SunPy, NumPy, Pandas, Matplotlib, emcee), Jupyter Notebook, Google Colab, LaTeX
- **Experience with**: MESA (stellar evolution code), GYRE (stellar oscillation code), CASA, GALARIO (GPU Accelerated Library for Analyzing Radio Interferometer Observations), TOPCAT, SAOImageDS9, HTML, CSS, MATLAB, L-Edit, Comsol MultiPhysics, Eagle PCB Designer, Ansys Designer RF

WORKSHOPS & SUMMER SCHOOLS

- **The International School for Young Astronomers (ISYA - IAU)** Algeria, 2024
  Framework: theoretical lectures in the morning and afternoon, group projects in the evening. Length: 3 weeks.
- **The 3rd Arab Advanced School for Astrophysics - Kattamia Observatory** Egypt, 2023
- **African Astronomical Society (AfAS) Hackathon** South Africa, 2023
- **Sagan Exoplanet Summer Hybrid Workshop on "Exoplanet Science in the Gaia Era"**
  Hosted by the NASA Exoplanet Science Institute at Caltech, CA. Certificate. Remotely, 2022

PRESENTATIONS & POSTERS

- **The Life Cycle of Stars**

  Presentation as an invited speaker to an event held by the Astronomy Club at the Government College of Engineering, Nagpur, India (GCOEN) March 2026

- **Searching for AM CVn stars using ZTF data**
  - Presentation for the ASPIRE program Online, Aug 2023
  - Poster for The Arab Advanced School for Astrophysics (ArAS) Egypt, Sep 2023
- **Four new eclipsing accreting ultracompact white dwarf binaries found with the Zwicky Transient Facility** South Africa, IAU-GA 2024

  Contributed poster at the XXXII IAU-GA

CONFERENCES

- The XXXII IAU General Assembly - South Africa 2024

Society Memberships

- African Network for Women in Astronomy (AFNWA) Aug 2024-current

Volunteering & Outreach

- **Founder of Astronomers 4 Palestine** **2026**
  A non-profit organization of astronomers coming together to help rebuild the education system in Gaza through online lessons and mentoring in Astronomy & Astrophysics. Learn more, here.
- **Stardust magazine (Astronomy Club, Ain Shams University, Cairo, Egypt)**
  - **Editor-In-Chief:** Led a team of writers & editors to publish the third issue 2019
  - **Writer & Editor:** Contributed as a writer & editor to produce the second issue 2018