

Jasmine M. Khalil

Master's Student - UniBo | Space and Astronomy Freelance Writer | [Portfolio](#)

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EDUCATION

- MSc in Astrophysics and Cosmology - **Bologna University, Italy** 2024 - 2026
- Qualifying Program in Astronomy, Space Science and Meteorology - **Cairo University, Giza, Egypt**. Grade: **Very Good**. Percentage: **84.567%** 2021 - 2022
- BEng. Electronics and Electrical Communications - **Ain Shams University, Cairo, Egypt**. Grade: **Good**. Graduation Project: "*Water Quality Analyzer, A MEMS-based device*". Grade: **Excellent**. [Dissertation](#) 2014 - 2019

RESEARCH EXPERIENCE

Research Student - University of Amsterdam, Remotely

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

Research Student - Cairo University, Giza, Egypt

- *Under the supervision of Dr. Al-Shaimaa Hassanin - Prof. Nahed Hassanin Lab for Solar Physics:* Aug 2022 - Dec 2023
 - Performing exploratory data analysis (EDA) using Python and the SunPy library.
- *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 the latest Gaia data release (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. Dina Khalil and Dr. Yasser M. Sabry:*
 - **MEMS Separation Devices:** Contributed to designing Micro Electrical Mechanical Systems to separate $1\mu\text{m}$ to $10\mu\text{m}$ 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.

PAPERS/LETTERS PUBLISHED OR UNDER PREPARATION

- 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**, [link](#)
- Hassanin, **J. M. Khalil**, et al.: *"A study of the CME link to geomagnetic storms during 1999-2022: Interaction of Homologous eruptions."*
Under preparation to be submitted to the **Solar Physics Journal**.

TECHNICAL SKILLS

- **Fluent Programming Languages:** Python (**Libraries & Environments:** AstroPy, astrobase, SciPy, SunPy, NumPy, Pandas, Matplotlib, Jupyter Notebook, Google Colab), L^AT_EX
- **Experience with:** HTML, CSS, MATLAB, TOPCAT, SAOImageDS9, C++, L-Edit, Comsol MultiPhysics, Eagle PCB Designer, Ansys Designer RF
- **Technologies:** Astrophysics, Exploratory Data Analysis, Robotics

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 Advanced School for Astrophysics - Kattamia Observatory** Egypt, Sep 2023
- **ASPIRE Astrophysics Summer Research Program - University of Amsterdam, NL**
A six-week summer research program when I worked on discovering AM CVn stars under the supervision of Dr. Jan Van Roestel. Remotely, 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
- **Introduction to Astronomy Research**, [GitHub](#) Remotely, 2022

PRESENTATIONS & POSTERS

- **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** SA, IAU-GA 2024

CONFERENCES

- **2024 IAU General Assembly - South Africa**

SOCIETY MEMBERSHIPS

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

VOLUNTEERING & OUTREACH

- **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