

Jasmine M. Khalil

Astrophysics Research Student

Space and Astronomy Freelance Writer | [Portfolio](#)

[Website](#) | [✉ jasminesaif66@yahoo.com](mailto:jasminesaif66@yahoo.com) | [+201126894188](#) | [ORCID](#) | Cairo, Egypt

EDUCATION

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** 2014 - 2019

Graduation Project: "*Water Quality Analyzer, A MEMS-based device*". Grade: **Excellent**. [Dissertation](#)

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, astrobases, 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
- **Operating Systems:** Windows, Linux (Ubuntu), MacOS

WORKSHOPS & SUMMER SCHOOLS

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. Virtually, 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, Pasadena, CA. [Certificate](#) Virtually, 2022

Introduction to Astronomy Research, [GitHub](#) Virtually, 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

WORK

Freelance Chief Astronomy Editor - Al Sadeem Observatory, UAE Oct 2023 - present

VOLUNTEERING & OUTREACH

Women in Astronomy - IAU 2022 - present

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