

Thara Caba

MSc. Student, Astrophysics & Space Science

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I am interested in multi-messenger astrophysics, statistical and computational techniques.

EXPERIENCE

Research Assistant - Autonomous University of Santo Domingo (UASD) Sep 2019 - present

I do administrative and research activities for the Institute of Physics. I help write memos and reports, organize talks and activities, and participate in research exchanges. *Supervision under Dr. Nelphy de la Cruz, Statistical and Computational Physics research group leader.*

Research Assistant - Max Planck Institute for Physics Jul 2024 - Sept 2024

Worked in the astrophysical messengers research group on a new approach for the detection of astrophysical neutrino sources using Bayesian statistics. *Bayesian ICECAT Analysis Supervision under Dr. Francesca Capel.*

Remote Fellow - Office of Astronomy for Development Jun 2023 - Oct 2023

I worked on the flagship project [Astronomy for Mental Health](#) working on the ways physics students can engage and benefit from this project. *Supervision under MSW. Dominic Vertue.*

Research Assistant - University of Louisville Aug 2022 - Nov 2022

Part of the [Central American - Caribbean \(CENCA\) Bridge in Astrophysics Remote research experience for undergraduate students](#). *Study of spiral galaxies and their environment, Supervision under: Dr. Benne Holwerda.*

Research Assistant - University of Padova Feb 2022 - Aug 2022

I worked on my bachelor's thesis project in multi-messenger astrophysics analyzing the data from the MAGIC telescopes. *Deriving very high energy gamma-ray flux upper limits on sky maps using the SkyPrism software, Supervision under: Dr. Elisa Bernardini & Dr. Konstancja Satalecka.*

EDUCATION

2023 - present Master's Degree at **University of Rome Tor Vergata & University of Belgrade**
[Erasmus Mundus Joint Master program in Astrophysics & Space Science \(MASS\)](#)

2017 - 2023 Bachelor's Degree at **UASD** Physics
Deriving very high energy gamma-ray flux upper limits on sky maps using the SkyPrism software, Supervision under: Dr. Elisa Bernardini & Dr. Konstancja Satalecka.

HONORS & AWARDS

Women and Girls in Astronomy mini-Grant 2023 - Present

Issued by the North American Regional Office of Astronomy for Development (NA-ROAD) to complete the Month of Astronomy in the Dominican Republic.

Erasmus Mundus Joint Master Scholarship 2023 - Present

Issued by Erasmus+ to complete my master's degree in Astrophysics and Space Science.

Hanrieder Fellowship

2024

Issued by Max Planck Institute for Physics & Hanrieder Foundation to complete my internship in the Max Planck Institute for Physics.

Italian Ministry of Foreign Affairs and International Cooperation Scholarship 2023 - 2024

Issued by the Italian Ministry of Foreign Affairs and International Cooperation to complete my master's degree in Astrophysics and Space Science.

International Astronomy and Astrophysics Competition National Award 2023

For achieving the nationwide highest score in the final round of the International Astronomy and Astrophysics Competition 2023. [Verify-ID: FN-2023-F3E6271733C](#).

Idelisa Bonnelly Scholarship for Women in STEM 2021 - 2023

Issued by the Ministry of Youth of the Dominican Republic to complete my bachelor's in physics.

National Scholarship 2018 - 2021

Issued by the Ministry of Higher Education, Science & Technology of the Dominican Republic to complete my bachelor's in physics.

SELECTED POSTERS & TALKS

- Jan 2024 **Panel** Astronomy for a better world, *American Astronomical Society Winter Meeting, United States*.
- Jul 2023 **Poster** The Multi-messenger Astrophysics Approach and the MAGIC Telescopes, *Giambiasi Winter School on Cosmology, Argentina*.
- May 2023 **Poster** Study of spiral galaxies and their environment, *PLANCKS, Italy*.
- Jan 2023 **Talk** Study of spiral galaxies and their environment, *IV International Congress of the Dominican Physical Society, Dominican Republic*.
- Nov 2022 **Talk** The Multi-messenger Astrophysics Approach and the MAGIC Telescopes, *VIII Student Congress of Physics and Mathematics, Guatemala*.
- Sep 2022 **Talk** The Multi-messenger Astrophysics Approach and the MAGIC Telescopes, *VII Student Congress of Scientific Research and Technology, Dominican Republic*.
- Sep 2022 **Poster** The Multi-messenger Astrophysics Approach and the MAGIC Telescopes, *International Conference of Physics Students, Mexico*.
- Mar 2019 **Panel** Women in Science, Development and Innovation, *Autonomous University of Santo Domingo, Dominican Republic*
- Oct 2019 **Panel** Building on the nexus of science and diplomacy to promote peace and security, *Comprehensive Nuclear-Test-Ban Treaty Organization, Dominican Republic*

TEACHING EXPERIENCE

Teaching Assistant 2021 - 2023

Modern Physics, 7th Semester, *UASD*

Teaching Assistant 2023

Basic Physics, 1st Semester, *UASD*

VOLUNTEER & OUTREACH WORK

jIAPS Editor-in-Chief 2024 - present

I am in charge of the 2025 issue of the journal of the [International Association of Physics Students \(IAPS\)](#). IAPS is a non-profit, non-governmental organisation run entirely for and by physics students worldwide.

CENCA Bridge in Astrophysics Mentor

2023 - present

Mentored two students in their first research experience in astrophysics: **Leiany De Oleo Rodríguez**, Investigating the Circumgalactic Medium and **Daniela Azucena Cardona Cuc**, Binarity in young star clusters across the entire mass range.

Month of Astronomy in the Dominican Republic

2023 - present

I organize a series of talks and activities expanding a whole month related to astronomy to introduce high school and university students to the subject. Financed by the NA-ROAD, the Heising-Simons Foundation and the International Association of Physics Students.

Social Media Manager

2023 - present

In charge of the social media of the Dominican Physical Society.

Teaching Committee Student Representative of MASS

2023 - present

The TC takes decisions on the main academic aspects of the programme (e.g. changes in the compulsory courses and optional courses, consistency of mobility paths, etc.).

Secretary

2022 - 2023

Part of IAPS. I was in charge of all administrative work.

Member of Affiliated Commission 5

2022 - 2023

[The Affiliated Commission 5](#) (IAPS) is the student branch of the International Union of Pure and Applied Physics (IUPAP). I managed the relations between IAPS and IUPAP especially relating to communications.

PR Manager

2021 - 2022

Part of the Executive Committee of IAPS. I was in charge of all social media and public relations.

President of the Association of Physics Students UASD

2020 - 2021

Increased the available opportunities and connection to students by joining the association to IAPS. Was in charge of administrative work and the relations between students and faculty.

CERTIFICATIONS

- 2024 [Observational Astronomy and Data Processing](#) **MASS Summer School 2024**
- 2024 [Python Essentials 2](#) **Cisco Networking Academy**
- 2024 [From Stars to Cosmic Explosions: Bridging Scales in Astrophysical Data Analysis](#) **MASS Winter School 2024**
- 2024 [Introduction to Quantum Computing](#) **The Coding School**
- 2023 [Giambiagi Winter School on Cosmology](#) **International Center for Theoretical Physics and University of Buenos Aires**
- 2023 [Designing Effective Science Communication](#) **University of Colorado Boulder**
- 2022 [Introduction to Data Science](#) **Cisco Networking Academy**
- 2022 [Python Essentials 1](#) **Cisco Networking Academy**
- 2022 [Gravitational Wave Open Data Workshop](#) **LIGO Scientific Collaboration and VIRGO Collaboration**
- 2021 [C for Everyone: Structured Programming](#) **University of California**

SKILLS

Programming	Python, C/C++, FORTRAN, SQL, Git, Bash
Academic	LaTeX, Office
Languages	Spanish, English

Last updated: October 10, 2024. References are available upon request.