






# Thara Caba

MSc. Student, Astrophysics & Space Science

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orcid.org/0000-0003-3993-169X

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

## EXPERIENCE

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**Research Assistant - Autonomous University of Santo Domingo** 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. *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 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

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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 **Autonomous University of Santo Domingo** 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

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**Women and Girls in Astronomy mini-Grant** 2023 - Present

Issued by the North American Regional Office of Astronomy for Development 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

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- 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

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### Teaching Assistant 2021 - 2023

Modern Physics, 7th Semester, *Autonomous University of Santo Domingo*

### Teaching Assistant 2023

Basic Physics, 1st Semester, *Autonomous University of Santo Domingo*

## VOLUNTEER & OUTREACH WORK

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### Central American - Caribbean 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.

jIAPS Editor-in-Chief2024 - 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.

Month of Astronomy in the Dominican Republic2023 - 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 North American Regional Office of Astronomy for Development, the Heising-Simons Foundation and the International Association of Physics Students.

Secretary2022 - 2023

Part of the Executive Committee of the International Association of Physics Students (IAPS). I was in charge of all administrative work.

Member of Affiliated Commission 52022 - 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 Manager2021 - 2022

Part of the Executive Committee of the International Association of Physics Students (IAPS). I was in charge of all social media and public relations.

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