Thara Caba

MSc. Student, Astrophysics & Space Science

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RESEARCH PROFILE

I am interested in high-energy astrophysics, astroparticle physics and multi-messenger astrophysics. I enjoy working in data analysis and scientific software programming.

EXPERIENCE

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.*

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, Advisor: 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, Advisor: 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
2017 - 2023	Bachelor's Degree at **Autonomous University of Santo Domingo** Physics

HONORS & AWARDS

Erasmus Mundus Joint Master Scholarship   2023 - Present

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

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, *Giambiagi 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, *Autonomous University of Santo Domingo*

Teaching Assistant   2023

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

Volunteer & Outreach Work

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

Secretary   2022 - 2023

Part of the Executive Committee of the International Association of Physics Students (IAPS). IAPS is a non-profit, non-governmental organisation run entirely for and by physics students worldwide. 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 the International Association of Physics Students (IAPS). I was in charge of all social media and public relations.

Mentored students

2023   **Leiany De Oleo Rodríguez** Investigating the Circumgalactic Medium, *Central American-Caribbean Bridge in Astrophysics.*

Certifications

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, Git, Bash
Academic	LaTeX, Office
Languages	Spanish, English