

# Diana Victoria Lopez Navarro

M.SC. IN ASTROPHYSICS (STUDENT)

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## Education

### University of Bonn

MASTER IN ASTROPHYSICS (BCGS SCHOLARSHIP)

**Thesis interest:** CMB analysis/ Galaxy Cluster/ SZ effect.

Bonn, Germany

Oct. 2024 - present

### Universidad de Panamá

BACHELOR'S DEGREE IN PHYSICS

Sigma-Lambda recognition.

Panama City, Panama

2019 - 2024

## Teaching/Tutoring Experience

Winter

2025/2026

**astro8405: The Cosmic Microwave Background**, Tutor

Bonn

University

## Research Experience

### Universidad de Panamá & National Directorate of Space Science of the Technological University of Panama (DINACE)

SUPERVISORS: DR. BERNARDO FERNÁNDEZ & DR. RODNEY DELGADO

Panama City, Panama

February 2022 - present

- Thesis: "Processing of Astronomical Images and Photometric Analysis for the Detection of Low Luminosity Structures"
- Research project focused on the development of a methodology for calibration and analysis of optical images, applied to the study of low-surface brightness structures using a small aperture telescope.

### 43rd International School for Young Astronomers & Instituto Nacional de Astrofísica, Óptica y Electrónica (INAOE)

SUPERVISORS: DR. ALFREDO MONTAÑA & MSc. MARIANELA QUIRÓZ

Puebla, Mexico

August-July 2023

- Short-term project: "Characterizing Distant Extreme Forming Galaxies"
- Project aimed to characterize a sample of 70 high redshift infrared luminous dusty galaxies with possible merging interactions or strongly lensed to get a first insight of their physical properties.

### Universidad de Panamá & Western Illinois University

SUPERVISOR: DR. ESTEBAN D. ARAYA

Online

August-December 2021

- Project: "Masers as Tracers of Angular Momentum in Molecular Outflows"
- Remote radio astronomy project developed as part of the INDIRA 2021 program, organized by NINE HUB Costa Rica, and supported by NRAO. We developed a data analysis platform using high-angular resolution observations of methanol and water masers to search for signatures of angular momentum in molecular jets.

### Bonn University

SUPERVISOR: DR. KAUSTUV MONI BASU

Bonn, Germany

July-August 2025

- Internship Project: "Searching for the signature of galaxy cluster rotation using ACT data"
- Research project focused on using data from the DR6 of the Atacama Cosmology Telescope (ACT) to search for signatures of cluster rotation via the rotational kinematic Sunyaev-Zel'dovich effect (rkSZ). A methodology to process CMB data and extract potential rkSZ signals from rotating clusters was developed during the 6 weeks duration of the project.

## Publications & Posters

López, D. V & Araya, E.D. (2023). Masers as Tracers of Angular Momentum in Molecular Outflows. *Tecnociencia*, 25(1), pp. 180-192. Available in: <https://revistas.up.ac.pa/index.php/tecnociencia/article/view/3443/2944>

López, D. V & Araya, E.D. (July, 2023). In Search For Angular Momentum in Molecular Outflows using High-Angular Resolution Maser Observations. Best Poster Award in *Guatemalan School of Astrophysics, Quetzaltenango, Guatemala*. Poster presentation in *43rd International School for Young Astronomers, Puebla, Mexico*. Information about the events in: <https://astro.alphacen.org/conferencia/> & <https://www.inaoep.mx/~isya2023/poster/>

## Awards & Scholarships

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2024	<b>BCGS Scholarship 2024: Astrophysics Master Degree Program</b> , Bonn-Cologne Graduate School of Physics and Astronomy	BCGS
2021	<b>Scholarship: Undergraduate Excellence in Basic Sciences Program</b> , National Secretariat of Science and Technology of Panama	SENACYT-IFARHU
2019	<b>Scholarship: Merit-Based IFARHU University Scholarship Program</b> , Institute for Training and Development of Human Resources of Panama	IFARHU
2018	<b>Honor Medal: Don Guillermo Andreve</b> , Awarded to students who upon completing their studies have earned the first place of honor in their respective High-Schools	Ministry of Education

## Skills

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### PROGRAMMING & SOFTWARE

**Programming Languages:** Python.

### OUTREACH

**Speaker:** Experience working with public of all-ages.

### LANGUAGES

**Spanish:** Native

**English:** CEFR C1

**German:** A2.1

## Schools & Workshops

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August, 2023	<b>43rd International School for Young Astronomers   ISYA-2023</b> , IAU, INAOE, Participant	Mexico
July, 2023	<b>Guatemalan School of Astrophysics 2023, Alpha-Cen</b> , Participant	Guatemala
March, 2023	<b>Seminar and Workshops in Arqueoastronomy  Dictated by: Dr. Javier Mejuto (National Autonomous University of Honduras)</b> , Participant	Panama

## Outreach Experience

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Jan, 2024	<b>Educational Tour: Technological &amp; Astronomical Summer   SENACYT</b> , Workshopper.	Panama
June, 2021-24	<b>Panamanian Space Science Olympiad   SENACYT</b> , Judge, Supervisor & Facilitator.	Panama
Oct, 2022	<b>Latin American Space Science Olympiad   SENACYT, City of Knowledge Foundation &amp; CENACEP Panama</b> , Volunteer Supervisor.	Panama
Feb, 2022	<b>Workshops: Knowing the Cosmos   SENACYT, Ministry of Education &amp; UTP</b> , Facilitator.	Panama

### PROFESSIONAL MEMBERSHIPS

#### Alpha-Cen - Vocal III (2024-2028)

Alpha-Cen is a non-profit and non-governmental scientific group created for the development and strengthening of research in astronomical sciences in the Central American and Caribbean region. In the last General Assembly, I was elected Vocal III of the Executive Committee 2024-2028. More information in: <https://astro.alphacen.org/>