

# Ana Isabel Lopez Murillo

## CURRICULUM VITAE

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### EDUCATION

UNIVERSITY OF NORTH CAROLINA – CHAPEL HILL

Chapel Hill, North Carolina

*PhD, Physics and Astronomy*

May 2030

Advisor: Dr. Andrew Mann

*B.S., Computer Science.*

May 2025

Undergraduate Thesis: Searching for Transit Timing Variations in Young Transiting Systems

Advisor: Dr. Andrew Mann

### AWARDS AND HONORS

*NC Space Grant Graduate Research Fellowship* (NC State, NASA)

2025

*Robert Shelton Award for Outstanding Research* (UNC Chapel Hill)

2025

*Chancellor's Science Scholar* (UNC Chapel Hill)

2021 – 2025

Highly selective merit-based STEM scholarship program

*Honors Carolina* (UNC Chapel Hill)

2021 – 2025

Competitive, four-year academic program enrolling 10% of each class

*Dean's List* (UNC Chapel Hill)

2021 – 2025

*Renwick Scholar Academic Award* (UNC Chapel Hill)

2022, 2023

### RESEARCH EXPERIENCE

**University of North Carolina – Chapel Hill**

Chapel Hill, North Carolina

*Research Assistant, Department of Physics and Astronomy*

January 2023 – present

Applying algorithmic statistics and Python packages to optimize transit data analysis, uncover transit timing variations (TTVs) of over exoplanets through statistical modeling and Gaussian Process machine learning.

### RESEARCH INTERESTS

Exoplanet discovery and characterization, machine learning and data mining, transit timing variation analysis, stellar activity

### PROFESSIONAL EXPERIENCE

**Wells Fargo**

Charlotte, North Carolina

*FC-Ops Intern Analyst*

June 2024 – August 2024

Proposed and developed a native Windows application to accelerate ILQC review process by over 10% using WinUI, .NET, and Windows App SDK Frameworks.

Coordinated independent documentation system rehaul proposal to optimize process and cost reduction.

Reviewed over 100 customer data profiles for fraud prevention and to accurately capture onboarded customers.

### TECHNICAL SKILLS

Python, Java, JavaScript, Typescript, RxJS, AngularJS, HTML/CSS, Git, HTTP, Full-Stack Engineering, Docker, SQL, MCMC Analysis, Algorithmic Analysis, Statistical Optimization, BATMAN, Pandas.

### PUBLICATIONS

Barber, M.G., Mann, A.W., et al. TESS Investigation—Demographics of Young Exoplanets (TI-DYE). III. An Inner Super-Earth in TOI 2076. *AJ* 170, 32 (2025). <https://doi.org/10.3847/1538-3881/add7db>

Barber, M.G., [...], Lopez Murillo, A. I. *et al.* A giant planet transiting a 3-Myr protostar with a misaligned disk. *Nature* 635, 574–577 (2024). <https://doi.org/10.1038/s41586-024-08123-3>.

Thao, P.C., [...], Lopez Murillo, A.I. *et al.* TESS Hunt for Young and Maturing Exoplanets (THYME). X. A Two-

## **Ana Isabel Lopez Murillo**

planet System in the 210 Myr MELANGE-5 Association. *AJ* **168**, 41 (2024).  
<https://doi.org/10.48550/arXiv.2406.05234>.

Lopez Murillo, A.I., Mann, A.W., Barber, M.G. *et al.* Searching for Transit Timing Variations in Young Transiting Systems (Manuscript submitted). <https://github.com/AnaLopezMurillo/TTV-Search>.

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### **PRESENTATIONS**

UNC Celebration of Undergraduate Research Symposium – Spring 2024  
Chancellor's Science Scholars Research Symposium – Fall 2023

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### **LEADERSHIP AND SERVICE**

Tutor, University of North Carolina at Chapel Hill, Math Department, 2022-2024  
Director of Design, Pearl Hacks, Marketing Team, 2023-2024  
Wiki Lead, UNC iGEM, University of North Carolina at Chapel Hill, 2023-2024  
Teaching Assistant, ISLA Los Sábados Program, Weekend Program, 2022