

Sebastian Lopez

Curriculum Vitae

Department of Astronomy
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[Publication List](#)

Education

The Ohio State University, Columbus, OH

Ph.D in Astronomy

Aug 2020 – Present

M.S. in Astronomy

May 2023

Advisor: Laura A. Lopez

University of Florida, Gainesville, FL

Bachelor's of Science in Astrophysics and Physics

Jun 2016 – Apr 2020

Astrophysics B.S: Summa Cum Laude

Physics B.S: Cum Laude

Senior Thesis: *Properties of Spatially Resolved Galactic Gas Accretion in the Illustris-TNG50 Simulation*

Advisor: Paul Torrey

Miami-Dade College, Miami, FL

Associate of Arts

Aug 2014 – Apr 2016

Part of High School Dual Enrollment Program

Graduated with Highest Honors

Awards and Honors

OSU Presidential Fellowship

2025–2026

Ann S. Tuttle Paper Award

2024

OSU Graduate Enrichment Fellowship

2020–2021

UF Astronomy Department Best Thesis Award

Spring 2020

UF Dean's List Recipient

Fall 2018, Spring 2019, Fall 2019, Spring 2020

Publications

Primary Contributor:

- **Lopez, S.** et al. 2025. "Observational Constraints on Cool Gas Clouds in M82's Starburst-Driven Outflow" *ApJ*, Vol. 100
- Porraz Barrera, N.*, **Lopez, S.**, et al. 2024. "Hot Gas Outflow Properties of the Starburst Galaxy NGC 4945" *ApJ*, 968, 54
- **Lopez, S.** et al. 2023. "X-Ray Properties of NGC 253's Starburst-driven Outflow" *ApJ*, 942, 108

*Advised Student

Co-Author:

- Barnes, P. et al. (incl. **Lopez, S.**) 2025. “The Three-mm Ultimate Mopra Milky Way Survey. III. Data Release 6” *ApJS*, 280, 31
- Fisher, D. et al. (incl. **Lopez, S.**) 2025. “JWST Observations of Starbursts: Cold Clouds and Plumes Launching in the M82 Outflow” *MNRAS*, 538(4)
- Villanueva, V. et al. (incl. **Lopez, S.**) 2024. “JWST Observations of Starbursts: Relations between PAH Features and CO Clouds in M82” *A&A*, 695, A202
- Bolatto, A. et al. (incl. **Lopez, S.**) 2024. “JWST Observations of Starbursts: PAH Emission at the Base of the M82 Galactic Wind” *ApJ*, 967, 63
- Nguyen, D. et al. (incl. **Lopez, S.**) 2024. “Dynamics of Hot Galactic Winds from Spherically-Stratified Starburst Cores” *MNRAS*, 518, 87

Presentations

Talk, AXIS Galaxy SWG, Jun 2025, *Morphology and Metal Content of Star Formation Driven Outflows*

Poster, SACNAS, Oct 2024, *Cool Gas Clouds Swept by M82’s Hot Galactic Wind*

Talk, Kansas University Astronomy Seminar, Sep 2024, *The Multiwavelength Properties of Starburst-Driven Outflows*

Talk, STScI Spring Symposium, Apr 2024, *Hot Gas Properties of Local Starburst-Driven Outflows*

Talk, SACNAS, Oct 2023, *Million Degree Gas Outflows Launched from Star-Forming Galaxies*

Talk, Ohio Latino Affairs Summit, Sep 2023, *Nurturing Future Latino/Hispanic Scientists in Columbus, OH*

Invited Talk, HEAD Meeting, Mar 2023, *The Temperature and Metallicity Gradients of Starburst-Driven Outflows*

Poster, HEAD Meeting, Mar 2022, *Properties of the Hot Gas Outflow of NGC 253*

PI Accepted Proposals

XMM-Newton: “The Hot Outflow Properties of the Starbursting Dwarf Galaxy NGC 1569” (100 ks, \$54k), PI: Sebastian Lopez

Chandra X-ray Observatory: “Unveiling the Origin of Cool Galactic Winds with Chandra” (Archival, \$49k), PI: Sebastian Lopez

Service and Outreach

Summer Undergraduate Research Program, OSU (Summer 2021, 2024)

– Co-advisor for undergraduate students

AstroLatinX (Summer 2023 – Present)

– Founding member. Organization providing bilingual outreach to Hispanic/Latin American communities in Columbus to increase interest in astronomy among underrepresented groups.

Polaris Mentorship Program, OSU (Aug 2021 – Aug 2023)

– Mentor supporting diverse, inclusive, and equitable environments in Physics and Astronomy, aiding retention of underrepresented and non-traditional students.