

The Ohio State University
Department of Astronomy
140 W. 18th Ave.
Columbus, OH 43210

Elvira Cruz-Cruz
Astronomy PhD Candidate
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Education

The Ohio State University Columbus, Ohio
2024-Present **Ph.D. in Astronomy**
Advisors: Christopher S. Kochanek & Laura A. Lopez
PhD Topic: Probing Nature of Supernovae Remnant Progenitors in our Galaxy & LMC
Nov 2024 **M.S. in Astronomy**
Advisor: Christopher S. Kochanek
MS Topic: Supernova Remnants as Probes of Supernovae Progenitors

University of California, Irvine (UC Irvine) Irvine, California
May 2021 **B.S. in Physics, Astrophysics specialization**
Undergraduate Research Advisor: Manoj Kaplinghat
Research Topic: Two-dimensional velocity curves of Dwarf Galaxies in the Little Things Survey

Research Positions

Astronomy PhD Candidate
Supernovae Remnant Research, Department of Astronomy, The Ohio State University
Aug 2021-Present Advisor: Dr. Christopher S. Kochanek
Using Gaia, Bayesian Monte Carlo Markov Chain methods, and multifiber echelle spectroscopy, I use the age distribution of nearby stars to estimate the progenitor masses of Galactic supernova remnants and to measure their distances, respectively.
Aug 2024-Present Second Advisor: Dr. Laura A. Lopez
Analyzing the supernovae remnant N157B, 30 Doradus B, in the Large Magellanic Cloud using Chandra X-ray spectroscopy to understand the progenitor's nature

Undergraduate Research Assistant
June 2019-2021 **Astro-particle Research Group**, Department of Physics & Astronomy, UC Irvine
Advisor: Dr. Manoj Kaplinghat
Applying Bayesian Monte-Carlo Markov Chain methods to model rotation curves of Dwarf Galaxies

Publications

Lead-Author Publications

1. *On the Progenitor of the Crab Pulsar*
E. Cruz-Cruz & C.S. Kochanek
February 2025, published in MNRAS [doi:10.1093/mnras/staf333](https://doi.org/10.1093/mnras/staf333)
2. *The Progenitor of S147 Supernova Remnant*
E. Cruz-Cruz & C.S. Kochanek
March 2026, published in ApJ [doi:10.3847/1538-4357/ae42c2](https://doi.org/10.3847/1538-4357/ae42c2)

3. *Looking into the Progenitor of N157B Supernova Remnant with Chandra*
E. Cruz-Cruz, L.A. Lopez, J.A. Rodriguez, K. Auchettl, & T. Holland-Ashford
 2026, in prep.
4. *The Distance to the Cygnus Loop*
E. Cruz-Cruz & C.S. Kochanek
 2026, in prep.

Selected Fellowships & Awards

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| Aug 2026-July 2027 | Presidential Fellowship
The 2026 Presidential Fellowship Recipient
The most prestigious award given by the Graduate School at The Ohio State University “to recognize the outstanding scholarly accomplishments and potential of graduate students entering the final phase of their dissertation research.” |
| Sep 2023-Aug 2026 | NASA FINESST FI Research Grant
NASA Future Investigators in NASA Earth and Space Science and Technology (NASA FINESST) Research Grant Recipient
Awarded a three-year research grant; PI: Dr. Christopher S. Kochanek, FI: Elvira Cruz-Cruz, \$150,000 over three years (2023). |
| May 2023-2024 | University Engagement Grant
AstroLatinX, The Ohio State University, Department of Astronomy
A one year grant, \$13,000, to host Spanish Planetarium Shows at the Arne Slettebak Planetarium, for K-12 students to attend. |
| Aug 2021-2023 | Heising-Simons Bridge Fellowship
The Ohio State University, Department of Astronomy
A two-year fellowship for Underrepresented Minority groups in a graduate Ph.D. program |
| May 2021 | Outstanding Graduating Senior Service Award
Department of Physics & Astronomy, UC Irvine
Awarded to a graduating student whose service in leading outreach & DEI initiatives within the department has been exceptional. |

Research Talks & Posters

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| 29 June - 3 July 2026 | Contributed Talk at EAS 2026 Conference in Lausanne, Switzerland
Presenting preliminary research, “Looking into the Progenitor of Supernova Remnant N157B with Chandra” Cruz-Cruz et al. 2026 (in prep), during ”Supernovae and their remnants” session. |
| 18-22 May 2026 | Research Poster at IAU Symposium 406: Future Landscape of Astrophysical Transients in Turku, Finland
Presented preliminary research, “Looking into the Progenitor of Supernova Remnant N157B with Chandra” Cruz-Cruz et al. 2026 (in prep), at poster conference session. |

- 16 October 2025 **Invited speaker for the Guest Observer program of AXIS at AAS HEAD22 Conference in St. Louis, MO**
Presented talk, “Looking into Progenitors of Supernova Remnants with AXIS”
- 12-16 October 2025 **Research Poster at AAS HEAD22 Conference in St. Louis, MO**
Presented preliminary research, “Looking into the Progenitor of Supernova Remnant N157B with Chandra” Cruz-Cruz et al. 2026 (in prep), at poster conference session.
Graduate Research Talk, Undergraduate Seminar Series
- Nov 2023 The Ohio State University, Presented my research and career path, provided advice and held a *Q&A* session.
Poster Presentation at SACNAS NDiSTEM Conference
- Oct 2023 Presented my preliminary research, “On the Progenitor of the Crab Pulsar” Cruz-Cruz & Kochanek et al. 2025.
Astronomical Society’s Astronomy Graduate Research/Career Path Talk
- Feb 2023 The Ohio State University, Presented my research and career path, provided insight into what’s it’s like to be a graduate student and shared research advice

Mentoring & Teaching

Resonance Fellow

- Sept 2020 - **Resonance Peer Mentoring Program** at UC Irvine
June 2021 Mentoring 1st & 2nd year undergraduate students

Certified Learning Assistant

- 2020-2021 **Certified Learning Assistant Program (CLAP)** at UC Irvine
Physics 3B: Fluids; heat; electricity and magnetism 3 sections
2018-2020 **Physics 2:** Intro to Mathematical Methods for Physics 6 sections

Service Talks & Panels

- 19 November 2025 **Invited Speaker at Buckeyes First Student Organization Event**
Gave an academic talk on how to navigate college as a first-generation student to undergraduate students and shared academic advice.
- 4 November 2025 **Invited Speaker at Heritage Class (Fall Semester) at Ohio State**
Gave an academic talk and advice during two Heritage classes about the graduate student and research experience to undergraduate students.
- 8 October 2025 **Panelist for “Polaris: Science Identity”**
Shared undergraduate and graduate experiences that contributed to my science identity to undergraduates at Ohio State’s Polaris Mentorship program.
- 25 March 2025 **Invited Speaker at Heritage Class (Spring Semester) at Ohio State**
Gave a talk and advice during two Heritage classes about my academic journey and graduate experience to undergraduate students.
- 18 March 2025 **Panelist for “Latine Clubs & Organizations at Ohio State”**
Shared Latine opportunities and experiences at Ohio State with Spanish heritage students from Central Crossing High School during a panel hosted by the Department of Spanish & Portuguese and the Center for Latin American studies.
- Sept 2023 **Talk at Ohio Latino Affairs Summit at Kent State University**
Presented and lead session titled, “AstroLatinX: Nurturing Future Latino/Hispanic Scientists in Columbus, OH” along with AstroLatinX co-leaders.
- July 2023 **Astronomy Career Path Talk, Upward Bound Astronomy Institute**
The Ohio University, presented my research and career path

Outreach & Service

- 2022-2024 **Co-Founder and Co-Leader of AstroLatinX**
An astronomy PhD student led bilingual outreach organization at The Ohio State University; hosts English-Spanish Planetarium shows at the Arne Slettebak Planetarium.
Astro Cafe
- 2022-2024 **Spanish “Astro Coffee” at The Ohio State University**
Astronomy articles published are presented & discussed in Spanish to practice Spanish terminology for future bilingual outreach activities
Founder & Lead Organizer of EquiTEA
- 2021-2023 **A DEI Event Series** at The Ohio State University
Create spaces for Underrepresented Minority Groups & Genders in astronomy and physics to communicate, socialize, share advice, and build a supportive environment.
- 2020-2021 **APS-IDEA/Team-UP Member**
American Physical Society Inclusion, Diversity, Equity Alliance
at UC Irvine
Creating & designing new strategies via shared leadership to:
(1) Increase inclusion and equity Physics and Astronomy Department
(2) Increase retention rates of underrepresented minority students