

Melanie I. Santiago

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La Jolla, CA - 92092

EDUCATION

- **University of California San Diego** *Expected 2030*
Ph.D. Student in Astronomy & Astrophysics La Jolla, CA
Advisor: Prof. Floor Broekgaarden
- **Haverford College** *Aug. 2021 – May 2025*
Bachelor of Science in Physics and Astronomy, with High Honors in both Haverford, PA
Thesis: *Exploring the Formation of Low-Mass Compact Object Mergers via Type Ia SNe and Gravitational Waves*

RESEARCH EXPERIENCE

- **Flatiron Institute: Center for Computational Astrophysics** *May 2024 - May 2025*
Summer Intern/Guest Researcher New York, NY
 - Computationally analyzed the rates of binary white dwarf and binary neutron star mergers
 - Conducted analysis on stellar populations using a binary population synthesis code, called COMPAS
Advisor: Prof. Lieke van Son
- **Haverford College: Department of Physics & Astronomy** *Fall 2024 - Spring 2024*
Student Researcher Haverford, PA
 - Used python to simulate the evolution of Supermassive Black Hole Binaries (SMBHBs) to analyze the Gravitational Wave Background (GWB)
 - Synthesized my methods and results for future student researchers
Advisor: Prof. Andrea Lommen
- **Washington State University: Waves in Physics REU** *Summer 2023*
Student Researcher Pullman, WA
 - Prepared substances that exhibited nonlinear optical properties
 - Modeled the properties of substances using methods, such as ellipsometry and spectroscopy
Advisor: Prof. Mark Kuzyk

CONFERENCES/PRESENTATIONS

- **Poster:** 245th AAS Meeting (National Harbor, MD) *January 12-16, 2025*
Honorable Mention *Chambliss Astronomy Achievement Award*
- **Poster:** KNAC Research Symposium (Colgate, NY) *September 27-28, 2024*
- **Talk:** Simons-NSBP Closing Ceremony (New York, NY) *August 8, 2024*
- **Poster:** Summer@Simons Poster Presentation (New York, NY) *August 7, 2024*
- **Poster:** Summer Undergraduate Research Symposium (Pullman, WA) *August 4, 2024*

CO-AUTHORED PUBLICATIONS

Steissberg, E. Patterson, A., Beyers, C., **Santiago, M.**, et al. *Resonant Soft X-Ray Scattering Reveals Chromophore Domains in Polymer Doped with Disperse Orange 11 Dye*, 2025, Appl. Sci., 15, 12006. <https://doi.org/10.3390/app152212006>

LEADERSHIP EXPERIENCE

- **Co-Organizer: STRAND Seminar** *Fall 2025 - Present*
UC San Diego: Astronomy & Astrophysics Department
 - Gathers speaker information for STRAND (Simulations TheoRy AND more) meetings at UCSD
- **Co-Head: Strawbridge Public Observing Team** *Fall 2023 - Spring 2025*
Haverford College: Strawbridge Observatory
 - Planned demos, talks, and telescope observations at the Strawbridge Observatory with other students
 - Hosted events for the public community, as well as private events for groups such as scouts and elementary to high school classes
- **Teaching Assistant** *Fall 2023 - Fall 2024*
Haverford College
 - Teaching Assistant (TA) for Intro to Astrophysics. Held weekly student question hours to help with homework. Hosted telescope observing nights with other TAs for students to use the 12" telescope.
 - TA for Topics in Intro Programming: Physics and Astronomy. Helped with lab and robotics assignments by debugging code and answering questions related to programming and Python.
 - TA for Classical and Modern Physics I. Held weekly student question hours to assist with homework questions, laboratory questions, and preparatory exam questions.
- **Peer Academic Coach** *Spring 2024 - Spring 2025*
Haverford College
 - Met with students to assist with time management, project management, reading strategies, study strategies, and other methods that promote academic success

HONORS AND AWARDS

- **Astronomy & Astrophysics Achievement Award** *Fall 2025*
UC San Diego: Astronomy & Astrophysics Department
- **The Louis B. Green Prizes in Physics and Astronomy** *Spring 2025*
Haverford College: Physics & Astronomy Department
- **Honorable Mention: Chambliss Astronomy Achievement Student Award** *January 2025*
245th AAS Meeting
- **Simons - National Society of Black Physicist (NSBP) Scholar** *May 2024*
Simons Foundation, NSBP
 - Conducted summer research with the Flatiron Institute: Center for Computational Astrophysics under the Simons Foundation
 - Gave a talk at the end of the summer series on research done with advisor: Lieke van Son

SKILLS/CERTIFICATION

- **Programming Languages:** Python
- **Data Science & Machine Learning:** NVIDIA Deep Learning Certification
- **Specialized Area:** Binary Population Synthesis Analysis
- **Mathematical & Statistical Tools:** Mathematica
- **Research Skills:** Science Communication, Data Analysis

PROFESSIONAL MEMBERSHIPS

- **National Society of Black Physicists**, Membership ID: 70987475 *Fall 2022 - Present*

ADDITIONAL INFORMATION

Languages: Spanish (Advanced Intermediate)