

KAYLEE ELIZABETH GRACE

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EDUCATION

- 2022 – Present* University of Delaware, Newark, DE.
Ph.D. in Physics, expected in 2029.
Advisor: Dr. Judith Provencal
- 2018 – 2022* University of Connecticut (UConn), Storrs, CT.
B.S. in **Physics (Honors)** and B.A. in **Women’s Gender and Sexuality Studies** with Astrophysics minor.
Thesis: [Electromagnetic Detectability of Binary Supermassive Black Holes](#)
Advisors: Dr. Jonathan Trump and Megan Davis

WORK AND RESEARCH EXPERIENCE

- 2022 - Pres.* **Graduate Research Assistant**
University of Delaware with Dr. J. Provencal
- Utilizes observational data and modeling to investigate the asteroseismology of pulsating DB white dwarfs
- 2019 – 2022* **Undergraduate Research Assistant**
University of Connecticut with Dr. J. Trump
- Created simulations of the electromagnetic variability of supermassive black hole binaries, developed using python
- Summer 2021* **IceCube Research Experience for Undergrads (REU)**
University of Wisconsin at River Falls with Dr. S. Seunarine
- Ran simulations using GEANT4 to determine the maximum number of detectable photons lost due to air bubbles in the optical gel

TEACHING AND OUTREACH EXPERIENCE

- 2022 - Pres.* **Graduate Teaching Assistant**
University of Delaware
- PHYS 221 (4 semesters): Co-req lab for algebra-based mechanics
 - PHYS 133 (2 semesters): Co-req lab for Introduction to Astronomy

*2022 - Pres.***Educational Associate**

Mount Cuba Astronomical Observatory

- Lead Public and Children's Programs for audiences of 25
- Observe using SARA Consortium telescopes 40 nights a year

PUBLICATIONS

- [1] Davis, Megan C., **Grace, Kaylee E.** et al. "Reliable Identification of Binary Supermassive Black Holes from Rubin Observatory Time-Domain Monitoring". In: *ApJ* 965.1 (2024), p. 34.

MENTORING EXPERIENCE*2023 - Pres***Mount Cuba Scholars Mentor**

- Act as a mentor for a high school student, helping them think up, plan, and execute a research project over a school year

*2020 - 2022***Physics Department Peer Mentor**

- Acted as a mentor for early undergraduate Physics students
- Answered questions about departmental procedure, clubs, and college

TALKS AND POSTER PRESENTATIONS*April 2024*InnovatHER: Research Showcase, *What's Happening in There? Using Photometry and Asteroseismology to Model GD 358*, Flash Talk.*March 2024*Current Challenges in the Physics of White Dwarf Stars, *What's Happening in There? Using Photometry and Asteroseismology to Model GD 358*, Poster Presentation.*January 2024*American Astronomical Society, *What's Happening in There? Using Photometry to Investigate Asteroseismology of a DBV White Dwarf*, Poster Presentation.*November 2023*American Physical Society Mid-Atlantic Meeting, *What's Happening in There? Using Photometry to Investigate Asteroseismology of a DBV White Dwarf*, Poster Presentation.*April 2022*UConn Frontiers Undergraduate Research Poster Exhibition, *False Positive Binary Supermassive Black Hole Detection Rate for Vera Rubin Observatory*.*Jan. 2022*Conference for Undergraduate Women in Physics, *False Positive Binary Supermassive Black Hole Detection Rate for Vera Rubin Observatory*, Poster Presentation.

- Dec. 2021* University of Wisconsin - River Falls Undergraduate Research, Scholarly and Creative Activity Fall Gala, *Using GEANT₄ to Simulate Air Bubbles in mDOM Optical Gel*, Poster Presentation.
- Oct. 2021* Conference for Undergraduate Research, *Using GEANT₄ to Simulate Air Bubbles in mDOM Optical Gel*, Oral Presentation.

COMMITTEES

- 2020 – 2022* UConn Physics Diversity and Multiculturalism Committee
- Identify positive measures for developing and sustaining an inclusive and productive environment for all in the Physics Department
 - Formulate proposals to recommend to the Department Head for implementation

EXTRACURRICULAR ACTIVITIES

- 2023 – Pres* Physics and Astronomy Graduate Student Society
- 2023 – Pres* General Board Member