

# KAYLEE ELIZABETH GRACE

Department of Physics and Astronomy  
University of Delaware  
Newark, DE 19716  
USA

Pronouns: she/they  
E-mail: [kgrace@udel.edu](mailto:kgrace@udel.edu)  
Webpage: [kaygrace.github.io](http://kaygrace.github.io)  
ORCID iD: [0009-0001-6853-9470](https://orcid.org/0009-0001-6853-9470)

## 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