



The Boeing Company Scholar

Madison Hanrahan

Chesapeake, VA

Sponsor: CDR William B Hanrahan

College: University of Minnesota, Twin Cities

2024-2025: Sophomore

Major: Physics & Astrophysics

Academic & Extracurricular Highlights:

- UM Undergraduate Women in Physics and Astronomy Club
- UM Physics Peer Mentor Program
- UM Solar Vehicle Project
- Volunteer American Red Cross Club
- NASA Langley Research Center -Student Volunteer/Intern
- Volunteer: Morale Welfare and Recreation – Lifeguard, Dive Team Coach, Old Dominion University's Planetarium



It is an honor to be chosen as one of this year's recipients of a Wings Over America Scholarship. I am extremely grateful for the opportunities that this scholarship has provided me. I have just finished my first year of college at the University of Minnesota as an Astrophysics and Physics double major in the College of Science and Engineering. There, I am a part of UMN's Women in Physics and Astronomy student organization that focuses on supporting and providing opportunities for women in STEM. I am also a part of UMN's Solar Vehicle Project as a member of their mechanical and solar array teams. UMNSVP is a 100% student-led organization that works to design, manufacture, and race our own fully solar-powered car each year. Additionally, when I'm not at school, I work with scientists at NASA Langley Research Center on multiple projects in the fields of astrophysics, environmental science, and atmospheric and planetary sciences. One such project is a small satellite mission called Shadow Chaser. Shadow Chaser aims to observe stellar occultation events on Uranus and Neptune within the next decade in order to better characterize their upper and middle atmospheres to corroborate or disprove theories of internal heat sources similar to Earth's based on data collected from the Voyager II spacecraft flyby in the late 80's. The work that I have done for this mission has been published and presented at conferences in Chicago in 2022 and in Chiba, Japan in 2023. I am incredibly proud and lucky to be a part of such amazing organizations and projects, all of which would not have been possible without the help of this foundation. It is my hope that this foundation will help me make this world- and others- a better place.