Merle Schrader

Email ◇ GitHub ◇ ORCID ◇ Website

Education

Trinity College Dublin — Dublin, Ireland
PhD Candidate in Astrophysics — 2024 - present
Unravelling the atmospheric variability in time-series spectroscopy of substellar objects in Dr. Johanna Vos' *"Weather on other Worlds"* group

Trinity College Dublin — Dublin, Ireland
B.A., Physics with moderatorship in Astrophysics — 2020 - 2024
Graduated with First Class Honours (I)

Other Research Experience

Trinity College Dublin — Dublin, Ireland
Capstone Research Project — 2023 - 2024
"Clouds and Aurorae on Isolated Worlds"; supervised by Dr. Johanna Vos

Trinity College Dublin — Dublin, Ireland
Summer Research Project — Summer 2023
Broad-wavelength near-infrared transmission spectroscopy using JWST NIRSpec's PRISM Mode; supervised by Dr. Neale Gibson

TELUS International — Remote
Translator and Transcriber (English/German) — 2020 - 2022
Articulate complex ideas with precision

Karl-Schwarzschild-Observatorium, Thüringer Landessternwarte — Tautenburg, Germany
Student Internship — Summer 2018
Data reduction for CARMENES survey

Selected Grants & Awards

Trinity Research Doctorate Award - *Trinity College Dublin* — 2024

Walton Prize in Physics - *Trinity College Dublin* — 2021

Outreach & Teaching Experience

Invited Speaker, *Universität Bielefeld* — 2025
"Intro to Particle Physics" - talk at legal tech seminar

Teaching Assistant, *Trinity College Dublin* — 2024 - present
Courses: 2nd & 3rd year practical labs, 3rd year computational labs

Student 2 Student Mentoring, *Trinity College Dublin* — 2021 - 2022
Introducing physical sciences first years to the physics department at TCD

International Baccalaureate (IB) Tutor, *Freelance* — 2020 - 2023
Private Tutor for International Baccalaureate courses: Higher Level Physics & Higher Level Maths

Awarded Telescope Time

JWST Cycle 4: Program 8155 (43.3 hrs), Co-I — 2025

Significant Contribution Publications

1. **The JWST weather report: Unravelling the atmospheric variability of isolated worlds using Principal Component Analysis**
   Schrader, M.; Kestell, J.; Vos, J. M.; Nasedkin, E.; McCarthy, A. M.; Biller, B. A.; Whiteford, N.; Zhou, Y. *(in prep)* .
2. **The JWST weather report: Retrieving temperature variations, auroral heating, and static cloud coverage on SIMP-0136**
   Nasedkin, E.; **Schrader, M.**; Vos, J. M.; McCarthy, A.; Whiteford, N. *2025* .