

Matthew Whitaker

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RESEARCH INTERESTS

Binaries, Globular Clusters, Machine Learning

EDUCATION

University of Utah, Salt Lake City, Utah Ongoing
Bachelor of Science: Physics (Astrophysics)
Bachelor of Science: Data Science
Advisor: Prof. Anil C. Seth

ACADEMIC EXPERIENCE

Undergraduate Research Assistant University of Utah 2023 — Present

Astrophysics Intern Cosm/Evans & Sutherland 2023

Teaching Assistant University of Utah 2023

SELECTED COURSES

Bachelor's Courses

- ASTR 4070 - Extragalactic Astrophysics
- ASTR 4060 - Observational Astronomy
- ASTR 4090 - Stellar Astrophysics
- ASTR 3070 - Foundations of Astronomy
- CS 5350 - Machine Learning
- CS 5530 - Databases
- DS 3190 - Foundations of Analysis
- PHYS 3010 - Intermediate Mechanics

PUBLICATIONS

Co-Author Publications

Häberle, M., Neumayer, N., Seth, A. et al. (2024). "Fast-moving stars around an intermediate-mass black hole in ω Centauri." *Nature* **631**, 285-288. <https://doi.org/10.1038/s41586-024-07511-z>.

OBSERVING PROPOSALS

Successful Co-Investigator Proposals

Seth, A. C. et al. (2024). "Weighing the Intermediate Mass Black Hole in Omega Centauri" JWST GO 5137. 26.2 hours.

HONORS and AWARDS

Summer Undergraduate Research Fellowship 2024
University of Utah

Paul Gilbert Outstanding Undergraduate Research Award in Astronomy and Astrophysics 2024
University of Utah

OUTREACH AND PRESENTATIONS

Public Talks

- "Finding An Intermediate-Mass Black Hole in Omega Centauri" *Astro on Tap, SLC*. ~50 people March 2024
- "3C-273 and an Introduction to SDSS Quasars" *Cosm Experience Center*. ~50 people August 2023

Poster Sessions

- “Searching for Binary Systems in ω Centauri” University of Utah August 2024
- “New Evidence for an Intermediate-Mass Black Hole in ω Centauri” University of Utah March 2024

SKILLS

- **Programming:** Python, C++, SQL (including PostgreSQL), Web Development (HTML, JS, CSS, PHP), Android/iOS Mobile App Development (Java, Kotlin, Dart), R, Matlab, Maple
- **Machine Learning:** Kolmogorov-Arnold Networks, Multi-Layer Perceptron, Decision Trees/Forests, Ensemble Methods, Symbolic and Numeric Regression