

Katelyn J. Wagner

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EDUCATION

Rochester Institute of Technology

Anticipated 2025

Ph.D. Astrophysical Sciences and Technology

- GPA: 3.79/4.00

Rochester Institute of Technology

Summer 2022

M.S. Astrophysical Sciences and Technology

- “*Template Lattices for a Cross-Correlation Search for Gravitational Waves from Scorpius X-1*”
- GPA: 3.79/4.00

Roberts Wesleyan College

May 2020

B.S. Physics

- GPA: 3.81/4.00
- Magna Cum Laude, Global Honors

RESEARCH EXPERIENCE

Parameter Inference for Eccentric Black Hole Binaries

Rochester Institute of Technology

August 2022 - Current

Advisor: Dr. Richard O’Shaughnessy

Improved Lattice Template Placement for a Search for Continuous Gravitational Waves from Scorpius X-1

Rochester Institute of Technology

May 2019 - July 2022

Advisor: Dr. John Whelan

Simulations of Precession Damping for Viscoelastic Rotators

University of Rochester

May 2018 - January 2019

Advisor: Dr. Alice Quillen

PUBLICATIONS

Katelyn J Wagner. Template Lattices for a Cross- Correlation Search for Continuous Gravitational Waves from Scorpius X-1. Master’s thesis, Rochester Institute of Technology, 2022

Katelyn J Wagner, John T Whelan, Jared K Wofford, and Karl Wette. Template Lattices for a Cross-Correlation Search for Gravitational Waves from Scorpius X-1. *Classical and Quantum Gravity*, 2022

R. Abbott *et al.* (The LIGO-Virgo-KAGRA Collaboration). Model-based cross-correlation search for gravitational waves from the low-mass X-ray binary Scorpius X-1 in LIGO O3 data. *Astrophysical Journal Letters*, 09 2022

Alice C Quillen, **Katelyn J Wagner**, and Paul Sánchez. Simulations of wobble damping in viscoelastic rotators. *Monthly Notices of the Royal Astronomical Society*, 485(1):725–738, 02 2019

TALKS

RIT Master’s Thesis Defense - July 2022

Template Lattices for a Cross-Correlation Search for Gravitational Waves from Scorpius X-1

RIT AST Graduate Research Jamboree - October 2021

Template Lattices for a Cross-Correlation Search for Gravitational Waves from Scorpius X-1

14th Edoardo Amaldi Conference on Gravitational Waves - July 2021
Template Lattices for a Cross-Correlation Search for Gravitational Waves from Scorpius X-1

LIGO-Virgo-KAGRA Collaboration Meeting - March 2021
Template Lattices for a Cross-Correlation Search for Sco X-1

RIT AST Graduate Research Jamboree - October 2020
Improved Lattice and Coordinate Choices for a Search for Continuous Gravitational Waves from Sco X-1

LIGO-Virgo-KAGRA Collaboration Meeting - September 2020
Improved Lattice and Coordinate Choices for Cross-Correlation Search for Sco X-1

LIGO Continuous Wave Group Telecon - September 2020
Full O3 Scorpius X-1 CrossCorr Update

RIT Undergraduate Research Symposium - August 2019
Template Placement for a Search for Continuous Gravitational Waves

UR Summer Research Symposium - August 2018
Simulations of Precession Damping for a Homogeneous Viscoelastic Rotator

OUTREACH

Mentoring: Research project with sophomore Haylli Yunga - Ongoing
Ossining Science Research Program

Teaching: Curriculum development with Marko Ristić for high school astronomy program in summer 2023
Rochester Institute of Technology

Public: ImagineRIT ("Making Waves - Gravitational Waves!") Virtual Exhibit
Rochester Institute of Technology

Lecture: Big Data in Astronomy - January 2021
Cicero-North Syracuse High School AP Computer Science Class, Girls Who Code

Mentoring: Work-shopping code with students - Ongoing
Cicero-North Syracuse High School AP Computer Science Class

PROFESSIONAL DEVELOPMENT

Data Carpentry: Pilot Workshop for Astronomers - November 2020
Penn State Summer School in Statistics for Astronomers XVI - June 2021
Code/Astro - A Software Engineering Workshop for Astronomy - June 2021

HONORS AND AWARDS

Sigma Pi Sigma Honor Society (SPS)
Chi Alpha Sigma Honor Society
Benjamin Titus Roberts Full-tuition Grant - *Roberts Wesleyan College*
Ensemble Scholarship, Violin - *Roberts Wesleyan College*
Dean's List, High Honors - *Roberts Wesleyan College*

LEADERSHIP & SERVICE

Graduate Student Peer Mentor
RIT AST Program

Fall 2021 - Current

Provide advice, inside knowledge, encouragement, and moral support to fellow graduate students in the AST program to help them navigate their first year. I meet bimonthly with my students in an informal setting for the entirety of their first academic year. I have mentored two students per year, 3/4 being other women in the program.

C.E.K. Mees Observatory, Naples, NY
Student Tour Guide

Summer 2018

Present history of the observatory and general introductory astronomy information, as well operate

24-inch computerized Cassegrain telescope to show a variety of astronomical objects to the public tour.

Roberts Wesleyan College

President, *Society of Physics Students*

2018 Academic Year

Organizing preview day for prospective students, fundraising, planning activities

Women's Varsity Soccer Team

Roberts Wesleyan College

Fall 2016 - Spring 2020

NCAA Division II, starting defensive midfielder

**PROFESSIONAL
AFFILIATIONS**

LIGO Scientific Collaboration
Sigma Pi Sigma

**TEACHING
EXPERIENCE**

Roberts Wesleyan College Teaching Assistant

- AST 201: Descriptive Astronomy
- PHY 101 LAB: Mechanics
- PHY 102 LAB: Electricity
- PHY 115: Physics of Music

Tutoring (Certified CRLA Level 1)

- Introductory Physics sequence (I, II, and III), Calculus sequence (I, II, and III), Descriptive Astronomy, Statistics, Linear Algebra

**COMPUTER
SKILLS**

Computer Programming and Data Analysis:

- Python, Maple
- UNIX shell scripting (Bash)

Document Editing and Development Tools:

- \TeX (\LaTeX , \BibTeX)
- Git (GitHub, GitLab)
- Microsoft Office, Mac iWork Suite, Google Suite
- Data Analysis: Matplotlib, Pandas

Operating Systems:

- Linux-Debian (primary), Mac OS, Windows

Technical Skills:

- Trained to operate the 24-inch computerized Cassegrain telescope at the University of Rochester's C.E.K. Mees Observatory