

Katelyn J. Wagner

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EDUCATION

Rochester Institute of Technology
Ph.D. Astrophysical Sciences and Technology
• GPA: 3.79/4.00

Anticipated 2025

Rochester Institute of Technology
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

Summer 2022

Roberts Wesleyan College
B.S. Physics
• GPA: 3.81/4.00
• Magna Cum Laude, Global Honors

May 2020

RESEARCH EXPERIENCE

Parameter Inference for Eccentric Black Hole Binaries
Rochester Institute of Technology
Advisor: Dr. Richard O’Shaughnessy

August 2022 - Current

Improved Lattice Template Placement for a Search for Continuous Gravitational Waves from Scorpius X-1
Rochester Institute of Technology
Advisor: Dr. John Whelan

May 2019 - July 2022

Simulations of Precession Damping for Viscoelastic Rotators
University of Rochester
Advisor: Dr. Alice Quillen

May 2018 - January 2019

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

John T. Whelan, Rodrigo Tenorio, Jared K. Wofford, James A. Clark, Edward J. Daw, David Keitel, Alicia M. Sintes, **Katelyn J. Wagner**, Graham Woan, Thomas L. Killestein, and Danny Steeghs. Search for gravitational waves from scorpius x-1 in ligo o3 data with corrected orbital ephemeris, 2023

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 2021
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

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.

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.

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	<p>RIT Outstanding Graduate Woman Achievement Award - <i>Nominee</i></p> <p>Sigma Pi Sigma Honor Society (SPS)</p> <p>Chi Alpha Sigma Honor Society</p> <p>Benjamin Titus Roberts Full-tuition Grant - <i>Roberts Wesleyan College</i></p> <p>Ensemble Scholarship, Violin - <i>Roberts Wesleyan College</i></p> <p>Dean's List, High Honors - <i>Roberts Wesleyan College</i></p>
COMPUTER SKILLS	<p>Languages: Python (Numpy, Pandas, Matplotlib, Scipy, RIFT), Bash, git, HTCondor, L^AT_EX</p> <p>Operating Systems: Linux-Debian (primary), Mac OS, Windows</p> <p>Development Tools: Gitlab CI/CD, Jupyter</p> <p>Statistical Modeling: Time series analysis, Bayesian inference</p>
LEADERSHIP & SERVICE	<p>Graduate Student Peer Mentor</p> <p>RIT AST Program Fall 2021 - Current</p> <p>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.</p> <p>C.E.K. Mees Observatory, Naples, NY</p> <p>Student Tour Guide Summer 2018</p> <p>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.</p> <p>Roberts Wesleyan College</p> <p>President, <i>Society of Physics Students</i> 2018 Academic Year</p> <p>Organizing preview day for prospective students, fundraising, planning activities</p> <p>Women's Varsity Soccer Team</p> <p>Roberts Wesleyan College Fall 2016 - Spring 2020</p> <p>NCAA Division II, starting defensive midfielder</p>
PROFESSIONAL AFFILIATIONS	<p>LIGO Scientific Collaboration</p> <p>Sigma Pi Sigma</p>
TEACHING EXPERIENCE	<p>Roberts Wesleyan College Teaching Assistant</p> <ul style="list-style-type: none"> • AST 201: Descriptive Astronomy • PHY 101 LAB: Mechanics • PHY 102 LAB: Electricity • PHY 115: Physics of Music <p>Tutoring (Certified CRLA Level 1)</p> <ul style="list-style-type: none"> • Introductory Physics sequence (I, II, and III), Calculus sequence (I, II, and III), Descriptive Astronomy, Statistics, Linear Algebra