

# ROBERT ‘BOB’ CADDY

📍 100 Allen Hall, University of Pittsburgh, 3941 O’Hara St, Pittsburgh, PA 📞 (765)-586-8882

✉ r.caddy@pitt.edu 🖥 robertcaddy.com 🌐 github.com/bcaddy 📺 robertcaddy1 🆔 0000-0002-4475-3181

## EDUCATION

<b>University of Pittsburgh, PA</b> <i>Ph.D. Physics</i>	2018 - current
<b>Bowling Green State University, OH</b> <i>M.S. Physics</i>	2016 - 2018
<b>Purdue University, IN</b> <i>B.S. Honors Physics Major, Astronomy Minor</i>	2012 - 2016

## TECHNICAL & PROFESSIONAL SKILLS

<b>Programming Languages:</b>	C++, Python, Fortran, Bash
<b>Packages &amp; APIs:</b>	MPI, CUDA, HIP, OpenMP, OpenACC, Numpy, Pandas, Scipy, Matplotlib, Astropy
<b>Software Tools:</b>	GoogleTest, git, Clang Tools, Make, HDF5, HSI, Slurm, Doxygen, Docker, L <sup>A</sup> T <sub>E</sub> X
<b>Hardware:</b>	Optics, Digital holography, Electronics
<b>Communication Skills:</b>	7+ years of experience as a teaching assistant

## EXPERIENCE

<b>Graduate Research Assistant</b> <i>University of Pittsburgh, Pittsburgh, PA</i>	2018 - Present
<ul style="list-style-type: none"><li>– Expand Cholla, a massively parallel GPU-accelerated code for simulating astrophysical fluid dynamics to include magnetic fields (magnetohydrodynamics).</li><li>– Collaborate with the Frontier Center for Accelerated Application Readiness (CAAR) program to optimize Cholla to run on exascale supercomputers such as Frontier.</li><li>– Develop and implement a robust testing framework for Cholla utilizing GoogleTest with custom extensions.</li></ul>	
<b>Graduate Research Assistant</b> <i>Bowling Green State University, Bowling Green, OH</i>	2016 - 2018
<ul style="list-style-type: none"><li>– Conducted <a href="#">original thesis research</a> into the properties of symbiotic star V1835 Aql with Professor Andrew Layden as advisor.</li><li>– Determined the general properties and causes of variability of a symbiotic star system through image and data analysis in Python.</li></ul>	
<b>Undergraduate Research Assistant</b> <i>Purdue University, West Lafayette, IN</i>	2015 - 2016
<ul style="list-style-type: none"><li>– Built an experimental optics system to observe the effect of various chemotherapy drugs on cancer tumors.</li><li>– Reduced experimental data analysis and archiving time from ~10 hours to ~30 minutes.</li></ul>	
<b>President, Purdue Society of Physics Students (SPS)</b> <i>Purdue University, West Lafayette, IN</i>	2015 - 2016
<ul style="list-style-type: none"><li>– Tripled the number of active members and increased profits of the club store by ~5x.</li><li>– Coordinated biweekly events and activities such as designing and constructing a weather balloon payload with SPS National funding, inviting guest speakers for special colloquia, and visiting Argonne National Lab.</li></ul>	

## PUBLICATIONS

- *Optical Time-series Photometry of the Symbiotic Nova V1835 Aquilae*  
Caddy et al. 2022. Publications of the Astronomical Society of the Pacific, Volume 134, Number 1039  
DOI: [10.1088/1538-3873/ac8f6f](https://doi.org/10.1088/1538-3873/ac8f6f), arXiv:[2209.11251](https://arxiv.org/abs/2209.11251)

## CONTINUING EDUCATION

---

- **Argonne Training Program for Extreme Scale Computing (ATPESC)** 2022
- **International High Performance Computing Summer School (IHPCSS)** 2022, Second place in the programming challenge

## HONORS & AWARDS

---

- **Learning Beyond the Classroom Certificate**, Purdue University, 2016.
  - Required work experience, volunteer time, career training, and one significant activity – bicycling across the U.S. with Bike & Build to raise money and awareness for affordable housing.
- **Presidential Scholarship**, Purdue University, 2012.
- **Ascarelli Fellow**, Purdue University Department of Physics and Astronomy, 2012.
- **Eagle Scout**, 2012.