

Carolyn G. Volpert

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Or online at <https://particlerover.github.io/>

EDUCATION

University of Chicago, Chicago, IL

Bachelor of Arts in Physics, Specialization in Astrophysics, September 2013 - June 2017

AWARDS AND HONORS

<i>Deans List</i>	2015-2016	<i>Astrophysics Dept Student Fellowship</i>	2016-2017
<i>Metcalf Internship</i>	2016	<i>Astronomy and Astrophysics Undergraduate</i>	
<i>Bridge Builder Award Nominee</i>	2016	<i>Committee Student Representative</i>	2016-2017

COURSEWORK OF INTEREST

Math Methods for Physics I, II	Statistical/Thermal Mechanics
Intermediate Mechanics	Spacetime and Black Holes
Intermediate E&M I, II	Galaxies and the Universe
Quantum Mechanics I, II	Molecularly Engineered Materials
Experimental Physics I, II, III	Current Topics in Astrophysics
Participation in Research	Electronics
Physics of the Earth	Senior Thesis Project Lab
Stars and Stellar Systems	

RESEARCH EXPERIENCE

University of Chicago Dept. of Astrophysics, Chicago, IL

Researcher on NASA's High-resolution Airborne Wideband Camera and Polarimeter (HAWC+)

January 2015 - Present

- **Contributed to the creation and fine-tuning** of the data pipeline used to process data from the HAWC+ detector on NASA's project SOFIA.
- **Contributed to the instrumental characterization and calibration** of a first generation scientific detector.
- **Assisted in problem-shooting** instrumental design flaws and sources of data error.
- **Flew with the instrument** in California on NASA aircraft SOFIA during data-taking flights, operating and debugging data pipeline in real time.
- Began part-time research as a student and **was hired as full-time research staff** upon graduating in 2017

Yerkes Observatory, Williams Bay, WI

Research Assistant

June 2015 - September 2015, June 2016 - September 2016

- **Designed and wrote operation manual** for optical periscope apparatus.
- **Repaired and reinstated** old CCDs into operational research apparatuses.
- **Analyzed data** from previous HAWC test flights.

Eastern University Observatory, Radnor, PA

Student Research Assistant

September 2012 - March 2013

- **Designed and produced** models for light curve analysis of previously unstudied binary star systems.
- **Assisted in the processing and publication** of the data, listed as the third author.

PUBLICATIONS AND REPORTS

- Co-author with D. Bradstreet and S. Sanders, Jan 2013, *Light Curves and Analyses of the Eclipsing Overcontact Binaries V546 And & V566 And & the Discovery of a New Variable Star*, Released by the American Astronomical Society
- D.T. Chuss, J. Michail, B-G Andersson, J. Bally, C. D. Dowell, D. A. Harper, C. G. Volpert, A. Lazarian, G. Novak, J Vaillancourt, et al., Jan 2018, *HAWC+/SOFIA Polarimetric Observations of OMC-1*, American Astronomical Society

- Currently at work as a contributor to the most recent HAWC+ report and instrumental papers, to be published in spring 2018

PROJECTS

High-resolution Airborne Wideband Camera (HAWC), a detector on NASA's airborne observatory SOFIA – Worked as one of a small number of undergraduates with senior scientists and engineers from NASA and other academic institutions to design and operate a first generation detector built for far-infrared polarimetry.

The Yerkes Astrophysics Workshop Initiative, a series of hands-on workshops for undergraduate STEM students – founded, organized, coordinated, and wrote the curriculum for a quarterly series of workshops meant to expose STEM undergraduate students to hands-on astrophysical research and experimentation. Funded by the University of Chicago and hosted at the Yerkes Observatory, with three weekend workshops each year.

SKILLS

Python, Matlab, LaTeX, Various CAD Programs, Data Pipeline Design, Digital Signal Processing, CCD Operation, Telescope, Optics and Detector Hardware Operation and Design, Microsoft Office, Data Algorithms

LEADERSHIP

Ryerson Astronomical Society (RAS) former Co-President, former VP, former Secretary
Kitchen Sink Student and Community Arts organization, Co-Founder
Yerkes Astrophysics Student Workshops Co-Founder, Director

REFERENCES

Doyal "Al" Harper

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