

# Charlotte M. Wood | CV

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## Education

### University of Notre Dame

*Ph.D. Physics*

Echoes of Silence: Probing Type Ia Supernova Environments with Scattered Light Echoes

Advisor: Dr. Peter Garnavich

Notre Dame, IN

2020-present

### Hofstra University

*B.S. Physics, Minor in Astronomy*

Magna Cum Laude, High Departmental Honors, Honors College Graduate with Distinction

Advisor: Dr. Stephen S. Lawrence

Hempstead, NY

2012-2016

## Publications

- **Benchmarking Substellar Evolutionary Models Using New Age Estimates for HD 4747 B and HD 19467 B**; C. M. Wood, T. Boyajian, K. von Braun, J. M. Brewer, J. R. Crepp, G. Schaefer, A. Adams, & T. R. White; *The Astrophysical Journal*, 873, 83 (doi:10.3847/1538-4357/aafe01)
- **The TRENDS High-Contrast Imaging Survey. VIII. Compendium of Benchmark Objects**; E. J. Gonzales, J. R. Crepp, E. B. Bechter, C. M. Wood, J. A. Johnson, B. T. Montet, H. Isaacson, & A. W. Howard; *The Astrophysical Journal*, 893, 27 (doi: 10.3847/1538-4357/ab71fb)
- **High-Time-Resolution Photometry of AR Scorpii: Confirmation of the White Dwarf's Spin-Down**, R. A. Stiller, C. Littlefield, P. Garnavich, C. M. Wood, F.-J. Hambsch, & G. Myers; *The Astronomical Journal*, 156, 150 (doi:10.3847/1538-3881/aad5dd)

## Talks and Presentations

- **"The Evolution of the Light Echo Around Type Ia Supernova 1998bu"**
  - Poster, 235th Meeting of the American Astronomical Society, Honolulu, HI, Jan. 2020
- **"The Slowly Fading Light Echo Around Type Ia Supernova 2009ig"**
  - Poster, Graduate Physics Society Annual Conference, University of Notre Dame, Nov. 2019
  - Poster, Midwest Workshop on Supernovae & Transients, Ohio State University, Sep. 2019
  - Talk, Graduate Physics Society Annual Conference, University of Notre Dame, Apr. 2019
  - Seminar, University of Notre Dame, Mar. 2019
  - Talk, Midwest Workshop on Supernovae & Transients, University of Chicago, Feb. 2019
  - Poster, 233rd Meeting of the American Astronomical Society, Seattle, WA, Jan. 2019
- **"Benchmarking Substellar Evolutionary Models Using New Age Estimates for HD 4747 B and HD 19467 B"**
  - Talk, College of Science and Engineering Joint Annual Meeting, University of Notre Dame, Dec. 2018
  - Poster, AWIS Women in Science Regional Conference, University of Notre Dame, Oct. 2018
- **"Precise Ages for the Benchmark Brown Dwarfs HD 19467 B and HD 4747 B"**
  - Poster, 231st Meeting of the American Astronomical Society, Washington D.C., January 2018
- **"The Origin of Metals in Extremely Low Mass White Dwarfs"**
  - Poster, Undergraduate Research Day, Hofstra University, Dec. 2015

## Other Research Experience

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### Observing Runs at the W. M. Keck Observatory

Waimea, HI

University of Notre Dame

June 2019, June 2020

Remote observing from the W. M. Keck Observatory Headquarters and the University of Notre Dame. Total of two 1/2 nights using NIRSPEC.

### Observing Runs at the Large Binocular Telescope

Tucson, AZ

University of Notre Dame

Oct. 2018, Mar./Oct./Dec. 2019

Remote observing from the University of Arizona for projects submitted by OSURC member institutions. Total of 20 nights using LBC & MODS.

### The Origin of Metals in Extremely Low Mass White Dwarfs

Norman, OK

University of Oklahoma

Summer 2015

Research Experience for Undergraduates – Advisor: Dr. Mukremin Kilic

Looked for evidence of debris disks around extremely low mass white dwarfs as a source of calcium excess.

### Observing Run at Cerro Tololo Interamerican Observatory

La Serena, Chile

Hofstra University

Oct./Nov. 2014

Advisor: Dr. Stephen S. Lawrence

Traditional observing with the 0.8m SMARTS telescope at CTIO. Total of 3 nights.

### Study of the Recurrent Nova T Pyxidis

Hempstead, NY

Hofstra University

2014-2015

Advisor: Dr. Stephen S. Lawrence

Analyzed data from the Hubble Space Telescope to measure expansion of "knots" around T Pyxidis.

## Awards

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### Sigma Xi Grant in Aid of Research

University of Notre Dame

Fall 2019

Grant from Sigma Xi to pay for travel expenses to and from a research site, or for purchase of non-standard laboratory equipment necessary to complete a specific research project.

### Graduate School Professional Development Award

University of Notre Dame

Spring 2019

Grant from the ND College of Science to support research-related travel, excluding presenting at conferences.

### Arthur J. Schmitt Leadership Fellowship

University of Notre Dame

Spring 2016

This fellowship is awarded to the top 15 students in the ND Colleges of Science and Engineering each year.

### Harold E. Clearman Memorial Award

Hofstra University

Spring 2015

This scholarship is awarded to a student majoring in Physics who has achieved meritorious performance in coursework along with an outstanding individual research project.

## Teaching Experience

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### Physics Teaching Practicum

Notre Dame, IN

University of Notre Dame

Fall 2018 - Spring 2020

Covered four lectures under observation of another instructor and created a teaching portfolio. Classes: Introduction to Astrophysics (3; undergraduate), Physics of Astrophysics (1; undergraduate/graduate)

### Teaching Assistant for Descriptive Astronomy

Notre Dame, IN

University of Notre Dame

Fall 2016, Fall 2017-present

Responsibilities include running the observatory, organizing help sessions, helping proctor exams, helping rewrite observing projects, and grading for the non-science majors introductory astronomy class. Lead TA from Fall 2017-Spring 2019.

- Teaching Assistant for Modern Observational Techniques** **Notre Dame, IN**  
*University of Notre Dame* *Fall 2019*  
 Responsibilities include creating answer keys and grading homework assignments for the graduate student methods class.
- Teaching Assistant for Physics of Astrophysics** **Notre Dame, IN**  
*University of Notre Dame* *Fall 2018*  
 Responsibilities include grading and assisting with homework assignments and running an observing session for the introductory graduate student astrophysics class.
- Teaching Assistant for Lasers and Modern Optics** **Notre Dame, IN**  
*University of Notre Dame* *Spring 2017*  
 Responsibilities include setting up and testing labs, grading lab reports, and proctoring an exam for the junior/senior undergraduate optics class/lab.
- Physics Tutor** **Hempstead, NY**  
*Hofstra University* *September 2014-December 2015*  
 Tutored non-physics majors for both calculus and non-calculus based introductory physics courses.
- Peer Teacher for ASTR 011 – The Solar System** **Hempstead, NY**  
*Hofstra University* *Spring 2015*  
 Assisted Dr. Stephen S. Lawrence in conducting lab activities for an introductory astronomy class.

## Skills

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**Computer Languages/Programs:** Python, IRAF/PyRAF, L<sup>A</sup>T<sub>E</sub>X, Mathematica, MATLAB, IDL, Git.  
**Spoken Languages:** English (native), Spanish (limited working proficiency), Italian (elementary).

## Activities & Outreach

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- Graduate Physics Society Executive Board** **Notre Dame, IN**  
*University of Notre Dame* *Summer 2018 - Spring 2020*  
 Serving as the astronomy group representative on the executive board for the physics graduate student organization. E-board acts as a bridge between the graduate students and the department and helps organize all GPS events.
- Association for Women in Science Physics Department Representative** **Notre Dame, IN**  
*University of Notre Dame* *Fall 2019 - Spring 2020*  
 Department representatives act as a liaison between AWIS and their respective departments and help organize & promote professional development events that support women in science.
- Faculty Observing Night** **Notre Dame, IN**  
*University of Notre Dame* *March 2020*  
 Set up telescopes and answered questions during a night of public observing with faculty and their families.
- Our Universe Revealed** **Notre Dame, IN**  
*University of Notre Dame* *December 2019*  
 Set up demonstrations for a public lecture on the extremes of the solar system.
- Mercury Transit Event** **Notre Dame, IN**  
*University of Notre Dame* *November 2019*  
 Helped coordinate an event on campus for Notre Dame students to observe the Mercury transit.
- Apollo 11 50th Anniversary Celebration** **Mishawaka, IN**  
*Bittersweet Elementary School* *July 2019*  
 Set up interactive demos and ran telescopes for solar observing as part of an event celebrating the 50th anniversary of the Moon landing.
- JINA-CEE Art-2-Science Camp** **Notre Dame, IN**  
*University of Notre Dame* *July 2019*

Guided elementary & middle school students through craft activities to teach them about sound.

**Science Alive**

*University of Notre Dame*

**Notre Dame, IN**

*February 2019*

Helped with interactive demonstrations that teach physics & astronomy to children in the local community.

**Summertime Stargazing**

*University of Notre Dame*

**Notre Dame, IN**

*July/August 2018*

Assisted with two large public observing events, set up telescopes and helped answer questions.

**Observing for Physics of Atomic Nuclei Students**

*University of Notre Dame*

**Notre Dame, IN**

*June 2018*

Held an observing night for high school students attending the JINA-CEE Physics of Atomic Nuclei camp.

**Expanding Your Horizons**

*University of Notre Dame*

**Notre Dame, IN**

*April 2018*

Ran a workshop to teach middle school girls about exoplanets and helped them craft their own paper-mache exoplanets.

## Professional Organizations

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- o **Sigma Xi**

Sigma Xi, The Scientific Research Honor Society, is the international honor society of science and engineering.

- o **Association for Women in Science**

AWIS is dedicated to driving excellence in STEM by achieving equity and full participation of women in all disciplines and across all employment sectors.

- o **American Astronomical Society**

AAS is the major organization of professional astronomers in North America. Their mission is to enhance and share humanity's scientific understanding of the universe.

- o **Phi Beta Kappa**

ΦBK aims to promote and advocate excellence in the liberal arts and sciences and to induct the most outstanding students of arts and sciences at American colleges and universities.

- o **Sigma Pi Sigma**

ΣΠΣ exists to honor outstanding scholarship in physics and to provide a fellowship of persons who have excelled in physics.

## References

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- o **Dr. Peter Garnavich**

Professor of Physics, Department Chair  
University of Notre Dame  
Notre Dame, IN

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- o **Dr. Stephen S. Lawrence**

Professor of Physics and Astronomy  
Hofstra University  
Hempstead, NY

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Phone: (516) 463-5584  
E-mail: stephen.s.lawrence@hofstra.edu

- o **Dr. Mukremin Kilic**

Assistant Professor of Physics and Astronomy  
University of Oklahoma  
Norman, OK

- o Contact info:

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