

Charlotte M. Wood | CV

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Education

University of Notre Dame

Ph.D. Physics

Notre Dame, IN

expected May 2022

“Connecting the Variations in Type Ia Supernovae to the Hubble Constant Tension”

Advisor: Dr. Peter Garnavich

Hofstra University

B.S. Physics, Minor in Astronomy

Hempstead, NY

May 2016

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

Advisor: Dr. Stephen S. Lawrence

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; arXiv:1901.03687)
- *Infrared Surface Brightness Fluctuation Distances for MASSIVE and Ia Supernova Host Galaxies*
J. B. Jensen, J. P. Blakeslee, C.-P. Ma, P. A. Milne, P. J. Brown, M. Cantiello, P. M. Garnavich, J. E. Greene, J. R. Lucey, A. Phan, R. B. Tully, & C. M. Wood; *The Astrophysical Journal Supplement Series*, 255, 21 (doi:10.3847/1538-4365/ac01e7; arXiv:2105.08299)
- *Rapid Variability in the Wind from the White Dwarf Merger Candidate J005311*
P. Garnavich, C. Littlefield, R. Pogge, & C. M. Wood; *Research Notes of the American Astronomical Society*, 4, 167 (doi:10.3847/2515-5172/abbb8b; arXiv:2009.12380)
- *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; arXiv:2010.11866)
- *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; arXiv:1802.04323)

Invited Talks

- **Echoes of Silence: Probing Type Ia Supernova Environments with Scattered Light Echoes**
Seminar, Michiana Astronomical Society, Apr. 2021
Colloquium, Utah Valley University, Mar. 2021
Colloquium, University of Louisville, Feb. 2021
Seminar, University of Notre Dame, Oct. 2020
- **The Slowly Fading Light Echo Around Type Ia Supernova 2009ig**
Seminar, University of Notre Dame, Mar. 2019
- **Navigating Graduate School**
Seminar, Hofstra University, Mar. 2019

Conference Presentations

- **Rapid Variability in the Wind from the White Dwarf Merger Candidate J005311**
iPoster, 237th Meeting of the American Astronomical Society, Virtual, Jan. 2021
- **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
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

- 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 one 1/2 night on DEIMOS & one 1/2 night on LRIS.
- Observing Runs at the Large Binocular Telescope** **Tucson, AZ**
University of Notre Dame *Oct. 2018 - Apr. 2021*
Remote observing from the University of Arizona for projects submitted by OSURC member institutions. Total of 35 nights using LBC, MODS, & LUCI.
- 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

- Sigma Xi Grant in Aid of Research** **Fall 2019**
University of Notre Dame
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

Physics Research Writing Consultant

University of Notre Dame

Notre Dame, IN

Fall 2020 - present

Trained by the University Writing Center in general writing pedagogy principles to work as a writing consultant specifically for members of the Physics Department (students, post-docs, professors, etc.).

Instructor - Scientific Writing for the REU

University of Notre Dame

Notre Dame, IN

Summer 2021

Designed & ran a shortened version of the Scientific Writing for Physicists course. Introduced the REU students to more planning & drafting tools, as well as talked to them about how to write a good scientific paper and how to make effective figures & tables.

Physics Teaching Practicum

University of Notre Dame

Notre Dame, IN

Fall 2018 - present

Covered seven lectures (five complete, two upcoming) under observation of another instructor and created a teaching portfolio. Classes: Introduction to Astrophysics (3; undergraduate), Physics of Astrophysics (1; undergraduate/graduate), Scientific Writing (1; graduate), Descriptive Astronomy (1; undergraduate, upcoming), Modern Observational Techniques (undergraduate/graduate, upcoming)

Teaching Assistant for Descriptive Astronomy

University of Notre Dame

Notre Dame, IN

Fall 2016, Fall 2017-Fall 2020

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 and for Fall 2020.

Teaching Assistant for Modern Observational Techniques

University of Notre Dame

Notre Dame, IN

Fall 2019, 2021

Responsibilities include creating answer keys and grading homework assignments for the graduate student methods class.

Teaching Assistant for Physics of Astrophysics

University of Notre Dame

Notre Dame, IN

Fall 2018, 2020, 2021

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

University of Notre Dame

Notre Dame, IN

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

Hofstra University

Hempstead, NY

Fall 2014 - Fall 2015

Tutored non-physics majors for both calculus and non-calculus based introductory physics courses.

Peer Teacher for ASTR 011 – The Solar System

Hofstra University

Hempstead, NY

Spring 2015

Assisted Dr. Stephen S. Lawrence in conducting lab activities for an introductory astronomy class.

Skills

Computer Languages/Programs: Python, IRAF/PyRAF, \LaTeX , Mathematica, MATLAB, IDL, Git.

Spoken Languages: English (native), Spanish (limited working proficiency), Italian (elementary).

Activities & Outreach

Writing Tutor for the Warrior-Scholar Project

Notre Dame, IN

University of Notre Dame

July 2021

Helped the scholars navigate and adjust to reading & writing in a university environment. Provided guidance on written work and answered questions about the given prompt.

Graduate Physics Society Public Relations Chair

Notre Dame, IN

University of Notre Dame

Fall 2020 - Spring 2021

Serving as the chair of the PR committee for the physics graduate student organization. Responsibilities include circulating a newsletter with upcoming events & news and maintaining social media accounts & the website.

Graduate Physics Society Executive Board

Notre Dame, IN

University of Notre Dame

Summer 2018 - Spring 2020

Served 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 liason between AWIS and their respective departments and help organize & promote professional development events that support women in science.

Mid-Autumn Festival Celebration

Notre Dame, IN

University of Notre Dame

October 2020

Gave a presentation about the Moon and planned to observe the Moon remotely (observing was clouded out) as part of a celebration of the Mid-Autumn Festival with the Chinese Culture Society.

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

Notre Dame, IN

University of Notre Dame

February 2019

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

Summertime Stargazing

University of Notre Dame

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

Notre Dame, IN

July/August 2018

Observing for Physics of Atomic Nuclei Students

University of Notre Dame

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

Notre Dame, IN

June 2018

Expanding Your Horizons

University of Notre Dame

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

Notre Dame, IN

April 2018

Professional Organizations

- **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.

- **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.

- **Sigma Xi**

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

- **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.

- **Sigma Pi Sigma**

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

References

- **Dr. Peter Garnavich**

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

- **Dr. Stephen S. Lawrence**

Professor of Physics and Astronomy
Hofstra University
Hempstead, NY

- **Dr. J. Christopher Howk**

Professor of Physics
University of Notre Dame
Notre Dame, IN

- **Dr. Joseph B. Jensen**

Professor of Physics, Department Chair
Utah Valley University
Orem, UT

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- **Dr. Mukremin Kilic**
Associate Professor of Physics and Astronomy
University of Oklahoma
Norman, OK

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