Brandon Radzom

PhD Candidate · Astronomy

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Education

Indiana University (IU) - Bloomington *Bloomington, IN 47405-7000*

Ph.D. Astronomy *Aug. 2020 - May 2026*

- Thesis: *Observational and Computational Constraints on the Origins of Short-period Gaseous Giants*
- Advisor: Prof. Songhu Wang

M.A. Astronomy *Aug. 2020 - May 2023*

- Minor: Scientific Computing

University of Wisconsin (UW) - Madison *Madison, WI 53706-1507*

B.S. Astronomy-Physics, B.S. Physics *Sept. 2016 - May 2020*

- Minor: Computer Science
- Thesis: *Characterizing AGN Activity in the SSA22 Field*
- Advisor: Prof. Amy Barger

Awards, Fellowships, & Grants

2024	**Frank and Margaret Edmondson Prize for Teaching**, IU-Bloomington	*$500*
2023	**Goethe Link Prize for Outreach and Public Education in Astronomy**, IU-Bloomington	*$500*
2022	**College of Arts and Sciences Travel Award**, IU-Bloomington	*$200*
2020	**Thesis of Distinction**, UW-Madison College of Letters & Science	
	Lowell Doherty Award for Excellence in Astronomy, Dept. of Astronomy, UW-Madison	*$500*
	Member of the Dean's List, College of Letters & Science, UW-Madison	
2019	**Member of the Dean's List**, College of Letters & Science, UW-Madison	
	Liebenberg Family Undergraduate Research Scholarship, UW-Madison	*$ 2,000*
	David H. Durra Scholarship, UW-Madison	*$ 3,000*
2018	**John Karl Scholz Sophomore General Scholarship**, UW-Madison	*$ 500*
2017	**Member of the Dean's List**, College of Letters & Science, UW-Madison	
2016	**Memorial Scholarship**, Anoka High School	*$ 500*

Software Skills

- Programming languages: Python, MATLAB, C++, Java, LabView
- Operating systems: Windows, Linux
- Python packages: `jupyterlab, spyder, allesfitter, exoplanet, pymc, rebound, lightkurve`
- Other: git & GitHub, Linux shell, VS Code, HTML, LaTeX, Maple, Mathematica, Windows Office Suite

Publications

Refereed

Brandon T. Radzom, Jiayin Dong, Malena Rice, Xian-Yu Wang, Kyle Hixenbaugh, George Zhou, Chelsea X. Huang, Songhu Wang 2025. *Evidence for Primordial Alignment II: Insights from Stellar Obliquity Measurements for Hot Jupiters in Compact Multi-planet Systems*, accepted to AJ (doi: 10.3847/1538-3881/ad9dd5)

R. Kent Honeycutt, Jeff Robertson, **Brandon T. Radzom** 2025. *Stunted Outbursts in Nova-like CVs*, accepted to ApJS

Cassandra Seltzer, Rudi Lien, **Brandon T. Radzom**, et al. 2025.*THUNDER: A Titan orbiter mission concept for the New Frontiers program*, PSJ 6 45

Brandon T. Radzom, Songhu Wang, Bonan Pu, and Malena Rice 2025. *Post-disk Evolution of Short-Period Gas Giants in Compact Multi-planet Systems: A Mechanism to Produce the Observed Companionship Dichotomy*, submitted to ApJ

Brandon T. Radzom, Jiayin Dong, Malena Rice, Xian-Yu Wang, Samuel W. Yee, Tyler R. Fairnington, Cristobal Petrovich, Songhu Wang 2024. *Evidence for Primordial Alignment: Insights from Stellar Obliquity Measurements for Compact Sub-Saturn Systems*, AJ, 168 116

Jack Lubin, Xian-Yu Wang, Malena Rice, Jiayin Dong, Songhu Wang, **Brandon T. Radzom**, et al. 2023. *TOI-1670 c, a 40 day Orbital Period Warm Jupiter in a Compact System, Is Well Aligned*, ApJL, 959 L5

Brandon T. Radzom, Anthony J. Taylor, Amy J. Barger, Lennox L. Cowie 2022. *X-ray Sources in the Chandra Field SSA22*, ApJ, 940 114

Xian-Yu Wang, Malena Rice, Songhu Wang, Bonan Pu, Gudmundur Stefánsson, Suvrath Mahadevan, **Brandon T. Radzom**, et al. 2022. *The Aligned Orbit of WASP-148 b, the Only Known Hot Jupiter with a Nearby Warm Jupiter Companion, from NEID and HIRES*, ApJL, 926 L8

Non-Refereed

W. Garrett Levine, **Brandon T. Radzom** et al. 2025. *Emerging Researchers in Exoplanetary Science (ERES) Symposium: Developing Community-Driven Mission & Vision Statements*, to be submitted to BAAS

Brandon T. Radzom 2020. *Characterizing AGN Activity in the SSA22 Field*, UW-Madison Dept. of Astronomy Senior Thesis

Presentations

Talks

Public Talk. *Exoplanets in the Media: Fact or Fantasy?* Astronomy on Tap, Bloomington, IN, September 2024.

Contributed Talk. *Evidence for Primordial Alignment: Insights from Stellar Obliquity Measurements for Compact Giant Systems.* ERES IX, Cornell University, July 2024.

Public Talk. *Astronomy in the News: NASA's DART Mission.* Astronomy on Tap, Bloomington, IN, March 2024.

Seminar Talk. *NASA PSSS: A Lightning-Fast Lesson in Mission Design and the THUNDER That Follows*. Astronomy Seminar, IU, January 2024.

Contributed Talk. *Post-formation Dynamics: A Mechanism to Explain the Companionship Properties of Hot and Warm Jupiters*. Great Lakes Exoplanet Area Meeting (GLEAM), IU, October 2023.

Invited Talk. *Measuring Stellar Obliquities To Constrain the Origins of Exoplanets*. Virtual WIYN Board Meeting, October 2023.

Contributed Talk. *Post-disk Dynamical Evolution: A Mechanism to Explain the Companionship Dichotomy Between Hot Jupiters and Warm Jupiters*. Division on Dynamical Astronomy Meeting #54, Michigan State University, May 2023.

Contributed Talk. *In Situ Origins of Hot Jupiter Isolation*. GLEAM 2022, The Ohio State University, November 2022.

Public Talk. *The Night Sky.* Indiana Master Naturalist Astronomy Event, Bloomington, IN, October 2021.

Seminar Talk. *The X-ray Luminosity Function of Optically Narrow and Broad-line AGNs Out To* $z \sim 4$. Astronomy Seminar, IU, September 2020.

Conference Posters

Brandon T. Radzom, et al. "Evidence for Primordial Alignment: Insights from Stellar Obliquity Measurements for Compact TESS Systems", 2024, TESS Science Conference 3, 10.5281/zenodo.13117605

Cassandra Seltzer, Rudi Lein, **Brandon T. Radzom**, et al. "THUNDER: A New Frontiers-class Titan orbiter mission concept from the NASA JPL Planetary Science Summer School", 2024, Lunar and Planetary Science Conference 2024

Brandon T. Radzom, Songhu Wang, and Bonan Pu. "In Situ Origins of Hot Jupiters", 2022, Emerging Researchers in Exoplanet Science (ERES) VII, 10.5281/zenodo.6944743

Brandon T. Radzom, Amy J. Barger, and Anthony J. Taylor. "Characterizing AGN Activity in the SSA22 Field", 2020, American Astronomical Society Meeting #236, id.137.03

Minho Kwon, Christopher Young, Matthew Ebert, Sebastian Malewicz, **Brandon Radzom**, Thad Walker, and Mark Saffman. "Progress toward entanglement of atomic ensemble qubits via Rydberg blockade", 2018, International Conference on Atomic Physics

Teaching Experience

Instructor of Record *IU Astronomy Dept.*

- Astronomy 100: The Solar System (Summer 2023 & 2024)

Associate Instructor *IU Astronomy Dept.*

- Astronomy 451: Stellar Astrophysics (Spring 2024)
- Astronomy 305: Modern Observational Techniques (Fall 2023)
- Astronomy 100: The Solar System (Spring 2023)
- Astronomy 107: The Art of Astronomy (Spring 2023, Fall 2020)
- Astronomy 103: Search For Life In The Universe (Fall 2021)
- Astronomy 222: General Astronomy II (Spring 2021)

Guest Lecturer *IU Astronomy Dept.*

- Astronomy 222: General Astronomy II (Spring 2025)
- Astronomy 100: The Solar System (Spring 2024)
- Astronomy 103: Search for Life in the Universe (Spring 2024)
- Astronomy 515: Exoplanets and Orbital Dynamics (Fall 2023)
- Astronomy 100: The Solar System (Spring 2023)

Mentoring

Alice-Palma Undergraduate Research Program *IU-Bloomington Astronomy*

- Informal Mentor (Summer 2024): Attend weekly research and development meetings, plan and lead cohort seminars, and support undergraduates in their work.
- Formal Mentor (Summer 2023): Design and guide an undergraduate student through a research project working with TESS data. Attend weekly research and development meetings, plan and lead cohort seminars, and support undergraduates in their work.

Professional Development

Service

2024-2025	**Task Lead**, ERES Mission & Vision Committee	
2023-2025	**Seminar Talk Coordinator**, IU Astronomy Graduate Leadership	*Bloomington, IN*
2022-2025	**Founder and Lead Organizer**, PyIU: A Workshop Series on Python Essentials	*Bloomington, IN*
2022-2025	**Undergraduate Research Coordinator**, IU Astronomy Graduate Leadership	*Bloomington, IN*
2023	**SOC & LOC Member, Session Chair**, GLEAM 2023 Conference	*Bloomington, IN*
2019-2020	**Vice President**, UW-Madison Astronomy Club	*Madison, WI*
2018-2019	**Volunteer Coordinator**, UW-Madison Astronomy Club	*Madison, WI*

Outreach

2025	**Kirkwood Observatory Sustainability Class Tour**, Tour guide	*Bloomington, IN*
2022-2025	**PyIU: A Workshop Series on Python Essentials**, Instructor, Lecturer, Code Developer	*Bloomington, IN*
2021-2025	**Kirkwood Observatory Open Nights**, Telescope operator & tour guide	*Bloomington, IN*
2024	**Boy Scout Astronomy Night**, Observatory Tour Guide	*Bloomington, IN*
2024	**Astronomy on Tap**, Public Speaker: *NASA's DART Mission*, *Exoplanets in the Media*	*Bloomington, IN*
2024	**Eclipse IU**, Solar eclipse viewing aid and guide	*Bloomington, IN*
2021-2024	**IU Science Fest**, Astronomy demo leader	*Bloomington, IN*

2023	**Kirkwood Observatory High School Class Tour**, Telescope operator & tour guide	*Bloomington, IN*
2023	**STEAM Night at McCormick's Creek Elementary**, Astronomy demo leader	*Bloomington, IN*
2023	**International Day of Women and Girls in Science**, Astronomy demo leader	*Bloomington, IN*
2022, 2023	**Indianapolis Children's Museum STEM Exploration Day**, Astronomy demo leader	*Indianapolis, IN*
2022	**Boys and Girls Club: *Streets Paved With Gold* (Alpha Phi Alpha)**, Astronomy demo leader	*Bloomington, IN*
2021	**Indiana Master Naturalist Event**, Guest speaker, telescope operator	*Bloomington, IN*
2020	**Girl Scout Astronomy Night**, UW-Madison Astronomy Club volunteer	*Madison, WI*
2019	**Moon Over Monona Terrace**, UW-Madison Astronomy Club volunteer	*Madison, WI*
2019	**My UW Days**, UW-Madison Astronomy & Physics Dept. representative	*Madison, WI*
2019	**UW Space Place OAO-2 Anniversary Event**, Orbital Astronomical Observatory (OAO) guide	*Madison, WI*
2018	**UW STEM Immersion Day**, UW Astronomy/ Astronomy Club representative	*Madison, WI*
2017	**UW Space Place Family Science Night**, Physics and Astronomy demo leader	*Madison, WI*

Development

Spring 2025: AAS Congressional Visits Day (CVD), *Washington, D.C.*. Was selected to participate in the 2025 AAS CVD. Was trained on the federal budget and appropriations process, as well as strategies for communicating with legislators. Advocated for (exo)planetary science and astronomical science decadal survey priorities with members of Congress.

Fall 2024: Cultivating Inclusive Teaching and Learning Environments, *IU Astronomy Dept.* Participant in an in-person workshop exploring foundational concepts and proven strategies for creating inclusive classroom environments. Developed a plan to implement such strategies in a future course.

Fall 2022-Present: PyIU: A Workshop Series on Python Essentials, *IU Astronomy Dept.* Founder and lead organizer of the PyIU program: a free, graduate student-led Python workshop series intended to equip undergraduate and high school students of diverse backgrounds to engage in astronomy and physics research. All content is posted to a public GitHub repository: github.com/BrandonRadzom/pyiu.

Summer 2023: NASA Planetary Science Summer School, *Jet Propulsion Laboratory (JPL)*. Was selected to participate in an 11-week planetary mission design program hosted by JPL. For the first 10 weeks, remotely received training on mission formulation from NASA mentors and worked with a multi-disciplinary cohort of 17 other early-career scientists and engineers to design a New Frontiers-class orbiter at Saturn's moon, Titan. Assumed the role of Deputy PI and Science Objective Lead throughout the program. During the culminating week, also served as Science Chair and worked with NASA's Team-X in person at JPL to finalize the mission design before presenting it to a broad NASA review panel of NASA engineers, scientists, and executives. The concept study has been published to the Planetary Science Journal. Media interview: news.iu.edu/college/live/news/35938-graduate-students-summer-experience-at-nasas-jet

Summer 2023: Code/Astro Software Engineering Workshop, *Northwestern University*. Was selected to participate in the 2023 Code/Astro Workshop which covered best practices for producing and publishing open-source astronomy software. Topics included managing Python environments, git and GitHub, de-bugging tools, releasing code to PyPI and GitHub, documentation of code (using docstrings & `Sphinx`), software testing, and employing anti-discriminatory practices. In parallel, worked with a small group to develop and publish a pip-installable package for planning observations at IU's Kirkwood Observatory called `kirkwoodnight` (GitHub: github.com/ag161920/kirkwoodnight, PyPI: pypi.org/project/kirkwoodnight). Program link: semaphorep.github.io/codeastro.

Spring 2021: Bring an Inclusive Mindset to Your Teaching, *IU.* Participant in a virtual workshop discussing data-driven techniques to make classrooms more inclusive to all, especially members of minority groups.

Professional Memberships

American Astronomical Society (2020-2025)