

SYDNEY A. JENKINS

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EDUCATION

Massachusetts Institute of Technology

2021 - 2027 (Expected)

PhD Candidate in Physics

Dissertation: *The Discovery and Characterization of Planets Around White Dwarf Stars*

Advisor: Dr. Andrew Vanderburg

University of Chicago

2017 - 2021

BA in Physics and BS in Computer Science

AWARDS & SCHOLARSHIPS

NSF GRFP (\$46k/yr, 3 yr)

2021-2026

Department of Physics Graduate Fellowship (\$100k, MIT)

2021-2022

Most Accessible Talk Award (*New Perspectives Conference*)

2020

Metcalf Grant Recipient (\$5k, *University of Chicago*)

2020

Provost's Scholar (\$20k, *University of Chicago*)

2017-2021

Dean's List (*University of Chicago*)

2017-2019

PUBLICATIONS

ORCID: 0000-0001-9827-1463, ADS Library: <https://tinyurl.com/JenkinsADS>

21 publications, *h-index* = 7, total citations = 396

First- and Second-Author Publications

* indicates student-led

7. **S. Jenkins**, et al. 2026. *A MIRI Imaging Search for Outer Companions to WD 1856 b*. In-prep.
6. **S. Jenkins**, et al. 2026. *Atmospheric Signatures of Common Envelope Evolution in White Dwarf Planets*. *ApJ*, 1006, 241. DOI:10.3847/1538-4357/ae83b5
5. *B. Macias, **S. Jenkins**, et al. 2026. *First Astrometric Limits on Binary Planets and Exomoons orbiting β Pictoris b*. *AJ*, 171, 197. DOI:10.48550/arXiv.2512.00160
4. *N. Aldarondo Quiñones, **S. Jenkins**, et al. 2025. *Reassessing the Relationship Between Stellar X-ray Luminosity and Age with eROSITA Data Release 1*. *PASP*, 137, 114206. DOI:10.1088/1538-3873/ae1e2c
3. **S. Jenkins**, et al. 2025. *An Eccentric Sub-Neptune Moving Into the Evaporation Desert*. *ApJL*, 989, L20. DOI: 10.3847/2041-8213/adea46
2. **S. Jenkins**, et al. 2024. *Absence of a Correlation between White Dwarf Planetary Accretion and Primordial Stellar Metallicity*. *MNRAS*, 532, 394. DOI: 10.1093/mnras/stae1506
1. **S. Jenkins**, et al. 2021. *VLT Spectroscopy of Ultra-Faint Dwarf Galaxies: Boötes I, Leo IV, Leo V*. *ApJ*, 920, 92. DOI: 10.3847/1538-4357/ac1353

Co-Author Publications

15. A. Venner et al. (25 co-authors including **S. Jenkins**) 2026. *HD 715 b, A Warm Jupiter Orbiting a Massive Subgiant Discovered from a Single TESS Transit*. Accepted to *AJ*.

14. M. A. Kenworthy et al. (10 co-authors including **S. Jenkins**) 2026. *Upper limits on exosatellites around Beta Pictoris b*. Accepted to MNRAS. DOI:10.48550/arXiv.2606.04685
13. Giacomo Mantovan et al. (20 co-authors including **S. Jenkins**) 2026. *A tidally detached super Neptune on a strongly misaligned retrograde orbit*. A&A, 709, L15. DOI:10.1051/0004-6361/202660217
12. Y. Wu et al. (21 co-authors including **S. Jenkins**) 2026. *Detection of four cold Jupiters through combined analyses of radial velocity and astrometry data*. AJ, 171, 189. DOI:10.3847/1538-3881/ae40f5
11. Madysen Barber et al. (17 co-authors including **S. Jenkins**) 2026. *TESS Investigation - Demographics of Young Exoplanets (TI-DYE) IV: a giant planet orbiting a 34 Myr Sun-like star in the Vela association*. AJ, 171, 20. DOI:10.3847/1538-3881/ae1b91
10. Robert Aloisi et al. (46 co-authors including **S. Jenkins**) 2025. *Searching for Exoplanets Born Outside the Milky Way: VOYAGERS Survey Design*. PASP, 137, 114404. DOI:10.1088/1538-3873/ae1cf0.
9. P. Noti, E. Lee, D. Kitzmann, R. MacDonald, **S. Jenkins**, et al. 2025. *Modelling the 3D atmospheric structure of the cold Jupiter WD1856+534b orbiting a white dwarf*. MNRAS, staf1119. DOI:10.1093/mnras/staf1119
8. M. A. Limbach, A. Vanderburg, R. MacDonald, K. Stevenson, **S. Jenkins**, et al. 2025. *Thermal Emission and Confirmation of the Frigid White Dwarf Exoplanet WD 1856+534 b*. ApJL, 984, L28. DOI:10.3847/2041-8213/ad74ed
7. M. A. Limbach, A. Vanderburg, A. Venner, S. Blouin, K. Stevenson, R. MacDonald, **S. Jenkins**, et al. 2024. *The MIRI Exoplanets Orbiting White Dwarfs (MEOW) Survey: Mid-Infrared Excess Reveals a Giant Planet Candidate around a Nearby White Dwarf*. ApJL, 973, L11. DOI:10.3847/2041-8213/ad74ed
6. M. Coughlin, et al. (52 co-authors including **S. Jenkins**) 2023. *A data science platform to enable time-domain astronomy*. ApJS, 267, 31. DOI:10.3847/1538-4365/acdee1
5. D. Tanoglidis, A. Ćiprijanović, A. Drlica-Wagner, B. Nord, M. Wang, A. J. Amsellem, K. Downey, **S. Jenkins**, et al. 2022. *DeepGhostBusters: Using Mask R-CNN to Detect and Mask Ghosting and Scattered-Light Artifacts from Optical Survey Images*. Astronomy and Computing, 39, 100580. DOI: 10.1016/j.ascom.2022.100580
4. A. Ćiprijanović, D. Kafkes, K. Downey, **S. Jenkins**, et al. 2021. *DeepMerge II: Building Robust Deep Learning Algorithms for Merging Galaxy Identification Across Domains*. MNRAS, 506, 677. DOI: 10.1093/mnras/stab1677
3. A. Ćiprijanović, D. Kafkes, **S. Jenkins**, et al. 2020. *Domain Adaptation Techniques for Improved Cross-Domain Study of Galaxy Mergers*. 34th Conference on Neural Information Processing Systems. DOI: 10.48550/arXiv.2011.03591
2. T. Kurihana, I. Foster, M. Maire, R. Willet, **S. Jenkins**, et al. 2019. *Cloud Characterization with Deep Learning II*. 9th International Workshop on Climate Informatics. arXiv:2209.15585
1. T. Li, J. Simon, K. Kuehn, A. Pace, D. Erkal, K. Bechtol, B. Yanny, A. Drlica-Wagner, J. Marshall, C. Lidman, E. Balbinot, D. Carollo, **S. Jenkins** et al. 2018. *The First Tidally Disrupted Ultra-Faint Dwarf Galaxy? - Spectroscopic Analysis of the Tucana III Stream*. ApJ, 866, 22. DOI: 10.3847/1538-4357/aadf91

ACCEPTED OBSERVING PROPOSALS & OBSERVING EXPERIENCE

Accepted Observing Proposals

co-I JWST <i>Journey to the Edge of WD 1145+017's Circumstellar Disk</i>	Cycle 5
PI JWST (\$192k, 32 hrs) <i>Probing the Dynamical History of a White Dwarf Planet</i>	Cycle 4
co-I JWST <i>A Search for Life Around Two Dead Stars</i>	Cycle 4
co-I JWST <i>Planet Authentication in White-dwarf Systems (PAWS): Revealing the Demographics of Exoplanets Orbiting White Dwarfs</i>	Cycle 4
co-I JWST <i>By the Ashes of Stars: A Chemical Census of a White Dwarf Planet</i>	Cycle 4
co-I JWST <i>Probing the Dynamical History and the Mid-IR SED of WD 1856b</i>	Cycle 3
PI Magellan (4 nights) <i>Characterizing Extragalactic Worlds using Polluted White Dwarfs</i>	2023, 2024, 2025
PI Magellan (1 night) <i>TOI-5800 b: A sub-Neptune planet candidate ideal for JWST follow-up</i>	2024

Ground-Based Observing Experience

Magellan Clay/PFS , 6 nights	2025
Magellan Clay/MIKE , 1 night	2025
TNG/HARPS-N , 18 nights	2024, 2025
Magellan Baade/MagE , 3 nights	2023, 2024

PRESENTATIONS

Invited Talks & Seminars

Talk	<i>WD 1856 and the Search for Frigid Worlds with JWST</i> . MIT Kavli Institute Journal Club, Cambridge, MA, 4/2026
Talk	<i>Planetary Evolution Across Stellar Lifetimes</i> . Special seminar, University of Cambridge, Cambridge, UK, 9/2025
Talk	<i>Planetary Evolution Across Stellar Lifetimes</i> . Special seminar, University of Warwick, Coventry, UK, 9/2025
Talk	<i>Discovery and Characterization of Planets Around White Dwarf Stars</i> . OWL Talk Series, Santa Cruz, CA, 7/2025
Talk	<i>Eccentric Sub-Neptune Approaching the Photoevaporation Desert</i> . CfA Exoplanet Pizza Lunch, Boston, MA, 3/2025
Talk	<i>Direct Imaging Exoplanets with JWST</i> . MIT Kavli Institute Journal Club, Cambridge, MA, 11/2022
Talk	<i>Probing the Role of Jupiter Analogs in White Dwarf Pollution</i> . CfA Exoplanet Pizza Lunch, Boston, MA, 10/2022

Contributed Talks & Posters

- Talk** *Searching for Frigid Worlds Around White Dwarfs with JWST.* Emerging Researchers in Exoplanet Science XI, Ann Arbor, MI, 7/2026
- Poster** *Tracing Post-Main-Sequence Planetary Evolution with JWST and the ELT.* HoRS3S, Granada, Spain, 7/2026
- Talk** *Searching for Frigid Worlds Around White Dwarfs with JWST.* Exoplanets 6, Porto, Portugal, 6/2026
- Talk** *Probing the Dynamical History of White Dwarf Planets: Atmospheric Signatures of Common Envelope Evolution.* Boston Area Planetary Science Meeting, Boston, MA, 1/2026
- Talk** *Probing the Dynamical History of White Dwarf Planets: Atmospheric Signatures of Common Envelope Evolution.* American Astronomical Society Meeting, Phoenix, AZ, 1/2026
- Talk** *Probing the Population of Giant Planets around White Dwarfs with JWST.* 51 Pegasi b: Cool Giant Planets and their Systems, Saint-Michel-l'Observatoire, France, 10/2025
- Talk** *An Eccentric Sub-Neptune Moving Into the Evaporation Desert.* The Fate of Neptunian Worlds: Exploring Demographics, Atmospheres and Evolution, Coventry, UK, 9/2025
- Talk** *Eccentric Sub-Neptune Approaching the Photoevaporation Desert.* 2025 Magellan Science Meeting, Washington, D.C., 5/2025
- Talk** *Thermal Emission from the First Giant Planet Transiting a White Dwarf.* TESS Science Conference III, Boston, MA, 8/2024
- Talk** *Thermal Emission from the First Giant Planet Transiting a White Dwarf.* Emerging Researchers in Exoplanet Science IX, Ithaca, NY, 7/2024
- Poster** *Thermal Emission from the First Giant Planet Transiting a White Dwarf.* Exoplanets 5, Leiden, The Netherlands, 6/2024
- Talk** *Thermal Emission from the First Giant Planet Transiting a White Dwarf.* Extreme Solar Systems, Christchurch, New Zealand, 3/2024
- Poster** *Thermal Emission from the First Giant Planet Transiting a White Dwarf.* Open Problems in the Astrophysics of Gas Giants, Puerto Natales, Chile, 12/2023
- Poster** *Constraining White Dwarf Pollution Mechanisms with the GMT.* Ninth Annual Giant Magellan Telescope Community Science Meeting, Washington, D.C., 9/2023
- Poster** *Constraining White Dwarf Pollution Mechanisms with the HWO.* Science with the Habitable Worlds Observatory and Beyond, Baltimore, MD, 7/2023
- Poster** *Probing the Role of Jupiter Analogs in White Dwarf Pollution.* Emerging Researchers in Exoplanet Science VIII, New Haven, CT, 6/2023
- Poster** *Probing the Role of Jupiter Analogs in White Dwarf Pollution.* Sagan Workshop, Los Angeles, CA, 8/2022
- Poster** *Taxonomy-Aware Neural Network Classification of Variable Stars.* American Astronomical Society Meeting, 1/2021
- Talk** *Identifying High-Redshift Galaxy Mergers with Domain Adaptation.* New Perspectives, Batavia, IL, 7/2020

- Poster** *Probing Dark Matter Halos with Ultra-Faint Dwarf Galaxies: A Spectroscopic Analysis of Leo V.* American Physical Society March Meeting, 3/2020
- Poster** *The Kinematics of Ultra-Faint Dwarf Galaxies: A Case Study of Spectroscopic Analyses.* American Astronomical Society Meeting, Honolulu, HI, 1/2020
- Poster** *Developing Unsupervised Learning Models for Cloud Classification.* American Geophysical Union Fall Meeting, San Francisco, CA, 12/2019

LEADERSHIP & SERVICE

- LOC Member** | Rogue Worlds 3 2026
- Summer Research Program Admissions Committee** | MIT 2025
- Physics Graduate Student Council** | MIT 2024-2025
- Organizing Committee Member** | Expand Your Horizons 2019 - 2021
- Organized annual symposium to engage middle school girls in STEM*

TEACHING

- TA for Physics I** 2024
- Department of Physics, MIT*
- TA for Inclusive Technology: Design for Underserved and Marginalized Communities** 2021
- Department of Computer Science, University of Chicago*

RESEARCH SUPERVISION

- Nadja Aldarondo Quiñones** 2024 - 2025
- MIT MSRP Student (co-supervised with Andrew Vanderburg and Melinda Soares-Furtado)*
- Isabella Macias** 2023 - 2025
- MIT MSRP Student (co-supervised with Andrew Vanderburg)*

ADVISING & MENTORSHIP

- MIT Research Mentoring Certificate** 2026
- Mentor** | MIT Graduate & Undergraduate Womxn in Physics 2023 - 2027
- Mentor** | MIT Physics Mentor Program 2021 - 2027
- Provided one-on-one mentorship to ~30 undergraduate women in the Physics Department*

ADVOCACY & OUTREACH

- Show Designer** | MIT Kavli Portable Planetarium 2026 - 2027
- Designing a planetarium show for middle-school audience*
- Member** | Graduates Advising Graduate Admissions 2024 - 2027
- Member** | MIT Sidewalk Astrogazers 2021 - 2027
- Mentor** | MIT Physics Graduate Application Assistance Program 2021 - 2026
- Project Leader** | Warrior-Scholar Project 2023, 2025, 2026
- Developed and led annual weeklong research project for team of veterans*
- TESS Volunteer** | NASA STEM Day at Fenway 2024, 2025
- Facilitator** | Boston Public School 2025
- Speaker** | Birches Middle School 2023