Jason Trevor Hinkle

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Research Interests

Observational astrophysics, with a broad interest in time-domain astronomy and a particular focus on transient astronomy, including tidal disruption events, active galactic nucleus flares, active galactic nucleus variability, and transient host galaxies.

Positions Held

Tidal Disruption Events Postdoc, University of Hawai'i at Mānoa — May 2025 - present

Education

University of Hawai'i at Mānoa — 2019 - 2025

Ph.D. in Astronomy — April 2025
M.S. in Astronomy — December 2021
Dissertation: *Messy Eaters: A Diversity of Supermassive Black Hole Accretion Behaviors Revealed by Nuclear Transients*
Advisor: Prof. Benjamin J. Shappee

University of Maryland — 2015 - 2019
B.S. in Physics with High Honors — May 2019
B.S. in Astronomy with High Honors — May 2019
Honors Thesis: *Ionization Mechanisms in Quasar Outflows*
Advisor: Prof. Sylvain Veilleux

Honors and Awards

NASA Hubble Fellowship Program Einstein Fellowship — Awarded 2025
Ohio State University Center for Cosmology and Astroparticle Physics Price Prize — October 2023
University of Hawai'i Office of the Vice Provost for Research and Scholarship Student Award for Excellence in Research — May 2023
Columbia Communications ARCS Award in Astronomy — May 2022
Friends of the IfA Best 699-2 Award — Spring 2021
NSF Graduate Research Fellowship Program Honorable Mention — March 2021
Friends of the IfA Best 699-1 Award — Fall 2020
High Honors in Physics — Spring 2019
High Honors in Astronomy — Spring 2019
Honors College Research Grant — Fall 2018
University Honors Citation — November 2017

Advising Experience

Allison Blum (UH REU); *Tidal Disruption Events* — March 2024 - present
Athena Engholm (UH undergraduate); *Ambiguous Nuclear Transients* — January 2024 - present
Ashley Tarrant (UH REU); *ASAS-SN AGN Variability* — April 2023 - present

Vera Berger (UH REU); *UV Stellar Flares with GALEX* — May 2022 - present
Willem Hoogendam (UH 1st year graduate student); *Tidal Disruption Events* — March 2023 - April 2024
Helena Treiber (UH REU); *AGNs in TESS* — March 2021 - August 2023
Michael Bolish (UH REU); *ASAS-SN AGN Variability* — May 2022 - July 2022
Jesse Zeldes (UH REU); *ASAS-SN M-dwarfs in K2 and TESS* — June 2020 - September 2021

Professional Activities

Referee, Nature Astronomy — 2024 - present
Referee, Monthly Notices of the Royal Astronomical Society Letters — 2023 - present
Referee, Monthly Notices of the Royal Astronomical Society — 2023 - present
Referee, The Astrophysical Journal Letters — 2023 - present
Member, High Energy Astrophysics Division of the AAS — 2023 - present
Referee, The Astrophysical Journal — 2021 - present
Member, American Astronomical Society — 2019 - present

Presentations

- "Relating the Environments and Observables of TDEs", Contributed Talk at *KITP Program: Towards a Physical Understanding of Tidal Disruption Events*
- "The Elusive Class of Ambiguous Nuclear Transients: Observational Trends, Physical Interpretations, and Open Questions", Contributed Talk at *KITP Conference: Anticipating the Rising Tide of Tidal Disruption Events: Theory and Observations*
- "Building an ANT-Hill: The Growing Class of Ambiguous Nuclear Transients", Contributed Talk at *Transients Down Under*
- "Messy Eaters: The Feeding Behaviors of Supermassive Black Holes", Invited Price Prize Talk at *OSU CCAPP Seminars*
- "A TESS View of the Ambiguous Nuclear Transient ASASSN-18el", Invited Talk at *June 2023 TESS Mission Update Meeting*
- "The Growing Class of Ambiguous Nuclear Transients", Poster at *High Energy Astrophysics Division Meeting #20*, 117.08
- "The Growing Class of Ambiguous Nuclear Transients", Poster at *eXtreme Black Holes Aspen Winter Conference*
- "Revealing AGNs Through TESS Variability", Invited Talk at *TESS Science Team Meeting #29*
- "A TESS View of Ambiguous Nuclear Transients", Contributed Talk at *TESS Science Conference II*
- "Discovery and Follow-up of the UV Luminous TDE ASASSN-19dj", Poster at *Tidal Disruptions in Kyoto: Confronting Theory with Observations*
- "Fundamental X-ray Corona Parameters of Swift/BAT AGN", Poster at *American Astronomical Society Meeting #235*, 304.29
- "Ionization Mechanisms in Quasar Outflows", Poster at *American Astronomical Society Meeting #233*, 242.26

Awarded Grants

Summary: 5 as Science PI, 1 as FI for FINESST, 9 as Co-I. $\sim$ \$275,000 awarded for PI/FI grants.

HST Cycle 32 Bridge – "Rest-Frame [O III] Imaging of Post-Starburst TDE Hosts with Extended Emission Line Regions"; Science PI, 2025
TESS Cycle 7 – ""A TESS View Of The First Light From Tidal Disruption Events"; Science PI, 2024
HST Cycle 34 – "Building an ANT-hill: STIS UV Follow-up of Ambiguous Nuclear Transients"; Science PI, awarded 2024
HST Cycle 33 – "Building an ANT-hill: STIS UV Follow-up of Ambiguous Nuclear Transients"; Science PI, awarded 2024
HST Cycle 32 – "Building an ANT-hill: STIS UV Follow-up of Ambiguous Nuclear Transients"; Science PI, 2024
TESS Cycle 6 – "A TESS View Of The First Light From Tidal Disruption Events"; Science PI, 2023
TESS Cycle 6 – "TESS Ground-Based Support Using ASAS-SN and SCAT"; Co-I, 2023
FINESST (Future Investigators in NASA Earth and Space Science and Technology) – "Tidal Disruption Events Under the Multiwavelength Microscope"; Future Investigator, 2023
Swift Cycle 19 – "Early-Time UVOT and XRT Follow-up of bright TDEs"; Science PI, 2023
Swift Cycle 19 – "Investigating the long-term trends of ASASSN-14ko's periodic flares"; Co-I, 2023
TESS Cycle 5 – "The Tess Transient Patrol"; Co-I, 2022
TESS Cycle 5 – "Probing The Physics Of Tidal Disruption Events With Tess"; Co-I, 2022
Swift Cycle 18 – "Bright Optical TDEs and Their Final Stages of Evolution"; Co-I, 2022
Chandra Cycle 24 – "Observing the full X-ray evolution of an X-ray bright TDE"; Co-I, 2022
NICER Cycle 3 – "Monitoring of a Newly Discovered X-ray Bright TDE Using NICER"; Co-I, 2021
Chandra Cycle 23 – "Capturing the full X-ray evolution of an X-ray bright TDE "; Co-I, 2021
NICER Cycle 2 – "Monitoring of a Newly Discovered X-ray Bright Tidal Disruption Event Using NICER"; Co-I, 2020

Ground-Based Telescope Time

Semester 2025A — Awarded: 32 h JCMT/SCUBA-2, 3 tracks SMA, 4 half-nights Keck-II/KCWI, 7.5 h ToO IRTF/Spex+Opihi, 8 half-nights IRTF/Spex
Semester 2024B — Awarded: 32 h JCMT/SCUBA-2, 3 tracks SMA, 4 half-nights Keck-II/KCWI, 7.5 h ToO IRTF/Spex+Opihi, 9 half-nights IRTF/Spex
Semester 2024A — Awarded: 32 h JCMT/SCUBA-2, 3 tracks SMA, 3 half-nights Keck-II/KCWI, 7.5 h ToO IRTF/Spex+Opihi, 7 half-nights IRTF/Spex; Observed: 9 half-nights UH88/SNIFS
Semester 2023B — Awarded: 32 h JCMT/SCUBA-2, 3 tracks SMA, 6 half-nights Keck-II/KCWI, 7.5 h ToO IRTF/Spex+Opihi, 6 half-nights IRTF/Spex; Observed: 14 half-nights UH88/SNIFS
Semester 2023A — Awarded: 24 h JCMT/SCUBA-2, 2 tracks SMA, 30 h Gemini-N/GMOS, 30 h UKIRT/WFCAM, 6 h ToO IRTF/SpeX, 5 half-nights IRTF/Spex; Observed: 12 half-nights UH88/SNIFS
Semester 2022B — Awarded: 24 h JCMT/SCUBA-2, 2 tracks SMA, 6 half-nights Keck-I/LRIS, 25 h UKIRT/WFCAM, 6 half-nights IRTF/Spex; Observed: 18 half-nights UH88/SNIFS
Semester 2022A — Awarded: 24 h JCMT/SCUBA-2, 3 tracks SMA, 5 half-nights Keck-I/LRIS, 26 h UKIRT/WFCAM, 4 half-nights IRTF/Spex; Observed: 17 half-nights UH88/SNIFS
Semester 2021B — Awarded: 6 half-nights IRTF/Spex (PI), 24 h JCMT/SCUBA-2, 3 tracks SMA,

28 h UKIRT/WFCAM, 8.9 h Gemini-N/GMOS (Co-I) ; Observed: 20 half-nights UH88/SNIFS
Semester 2021A — Awarded: 52 h JCMT/SCUBA-2, 5.5 tracks SMA, 35 h UKIRT/WFCAM, 14.9 h Gemini-N/GMOS (Co-I); Observed: 13 half-nights UH88/SNIFS
Semester 2020B — Awarded: 20 h UKIRT/WFCAM (PI); Observed: 15 half-nights UH88/SNIFS

Outreach

HI STAR (Hawai'i Student/Teacher Astronomy Research) Mentor — Fall 2020 Spring 2025
Astrobites Author — Spring 2020 - Spring 2025
Maunakea Scholars Program Mentor — Fall 2019 - Fall 2024
Astrobites Hiring Committee Member — Fall 2020 - Spring 2023
Astrobites Undergraduate Co-Chair — Fall 2020 - Spring 2022
Astrobites Editorial Committee Member — Fall 2020 - Fall 2021
Astrobites Education Committee Member — Fall 2020 - Fall 2021
AAS Astronomy Ambassadors Program — January 2020
Volunteer at Institute for Astronomy Booth at AAS conference — January 2020
Mobile Planetarium Show at Mānoa Japanese Language School — December 2019
Research Talk to High School Students at Punahou School — November 2019
Honolulu Children and Youth Day — October 2019

Service

Graduate Representative to the Scientific Staff Screening Committee — Fall 2023 - Spring 2023
Graduate Telescope Allocation Committee Representative — Semester 2024A
Graduate Research Oversight Group Representative — Fall 2022 - Spring 2023
Graduate Admissions Representative — Fall 2020 - Spring 2021
Graduate Colloquium Representative — Fall 2019 - Fall 2020
ASTR110L/110 Teaching Assistant — Fall 2019 - Spring 2020
ASTR100 Teaching Assistant — Fall 2018

Publications

Summary: 49 total refereed/submitted publications, 13 first author, 31 with significant contribution (7 second author), and 5 with contribution. ∼1010 total citations (∼330 first author), with an h-index of 18. The 5 papers led by students I have co-advised are denoted by **.

Posted/Submitted:

1. Medler, K., Ashall, C., Hoeflich, P., et al. (incl. **Hinkle, J. T.**) 2025, "JWST Observations of SN 2023ixf II: The Panchromatic Evolution Between 250 and 720 Days After the Explosion", *arXiv e-prints*, arXiv:2507.19727
2. DerKacy, J. M., Ashall, C., Baron, E., et al. (incl. **Hinkle, J. T.**) 2025, "JWST Observations of SN 2023ixf I: Completing the Early Multi-Wavelength Picture with Plateau-phase Spectroscopy", *arXiv e-prints*, arXiv:2507.18785
3. Baron, E., Ashall, C., DerKacy, J. M., et al. (incl. **Hinkle, J. T.**) 2025, "JWST Observations of SN 2024ggi I: Interpretation and Model Comparison of the Type II Supernova 2024ggi at 55 days Past Explosion", *arXiv e-prints*, arXiv:2507.18753
4. Medler, K., Ashall, C., Shahbandeh, M., et al. (incl. **Hinkle, J. T.**) 2025, "The Hawaii Infrared Supernova Study (HISS): Spectroscopic Data Release 1", *arXiv e-prints*, arXiv:2505.18507

5. Hoogendam, W. B., Ashall, C., Jones, D. O., et al. (incl. **Hinkle, J. T.**) 2025, "Early and Extensive Ultraviolet Through Near Infrared Observations of the Intermediate-Luminosity Type Iax Supernovae 2024pxl", *arXiv e-prints*, arXiv:2505.04610
6. Hoogendam, W. B., Jones, D. O., Ashall, C., et al. (incl. **Hinkle, J. T.**) 2025,"Seeing the Outer Edge of the Infant Type Ia Supernova 2024epr in the Optical and Near Infrared", *arXiv e-prints*, arXiv:2502.17556
7. Pasham, D. R., Coughlin, E., van Velzen, S., & **Hinkle, J. T.** 2025, "Using Infrared Dust Echoes to Identify Bright Quasi-periodic Eruption Sources", *arXiv e-prints*, arXiv:2502.12078
8. **Tarrant, A., **Hinkle, J. T.**, Shappee, B., et al. 2025, "The AGN Optical Variability Fundamental Plane", *arXiv e-prints*, arXiv:2501.12444
9. **Hinkle, J. T.**, Auchettl, K., Hoogendam, W. B., et al. 2024, "On the Double: Two Luminous Flares from the Nearby Tidal Disruption Event ASASSN-22ci (AT2022dbl) and Connections to Repeating TDE Candidates", *arXiv e-prints*, arXiv:2412.15326
10. **Hinkle, J. T.**, Shappee, B. J., & Tucker, M. A. 2023, "A Swift Fix II: Physical Parameters of Type I Superluminous Supernovae", *arXiv e-prints*, arXiv:2309.03270
11. **Zeldes, J., **Hinkle, J. T.**, Shappee, B. J., et al. 2021, "Flares Big and Small: a K2 and TESS View of ASAS-SN Superflares", *arXiv e-prints*, arXiv:2109.04501

Accepted/Published:

1. **Hinkle, J. T.**, Shappee, B. J., Auchettl, K., et al. 2025, "The most energetic transients: Tidal disruptions of high-mass stars", *Science Advances*, 11, eadt0074
2. **Hinkle, J. T.** 2024, "Mid-Infrared Echoes of Ambiguous Nuclear Transients Reveal High Dust Covering Fractions: Evidence for Dusty Tori", *Monthly Notices of the Royal Astronomical Society*, 531, 2603
3. **Hinkle, J. T.**, Shappee, B. J. & Holoien, T. W.-S. 2024, "Coronal Line Emitters are Tidal Disruption Events in Gas-Rich Environments", *Monthly Notices of the Royal Astronomical Society*, 528, 4775
4. **Hinkle, J. T.**, Kochanek, C. S., Shappee, B. J., et al. 2023, "TESS Shines Light on the Origin of the Ambiguous Nuclear Transient ASASSN-18el", *Monthly Notices of the Royal Astronomical Society*, 521, 3517
5. **Hinkle, J. T.**, Tucker, M. A., Shappee, B. J., et al. 2023, "SCAT uncovers ATLAS's first tidal disruption event ATLAS18mlw: a faint and fast TDE in a quiescent Balmer strong Galaxy", *Monthly Notices of the Royal Astronomical Society*, 519, 2035
6. **Hinkle, J. T.**, Holoien, T. W.-S., Shappee, B. J., et al. "The Curious Case of ASASSN-20hx: A Slowly Evolving, UV- and X-Ray-Luminous, Ambiguous Nuclear Transient", *The Astrophysical Journal*, 930, 12
7. **Hinkle, J. T.**, & Mushotzky, R. 2021, "Fundamental X-ray corona parameters of Swift/BAT AGN", *Monthly Notices of the Royal Astronomical Society*, 506, 4960
8. **Hinkle, J. T.**, Holoien, T. W.-S., Shappee, B. J., & Auchettl, K. 2021, "A Swift Fix for Nuclear Outbursts", *The Astrophysical Journal*, 910, 83
9. **Hinkle, J. T.**, Holoien, T. W.-S., Auchettl, K., et al. 2021, "Discovery and follow-up of ASASSN-19dj: an X-ray and UV luminous TDE in an extreme post-starburst galaxy",

Monthly Notices of the Royal Astronomical Society, 500, 1673

10. **Hinkle, J. T.**, Holoien, T. W.-S., Shappee, B. J., et al. 2020, "Examining a Peak-luminosity/Decline-rate Relationship for Tidal Disruption Events", *The Astrophysical Journal*, 894, L10
11. **Hinkle, J. T.**, Veilleux, S., & Rupke, D. S. N. 2019, "Ionization Mechanisms in Quasar Outflows", *The Astrophysical Journal*, 881, 31
12. Bose, S., Stritzinger, M. D., Ashall, C., et al. (incl. **Hinkle, J. T.**) 2025, "Expanding the parameter space of 2002es-like type Ia supernovae: On the underluminous ASASSN-20jq/SN 2020qxp", *Astronomy and Astrophysics*, 699, A169
13. Do, A., Shappee, B. J., Tonry, J. L., et al. (incl. **Hinkle, J. T.**) 2025, "Hawaii Supernova Flows: A peculiar velocity survey using over a Thousand Supernovae in the near-infrared", *Monthly Notices of the Royal Astronomical Society*, 536, 624
14. Tucker, M. A., **Hinkle, J. T.**, Angus, C. R. et al. 2024, "The Extremely Metal-Poor SN 2023ufx: A Local Analog to High-Redshift Type II Supernovae", *The Astrophysical Journal*, 976, 178
15. Dong, Y., Valenti, S., Ashall, C., et al. (incl. **Hinkle, J. T.**) 2023, "Characterizing the Rapid Hydrogen Disappearance in SN 2022crv: Evidence of a Continuum between Type Ib and IIb Supernova Properties", *The Astrophysical Journal*, 974, 316
16. **Berger, V. L., **Hinkle, J. T.**, Tucker, M. A., et al. 2024, "Stellar Flares Are Far-Ultraviolet Luminous", *Monthly Notices of the Royal Astronomical Society*, 532, 4436
17. Pasham, D. R., Coughlin, E. R., Guolo, M., et al. (incl. **Hinkle, J. T.**) 2024, "A Potential Second Shutoff from AT2018fyk: An Updated Orbital Ephemeris of the Surviving Star under the Repeating Partial Tidal Disruption Event Paradigm", *The Astrophysical Journal*, 971, L31
18. **Hoogendam, W. B., **Hinkle, J. T.**, Shappee, B. J., et al. 2024, "Discovery and follow-up of ASASSN-23bd (AT 2023clx): the lowest redshift and luminosity optically selected tidal disruption event", *Monthly Notices of the Royal Astronomical Society*, 530, 4501
19. Gaidos, E., Thanathibodee, T., Hoffman, A., et al. (incl. **Hinkle, J. T.**) 2024, "The Dynamic, Chimeric Inner Disk of PDS 70", *The Astrophysical Journal*, 966, 167
20. Pasham, D. R., Tombesi, F., Sukova, P., et al. (incl. **Hinkle, J. T.**) 2024, "A Case for a Binary Black Hole System Revealed via Quasi-Periodic Outflows", *Science Advances*, 10, 13
21. Pearson, J., Sand, D. J., Lundqvist, P., et al. (incl. **Hinkle, J. T.**) 2024, "Strong Carbon Features and a Red Early Color in the Underluminous Type Ia SN 2022xkq", *The Astrophysical Journal*, ApJ, 960, 29
22. Ertini, K., Folatelli, G., Martinez, L., et al. (incl. **Hinkle, J. T.**)2023, "SN 2021gno: a calcium-rich transient with double-peaked light curves", *Monthly Notices of the Royal Astronomical Society*, 526, 279
23. **Treiber, H. P., **Hinkle, J. T.**, Fausnaugh, M. M., et al. 2023, "Revealing AGNs Through TESS Variability", *Monthly Notices of the Royal Astronomical Society*, 525, 5795
24. Desai, D. D., Ashall, C., Shappee, B. J., et al. (incl. **Hinkle, J. T.**) 2023, "Fast and not-so-furious: Case study of the fast and faint type IIb SN 2021bxu", *Monthly Notices of the Royal Astronomical Society*, 524, 767
25. Payne, A. V., Auchettl, K., Shappee, B. J., et al. (incl. **Hinkle, J. T.**) 2023, "Chandra,

HST/STIS, NICER, Swift, and TESS Detail the Flare Evolution of the Repeating Nuclear Transient ASASSN -14ko", *The Astrophysical Journal*, 951, 134

26. Holoien, T. W.-S., Berger, V. L., **Hinkle, J. T.**, et al. 2023, "Examining the Properties of Low-luminosity Hosts of Type Ia Supernovae from ASAS-SN", *The Astrophysical Journal*, 950, 108
27. Neustadt, J. M. M., **Hinkle, J. T.**, Kochanek, C. S., et al. 2023, "Multiple flares in the changing-look AGN NGC 5273", *Monthly Notices of the Royal Astronomical Society*, 521, 3810
28. de Jaeger, T., Shappee, B. J., Kochanek, C. S., et al. (incl. **Hinkle, J. T.**) 2023, "Optical/γ-ray blazar flare correlations: understanding the high-energy emission process using ASAS-SN and Fermi light curves", *Monthly Notices of the Royal Astronomical Society*, 519, 6349
29. Tucker, M. A., Shappee, B. J., Huber, M. E., et al. (incl. **Hinkle, J. T.**) 2022, "The Spectroscopic Classification of Astronomical Transients (SCAT) Survey: Overview, Pipeline Description, Initial Results, and Future Plans", *Publications of the Astronomical Society of the Pacific*, 134, 124502
30. Jayasinghe, T., Thompson, T. A., Kochanek, C. S., et al. (incl. **Hinkle, J. T.**) 2022, "The 'Giraffe': discovery of a stripped red giant in an interacting binary with an 2 $M_\odot$ lower giant", *Monthly Notices of the Royal Astronomical Society*, 516, 5945
31. Liu, M. C., Magnier, E. A., Zhang, Z., et al. (incl. **Hinkle, J. T.**) 2022, "On the Unusual Variability of 2MASS J06195260-2903592: A Long-lived Disk around a Young Ultracool Dwarf", *The Astronomical Journal*, 164, 165
32. Holoien, T. W.-S., Neustadt, J. M. M., Vallely, P. J., et al. (incl. **Hinkle, J. T.**) 2022, "Investigating the Nature of the Luminous Ambiguous Nuclear Transient ASASSN-17jz", *The Astrophysical Journal*, 933, 196
33. Payne, A. V., Shappee, B. J., **Hinkle, J. T.**, et al. 2022, "The Rapid X-Ray and UV Evolution of ASASSN-14ko", *The Astrophysical Journal*, 926, 142
34. Tucker, M. A., Shappee, B. J., **Hinkle, J. T.**, et al. 2021, "An AMUSING look at the host of the periodic nuclear transient ASASSN-14ko reveals a second AGN", *Monthly Notices of the Royal Astronomical Society*, 506, 6014
35. Jayasinghe, T., Kochanek, C. S., Strader, J., et al. (incl. **Hinkle, J. T.**) 2021, "The loudest stellar heartbeat: characterizing the most extreme amplitude heartbeat star system", *Monthly Notices of the Royal Astronomical Society*, 506, 4083
36. Jayasinghe, T., Stanek, K. Z., Thompson, T. A., et al. (incl. **Hinkle, J. T.**) 2021, "A unicorn in monoceros: the 3 $M_\odot$ dark companion to the bright, nearby red giant V723 Mon is a non-interacting, mass-gap black hole candidate", *Monthly Notices of the Royal Astronomical Society*, 504, 2577
37. Payne, A. V., Shappee, B. J., **Hinkle, J. T.**, et al. 2021,"ASASSN-14ko is a Periodic Nuclear Transient in ESO 253-G003", *The Astrophysical Journal*, 910, 125
38. Holoien, T. W.-S., Auchettl, K., Tucker, M. A., et al. (incl. **Hinkle, J. T.**) 2020, "The Rise and Fall of ASASSN-18pg: Following a TDE from Early to Late Times", *The Astrophysical Journal*, 898, 161