

# Jason Trevor Hinkle

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## Research Interests

Observational astrophysics, with a particular focus on transient astronomy including tidal disruption events, active galactic nucleus flares, active galactic nucleus variability, and transient host galaxies.

## Education

**University of Hawai‘i at Mānoa** — 2019 - present

Ph.D. in Astronomy (expected Spring 2025)

M.S. in Astronomy — Fall 2021

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

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

## Professional Activities

Referee, Monthly Notices of the Royal Astronomical Society — 2023 - present

Member, High Energy Astrophysics Division of the AAS — 2023 - present

Referee, The Astrophysical Journal — 2021 - present

Member, American Astronomical Society — 2019 - present

## Co-Advising Experience

Ashley Tarrant (UH REU); *ASAS-SN AGN Variability* — April 2023 - present

Vera Berger (UH REU); *UV Stellar Flares with GALEX* — May 2022 - present

Helena Treiber (UH REU); *AGNs in TESS* — March 2021 - present

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

## Publications

Summary: 31 total submitted/refereed publications, 11 first author, 17 with significant contribution, 3 with contribution. ~470 total citations (~180 first author), with an h-index of 13.

1. **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
2. **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
3. **Hinkle, J. T.**, Shappee, B. J. & Holoien, T. W.-S. 2023, “Coronal Line Emitters are Tidal Disruption Events in Gas-Rich Environments”, *arXiv e-prints*, arXiv:2303.05525
4. **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
5. **Hinkle, J. T.** 2022, “Mid-Infrared Echoes of Ambiguous Nuclear Transients Reveal High Dust Covering Fractions: Evidence for Dusty Tori”, *arXiv e-prints*, arXiv:2210.15681
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., Auchettl, K., Kochanek, C. S., Stanek, K. Z., Payne, A. V., & Thompson, T. A. 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. Pearson, J., Sand, D. J., Lundqvist, P., et al. (incl. **Hinkle, J. T.**) 2023, “Strong Carbon Features and a Red Early Color in the Underluminous Type Ia SN 2022xkq”, *arXiv e-prints*, arXiv:2309.10054
13. Dong, Y., Valenti, S., Ashall, C., et al. (incl. **Hinkle, J. T.**) 2023, “SN 2022crv: IIb, Or Not IIb: That is the Question”, *arXiv e-prints*, arXiv:2309.09433
14. 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
15. 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
16. 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*, in press
  17. 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
  18. 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
  19. de Jaeger, T., Shappee, B. J., Kochanek, C. S., et al. (incl. **Hinkle, J. T.**) 2023, “Optical/ $\gamma$ -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
  20. 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
  21. 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
  22. 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
  23. Treiber, H. P., **Hinkle, J. T.**, Fausnaugh, M. M., et al. 2022, “Revealing AGNs Through TESS Variability”, *arXiv e-prints*, arXiv:2209.15019
  24. Holoien, T. W.-S., Neustadt, J. M. M., Valley, 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
  25. 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
  26. 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
  27. 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
  28. 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
  29. 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

30. 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
31. 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

## Presentations

1. Hinkle, J. T., Kochanek, C. S., Shappee, B. J., et al., 2023, “A TESS View of the Ambiguous Nuclear Transient ASASSN-18el”, Invited Talk at *June 2023 TESS Mission Update Meeting*
2. Hinkle, J. T., Shappee, B. J., Holoien, T. W.-S., et al. 2023, “The Growing Class of Ambiguous Nuclear Transients”, Poster at *High Energy Astrophysics Division Meeting #20*, 117.08
3. Hinkle, J. T., Shappee, B. J., Holoien, T. W.-S., et al. 2023, “The Growing Class of Ambiguous Nuclear Transients”, Poster at *eXtreme Black Holes Aspen Winter Conference*
4. Hinkle, J. T., Treiber, H. P., Fausnaugh, M. M., et al., 2022, “Revealing AGNs Through TESS Variability”, Invited Talk at *TESS Science Team Meeting #29*
5. Hinkle, J. T., Holoien, T. W.-S., Shappee, B. J., et al. 2022, “A TESS View of Ambiguous Nuclear Transients”, Contributed Talk at *TESS Science Conference II*
6. Hinkle, J. T., Holoien, T. W.-S., Auchettl, K., et al. 2022, “Discovery and Follow-up of the UV Luminous TDE ASASSN-19dj”, Poster at *Tidal Disruptions in Kyoto: Confronting Theory with Observations*
7. Hinkle, J. T., & Mushotzky, R. 2020, “Fundamental X-ray Corona Parameters of Swift/BAT AGN”, Poster at *American Astronomical Society Meeting #235*, 304.29
8. Hinkle, J., Veilleux, S., & Rupke, D. 2019, “Ionization Mechanisms in Quasar Outflows”, Poster at *American Astronomical Society Meeting #233*, 242.26

## Awarded Grants

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

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 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

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

Semester 2020A — Observed: 5 nights UH88/SNIFS

## Outreach

HiSTAR (Hawai'i Student/Teacher Astronomy Research) Mentor — Fall 2020 present

Astrobits Author — Spring 2020 - Present

Maunakea Scholars Program Mentor — Fall 2019 - present

Astrobits Hiring Committee Member — Fall 2020 - Spring 2023

Astrobits Undergraduate Co-Chair — Fall 2020 - Spring 2022

Astrobits Editorial Committee Member — Fall 2020 - Fall 2021

Astrobits 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

Volunteer at Institute for Astronomy Booth at SACNAS conference — November 2019

Honolulu Children and Youth Day — October 2019

University Honors Peer Mentor — Fall 2018

ASTR 288I: Panel of Undergraduates Doing Research — March 12, 2018

## Service

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