

DHVANIL D. DESAI

PhD Candidate, Institute for Astronomy, University of Hawai'i at Mānoa

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Research Interests

Observational and time-domain astrophysics, specializing in broad population statistics and detailed physics of transient phenomena, responsible for chemical enrichment of the universe.

Education

Institute for Astronomy (IfA), University of Hawai'i at Mānoa (UH) PhD, Astronomy — Advisor: Benjamin Shappee	2023 - Present Honolulu, HI
Institute for Astronomy, University of Hawai'i at Mānoa M.S., Astronomy	2021 - 2023 Honolulu, HI
The Ohio State University (OSU) B.S., Astronomy & Astrophysics and Physics — Advisor: Barbara Ryden	2016 - 2020 Columbus, OH

First-Author / Significant Contribution Publications

[NASA ADS](#) | 28 total publications (6 first author, 1 second author) | 390+ total citations | h-index = 14

Published or Submitted Papers

1. **Desai D. D.**, Shappee B. J., Kochanek C. S. et al., [ASAS-SN Rates IV: Constraints on the Kilonova Rate](#), 2026, arXiv e-prints, arXiv:2603.26871, Submitted to OJAp.
2. **Desai D. D.**, Shappee B. J., Kochanek C. S. et al., [Supernova Rates and Luminosity Functions from ASAS-SN III: Over a Decade of Type Ia SNe and Their Subtypes](#), 2026, arXiv e-prints, arXiv:2602.00223, Submitted to OJAp.
3. **Desai D. D.**, Haggerty C. C., Shappee B. J. et al., [Plasma instabilities dominate radioactive transients magnetic fields: the self-confinement of leptons in Type Ia and core-collapse supernovae, and kilonovae](#), 2025, MNRAS, 541, 2197.
4. **Desai D. D.**, Kochanek C. S., Shappee B. J. et al., [Supernova rates and luminosity functions from ASAS-SN I: 2014-2017 Type Ia SNe and their subtypes](#), 2024, MNRAS, 530, 5016.
5. **Desai D. D.**, Ashall C., Shappee B. J. et al., [Fast and not-so-furious: Case study of the fast and faint Type IIb SN 2021bxu](#), 2023, MNRAS, 524, 767.
6. **Desai D. D.**, Ryden B. S., [Galaxy Alignments with Surrounding Structure in the Sloan Digital Sky Survey](#), 2022, ApJ, 936, 25.
7. Pessi T., **Desai D. D.**, Prieto J. L. et al., [Supernova rates and luminosity functions from ASAS-SN: II. 2014-2017 core-collapse supernovae and their subtypes](#), 2025, A&A, 703, A34.

Telescope Time

“Probing The Origins of Ca-rich Transients...” Keck II/KCWI (PI, 6 nights; Co-observer 2 nights)	2024 - 2025
“Spectroscopic Classification of Astronomical Transients (SCAT)” UH88/SNIFS (Observer, 80 half nights)	2021-Present

Advising & Teaching

Co-advisor, Grace Showerman IfA Research Experience for Undergraduates	2024-Present
Mentor, Derrick James OSU Summer Undergraduate Research Program (SURP)	2020
Graduate Teaching Assistant ASTR 300L & 301 Observational Astronomy, UH	2023-2024
Physics Tutor/Grader/TA PHYS 2300 & 2301, Intermediate Mechanics, OSU	2018-2020
Instructional Assistant Astronomy 1101 Lab, OSU	2018

Professional Activities

Referee, <i>Astronomy & Astrophysics</i>	2024 - Present
Member, ASAS-SN (All-Sky Automated Survey for Supernovae)	2020 - Present
Member, SCAT (Spectroscopic Classification of Astronomical Transients)	2021 - Present
Member, ePESSTO+ (Public ESO Spectroscopic Survey of Transient Objects)	2021 - Present
Member, POISE (Precision Observations of Infant Supernova Explosions)	2021 - Present
Member, CSP (Carnegie Supernova Project)	2021 - Present

Awards

OVPRS Student Award for Excellence in Research, UH	2026
Aloha Data: AI Hackathon for Hawai‘i’s Resilience, UH First Place	2025
IfA Director’s Research Excellence Award Top graduate applicant at the IfA, UH	2021
Smith Senior Award High Achieving Senior in Physics, OSU	2020
Ann Slusher Tuttle Scholarship Summer Undergraduate Research Program, OSU	2019
Smith Junior Award High Achieving Junior in Physics at OSU	2019
Smith Sophomore Award High Achieving Sophomore in Physics at OSU	2018

Service & Leadership

Time Allocation Committee, UH	2025
Graduate Representative of the Admissions Committee, UH	2022-2023
Treasurer, Astronomical Society at OSU	2019-2020

Talks & Posters

“Plasma Instabilities Matter”, Transients Down Under, SUT, Melbourne, Australia	Jan 2024
“The Local Type Ia SNe Rate...”, The Transient and Variable Universe, Illinois, IL	Jun 2023
“Rates and Luminosity Functions of Diverse Classes...”, Dissertation Proposal, UH	Dec 2023
“A Collisionless Mechanism for Relativistic...”, UH	May 2023
“SN 2021bxu: a unique stripped-envelope supernova”, CSP/POISE Meeting, Carnegie Obs.	Jun 2022
“Fast and Not-so-Furious: Case Study of...”, UH	Sept 2022
“Galaxy Alignment with Surrounding Large-Scale Structure”, SURP Symposium, OSU	Jul 2019
P: “Galaxy Alignment with Surrounding...”, Denman Undergraduate Research Forum, OSU, OH	2020
P: “Galaxy Alignment with Surrounding Large-Scale Structure”, AAS 235th Meeting, Honolulu, HI	2020

Relevant Employment

Data Analyst Image Quality Control for ASAS-SN	2020-2021
Department of Astronomy, The Ohio State University	Columbus, OH

Certifications

Fundamentals of Deep Learning, NVIDIA	2025
Applications of AI for Anomaly Detection, NVIDIA	2025

Other Publications

Co-Author

1. DerKacy J. M., Ashall C., Baron E. et al. including **Desai D. D.**, [JWST Observations of SN 2023ixf. I. Completing the Early Multiwavelength Picture with Plateau-phase Spectroscopy](#), 2026, ApJ, 997, 179.
2. Tucker M. A., Huber M. E., Shappee B. J. et al. including **Desai D. D.**, [SCAT Data Release 1: 1810 optical spectra of 1330 transients](#), 2026, arXiv e-prints, arXiv:2604.23794.
3. Shi J., Auchettl K., Hoogendam W. B. et al. including **Desai D. D.**, [The Enigmatic Type Icn Supernova 2024abvb Located ~22 kpc from Its Host Galaxy](#), 2026, arXiv e-prints, arXiv:2602.16227.
4. Medler K., Hoogendam W. B., Ashall C. et al. including **Desai D. D.**, [Contemporaneous Optical and Near-Infrared Observations of the Interstellar Comet 3I/ATLAS Pre- and Post-Perihelion](#), 2026, arXiv e-prints, arXiv:2602.23586.
5. Hoogendam, W. B., Jones, D. O., Yang, B., et al. including **Desai D. D.**, [Post-Perihelion Integral Field Spectroscopy of the Interstellar Comet 3I/ATLAS](#), 2026, arXiv e-prints, arXiv:2601.16983.
6. Hoogendam, W. B., Kuesters, D., Shappee, B. J., et al. including **Desai D. D.**, [University of Hawaii 88-inch Telescope Observations of the Interstellar Comet 3I/ATLAS: Spectrophotometric Blue-Sensitive Spectral Time Series Spanning Two Months from Discovery](#), 2025, arXiv e-prints, arXiv:2512.09020.

7. Pandey P., Hinkle J., Kochanek C. et al. including **Desai D. D.**, [Unraveling the Nature of the Nuclear Transient AT2020adpi](#), 2025, OJAp, 8, 51453.
8. Medler K., Ashall C., Hoefflich P. et al. including **Desai D. D.**, [JWST Observations of SN 2023ixf. II. The Panchromatic Evolution between 250 and 720 Days after the Explosion](#), 2025, ApJ, 993, 191.
9. Hoogendam W. B., Shappee B. J., Wray J. J. et al. including **Desai D. D.**, [Spatial Profiles of 3I/ATLAS CN and Ni Outgassing from Keck/KCWI Integral Field Spectroscopy](#), 2025, arXiv e-prints, arXiv:2510.11779.
10. Hoogendam W. B., Ashall C., Jones D. O. et al. including **Desai D. D.**, [Early and Extensive Ultraviolet through Near Infrared Observations of the Intermediate-luminosity Type Iax Supernovae 2024pxl](#), 2025, ApJ, 988, 209.
11. Hoogendam W. B., Jones D. O., Ashall C. et al. including **Desai D. D.**, [Seeing the Outer Edge of the Infant Type Ia Supernova 2024epr in the Optical and Near Infrared](#), 2025, OJAp, 8, 120.
12. Hinkle J. T., Shappee B. J., Auchettl K. et al. including **Desai D. D.**, [The most energetic transients: Tidal disruptions of high-mass stars](#), 2025, Science Advances, 11, eadt0074.
13. Do A., Shappee B. J., Tonry J. L. et al. including **Desai D. D.**, [Hawai'i Supernova Flows: a peculiar velocity survey using over a Thousand Supernovae in the near-infrared](#), 2025, MNRAS, 536, 624.
14. Tucker M. A., Hinkle J., Angus C. R. et al. including **Desai D. D.**, [The Extremely Metal-poor SN 2023ufx: A Local Analog to High-redshift Type II Supernovae](#), 2024, ApJ, 976, 178.
15. Hinkle J. T., Auchettl K., Hoogendam W. B. et al. including **Desai D. D.**, [On the Double: Two Luminous Flares from the Nearby Tidal Disruption Event ASASSN-22ci \(AT2022dbl\) and Connections to Repeating TDE Candidates](#), 2024, arXiv e-prints, arXiv:2412.15326.
16. Pearson J., Sand D. J., Lundqvist P. et al. including **Desai D. D.**, [Strong Carbon Features and a Red Early Color in the Underluminous Type Ia SN 2022xkq](#), 2024, ApJ, 960, 29.
17. Neustadt J. M. M., Hinkle J. T., Kochanek C. S. et al. including **Desai D. D.**, [Multiple flares in the changing-look AGN NGC 5273](#), 2023, MNRAS, 521, 3810.
18. Neumann K. D., Holoiën T. W.-S., Kochanek C. S. et al. including **Desai D. D.**, [The ASAS-SN bright supernova catalogue - V. 2018-2020](#), 2023, MNRAS, 520, 4356.
19. Hinkle J. T., Tucker M. A., Shappee B. J. et al. including **Desai D. D.**, [SCAT uncovers ATLAS's first tidal disruption event ATLAS18mlw: a faint and fast TDE in a quiescent Balmer strong Galaxy](#), 2023, MNRAS, 519, 2035.
20. Tucker M. A., Shappee B. J., Huber M. E. et al. including **Desai D. D.**, [The Spectroscopic Classification of Astronomical Transients \(SCAT\) Survey: Overview, Pipeline Description, Initial Results, and Future Plans](#), 2022, PASP, 134, 124502.
21. Necker J., de Jaeger T., Stein R. et al. including **Desai D. D.**, [ASAS-SN follow-up of IceCube high-energy neutrino alerts](#), 2022, MNRAS, 516, 2455.

Other Non-Refereed Publications: A total of 55 Transient Classification Reports on the Transient Name Server (TNS), 25 Astronomer's Telegrams, and 5 Transient Discovery Reports on TNS, listed on [ADS](#).