# Jack T. Dinsmore

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## Education

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| Sept 2022 – present | **Stanford University**<br>PhD in Physics (in progress)<br>GPA: 4.0/4.0 |
| Sept 2018 – May 2022 | **Massachusetts Institute of Technology**<br>BS in Physics; Minors in Astronomy and Mathematics; Concentration in Music<br>GPA: 5.0/5.0 |

## Awards & Honors

- April 2024 — Received the NSF Graduate Research Fellowship Program Honorable Mention.
- May 2022 — Received Barrett Prize for excellence in astrophysics research on recommendation from Prof. Tracy Slatyer.
- May 2022 — Inducted into Phi Beta Kappa and Sigma Pi Sigma honors societies for excellence in academics with a humanities element (Phi Beta Kappa) and in physics (Sigma Pi Sigma).
- May 2020 — Accepted at competitive REU program at Lehigh University. See research with Prof. Pepper below.

## Presentations & Press

- June 2023 — Solo presentation to Asteroids, Comets, and Meteorites conference on extracting asteroid densities from tidal torque. ∼ *400 in attendance*
- October 2022 — Press release culminating the new asteroid observing technique described in [4]. *MIT News*. Astrobites post to follow.
- April 2022 — Solo presentation to Apophis T-7 Years on how to map Apophis's internal structure with Earth's gravity. ∼ *200 in attendance*
- Aug 2021 — Concluding solo research presentation to PRISM, an MIT undergraduate research conference, for my research on the Galactic Center Excess. ∼ *30 in attendance*
- Aug 2020 — Final research presentation to conclude my REU at Lehigh University to REU faculty, students, and members of the public. ∼ *25 in attendance*

## Research Experience

- **Astrophysics**: High energy astrophysics, pulsars [3, 5], time-domain astrophysics [6], the interstellar medium.

- **Physics**: General relativity [1], particle physics [2], condensed matter, statistics [3,6].
- **Planetary Science**: Asteroids [4], gravitationally bound systems, planetary rings
- **Computer Science**: Machine learning [2], performance computing [2,3,4],

## Peer Reviewed Publications


[6] Tobin M. Wainer, Gail Zasowski, Joshua Pepper, Tom Wagg, Christina L. Hedges, Vijith Jacob Poovelil, Tara Fetherolf, James R. A. Davenport, P. Marios Christodoulou, **Jack T. Dinsmore**, Avi Patel, Kameron Goold, and Benjamin J. Gibson. Catalog of Integrated-light Star Cluster Light Curves in TESS. *The Astronomical Journal*, 166(3):106, aug 2023

[5] Josephine Wong, Roger W. Romani, and **Jack T. Dinsmore**. Improved Measurements of the IXPE Crab Polarization. *The Astrophysical Journal*, 953(1):28, jul 2023

[4] **Jack T Dinsmore** and Julien de Wit. Constraining the Interiors of Asteroids Through Close Encounters. *Monthly Notices of the Royal Astronomical Society*, 520(3):3459–3475, 10 2022

[3] **Jack T. Dinsmore** and Tracy R. Slatyer. Luminosity Functions Consistent with a Pulsar-Dominated Galactic Center Excess. *JCAP*, 06(06):025, 2022

[2] Jeffrey Krupa, Kelvin Lin, Maria Acosta Flechas, **Jack Dinsmore**, Javier Duarte, Philip Harris, Scott Hauck, Burt Holzman, Shih-Chieh Hsu, Thomas Klijnsma, Mia Liu, Kevin Pedro, Dylan Rankin, Natchanon Suaysom, Matt Trahms, and Nhan Tran. GPU Coprocessors as a Service for Deep Learning Inference in High Energy Physics. *Machine Learning: Science and Technology*, 2(3):035005, apr 2021

[1] **Jack Dinsmore**, Patrick Draper, David Kastor, Yue Qiu, and Jennie Traschen. Schottky Anomaly of deSitter Black Holes. *Class. Quant. Grav.*, 37(5):054001, 2020


## Teaching Experience & Outreach

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| 2024– | • TA for PHYSICS 120: Intermediate Electromagnetism at Stanford |
| 2023– | • Mentor for the Stanford Future Advancers of Science and Technology (FAST) program |
| Spring 2023 | • Lab TA for PHYSICS 43: Electromagnetism at Stanford. |
| Winter 2022 | • TA and course material designer for new MIT physics class 8.S50 on statistics |
| 2022– | • Volunteer for KIPAC outreach programs |
| Spring 2019 | • Problem set grader for Physics I (8.012) under Prof. Phil Harris. |
| Fall 2018 | • SAT Math section teacher for MIT Academic Teaching Initiative. |

References are available upon request. Updated April 24, 2024