Jack Dinsmore

Physics Graduate Student

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Links

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Education

STANFORD UNIVERSITY

2022 – present
Ph.D. in Physics (in progress)

MIT

2018 – 2022
B.S. in Physics
Minors: Astronomy, Math
GPA: 5.0/5.0

36 undergraduate courses
4 graduate courses
1 senior thesis

Awards & Honors

Barrett Prize (MIT)
Phi Beta Kappa member
Sigma Pi Sigma member
REU at Lehigh University

Presentations

Apophis T–7 Years (audience ∼ 200)
MIT PRISM (∼ 30)
Lehigh REU cumulative (∼ 20)

Additional Interests

Open-source programming, game programming, orchestral and solo cello, writing, woodworking, calligraphy, bookbinding, language invention

Research Experience

2021–22 **Asteroid Density Extraction from Encounters** *MNRAS*
Designing, implementing, and analyzing a fast simulation of asteroid flybys and an algorithm to fit a density distribution. Github — *Only student, first author*

2020–22 **Modeling the Galactic Center Excess** *JCAP*
Analyzing a millisecond pulsar explanation for the Galactic Center Excess and contrasting studies found in the literature. Github — *Only student, first author*

2020–present **Ensemble Photometry on Open Clusters**
Extracted error-corrected luminosity fluctuations from large images of unresolved open clusters drawn from astrophysics databases. Github — *One of two undergraduates*

2019–20 **Improving Analysis Speed at LHC** *ML: Sci. Tech.*
Built a dense Neural Network on GPUs and TPUs to reconstruct events in the Large Hadron Collider faster than the nominal method. Github — *Only undergraduate, fourth author*

2017–18 **Black Hole Thermodynamics** *CQG*
Performed numerical and analytical calculations to demonstrate the existence of a Schottky anomaly analog in Schwarzschild-de Sitter black holes. — *Only high schooler, first author*

Leadership

2022 **Next House Wing Representative (Elected)**
Liaison between college dormitory wing (about 30 people) and Next House government; responsible for community activities, ceremonies, wing upkeep, and expenses. Also led and assisted dorm community building projects, such as a haunted house, a small medieval castle, and a pergola.

2022 **Teaching Assistent for New Course**
Designed and taught three recitations for a new, experimental MIT course on statistics for graduates and undergrads. Also led office hours.

2020 **Chief Copy Editor for *The Tech* (Elected)**
Led copy editing department for MIT's student newspaper through COVID, nearly doubling department size. Retained old staff members and trained new leadership.

2018–19 **Teacher & Grader**
Graded for introductory MIT physics course. Also taught self-designed SAT preparatory classes to local high school students through MIT ATI program; received ratings of 4.5 / 5.0.

Updated September 12, 2022