

# Mark Dodici

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## RESEARCH INTERESTS

Binary stars in dense clusters; transient phenomena in galactic nuclei; hierarchical triples and few-body dynamics; stellar tides; intermediate-mass black holes; celestial mechanics; galactic dynamics

## EDUCATION

### University of Toronto

2022 – (expected 2027)

Ph.D. candidate, Department of Astronomy & Astrophysics

Graduate researcher, Canadian Institute for Theoretical Astrophysics (CITA)

Visiting Graduate Student, Institute for Advanced Study (Winter 2026)

*Advisors: Professors Yanqin Wu & Scott Tremaine*

### Princeton University

2018 – 2022

A.B. Astrophysical Sciences, *magna cum laude*

Certificate in Planets and Life

## PUBLICATIONS

### FIRST AUTHOR

- M. Dodici**, S. Tremaine, & Y. Wu, 2025. Dynamical evolution of stellar binaries in galactic centers. arXiv eprints [astro-ph:2511.02905](https://arxiv.org/abs/astro-ph/2511.02905). (In press, ApJ.)
- M. Dodici** & S. Tremaine, 2024. Studying binary formation under dynamical friction using Hill's Problem. [ApJ, 972, 193](#).
- M. Dodici** & Y. Wu, in prep. Breaking up a denser, primordial Neptunian scatter belt to supply material for the cold, classical Kuiper Belt.

### CONTRIBUTING

- B. Lewis et al. (incl. **M. Dodici**), 2025. Improving Undergraduate Astronomy Students' Skills with Research Literature via Accessible Summaries: A Case Study with Astrobites-based Lesson Plans. [Phys. Rev. Physics Education Research, 21, 010124](#).
- B. Hensley, C. Murray, & **M. Dodici**, 2022. Polycyclic Aromatic Hydrocarbons, Anomalous Microwave Emission, and their Connection to the Cold Neutral Medium. [ApJ, 929, 23](#).

## TALKS

### AT CONFERENCES

|  |                              |
|--|------------------------------|
| MODEST-25 / IAU Symposium 398                            | Seoul, South Korea. Jun 2025 |
| AAS Division on Dynamical Astronomy 56                   | Atlanta, GA. May 2025        |
| AAS Division on Dynamical Astronomy 55                   | Toronto, ON. May 2024        |
| AAS Division for Planetary Science 55                    | San Antonio, TX. Oct 2023    |
| CITA Planet Day  | Toronto, ON. Aug 2023        |
| Emerging Researchers in Exoplanet Science Symposium VIII | New Haven, CT. Jun 2023      |
| Great Lakes Exoplanets Area Meeting                      | Columbus, OH. Nov 2022       |
| AAS 240  | Pasadena, CA. Jun 2022       |

## AT INSTITUTIONS

|   |                         |
|---|-------------------------|
| Institute for Advanced Study Dynamics Blackboard Talk | Princeton, NJ. Mar 2026 |
| Institute for Advanced Study Astrophysics Seminar     | Princeton, NJ. Feb 2026 |
| CITA Compact Objects Group Meeting                    | Toronto, ON. Feb 2024   |
| University of Toronto Lunch Seminar                   | Toronto, ON. Jan 2024   |

## FELLOWSHIPS, GRANTS, and AWARDS

|  |            |
|--|------------|
| Carl Reinhardt Fellowship in Astronomy   | 2025       |
| Dunlap Institute Seed Funding Grant, for <i>Coding the Cosmos</i> (outreach workshop series) | 2024       |
| for <i>Age of the Universe</i> (outreach workshop)   | 2023       |
| CITA Graduate Scholarship  | 2023       |
| C.a. Chant Fellowship in Astronomy   | 2022, 2023 |
| David A. Dunlap Entrance Award   | 2022       |
| Princeton Research Day Undergraduate Presenter Award   | 2021       |

## LEADERSHIP and SERVICE ROLES

|   |             |
|---|-------------|
| Referee, <i>ApJL, OJA</i>   | 2025 –      |
| Graduate Astronomy Students Association<br><i>Co-President (2024 – 2025)</i>        | 2022 –      |
| <i>Courses &amp; Qualifying Exams Committee (2022 – 2024, 2025 –)</i>               |             |
| Department Jamboree, <i>Organizer &amp; Emcee</i>                                   | 2023 – 2025 |
| Coding the Cosmos (HS workshop series), <i>Co-director (2024 – 2025)</i>            | 2023 – 2025 |
| UofT AstroTours (Public lecture/telescope events), <i>Co-director (2023 – 2024)</i> | 2022 – 2024 |
| Age of the Universe (HS workshop), <i>Co-organizer &amp; Speaker</i>                | 2023        |

## TEACHING ASSISTANT EXPERIENCE

|  |                   |
|--|-------------------|
| Stars and Planets (AST221, Toronto)            | Fall 2024, 2025   |
| Introduction to Astrophysics (AST320, Toronto) | Winter 2025       |
| Stars and Galaxies (AST201, Toronto)           | Winter 2023, 2024 |
| The Sun and its Neighbours (AST101, Toronto)   | Fall 2022, 2023   |
| The Universe (AST203, Princeton)               | Winter 2021, 2022 |

## OTHER OUTREACH

|  |             |
|--|-------------|
| Astronomy on Tap TO (Public lecture series), <i>Volunteer</i>                      | 2022 –      |
| Pursue STEM (HS science program), <i>Workshop leader</i>                           | 2025        |
| Astrobites (Research blog), <i>Author &amp; Education Study co-author</i>          | 2023 – 2025 |
| Eclipse 2024 at the Toronto Public Library (Public lecture series), <i>Speaker</i> | 2024        |
| Solar Eclipse 2024: Indigenous Knowledge (Video), <i>Editor</i>                    | 2024        |
| Cosmos from your Couch (Astronomy video series), <i>Editor</i>                     | 2023        |
| ComSciCon Canada (Science Communication Workshop), <i>Attendee</i>                 | 2023        |
| Princeton Research Day (Virtual talk competition), <i>Award-winning presenter</i>  | 2021        |