

Mark Dodici

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My research primarily concerns the dynamics of binary stars in galactic centers; I use a mix of analytical and numerical tools to clarify our understanding of these complicated systems.

My general interests span all scales of astrophysical 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/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 <i>Co-President (2024 – 2025)</i>	2022 –
<i>Courses & Qualifying Exams Committee (2022 – 2024, 2025 –)</i>	
Department Jamboree, <i>Organizer & 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 & 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 & 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