

Daniel A. Yahalomi

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Education

Columbia University

Candidate for PhD in Astronomy and Astrophysics

New York, NY

2020 –

Massachusetts Institute of Technology

SB in Physics with Concentration in Astronomy

Minors in Computer Science and Comparative Media Studies

Cambridge, MA

2014-2018

- **Thesis**, Statistical Analyses of Gravitational Microlensing Probability Densities
- **Advisor**, Professor Paul L. Schechter

Research Interests

I am most interested in projects at the intersection of astronomy and data science in the data-limited regime. I study extrasolar planets with a focus on formation, architectures, and habitability. I also model self-lensing binary star systems to investigate stellar structure models and evolution.

Honors & Awards

- **NSF GRFP Honorable Mention**: 2020.
- **Dean's Fellowship**, Columbia Graduate School of Arts and Sciences: 2020 – .
- **Sigma Xi**, Associate Member: 2020 – .
- **New York Academy of Sciences**, Science Alliance Member: 2020 – .
- **Sagan Summer Workshop Travel Award**: 2019.
- **Theo St. Francis Award**, MIT Water Polo Team: 2017.
- **Academic All-American**, Association of Collegiate Water Polo Coaches: 2016, 2017.
- **Columbia Science Honors Program**, Participant: 2013-2014.
- **High School Academic All-American**, USA Water Polo: 2012, 2013, 2014.

Outreach

Harvard-MIT Science Research Mentoring Program

Deputy Director (2020 –). Head of Observing (2018 – 2020). Project Mentor (2020 – 2021).

Cambridge, MA

Sep 2018 –

Harvard Observing Project

Observer – coordinated and ran weekly observing for undergraduates on 16" Clay Telescope.

Cambridge, MA

Jan 2019 – March 2020

MIT President's Advisory Committee

One of Four Undergraduate Representatives on MIT President Reif's advising committee.

Cambridge, MA

Sep 2017 – June 2018

MIT Committee on Student Life

One of Three Undergraduate Representatives.

Cambridge, MA

Sep 2015 – June 2018

MIT Undergraduate Association Student Support and Wellness Committee

Vice-Chair (2016-2017), Committee Member (2017-2018).

Cambridge, MA

Sep 2016 – June 2018

Research Experience

Columbia University, Cool Worlds Lab

Graduate research project with Professor David Kipping.

New York, NY

Sep 2021 –

Flatiron Institute, Center for Computational Astronomy

Graduate research project with Professors David Spergel and Ruth Angus.

New York, NY

Sep 2020 –

Center for Astrophysics | Harvard & Smithsonian

Astronomer at the CfA with Dr. David Latham as a part of TESS Science Team.

Cambridge, MA

Sep 2018 – August 2020

Massachusetts Institute of Technology

Undergraduate Researcher studying gravitational microlensing with Professor Paul Schechter.

Cambridge, MA

Jan 2017 – June 2018

NASA Jet Propulsion Laboratory

Summer Intern on Systems Engineering team for the Europa Clipper Mission.

Pasadena, CA

May 2016 – July 2016

Massachusetts Institute of Technology

Undergraduate Researcher on LIGO Mission with Professor Erotokritos Katsavounidis.

Cambridge, MA

March 2015 – Sep 2015

Dartmouth College

Research Assistant modeling fermibounce cosmology with Professor Stephon Alexander.

Hanover, NH

June 2014 – July 2014

Princeton University

Research Assistant on SuMIRe PFS project with Professor David Spergel.

Princeton, NJ

July 2013 – Aug 2013

Publications

First Author Publications

2. **Yahalomi, D. A.** et al. “The Mass of the White Dwarf Companion in the Self-Lensing Binary KOI-3278: Einstein vs. Newton.” *The Astrophysical Journal*, 880, 33 (2019).
1. **Yahalomi, D. A.**, Schechter, P. L., and Wambsganss, J. “A Quadruply Lensed SN Ia: Gaining a Time-Delay...Losing a Standard Candle.” *MIT Journal of Undergraduate Research*, Fall 2017 – arXiv:1711.07919.

Co-Author Publications

18. Scarsdale, N. et al. **including Yahalomi D. A.** “TKS V. Twin sub-Neptunes Transiting the Nearby G Star HD 63935.” *The Astronomical Journal*, accepted - arXiv:2110.06885 .
17. Hoyer, S. et al. **including Yahalomi D. A.** “TOI-220 b: a warm sub-Neptune discovered by TESS.” *Monthly Notices of the Royal Astronomical Society*, accepted - arXiv:2105.01944 .
16. Dong, J. et al. **including Yahalomi D. A.** “Warm Jupiters in TESS Full-Frame Images: A Catalog and Observed Eccentricity Distribution for Year 1.” *The Astrophysical Journal Supplement*, submitted - arXiv:2104.01970.
15. Guerrero, N. M. et al. **including Yahalomi D. A.** “The TESS Objects of Interest Catalog from the TESS Prime Mission.” *The Astrophysical Journal Supplement*, 254, 2, (2021).
14. Ikwut-Ukwa, M. et al. **including Yahalomi D. A.** “Two Massive Jupiters in Eccentric Orbits from the TESS Full Frame Images.” *AAS Journals*, submitted – arXiv:2102.02222.
13. Palatnick S., Kipping D., **and Yahalomi D. A.** “Validation of HD 183579b using archival radial velocities: a warm-neptune orbiting a bright solar analog.” *The Astrophysical Journal Letters*, accepted – arXiv:2101.12137.
12. Rodriguez, J. E. et al. **including Yahalomi D. A.** “TESS Delivers Five New Hot Giant Planets Orbiting Bright Stars from the Full Frame Images.” *The Astronomical Journal*, accepted – arXiv:2101.01726.
11. Zhou, G. et al. **including Yahalomi D. A.** “Two young planetary systems around field stars with ages between 20-320 Myr from TESS.” *The Astronomical Journal*, accepted – arXiv:2011.13349.

10. Teske, J. et al. **including Yahalomi D. A.** “The Magellan-TESS Survey I: Survey Description and Mid-Survey Results.” The Astrophysical Journal Letters, accepted – arXiv:2011.11560.
9. Brahm, R. et al. **including Yahalomi D. A.** “TOI-481 b & TOI-892 b: Two long period hot Jupiters from the Transiting Exoplanet Survey Satellite.” The Astronomical Journal, accepted – arXiv:2009.08881.
8. Ikwut-Ukwa, M. et al. **including Yahalomi D. A.** “The K2 & TESS Synergy I: Updated Ephemerides and Parameters for K2-114, K2-167, K2-237, & K2-261.” The Astronomical Journal, 160, 209 (2020).
7. Mireles, I. et al. **including Yahalomi D. A.** “TOI 694 b and TIC 220568520 b: Two Low-Mass Companions Near the Hydrogen Burning Mass Limit Orbiting Sun-like Stars.” The Astronomical Journal, 160, 133 (2020).
6. Beatty, T. G. et al. **including Yahalomi D. A.** “The TESS Phase Curve of KELT-1b Suggests a High Dayside Albedo.” The Astronomical Journal, 160, 211 (2020).
5. Wong, I. et al. **including Yahalomi D. A.** “Systematic Phase Curve Study of Known Transiting Systems from Year 1 of the TESS Mission.” The Astronomical Journal, 160, 155 (2020).
4. Dragomir, D. et al. **including Yahalomi D. A.** “Securing the Legacy of TESS through the Care and Maintenance of TESS Planet Ephemerides.” The Astronomical Journal, 159, 219 (2020).
3. Diaz, M. R. et al. **including Yahalomi D. A.** “TOI-132 b: A short-period planet in the Neptune desert transiting a V=11.3 G-type star.” Monthly Notices of the Royal Astronomical Society, 493, 973 (2020).
2. Wong, I., et al. **including Yahalomi, D. A.** “Exploring the atmospheric dynamics of the extreme ultra-hot Jupiter KELT-9b using TESS photometry.” The Astronomical Journal, 160, 88 (2020).
1. Rodriguez, J., et al. **including Yahalomi, D. A.** “An Eccentric Massive Jupiter Orbiting a Sub-Giant on a 9.5 Day Period Discovered in the Transiting Exoplanet Survey Satellite Full Frame Images.” The Astronomical Journal, 157, 191 (2019).

Awarded Proposals

2. Pooley, D. A. et al. **including Yahalomi D. A. (co-investigator)** “Nano-arcsecond Tomography of the Central Regions of the Quasar in SDSS J0924+0219.” Chandra Cycle 23, Large Target of Opportunity Proposal.
1. Angus, R. et al. **including Yahalomi D. A. (collaborator)** “Measuring long rotation periods from TESS light curves.”, NASA TESS Guest Investigator program, Cycle 3, large program.

Talks & Posters

STScI Towards Comprehensive Characterization of Exoplanets

Poster: “Observing Plan for Roman Astrometry of Terra Hunting Stars...P(Jupiter | Earth) .”

Remote

April 2021

AAS Habitable Worlds Meeting

Poster: “Simulating Roman Astrometry of Terra Hunting Stars.”

Remote

March 2021

AAS 237th Meeting

Talk: “Simulating Roman Astrometry of Terra Hunting Stars.”

Remote

Jan 2021

Columbia Machine Learning in Science & Engineering

Poster: “Simulating Roman Astrometry of Terra Hunting Stars.”

Remote

Dec 2020

AAS 235th Meeting

Poster: “Discovery of a Warm Jupiter near Resonance with an Exterior sub-Neptune.”

Honolulu, HI

Jan 2020

Princeton Exoplanet Group Meeting

Invited Talk: “Characterizing White Dwarfs in Self-Lensing Binaries, plus a Planet Surprise...”

Princeton, NJ

Nov 2019

Harvard Exoplanet Pizza Lunch

Talk: “Characterizing White Dwarfs in Self-Lensing Binaries, plus a Planet Surprise...”

Cambridge, MA

Nov 2019

Sagan Exoplanet Workshop: Astrobiology for Astronomers

Poster: “Mass of the WD Companion in the Self-Lensing Binary KOI-3278: Einstein vs. Newton.”

Pasadena, CA

July 2019

AAS 233rd Meeting

Talk: “A Dynamical Mass for the White Dwarf in the Self-Lensing Binary KOI-3278.”

Seattle, WA

Jan 2019

MIT Undergraduate Cosmology Workshop

Talk: “A Quadruply Lensed SN Ia: Gaining a Time-Delay...Losing a Standard Candle.”

Cambridge, MA

Aug 2017

AAS HEAD 16th Meeting

Poster: “Using Microlensing to Investigate Macro-Models of the Supernova iPTF16geu.”

Sun Valley, ID

Aug 2017

Columbia Nevis Laboratory

Invited Talk: “Using Microlensing to Investigate Macro-Models of the Supernova iPTF16geu.”

Irvington, NY

June 2017

Manhattan Microlensing Conference

Talk: “Using Microlensing to Investigate Macro-Models of the Supernova iPTF16geu.”

New York, NY

June 2017

Teaching

Columbia Astronomy Department: Graduate Teaching Assistant

- Observing TA
- Earth, Moon, and Planets
- Stars and Atoms
- Another Earth

New York, NY

Fall 2021

Summer 2021

Spring 2021

Fall 2020

MIT Physics Department: Undergraduate Teaching Assistant

- Intro to Mechanics Review (8.01R)

Cambridge, MA

Jan 2015

Athletics

15th European Maccabi Games

USA Water Polo Team Member. Silver Medal Winner.

Budapest, Hungary

Aug 2019

MIT Varsity Water Polo Team

Captain (2017). DIII Eastern Champions (2014, 2016). DI Nationally Ranked 20th (2015).

Cambridge, MA

Aug 2014 – Nov 2017

London Marathon

Charity Entry through the “Children of Peru” Foundation.

Cambridge, MA

April 2017