Daniel A. Yahalomi

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Education

Columbia University — *New York, NY*
Candidate for PhD in Astronomy and Astrophysics — *2020-*

Massachusetts Institute of Technology — *Cambridge, MA*
SB in Physics with Concentration in Astronomy — *2014-2018*
Minors in Computer Science and Comparative Media Studies

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

Research Interests

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. I am most interested in projects at the intersection of astronomy and data science in the data-limited regime.

Research Experience

Flatiron Institute, Center for Computational Astronomy — *New York, NY*
Graduate research project with Professors David Spergel and Ruth Angus. — *Sep 2020 – Present*

Center for Astrophysics | Harvard & Smithsonian — *Cambridge, MA*
Astronomer at the CfA with Dr. David Latham as a part of TESS Science Team. — *Sep 2018 – August 2020*

Massachusetts Institute of Technology — *Cambridge, MA*
Undergraduate Researcher studying gravitational microlensing with Professor Paul Schechter. — *Jan 2017 – June 2018*

NASA Jet Propulsion Laboratory — *Pasadena, CA*
Summer Intern on Systems Engineering team for the Europa Clipper Mission. — *May 2016 – July 2016*

Massachusetts Institute of Technology — *Cambridge, MA*
Undergraduate Researcher on LIGO Mission with Professor Erotokritos Katsavounidis. — *March 2015 – Sep 2015*

Dartmouth College — *Hanover, NH*
Research Assistant modeling fermibounce cosmology with Professor Stephon Alexander. — *June 2014 – July 2014*

Princeton University — *Princeton, NJ*
Research Assistant on SuMIRe PFS project with Professor David Spergel. — *July 2013 – Aug 2013*

Honors & Awards

- **NSF GRFP Honorable Mention** – 2020.
- **Dean's Fellowship**, Columbia Graduate School of Arts and Sciences – 2020-Present.
- **Sigma Xi Associate Member**, Scientific Research Honors Society – 2020-Present.
- **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.

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

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

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

AAS 235th Meeting *Honolulu, HI*

Poster: "Discovery of a Warm Jupiter near Resonance with an Exterior sub-Neptune." *Jan 2020*

Princeton Exoplanet Group Meeting *Princeton, NJ*

Invited Talk: "Characterizing White Dwarfs in Self-Lensing Binaries, plus a Planet Surprise..." *Nov 2019*

Harvard Exoplanet Pizza Lunch *Cambridge, MA*

Talk: "Characterizing White Dwarfs in Self-Lensing Binaries, plus a Planet Surprise..." *Nov 2019*

Sagan Exoplanet Workshop: Astrobiology for Astronomers *Pasadena, CA*

Poster: "Mass of the WD Companion in the Self-Lensing Binary KOI-3278: Einstein vs. Newton." *July 2019*

AAS 233rd Meeting *Seattle, WA*
Talk: "A Dynamical Mass for the White Dwarf in the Self-Lensing Binary KOI-3278." *Jan 2019*

MIT Undergraduate Cosmology Workshop *Cambridge, MA*
Talk: "A Quadruply Lensed SN Ia: Gaining a Time-Delay...Losing a Standard Candle." *Aug 2017*

AAS HEAD 16th Meeting *Sun Valley, ID*
Poster: "Using Microlensing to Investigate Macro-Models of the Supernova iPTF16geu." *Aug 2017*

Columbia Nevis Laboratory *Irvington, NY*
Invited Talk: "Using Microlensing to Investigate Macro-Models of the Supernova iPTF16geu." *June 2017*

Manhattan Microlensing Conference *New York, NY*
Talk: "Using Microlensing to Investigate Macro-Models of the Supernova iPTF16geu." *June 2017*

Outreach

Harvard-MIT Science Research Mentoring Program *Cambridge, MA*
Associate Director and Project Mentor on self-lensing binary project. *June 2020 – Present*
Head of Observing – taught classes & led observing sessions with high school students. *Sep 2018 – June 2020*

Harvard Observing Project *Cambridge, MA*
Observer – coordinated and ran weekly observing for undergraduates on 16" Clay Telescope. *Jan 2019 – March 2020*

MIT President's Advisory Committee *Cambridge, MA*
One of Four Undergraduate Representatives on MIT President Reif's advising committee. *Sep 2017 – June 2018*

MIT Committee on Student Life *Cambridge, MA*
One of Three Undergraduate Representatives. *Sep 2015 – June 2018*

MIT Undergraduate Association Student Support and Wellness Committee *Cambridge, MA*
Vice-Chair (2016-2017), Committee Member (2017-2018). *Sep 2016 – June 2018*

Teaching

Columbia Astronomy Department: Graduate Teaching Assistant *New York, NY*
– Earth, Moon, and Planets *Summer 2021*
– Stars and Atoms *Spring 2021*
– Another Earth *Fall 2020*

MIT Physics Department: Undergraduate Teaching Assistant *Cambridge, MA*
– Intro to Mechanics Review (8.01R) *Jan 2015*

Athletics

15th European Maccabi Games *Budapest, Hungary*
USA Water Polo Team Member. Silver Medal Winner. *Aug 2019*

MIT Varsity Water Polo Team *Cambridge, MA*
Captain (2017). DIII Eastern Champions (2014, 2016). DI Nationally Ranked 20th (2015). *Aug 2014 – Nov 2017*

London Marathon *Cambridge, MA*
Charity Entry through the "Children of Peru" Foundation. *April 2017*