

# Daniel A. Yahalomi

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## Education

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### Columbia University

Candidate for Ph.D. in Astronomy and Astrophysics

*New York, NY*

*2020-*

### Massachusetts Institute of Technology

B.S. in Physics w/ 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

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

## Research Experience

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### Flatiron Institute, Center for Computational Astronomy

Graduate research project with Professor David Spergel and Dr. Ruth Angus.

*New York, NY*

*Sep 2020 – Present*

### 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*

## Honors & Awards

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- **Sigma Xi Associate Member**, Scientific Research Honors Society – 2020-Present.
- **NSF GRFP Honorable Mention** – 2020.
- MIT Water Polo team **Theo St. Francis Award** for leadership, perseverance, and outstanding moral presence on and off the pool deck – 2017.
- Association of Collegiate Water Polo Coaches **All-Academic Team** – 2016 & 2017.

## Publications

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### 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

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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

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### 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*

## **Outreach**

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### **Harvard-MIT Science Research Mentoring Program**

Associate Director and Project Mentor on self-lensing binary project.

*Cambridge, MA*

*June 2020 – Present*

### **Harvard-MIT Science Research Mentoring Program**

Head of Observing – taught classes & led observing sessions with high school students.

*Cambridge, MA*

*Sep 2018 – June 2020*

### **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*

### **MIT Physics Department: Intro to Mechanics Review (8.01R).**

Undergraduate Teaching Assistant

*Cambridge, MA*

*Jan 2015*

## **Athletics**

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### **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*