

James Sunseri

Astrophysics Graduate Student

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EDUCATION

Princeton University

Hertz Fellow

Ph.D. Astrophysical Sciences | Advisors: Prof. Romain Teyssier and Prof. Alexandra Amon

Princeton, NJ

M.S. Astrophysical Sciences

Expected 2028

2025

University of California Berkeley

B.A. Physics; B.A. Astrophysics with High Distinction | Advisors: Prof. Alex Filippenko, Prof. Jia Liu, Prof. Zachary Slepian

Berkeley, CA

2022

RESEARCH INTERESTS

- Baryonic Feedback, Weak Lensing, CMB Secondaries, and Cosmological Simulations.

POSITIONS

Visiting Student Researcher, Kavli IPMU

The Effects of Massive Neutrinos and Dark Energy on the Cosmic Web | Advisor: Prof. Jia Liu

Kashiwanoha, Japan

2023

Student Researcher, UC Berkeley

Transient Based Observational Astronomy | Advisor: Prof. Alex Filippenko

Berkeley, CA

2018 - 2022

Student Researcher, University of Florida

SARABANDE: a python package for measuring 3/4 PCFs with FFTs | Advisor: Prof. Zack Slepian

Remote

2021 - 2023

Student Researcher, University of Tokyo

The Effects of Baryonic Feedback on the Cosmic Web | Advisor: Prof. Jia Liu

Remote

2020 - 2023

NSF Summer Research Experience for Undergraduates, University of Florida

Fast Four Point Statistics of Turbulence in the Interstellar Medium | Advisor: Prof. Zack Slepian

Gainesville, FL

2021

LIGO Summer Undergraduate Research Fellowship, Caltech

Measuring The Hubble Constant With Dynamical Tides In Inspiring Neutron Star Binaries | Advisor: Dr. Hang Yu

Pasadena, CA

2020

PUBLICATIONS

1. Sunseri, James; Andalman, Zachary L.; & Teyssier, Romain, 2025, *Supermassive Black Hole Growth in Massive Galaxies at Cosmic Dawn*, ArXiv ([arXiv:2510.19822](#)) [1 citation]
2. Williamson, Victoria; Sunseri, James; Slepian, Zachary; Hou, Jiamin; & Greco, Alessandro, 2024, *First Measurements of the 4-Point Correlation Function of Magnetohydrodynamic Turbulence as a Novel Probe of the Interstellar Medium*, ArXiv ([arXiv:2412.03967](#)) [3 citations]
3. Sunseri, James; Amon, Alexandra; Dunkley, Jo; Battaglia, Nicholas; et al., 2026, *Disentangling the Halo: Joint Model for Measurements of the Kinetic Sunyaev-Zeldovich Effect and Galaxy-Galaxy Lensing*, MNRAS([arXiv:2505.20413](#)) [8 citations]
4. Sunseri, James; Bayer, Adrian E.; & Liu, Jia, 2025, *Power of the cosmic web*, Physical Review D, **112**, 63516 ([arXiv:2503.11778](#)) [4 citations]
5. Alvarado, Efrain; Bostow, Kate B.; Patra, Kishore C.; Jacobus, Cooper H.; et al. (17 other co-authors, incl. Sunseri, James), 2024, *Searching for tidal orbital decay in hot Jupiters*, MNRAS, **534**, 800 ([arXiv:2409.04660](#)) [7 citations]
6. Ailawadhi, B.; Dastidar, R.; Misra, K.; Roy, R.; et al. (33 other co-authors, incl. Sunseri, James), 2023, *Photometric and spectroscopic analysis of the Type II SN 2020jfo with a short plateau*, MNRAS, **519**, 248 ([arXiv:2211.02823](#)) [19 citations]
7. Sunseri, James; Li, Zack; & Liu, Jia, 2023, *Effects of baryonic feedback on the cosmic web*, Physical Review D, **107**, 23514 ([arXiv:2212.05927](#)) [19 citations]
8. Sunseri, James; Slepian, Zachary; Portillo, Stephen; Hou, Jiamin; et al., 2023, *SARABANDE: 3/4 point correlation functions with fast Fourier transforms*, RAS Techniques and Instruments, **2**, 62 ([arXiv:2210.10206](#)) [15 citations]
9. Murakami, Yukei S.; Jennings, Connor; Hoffman, Andrew M.; Savel, Arjun B.; et al. (6 other co-authors, incl. Sunseri, James), 2022, *PIPS, an advanced platform for period detection in time series - I. Fourier-likelihood periodogram and application to RR Lyrae stars*, MNRAS, **514**, 4489 ([arXiv:2107.14223](#)) [3 citations]

10. Zheng, WeiKang; Stahl, Benjamin E.; de Jaeger, Thomas; Filippenko, Alexei V.; et al. (84 other co-authors, incl. **Sunseri, James**), 2022, *The Lick Observatory Supernova Search follow-up program: photometry data release of 70 SESNe*, MNRAS, **512**, 3195 ([arXiv:2203.05596](https://arxiv.org/abs/2203.05596)) [14 citations]
11. Kilpatrick, Charles D.; Coulter, David A.; Arcavi, Iair; Brink, Thomas G.; et al. (79 other co-authors, incl. **Sunseri, James**), 2021, *The Gravity Collective: A Search for the Electromagnetic Counterpart to the Neutron Star-Black Hole Merger GW190814*, ApJ, **923**, 258 ([arXiv:2106.06897](https://arxiv.org/abs/2106.06897)) [36 citations]

POSTERS & RESEARCH TALKS

- **SMBH Growth in Massive Galaxies at Cosmic Dawn:** Yale Galaxy Lunch Talk, IESC Cargese Thematic School Talk, Perimeter Institute Poster - 2025
- **Disentangling the Halo: Joint Model for Measurements of the kSZ Effect and GGL:** NASA Cosmic Origins Early Career Conference Talk - 2025
- **The Effects of Baryons on the Cosmic Web:** Kavli IPMU, Chiba University, University of Tokyo, Nagoya University - 2023 [[Slides](#)]
- **Fast Four Point Statistics for the Turbulent Interstellar Medium:** University of Florida REU Program - 2022
- **New Four-Band Photometry of RR Lyrae Stars in M3:** 238th AAS Meeting iPoster - 2021
- **Measuring the Hubble Constant With Dynamical Tides In Inspiraling Neutron Star Binaries:** Caltech LIGO SURF program, 237th AAS Meeting iPoster - 2020 (Featured on [AstroBites](#))

OUTREACH

The McClintock Letters Project

Op-Ed, "Don't dim the stars: why budget cuts to NASA and the NSF matter

Lodi News Sentinel

2025

TEDxAustin Youth

Guest Speaker, "The Essential Skill You Can't Afford To Ignore In Today's Digital World

Austin, TX

2023

World of Wonders Science Museum

Designed curriculum for summer camps and local middle schools

Lodi, CA

2017 - 2022

SPLASH at UC Berkeley

Taught basic programming skills via astrophysical simulations to local high school students

Berkeley, CA

2021

TEACHING

Teaching Fellow

Princeton University Preparatory Program (PUPP)

Princeton, NJ

2025-2026

Head TA

Astro C10 - Introduction to Astronomy

Berkeley, CA

Fall 2022

Undergraduate TA

Astro C10 - Introduction to Astronomy

Berkeley, CA

Fall 2020

Head Facilitator

Python Decal - Introduction to Computational Methods for Astronomers

Berkeley, CA

Fall 2020 - Fall 2022

MENTORSHIP

Undergraduate Students

Research projects led by undergraduates that I co-advised

- Victoria Williamson - UF Undergrad (2023-2024) → Rutgers PhD Program - [ArXiv:2412.03967](https://arxiv.org/abs/2412.03967)
- Taeho Kim - Princeton Undergrad - Dissecting the Morphology of the Multiphase Galactic Web

Berkeley, CA

2021 - 2022

Numerical Spin Analysis of Relativistic Bondi Accretion in M87*

Research Mentor for Undergraduate Laboratory at Berkeley (ULAB), research poster can be found [here](#)

Berkeley, CA

2021

UC Berkeley Compass Mentor

Peer mentor for a younger undergraduate student

Berkeley, CA

2021

Berkeley High School RISE Mentor

An academic tutor and mentor to struggling high school students from under-represented backgrounds

Berkeley, CA

2018 - 2020

AWARDS

- Fannie and John Hertz Foundation Fellowship
- Department of Energy Computational Science Graduate Research Fellowship (DOE CSGF) - (**Declined**)
- Outstanding (U)GSI Teaching Award
- Chambliss Award for Best Research Poster at 238th AAS Meeting (shared)
- Recipient of the Northern California Scholarship Foundations Award
- Q728 Lui, P & Chang, J Phys Scholarship
- Berkeley Scholarship
- 7 Separate Astronomy Departmental Scholarships for Teaching
- Ehrman, Albert Scholarship
- Berkeley CARES Award
- Edward Frank Kraft Award