





James Sunseri

Astrophysics Graduate Student

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EDUCATION

Princeton University <i>Hertz Fellow</i> Ph.D. Astrophysical Sciences Advisors: Prof. Romain Teyssier and Prof. Alexandra Amon M.S. Astrophysical Sciences	Princeton, NJ 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 <i>The Effects of Massive Neutrinos and Dark Energy on the Cosmic Web</i> Advisor: Prof. Jia Liu	Kashiwanoha, Japan 2023
Student Researcher, UC Berkeley <i>Transient Based Observational Astronomy</i> Advisor: Prof. Alex Filippenko	Berkeley, CA 2018 - 2022
Student Researcher, University of Florida <i>SARABANDE: a python package for measuring 3/4 PCFs with FFTs</i> Advisor: Prof. Zack Slepian	Remote 2021 - 2023
Student Researcher, University of Tokyo <i>The Effects of Baryonic Feedback on the Cosmic Web</i> Advisor: Prof. Jia Liu	Remote 2020 - 2023
NSF Summer Research Experience for Undergraduates, University of Florida <i>Fast Four Point Statistics of Turbulence in the Interstellar Medium</i> Advisor: Prof. Zack Slepian	Gainesville, FL 2021
LIGO Summer Undergraduate Research Fellowship, Caltech <i>Measuring The Hubble Constant With Dynamical Tides In Inspiral Neutron Star Binaries</i> Advisor: Dr. Hang Yu	Pasadena, CA 2020

PUBLICATIONS

- Sunseri, James**; Andalman, Zachary L.; & Teyssier, Romain, 2025, *Supermassive Black Hole Growth in Massive Galaxies at Cosmic Dawn*, ArXiv ([arXiv:2510.19822](https://arxiv.org/abs/2510.19822)) [1 citation]
- 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](https://arxiv.org/abs/2412.03967)) [3 citations]
- 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](https://arxiv.org/abs/2505.20413)) [8 citations]
- Sunseri, James**; Bayer, Adrian E.; & Liu, Jia, 2025, *Power of the cosmic web*, Physical Review D, **112**, 63516 ([arXiv:2503.11778](https://arxiv.org/abs/2503.11778)) [4 citations]
- 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](https://arxiv.org/abs/2409.04660)) [7 citations]
- 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](https://arxiv.org/abs/2211.02823)) [19 citations]
- Sunseri, James**; Li, Zack; & Liu, Jia, 2023, *Effects of baryonic feedback on the cosmic web*, Physical Review D, **107**, 23514 ([arXiv:2212.05927](https://arxiv.org/abs/2212.05927)) [19 citations]
- 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](https://arxiv.org/abs/2210.10206)) [15 citations]
- 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](https://arxiv.org/abs/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](#)) [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](#)) [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 Inspiring Neutron Star Binaries:** Caltech LIGO SURF program, 237th AAS Meeting iPoster - 2020 (Featured on [AstroBites](#))

OUTREACH

The McClintock Letters Project	Lodi News Sentinel
<i>Op-Ed, "Don't dim the stars: why budget cuts to NASA and the NSF matter"</i>	2025
TEDxAustin Youth	Austin, TX
<i>Guest Speaker, "The Essential Skill You Can't Afford To Ignore In Today's Digital World"</i>	2023
World of Wonders Science Museum	Lodi, CA
<i>Designed curriculum for summer camps and local middle schools</i>	2017 - 2022
SPLASH at UC Berkeley	Berkeley, CA
<i>Taught basic programming skills via astrophysical simulations to local high school students</i>	2021

TEACHING

Teaching Fellow	Princeton, NJ
<i>Princeton University Preparatory Program (PUPP)</i>	2025-2026
Head TA	Berkeley, CA
<i>Astro C10 - Introduction to Astronomy</i>	Fall 2022
Undergraduate TA	Berkeley, CA
<i>Astro C10 - Introduction to Astronomy</i>	Fall 2020
Head Facilitator	Berkeley, CA
<i>Python Decal - Introduction to Computational Methods for Astronomers</i>	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](#)
- **Taeho Kim** - Princeton Undergrad - Dissecting the Morphology of the Multiphase Galactic Web

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 - 2022

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