





# James Sunseri

## Astrophysics Graduate Student

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### EDUCATION

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<b>Princeton University</b> <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
<b>University of California Berkeley</b> B.A. Physics; B.A. Astrophysics with High Distinction   Advisors: Prof. Alex Filippenko, Prof. Jia Liu, Prof. Zachary Slepian	Berkeley, CA 2022

### RESEARCH INTERESTS

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

### POSITIONS

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

### PUBLICATIONS

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1. **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)) [2 citations]
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](https://arxiv.org/abs/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, **546** ([arXiv:2505.20413](https://arxiv.org/abs/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](https://arxiv.org/abs/2503.11778)) [5 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](https://arxiv.org/abs/2409.04660)) [9 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](https://arxiv.org/abs/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](https://arxiv.org/abs/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](https://arxiv.org/abs/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](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]

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## 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](#))

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## OUTREACH

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

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## TEACHING

<b>Teaching Fellow</b>	Princeton, NJ
<i>Princeton University Preparatory Program (PUPP)</i>	2025-2026
<b>Head TA</b>	Berkeley, CA
<i>Astro C10 - Introduction to Astronomy</i>	Fall 2022
<b>Undergraduate TA</b>	Berkeley, CA
<i>Astro C10 - Introduction to Astronomy</i>	Fall 2020
<b>Head Facilitator</b>	Berkeley, CA
<i>Python Decal - Introduction to Computational Methods for Astronomers</i>	Fall 2020 - Fall 2022

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## 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

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## 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