NISHANT MISHRA

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EDUCATION

University of Michigan, Ann Arbor — May 2024 - Present
Ph.D. in Astronomy & Astrophysics

University of Michigan, Ann Arbor — Aug 2022 - May 2024
M.S. in Astronomy & Astrophysics

University of California, Berkeley — Aug 2017 - May 2021
B.A. in Physics, Astrophysics (Honors)

FIRST AUTHOR PUBLICATIONS

N. Mishra et al. (2024, accepted), *The Cosmic Ultraviolet Baryon Survey (CUBS) X: The multi-phase circumgalactic and intergalactic medium around star-forming field dwarf galaxies*, The Astrophysical Journal. arXiv:2408.11151

N. Mishra, N. Gnedin (2022) *Cosmic Reionization on Computers: Evolution of the Flux Power Spectrum.* The Astrophysical Journal. vol 928. no. 2. arXiv:2109.13252

N. Mishra, E. Schaan (2019), *Bias to CMB lensing from lensed foregrounds*, Physical Review D, vol. 100, no. 12. arXiv:1908.08057 (Simons Observatory Talk)

OTHER PUBLICATIONS

J. Li et al. [including **N. Mishra**] (2024, submitted) *Fast and Flexible Inference Framework for Continuum Reverberation Mapping using Simulation-based Inference with Deep Learning.* The Astrophysical Journal. arXiv:2407.14621

S.D. Johnson et al. [including **N. Mishra**] (2024) *Discovery of optically emitting circumgalactic nebulae around the majority of UV-luminous quasars at intermediate redshift.* The Astrophysical Journal, vol. 966, no. 2,. arXiv:2404.00088

J. Li et al. [including **N. Mishra**] (2024) *The Cosmic Ultraviolet Baryon Survey (CUBS) VIII: Group Environment of the Most Luminous Quasars at* $z \approx 1$. The Astrophysical Journal, vol. 965, no. 2. arXiv:2403.03983

T. Schutt et al. [including **N. Mishra**] (2024) *A new "temperature inversion" estimator to detect CMB patchy screening by large-scale structure.* Physical Review D, vo. 109, no. 10. arXiv:2401.13040

Z. Liu et al. [including **N. Mishra**] (2023) *The first comprehensive study of a giant nebula around a radio-quiet quasar in the* $z < 1$ *Universe.* Monthly Notices of the Royal Astronomical Society, vol. 527, no. 3. arXiv:2309.00053

R. Ren et al. [including **N. Mishra**] (2021) *Design and characterization of a phonon-mediated cryogenic particle detector with an eV-scale threshold and 100 keV-scale dynamic range.* Physical Review D. vol 104. no. 3. arXiv:2012.12430

N. T. Palliyaguru et al. [including **N. Mishra**] (2016), *Radio follow-up of gravitational-wave triggers during Advanced LIGO O1.* The Astrophysical Journal Letters, vol. 829, no. 2. arXiv:1608.06518

TALKS

- *Multiphase Madness.* Center for Astrophysics, Harvard University. August 2024
- *CGM-Chile 2024: Resolving the Circumgalactic Medium and its Impact on Galaxy Evolution.* ESO, Santa Cruz, Colchagua, Chile. November 2024

· *Baryons Beyond Galactic Boundaries*. IUCAA, Pune, India. December 2024.

POSTERS

N. Mishra, M. White (2022) *Cosmology from Lyman-alpha forest during the second five-year survey of the Dark Energy Spectroscopic Instrument*, Lawrence Berkeley National Laboratory, BLUR Program Poster Session (Remote). Link.

N. Mishra, N. Gnedin (2021) *Cosmic Reionization on Computers: Constraints on the Epoch of Reionization from the Cosmic Microwave Background*, Fermi National Accelerator Laboratory, SULI Program Poster Session (Remote). Link.

N. Mishra, C. Modi, B. Horowitz, U. Seljak (2021) *Cosmological inference from Lyman-α forest using normalizing flows*, UC Berkeley, Berkeley Physics Research Scholars Symposium (Remote). Link.

N. Mishra, N. Kurinsky (2020), *Characterizing complex impedance in TES Detectors for SuperCDMS*, Fermi National Accelerator Laboratory, SULI Program Poster Session (Remote). Link.

N. Mishra, E. Schaan, M. Alvarez (2018), *Bias to CMB lensing from foreground lensing reconstruction*, UC Berkeley, Undergraduate Physics Symposium. Link.

SELECTED AWARDS & SCHOLARSHIPS

· NSF Graduate Research Fellowship (2022, 2024): Honorable Mention (2x)
· Berkeley Lab Undergraduate Research (BLUR) Grant (2022): Places undergraduates, post baccalaureates, and graduate students who have established collaborations with LBNL scientists.
· Science Undergraduate Laboratory Internship (SULI) @ Fermilab (2020/2021): Twice among 20 selected via nationwide application process, with Fermilab acceptance rate of $\sim 10\%$
· Berkeley Physics Research Scholar (2019-21): Stipend provided to students who demonstrate the ability and motivation to execute a research project under faculty advisor at UC Berkeley.
· Clark Scholar (2016): Among 12 high school students selected via a nationalwide application process. Acceptance rate of $\sim 10\%$.

TEACHING

University of Michigan
Reference(s): Mateusz Ruszkowski, Joel Bregman, Sean Johnson, Michael Lopresto

· Astronomy 102: Introductory Astronomy - Stars, Galaxies, and the Universe

UC Berkeley
Reference(s): Alex Filippenko, Holger Muller

· Astronomy C10: Introduction to General Astronomy
· Physics 98 Seminar: Lasers for Everyone (as part of the Democratic Education at Cal program)

OUTREACH

Berkeley Undergraduate Research Fair Coordinator
Reference: Roia Ferrazares, Dr. Austin Hedeman *May 2020 - May 2021*

· Conceptualized and organized an event to connect UC Berkeley professors with undergraduates looking to do research in their labs.
· Fall 2020 and Spring 2021 editions of the event had 12+ faculty members offering 20+ research positions. 80+ students attending the virtual event. As a result of this success, the department has included the fair as a regular bi-anual event.

· Assisted administration in setting up additional funding channels for undergraduate researchers including scholarships and work-study programs, the latter intending on opening up opportunity for middle and low income students. ~ 65 % of positions offered were funded (compared to ~ 25 % in 2019)

Splash Class Instructor
Reference: Splash at Berkeley *Mar 2020 - Oct 2020*

· Splash at Berkeley brings local high school students to UC Berkeley for a day of student-led learning. Participating students take courses in both conventional and unconventional subjects taught by Berkeley students.
· Taught a 1 hour course (An Introduction to Dark Matter Physics) to 70+ high school students (grades 9-12), over the past 2 semesters. It has been one of the most popular STEM courses offered at Splash.