

SHAUNAK MODAK

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EDUCATION

Princeton Ph.D. Astrophysical Sciences

Centennial Fellow, NSF Graduate Research Fellowship Recipient

2021 - Current

Expected Graduation: Spring 2026

UC Berkeley B.A. Physics, B.A. Mathematics

Highest Distinction, Physics Honors, Mathematics Honors

2017 - 2021

RESEARCH INTERESTS

Galaxy formation, dynamics, and evolution; Kinetic Theory of Stellar Systems and Plasmas; Dwarf Galaxies; Globular Clusters; Supermassive Black Holes;

TEACHING

Physics 98 Seminar: From Quasars to Quarks

Democratic Education at Cal (DeCal) Course Facilitator and Lecturer

Supervising Professor: Ori Ganor

Fall 2020, Spring 2021

Astronomy C10: Introduction to General Astronomy

Undergraduate Student Instructor

Professor: Alex Filippenko

Fall 2019, Fall 2020

Math 74 Seminar: Transition to Upper-Division Mathematics

Democratic Education at Cal (DeCal) Lecturer

Supervising Professor: Martin Olsson

Spring 2019, Fall 2019, Spring 2020

SERVICE AND OUTREACH

Physics Undergraduate Research Fair

Organizer and Undergraduate Representative

Summer 2020 - Summer 2021

Society of Physics Students

Treasurer, Projects Committee Member

Spring 2020 - Spring 2021

Undergraduate Astronomy Society

Mentorship Program Coordinator

Fall 2019 - Spring 2021

Splash at Berkeley

Volunteer Teacher

Spring 2020 - Fall 2020

Mathematics Undergraduate Student Association

Peer Mentor

Fall 2019 - Spring 2020

AWARDS

- NSF Graduate Research Fellowship (2021 - 2026)
- Berkeley Physics Department Citation (Spring 2021)
- Berkeley College of Letters & Sciences Dean's Honors List (Fall 2017 - Spring 2021)
- Berkeley Physics Undergraduate Research Scholarship (Spring 2020 - Spring 2021)
- Berkeley Astronomy Outstanding Student Instructor Award (Fall 2019)
- Berkeley Physics Isidore Pomerantz Endowment Award (Fall 2019)
- Berkeley Edward Frank Kraft Award for Freshmen (Fall 2017)

TALKS AND POSTERS

- *Dynamical Friction and the Globular Cluster Timing Problem* (Talk, Princeton Summer Undergraduate Research Colloquium, Summer 2022)
- *Realistic Thermodynamics for Cosmic-Ray-Driven Galactic Winds* (Poster, AAS 240 Conference, Summer 2022)
- *Modeling Supermassive Black Holes with Galactic Dynamics* (Talk, Summer Undergraduate Research Fellowship Conference, Summer 2020)
- *Superconducting Transformer Development for Next-Generation CMB Experiments* (Poster, Berkeley Lab Undergraduate Research Conference, Summer 2019)
- *Generalized Stokes' Theorem and an Accessible Introduction to Differential Geometry* (Talk, Directed Reading Program, Fall 2018)

REFEREED PUBLICATIONS

Zheng, W.; Stahl, B.; de Jaeger, T.; Filippenko, A.; Wang, S.; Gan, W.; Brink, T.; [and 81 others, including **Modak, S.**]. *The Lick Observatory Supernova Search follow-up program: photometry data release of 70 stripped-envelope supernovae*. (MNRAS, 2022). DOI:10.1093/mnras/stac723

Perley, D.A.; Fremling, C.; Sollerman, J.; Miller, A. A.; Dahiwale, A. S.; Sharma, Y.; [and 32 others, including **Modak, S.**]. *The Zwicky Transient Facility Bright Transient Survey. II. A Public Statistical Sample for Exploring Supernova Demographics*. (ApJ, 2020). DOI: 10.3847/1538-4357/abbd98

OTHER PUBLICATIONS

Kilpatrick, C.; Coulter, D.; Arcavi, I.; Brink, T.; Dimitriadis, G.; Filippenko, A.; Foley, R.; Howell, A.; Jones, D.; Makler, M.; Piro, A.; Rojas-Bravo, C.; Sand, D.; Swift, J.; Tucker, D.; Zheng, W.; [and 66 others, including **Modak, S.**]. *The Gravity Collective: A Search for the Electromagnetic Counterpart to the Neutron Star-Black Hole Merger GW190814*. arxiv: 2106.06897