Anna Y. Q. Ho

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PRIMARY RESEARCH INTERESTS

Stellar death (supernovae, gamma-ray bursts), transients, time-domain astronomy, high-energy astrophysics, radio and sub-millimeter observations, large surveys

EDUCATION & APPOINTMENTS

2022–Present	Assistant Professor, Astronomy Department, Cornell
2020–2022	Miller Postdoctoral Fellow, Astronomy Department, U.C. Berkeley
2020–2022	Affiliate, Lawrence Berkeley National Laboratory
2020	Ph.D., California Institute of Technology, Astrophysics
	• Thesis Advisor: Shri Kulkarni
2017	M.S., California Institute of Technology, Astrophysics
2014–2015	Fulbright Scholar, Max Planck Institute for Astronomy, Heidelberg, Germany
	• Host: Hans-Walter Rix
2014	B.S., Massachusetts Institute of Technology, Physics

AWARDS & HONORS

2024	Packard Fellowship for Science and Engineering *Awarded annually to 20 early-career scientists and engineers in the U.S.*
2024	Scialog Fellow, Research Corporation for Science Advancement: *Early Science with the LSST*
2024	Alfred P. Sloan Research Fellow in Physics *Annual award for early career researchers in recognition of distinguished performance and a unique potential to make substantial contributions to their field.*
2021	Springer Thesis Prize, *In recognition of outstanding Ph.D. research in the physical sciences.*
2020	AAS Rodger Doxsey Travel Prize
2014–9	National Science Foundation Graduate Research Fellowship
2019	Keck Institute for Space Studies Affiliate
2017	TA Award, Caltech, *For being one of the highest rated TAs for the Spring 2017 term.*
2017	France Cordova Graduate Fellowship—Gordon Garmire Scholarship, Caltech *Annual award for an outstanding graduate student in Physics, Math, and Astronomy.*
2014	MIT Karl Taylor Compton Prize *The highest awards presented by the Institute to students...in recognition of excellent achievements in citizenship and devotion to the welfare of MIT.*
2014	MIT Ida M. Green Fellowship (declined), *For the MIT Graduate Program in Science Writing*
2013	First Place, MIT DeWitt Wallace Prize for Science Writing for the Public
2012	MIT Burchard Scholar

SELECTED PUBLICITY

2025	**BBC**, *The bizarre space explosions scientists can't explain*
2025	Wrote the **Griffith Observer** article, *Chasing Cosmic Flashes*
2024	**MIT News**, *Alum first spots cosmic explosion*
2024	**Cornell Chronicle**, *Cornell astronomers on newly approved UVEX NASA mission*
2024	**National Geographic**, *What is causing these massive, mysterious explosions in space?*

2023 **Nature News**, *Mysterious Tasmanian devil space explosion baffles astronomers*
2023 **CNN**, *Stellar corpse called 'Tasmanian devil' reveals phenomenon astronomers have never seen*
2023 **Cornell Chronicle**, *NASA selects Cornell astronomer for ULTRASAT observatory*
2023 **The New York Times**, *A Cow, a Camel and a Finch Exploded in Space. What Is Going On?*
2021 **Quanta**, *New Kind of Space Explosion Reveals the Birth of a Black Hole*
2020 Wrote the **Scientific American** cover article, *Extreme Supernovae*
2020 **Science News**, *A weird cosmic flare called the Cow now has company*
2020 **Science Daily**, *Astronomers discover new class of cosmic explosions*
2020 **Sky & Telescope**, *Two New Beasts for an Explosive Zoo*
2019 Wrote article for the **Submillimeter Array Newsletter**, *SMA Observations of AT2018cow: A Prototype for Millimeter Time-domain Astronomy*
2019 **Science News**, *The cosmic Cow may be a strange supernova*
2019 **The Washington Post**, *Scientists had never seen anything like this supernova*
2019 **WIRED**, *We may have finally spotted a star turning into a black hole*
2018 **Nature News**, *Holy Cow! Astronomers agog at mysterious new supernova*

PUBLICATIONS

Count: 22 first/second author; 94 total [full list on ADS]; 6 white papers or science books
h-index: 16 first/second author; 43 total
Citations: 1,127 first/second author; 12,000+ total

†Projects for which I played a significant mentoring or advising role.

First or Second Author

[1] †Schroeder, G., **Ho, A. Y. Q.** et al. 2025, *A Late-time Radio Search for Highly Off-axis Jets from PTF Broad-lined Ic Supernovae in GRB-like Host Galaxy Environments*, submitted to ApJ (arXiv:2507.15928)

[2] **Ho, A. Y. Q.** et al. 2025, *A Luminous Red Optical Flare and Hard X-ray Emission in the Tidal Disruption Event AT 2024kmq*, accepted for publication in ApJ (arXiv:2502.07885)

[3] †Li, M. L., **Ho, A. Y. Q.** et al. 2025, *The Nature of Optical Afterglows Without Gamma-ray Bursts: Identification of AT2023lcr and Multiwavelength Modeling*, ApJ, **985**, 124 (arXiv:2411.07973)

[4] Perley, D. A., **Ho, A. Y. Q.** et al. 2025, *AT2019pim: A Luminous Orphan Afterglow from a Moderately Relativistic Outflow*, MNRAS, **537**, 2362 (arXiv:2401.16470)

[5] **Ho, A. Y. Q.** et al. 2023, *Minutes-duration Optical Flares with Supernova Luminosities*, Nature, **623**, 927 (arXiv:2311.10195)

[6] Corsi, A., **Ho, A. Y. Q.** et al. 2023, *A search for relativistic ejecta in a sample of ZTF broad-lined Type Ic supernovae*, ApJ, **953**, 179 (arXiv:2210.09536)

[7] **Ho, A. Y. Q.** et al. 2023, *A Search for Extragalactic Fast Blue Optical Transients in ZTF and the Rate of AT2018cow-like Transients*, ApJ, **949**, 120 (arXiv:2105.08811)

[8] **Ho, A. Y. Q.** et al. 2022, *Cosmological Fast Optical Transients with the Zwicky Transient Facility: A Search for Dirty Fireballs*, ApJ, **938**, 85 (arXiv:2201.12366)

[9] †Yao, Y., **Ho, A. Y. Q.**, et al. 2022, *The X-ray and Radio Loud Fast Blue Optical Transient AT2020mrf: Implications for an Emerging Class of Engine-Driven Massive Star Explosions*, ApJ, **934**, 104 (arXiv:2112.00751)

[10] **Ho, A. Y. Q.** et al. 2022, *Luminous Millimeter, Radio, and X-ray Emission from ZTF20acigmel (AT2020xnd)*, ApJ, **932**, 116 (arXiv:2110.05490)

[11] Perley, D. A., **Ho, A. Y. Q.** et al. 2021, *Real-time discovery of AT2020xnd: a fast, luminous ultraviolet transient with minimal radioactive ejecta*, MNRAS, **508**, 5138 (arXiv:2103.01968)

[12] **Ho, A. Y. Q.** et al. 2020, *ZTF20aajnksq (AT 2020blt): A Fast Optical Transient at $z \approx 2.9$ With No Detected Gamma-Ray Burst Counterpart*, ApJ, **905**, 98 (arXiv:2006.10761)

[13] **Ho, A. Y. Q.** et al. 2020, *SN2020bvc: a Broad-lined Type Ic Supernova with a Double-peaked Optical Light Curve and a Luminous X-ray and Radio Counterpart*, ApJ, **902**, 86 (arXiv:2004.10406)

[14] Duffell, P. C. & **Ho, A. Y. Q.** 2020, *How Dense a CSM is Sufficient to Choke a Jet?*, ApJ, **900**, 193

[15] **Ho, A. Y. Q.** et al. 2020, *The Koala: A Fast Blue Optical Transient with Luminous Radio Emission from a Starburst Dwarf Galaxy at $z = 0.27$*, ApJ, **895**, 1 (arXiv:2003.01222)

[16] **Ho, A. Y. Q.** et al. 2020, *The Broad-lined Ic Supernova ZTF18aaqjovh (SN 2018bvw): An Optically-discovered Engine-driven Supernova Candidate with Luminous Radio Emission*, ApJ, **893**, 132 (arXiv:1912.10354)

[17] **Ho, A. Y. Q.** et al. 2019, *Evidence for Late-stage Eruptive Mass-loss in the Progenitor to SN2018gep, a Broad-lined Ic Supernova: Pre-explosion Emission and a Rapidly Rising Luminous Transient*, ApJ, **887**, 169H (arXiv:1904.11009)

[18] Casey, A.R., **Ho, A. Y. Q.**, et al. 2019, *Tidal interactions between binary stars drives lithium production in low-mass red giants*, ApJ, **880**, 125 (arXiv:1902.04102)

[19] **Ho, A. Y. Q.** et al. 2019, *AT2018cow: a luminous millimeter transient*, ApJ, **871**, 73 (arXiv:1810.10880)

[20] **Ho, A. Y. Q.** et al. 2018, *iPTF Archival Search for Fast Optical Transients*, ApJL, **854**, 13 (arXiv:1712.00949)

[21] **Ho, A. Y. Q.** et al. 2017, *Masses and Ages for 230,000 LAMOST Giants, via Their Carbon and Nitrogen Abundances*, ApJ, **841**, 40 (arXiv:1609.03195)

[22] **Ho, A. Y. Q.** et al. 2017, *Label Transfer from APOGEE to LAMOST: Precise Stellar Parameters for 450,000 LAMOST Giants*, ApJ, **836**, 5 (arXiv:1602.00303)

Selected Co-author

[1] Ofek, E. O., et al. 2025, *A search for minute-time-scale flares from the transient AT 2024wpp*, submitted to ApJ

[2] †Srinivasaragavan, G. P., et al. 2025, *EP250108a/SN 2025kg: A Broad-Line Type Ic Supernova Associated with a Fast X-ray Transient Showing Evidence of Extended CSM Interaction*, accepted for publication in ApJL (arXiv:2504.17516)

[3] Fryer, C. L., Burns, E., **Ho, A. Y. Q.** et al. 2025, *Explaining Non-Merger Gamma-Ray Bursts and Broad-Lined Supernovae with Close Binary Progenitors with Black Hole Central Engines*, ApJ, **986**, 185 (arXiv:2410.10378)

[4] †Srinivasaragavan, G. P., Perley, D. A., **Ho, A. Y. Q.** et al. 2025, *Multi-Wavelength Analysis of AT 2023sva: a Luminous Orphan Afterglow With Evidence for a Structured Jet*, MNRAS, **538**, 351 (arXiv:2501.03337)

[5] Soumagnac, M. T., Nugent, P., Knop, R. A., **Ho, A. Y. Q.** et al. 2024, *The MOST Hosts Survey: spectroscopic observation of the host galaxies of $\sim$ 40,000 transients using DESI*, ApJS, **275**, 22 (arXiv:2405.03857)

[6] †Srinivasaragavan, G. P. et al. 2024, *Optical and Radio Analysis of Systemically Classified Broad-lined Type Ic Supernovae from the Zwicky Transient Facility*, ApJ, **976**, 71 (arXiv:2408.14586)

[7] Hervías-Caimapo et al. 2024, *The Atacama Cosmology Telescope: Flux Upper Limits from a Targeted Search for Extragalactic Transients*, MNRAS, **529**, 3 (arXiv:2301.07651)

[8] Berger, E. et al. 2023, *Millimeter Observations of the Type II SN 2023ixf: Constraints on the Proximate Circumstellar Medium*, ApJL, 951, L31 (arXiv:2306.09311)

[9] Vink, J., Thomas, B. P., Wheeler, J. C., **Ho, A. Y. Q.** et al. 2023, *Searching for Supernovae in HETDEX Data Release 3*, ApJ, **946**, 31V (arXiv:2212.08444)

[10] Andreoni, I. et al. 2022, *A very luminous jet from the disruption of a star by a massive black hole*, Nature, **612**, 7940 (arXiv:2211.16530)

[11] Martsen, A. R. et al. 2022, *Radio Pulse Profiles and Polarization of the Terzan 5 Pulsars*, ApJ, **941**, 22 (arXiv:2204.06158)

[12] †Yurk, N., Ravi, V., & **Ho, A. Y. Q.** 2022, *Models of Millimeter and Radio Emission from Interacting Supernovae*, ApJ, **934**, 5 (arXiv:2206.03518)

[13] Margalit, B., Quataert, E., & **Ho, A. Y. Q.** 2022, *Optical to X-Ray Signatures of Dense Circumstellar Interaction in Core-collapse Supernovae*, ApJ, **928**, 122 (arXiv:2109.09746)

[14] Dong, D. Z., et al. 2021, *A transient radio source consistent with a merger-triggered core collapse supernova*, Science, 373, 1125 (arXiv:2109.01752)

[15] Andreoni, I., et al. 2021, *Fast-transient Searches in Real Time with ZTFReST: Identification of Three Optically Discovered Gamma-Ray Burst Afterglows and New Constraints on the Kilonova Rate*, ApJ, 918, 63 (arXiv:2104.06352)

[16] De, K., et al. 2020, *The Zwicky Transient Facility Census of the Local Universe I: Systematic search for Calcium rich gap transients reveal three related spectroscopic sub-classes*, ApJ, **905**, 58 (arXiv:2004.09029)

[17] Perley, D. A., et al. 2020, ApJ, *The Zwicky Transient Facility Bright Transient Survey. II. A Public Statistical Sample for Exploring Supernova Demographics* , ApJ, **904**, 35 (arXiv:2009.01242)

[18] Szkody, P., Dicenzo, B., **Ho, A. Y. Q.**, et al. 2020, *Cataclysmic Variables from the First Year of the Zwicky Transient Facility*, AJ, **159**, 198 (arXiv:2002.08447)

[19] Graham, M. J. et al. 2019, *The Zwicky Transient Facility: Science Objectives*, PASP, 131, 078001 (arXiv:1902.01945)

[20] Bellm, E. C. et al. 2019, *The Zwicky Transient Facility: System Overview, Performance, and First Results*, PASP, 131, 018002 (arXiv:1902.01932)

[21] Ness, M., et al. 2015, *The Cannon: A data-driven approach to stellar label determination*, ApJ, **808**, 16 (arXiv:1501.07604)

White Papers, Science Books

[1] The Simons Observatory: Science Goals and Forecasts for the Enhanced Large Aperture Telescope (Time-domain Section)

[2] Burns, E. et al. 2025, *Multidisciplinary Science in the Multimessenger Era* (arXiv2502.03577) (FBOT Section)

[3] Gamma-ray Transient Network Science Analysis Group Report (Dirty Fireballs, FBOTs)

[4] CfA Decadal White Paper, *Time-domain Astrophysics with the Submillimeter Array*

[5] DSA-2000 Community Science Book (Relativistic Stellar Explosions)

[6] PRIMA General Observer Science Book (Relativistic Stellar Explosions)

FUNDING

2025–2026	Research Corporation for Science Advancement Scialog Award (**$60,000**)
2024–2029	Packard Fellowship for Science and Engineering (**$875,000**)
2024	PCCW Frank H.T. Rhodes Leadership Grant and Mission Grant (**$5,000**)
2024–2026	HST Cycles 31 & 32 (**$37,593**)
2024–2026	Sloan Fellowship (**$75,000**)
2023–2026	NASA Ultraviolet Transient Astronomy Satellite Participating Scientists Program (PI; **$210,000**)
2023–2024	NASA *Swift* Cycle 19 (PI; **$36,000**)
2023	Cornell Roger and Mary Lou West Undergraduate Research Fellowship (for undergraduate mentee Maggie Li; **$6,500**)

SUCCESSFUL OBSERVING PROPOSALS

Summary: 92 successful PI proposals for 34 distinct programs. 659 hours on millimeter telescopes, 566 hours on radio telescopes, 365 ksec (100 hr) on X-ray telescopes, 89 hr hours on optical telescopes.

List of proposals as PI, or with student/postdoc under my direct supervision as PI (indicated with †):

Millimeter: 37 proposals, 10 programs. Telescopes: SMA (411 hr), NOEMA (211.8 hr), ALMA (36.3 hr).

- *AT2018cow: the poster-child relativistic explosion for high-frequency time-domain astronomy*
  SMA, ≈ 76 hr, DDT, 2018A
  ALMA, 2.6 hr, DDT, 2017
- *Single-object DDTs: rapidly rising blue transients discovered by ZTF*
  SMA, ≈ 5 hr, DDT, 2018A
  NOEMA, 8 hr DDT D20, 4 hr DDT D20, 1 hr DDT D24
  ALMA, 5.6 hr DDT 2022
- *Landscape of relativistic stellar explosions (LLGRBs, dirty fireballs)*
  SMA, 96 hr 2018B, 18 hr 2021B, 6 hr 2022A, 18 hr 2022B
  NOEMA, 22.1 hr W21, 19.9 hr W22, 20.8 hr S23, 10.5 hr W23
- *The death throes of massive stars, revealed through early millimeter observations*
  SMA, 36 hr 2019A, 18 hr 2019B
  NOEMA, 32 hr S19, 14 hr W24EX, 9.6 hr S25CX
  ALMA, 9.7 hr 2019
- *A new class of energetic stellar explosions in a dense medium*
  SMA, 36 hr 2020A, 30 hr 2020B, 6 hr 2021A
  NOEMA, 6 hr W20BO, 9 hr S21AY, 18.8 hr W24EW, 10.6 hr S25CW
  ALMA, 6.9 hr 2023, 6.9 hr 2024, both through joint VLA
- *DDT: Continued Monitoring of Relativistic Jetted TDE AT2022cmc*
  SMA, 54 hr DDT, 2021B
- *Millimeter-wavelength Monitoring of a Galactic Nova*
  SMA, 6 hr 2024B, 6 hr 2025A
- *GRB 250419A: A Candidate Dirty Fireball*
  NOEMA, 2.8 hr DDT, E24AN
- *The first millimeter observations of an orphan afterglow*
  ALMA, 2.3 hr DDT, 2022
- *A Candidate Fast Extragalactic Transient Discovered at Millimeter Wavelengths*
  ALMA, 2.3 hr DDT, 2022

Radio: 35 proposals, 13 programs. Telescopes: VLA (267 hr), ATCA (256 hr), VLBA (24 hr), EVN (11 hr), MeerKAT (5 hr), uGMRT (3 hr).

- *Monitoring the flux from eclipsing binary pulsar Terzan 5A*
  VLA, 4 hr, 2013A

- *Short soft transients from MAXI*
  VLA, 2 DDTs, each 3 hr, 2017A & 2017B
- *Relativistic explosions in dense circumburst matter (luminous fast blue optical transients)*
  VLA, 176 hr total spanning 2019A–2025A
  ATCA, 216 hr total spanning 2021–2022
- *Search for a radio counterpart to eROSITA X-ray transients*
  VLA, 2 hr, 2019B, DDT
- *A search for off-axis jets in Ic-BL supernovae with GRB-like host environments*
  VLA, 16, hr, 2020A
- *VLA+Chandra observations of Ic-BL SNe with ZTF high-cadence light curves*
  VLA, 16 hr, 2021B
- *Expanding the known range of LFBOT physical properties (single-object DDTs)*
  VLA, 37.1 hr, DDTs spanning 2023A–2025A
  uGMRT, 3 hr, DDT, 2019
- *VLA characterization of Einstein Probe fast X-ray transients*
  VLA, 2 DDTs in 2024A, each 2 hr
- † *Confirming an Off-Axis Jet in PTF10tqv, a Ic-BL SN*
  VLA, 1.25 hr, 2024B, DDT; then 1.17 hr, 2025B
  MeerKAT, 1 hr, DDT, 2025
  EVN, 11 hr, 2025
- *Supernovae with Luminous Radio Counterparts: A Systematic ZTF+VLASS Search*
  VLA, 20.61 hr, 2025A
- *Constraining the Origin of Extragalactic Transients Discovered by Wide-field Millimeter Surveys*
  ATCA, 40 hr, 2024OCTS
  MeerKAT, 4 hr, DDT, 2025
- *Confirmation of Superluminal Motion for Rare Relativistic Supernova AT2018cow*
  VLBA, 12 hr, 2018A
- *Search for an off-axis jet in the broad-lined Ic supernova SN2020bvc*
  VLBA, 12 hr, 2020A

X-ray: 5 proposals, 5 programs. Telescopes: Chandra (100 ksec=27.8 hr), Swift (42 ksec=11.7 hr). Also 56 *Swift* ToO requests totaling ≈ 220 ksec=62 hr.

- *A Candidate Low-luminosity Gamma-ray Burst Identified by an Early Optical Flash*
  Chandra, 20 ksec, DDT, Cycle 21
- *VLA+Chandra Observations of Ic-BL Supernovae with ZTF High-Cadence Light Curves*
  Chandra, 20 ksec, DDT, Cycle 22
- *Discovery of Minute-timescale Flares in the Aftermath of a Cosmic Explosion*
  Chandra, 40 ksec, DDT, Cycle 23
- *The X-ray Flash 250419A: A Candidate Dirty Fireball*
  Chandra, 20 ksec, DDT, Cycle 26
- *The Landscape of Relativistic Stellar Explosions*
  Swift, 42 ksec, Cycle 19

Optical: 15 proposals, 6 programs. Telescopes: HST (6 orbits=9.6 hr), Gemini North (12.8 hr), Gemini South (26 hr), Palomar 60-inch (16.5 hr), Palomar 48-inch (3 nights)

- *Tracking the Emergence of an Accretion Disk in an LFBOT*
  HST, 6 orbits (9.6 hr), DDT, Cycle 32
- *A Rapid Response to the Youngest ZTF Explosions*
  Gemini South, 4.4 hr, 2021A
- *Finding Relativistic Stellar Explosions as Fast Optical Transients*
  Gemini North, 12.8 hr from 2022A–2025A
  Gemini South, 18.5 hr from 2022A–2025A
- *Characterizing a Fast Extragalactic Transient Discovered by a Millimeter Survey*

Gemini South, 3.14 hr, Fast Turnaround, 2025A
- *The First Optically Selected Population of Relativistic Afterglows*
  Palomar 60-inch/SEDM, 8.25 hr each of 2019A and 2020A
- *ZTF Experiment Proposal: Monitoring an ULTRASAT High-cadence Field*
  Palomar 48-inch/ZTF, 3 nights ($\approx$ 24 hr), 2024

LEADERSHIP & PROFESSIONAL SERVICE

Scientific leadership and membership roles; WG=Working Group

2024–Present	BlackCAT X-ray CubeSat (Science Team Member)
2024–Present	Africa Millimetre Telescope (Science Team Member)
2024–Present	South Pole Telescope (Provisional Senior Member)
2023–Present	Ultraviolet Transient Astronomy Satellite (ULTRASAT; Participating Scientist) • (2023–Present) **Co-chair, Gamma-ray Bursts (GRB) WG**
2023–Present	Atacama Cosmology Telescope (Senior Member)
2023–Present	Simons Observatory (Senior Member)
2022–Present	CCAT Observatory • (2022–Present) **Co-lead, Time-domain Astrophysics WG**
2022–Present	CMB-S4 (Senior Member) • (2021–2023) Co-chair, Sources & Transients WG
2021–Present	UltraViolet EXplorer (UVEX) Mission (Co-I). *NASA MIDEX: launch 2030*
2018–Present	Zwicky Transient Facility (ZTF; Member) • (2025–Present) **Co-chair, Supernova & Relativistic Explosions WG**

Invited positions for service external to Cornell

2026	Ambassador, Aspen Center workshop on "Physics and Astrophysics of Neutrino-Dense Environments"
2025	NSF Review Panel
2025	SOC, NASA's 4th TDAMM Workshop
2025	Internal Reviewer, Simons Observatory time-resolved pipeline
2025	External Examiner, Viva at University College Dublin
2023–Present	Member, ZTF Publication Board
2023–Present	Member, ZTF Science Steering Committee
2022–Present	Member, Science Advisory Council, DSA-2000
2019–Present	Referee/reviewer for ApJ, ApJL, MNRAS, Nature Astronomy, Science, A&A, PASP
2023–2024	Member, SOC, Workshop on Fast Extragalactic Transients, Bormio, Italy
2023	Review Panelist, NASA ROSES Program
2023	Reviewer, James Webb Space Telescope DD proposal
2023	Reviewer, Hubble Space Telescope DD proposal
2023	Member, SOC, CMB-S4 Collaboration Meeting
2022–2023	Member, Science Organizing Committee, "Scientific Frontiers and Synergies for the DSA-2000 Radio Camera" Conference
2022	Member, Miller Annual Symposium Organizing Committee
2022	Member, SOC, CMB-S4 Collaboration Meeting
2022	Member, SOC, Workshop on "Astrophysics with the CMB-S4 Survey"

Other external service

2021–2022	Co-organizer, Theoretical Astrophysics Center Seminar Series, UC Berkeley
2021–2022	Organizer, Explosive Astronomy Seminar Series, UC Berkeley
2021	Co-organizer, Session on Transients with CMB-S4, CMB-S4 Summer Workshop
2021	Reviewer, NASA FINESST Program

2021	Time Allocation Committee: Gemini, Chandra
2021	Peer Reviewer, ALMA proposals
2021	Co-organizer, Cal-URSA Research Program
2021	Organizer, Workshop on Status of Millimeter-Transient Searches (virtual)

TEACHING: CLASSROOM & WORKSHOPS

UG=Undergraduate, G=Graduate

Fall 2025	ASTRO 2211: Stars, Galaxies, and Cosmology (UG course)
Spring 2025	ASTRO 4432/6530: Astrophysical Processes (joint UG+G course)
	• 17 students. Course rating: 5.00/5. Instructor rating: 4.92/5
Fall 2024	ASTRO 2211: Stars, Galaxies, and Cosmology (UG course)
	• 34 students. Course rating: 4.52/5. Instructor rating: 4.72/5
Spring 2024	ASTRO 6530: Astrophysical Processes (G course)
	• 10 students. Course rating: 5.00/5. Instructor rating: 4.90/5
	ASTRO 4940: Independent Study (UG; 1 student)
	PHYS 4499: Senior Thesis (UG; 1 student)
Fall 2023	ASTRO 2211: Stars, Galaxies, and Cosmology (UG course)
	• 41 students. Course rating: 4.79/5. Instructor rating: 4.87/5
	PHYS 2298: Independent Study (UG; 1 student)
	PHYS 4498: Senior Thesis (UG; 1 student)
Spring 2023	ASTRO 7683: Seminal Papers in Astronomy and Planetary Science (G course)
	• 10 students. Course rating: 5.00/5. Instructor rating: 5.00/5
	ASTRO 4940: Independent Study (UG; 2 students)
Fall 2022	ASTRO 4940: Independent Study (UG; 2 students)
2018	Instructor, ZTF Summer School
2016	Lead Instructor, Gemini Observatory Workshop on Data-Driven Modeling of Spectra

ADVISING AND MENTORING

Postdoctoral Scholar Mentoring

Fall 2025–	K-Ryan Hinds (joint with Caltech): fast transients with ZTF & LSST
Fall 2025–	Rahul Jayaraman, Cornell Klarman Fellow: fast transients with TESS
Fall 2024–	Genevieve Schroeder: radio observations of GRBs and engine-driven supernovae

Graduate Students

Spring 2025–	Gokul Srinivasaragavan (5th year at UMD, serving as external committee member)
Fall 2024–	Michael Camilo (2nd year): synchrotron modeling for trans-relativistic explosions
Fall 2023–	Cassie Sevilla (3rd year): fast blue optical transients with ZTF & ULTRASAT

Undergraduate Students

2024–	Harlan Phillips (REU student): A catalog of all ZTF extragalactic transients
2024–	Marquice Sanchez-Fleming (Cornell junior, physics): SN mm-wave counterparts
2024–	Jack Pope (Cornell senior, physics & data science): SN cm-wave counterparts
2023–	Jada Vail (Cornell physics → Epic Systems): Ic-BL SN optical light curves
	• McNair Scholar; 2023 Nexus Scholar
2022–2024	Maggie Li (Cornell physics → PhD student at Caltech): orphan afterglow modeling
	• 2023 Roger & Mary Lou West Fellow; 2024 AAS Chambliss Award; 2024 Shelley Undergraduate Research Award in Astronomy; 2024 Bethe Thesis Prize in Physics

Summer 2023	Joshua Grajales (REU student, Columbia senior): ML identification of FBOTs
2022–2023	Kailai Wang (Cornell physics): photometry of early GRB optical afterglows
2022–2023	William Hohensee (UC Berkeley astrophysics): DESI observations of ZTF host galaxies
Summer 2022	Mary Gerhart (UC Berkeley astrophysics): FBOT identification in survey data
Summer 2021	Alexis Andersen, Autumn Awbrey, Ruby Wong (UC Berkeley physics/astrophysics): DESI observations of transient host galaxies (co-advised with Peter Nugent)
Summer 2021	Caitlin King (Northern Arizona University): orphan afterglow model predictions DOE Science Undergraduate Laboratory Internship (SULI) program

ACADEMIC PRESENTATIONS

Summary: 83 total (60 invited), of which 35 at international conferences (21 invited), 45 department colloquia/seminars (36 invited), 2 summer schools (1 as lead organizer), 1 press panel.

Selected recent invited talks:

2026	Plenary, IAU Symposium on "Future landscape of astrophysical transients: novel approaches in theory and observations," Turku, Finland
2026	Plenary, "Multi-Messenger Astrophysics in the Dynamic Universe" Workshop, Kyoto, Japan
2025	Colloquium, Max Planck Institute for Radio Astronomy, Bonn Germany
2025	Astronomy & Astrophysics Seminar, New York University, New York USA
2025	Plenary, Science Meeting for the Black Hole Explorer (virtual)
2025	Lecturer, Center for Computational Astrophysics LSST Summer School, NY, USA
2025	Plenary, "Shaping the Future of Time-Domain Astronomy with LSST" Conference, Rio de Janeiro, Brazil
2025	Talk on landscape of sub-mm discovery engines, "PRIMA and the Future of Far-IR Science" Workshop, Caltech, Pasadena CA, USA
2025	Colloquium, Goddard Space Flight Center, Greenbelt MD, USA
2025	Trottier Space Institute Astronomy Seminar, McGill University, Montreal QC, Canada
2025	Colloquium, Syracuse University, Syracuse NY, USA
2025	Seminar, University College Dublin, Dublin, Ireland
2025	Colloquium, Herzberg Astronomy and Astrophysics Research Centre, Victoria BC, Canada
2025	Colloquium, University of British Columbia, Vancouver BC, Canada
2024	Plenary, "MAXI 15 Year Workshop for the Time Domain Astronomy," Tokyo, Japan
2024	Colloquium, Pennsylvania State University, College Park PA, USA
2024	Colloquium, Aspen Center for Physics, Aspen CO, USA (recording)
2024	Plenary, Current Themes Workshop, Niels Bohr Institute, Copenhagen, Denmark
2024	Plenary, "Cosmic Transients in the Era of Large Surveys" Symposium, Swedish Royal Academy of Sciences, Stockholm, Sweden
2024	Plenary on Transient Science, CMB-S4 Spring Collaboration Meeting (virtual)
2024	Colloquium, Princeton/IAS, Princeton NJ, USA
2023	Plenary, 32nd Texas Symposium on Relativistic Astrophysics, Shanghai, China
2023	Colloquium, MIT Astrophysics, Cambridge MA, USA
2023	Colloquium, UVA/NRAO, Charlottesville VA, USA
2023	Plenary, The Transient and Variable Universe Conference, UIUC, Illinois, USA
2023	Talk, CMB-S4 Spring Collaboration Meeting (virtual)
2023	Colloquium, Columbia University, New York NY, USA
2023	Review, MIAPbP "Interacting Supernovae" Workshop, Garching, Germany
2023	Colloquium, University of Toronto, Toronto ON, Canada
2022	Colloquium, Caltech, Pasadena CA, USA
2022	Talk, Time Domain and Multi-Messenger Astrophysics NASA Workshop (virtual)
2022	Plenary, CMB-S4 Collaboration Meeting (virtual)
2022	Talk, AAS Special Session on "An Update on Astrophysics and Cosmology from Cosmic Microwave Background Measurements in the Next Decade"

2022 Colloquium, Radboud University, Nijmegen, Netherlands
2022 Colloquium, Carnegie Observatories, Pasadena CA, USA
2022 Talk, APS April Meeting, Cecilia Payne-Gaposchkin Dissertation Award Finalist
2022 CCAT-Prime/FYST Collaboration Meeting (virtual)
2022 Tor Vergata Astrophysics Seminar (virtual)
2022 Special Physics & Astronomy Seminar, Northwestern University, Evanston IL, USA
2022 Colloquium, U.T. Austin, Austin TX, USA
2022 Colloquium, Cornell University, Ithaca NY, USA
2021 Colloquium, Max Planck Institute for Astronomy, Heidelberg, Germany (virtual)
2021 Colloquium, U.C. Santa Cruz, USA
2021 Talk, SuperVirtual (virtual)
2021 Seminar, Kavli Institute for Cosmological Physics, U. Chicago, USA

COMMUNITY ENGAGEMENT

2025 Lecturer, Warrior Scholars Program, Cornell
2025 Volunteer, Spacecraft Planetary Image Facility Open House, Cornell
2025 Guest Speaker, Ithaca High School
2025 Speaker, Ithaca Astro on Tap
2025 Interviewed for Diaries of the Cosmos, part of NASA's Universe of Learning
2025 Lecture for Astronomy Section, Rochester Academy of Science
2024 Interviewed for class project, Irvine Valley College
2024 Lecture for Cornell Friends of Astronomy
2024 Lecture for North Jersey Astronomical Society (recording)
2023 Interviewed for Hotel Mars CBS Eye On The World podcast
2023 Interviewed for Science Review magazine, American School in London
2023 Member, Career Panel, 4-H Camp at Cornell
2023 Interviewed for graduate student podcast *Cosmos Crusaders*
2022 Keynote Speaker, Annual Cray User Group Meeting, Monterey CA
2017–2022 Interviewer, MIT Admissions
2021 Compass Lecture, UC Berkeley
2021 Speaker, Riverside Astronomical Society (virtual)
2019 Speaker, Greenway Talk Series, Palomar Observatory
2019 Speaker, Owens Valley Radio Observatory Lecture Series
2019 Speaker, Caltech Graduate Research Spotlight
2019 Speaker, Ventura County Astronomical Society
2019 Speaker, Greenway Talk Series, Palomar Observatory
2018 Contributing Writer, Caltech Letters
2018 Speaker, College of the Canyons Star Party
2018 Visitor, 8th-grade class, St. Philip the Apostle School, Pasadena CA
2017 Volunteer, Orbit Deep Learning Days, Huntington Library, Pasadena CA
2017 Speaker, Astro on Tap, Pasadena CA
2017 Speaker, Riverside Astronomical Society
2017 Speaker, Ventura County Astronomical Society
2017 Speaker, High School Summer Camp, Culver City CA
2016 Speaker, Santa Monica Astronomy Club
2016 Volunteer, Field Trip, iChicas After-school Program
2015 Speaker, St. Philip Reverse Science Fair, Pasadena CA
2015 Volunteer, Webster Elementary Science and Stargazing Night, Pasadena CA
2015-2020 Volunteer, Caltech Astronomy Outreach program
2014–2015 Volunteer, Center for Astronomy Education and Outreach, Heidelberg, Germany
2014 AAS Astronomy Ambassadors Workshop, AAS 223rd Meeting
2012–2013 Volunteer, McCormick Public Observatory, Charlottesville VA