Andrea C. Antoni - Curriculum Vitae

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Academic Employment

9/2024-Present	Flatiron Research Fellow, Center for Computational Astrophysics
6/2024-8/2024	UC President's Postdoctoral Fellow, KITP, UC Santa Barbara
8/2018-5/2024	Graduate Student Researcher, UC Berkeley

Education

Ph.D. in Astrophysics, University of California, Berkeley, 2024
Thesis advisor: Eliot Quataert
Thesis title: IIp or not IIp: Transients produced from "failed" or weak explosions of red supergiants

M.A. in Astrophysics, University of California, Berkeley, 2020

B.S. in Physics (Astrophysics) with Highest Honors, University of California, Santa Cruz, 2018
Summa cum laude, Dean's Award for Outstanding Senior Thesis, GPA: 4.0
Thesis Advisor: Enrico Ramirez-Ruiz

A.A. Mathematics, A.S. Physics, West Valley College, 2015
Honor Graduate, Dean's List, GPA: 4.0

Fellowships & Scholarships

2027-2029	Columbia THEA Postdoctoral Fellowship
2024-2027	Flatiron Research Fellowship
2024-2027	NASA Hubble Postdoctoral Fellowship (declined)
2024-2026	UC President's Postdoctoral Fellowship
2023-2024	University of California Dissertation-Year Fellowship
2020-2023	NSF Graduate Research Fellowship
2018-2020	Berkeley Graduate Fellowship
2017-2018	Barry Goldwater Scholarship
2015-2017	University of California Regents Scholarship

Teaching Experience

Summer 2025	Lecturer, Flatiron Summer School on Astrophysical Transients
Spring 2021	Graduate Student Instructor, Astro 7B, UC Berkeley
Fall 2018	Graduate Student Instructor, Astro C10, UC Berkeley
2012-2015	Math Tutor, Math Resource Center, West Valley College

Service & Outreach

Flatiron:

2025-Present	Lamat Research Advisor
2025	AstroCom Summer Research Advisor
2025	Flatiron Post-doc Experience Panelist
2025	Member of post-doc panel for Research Scientist search
2024-Present	CUNY Masters Program Career Mentor

UC Berkeley:

2020-2024 Workshop Coordinator, POWER Bay-Area Executive Team

POWER Bay-Area is a workshop series and mentoring program for community college students. We actively recruit women and students from other minoritized genders from local schools with a high percentage of first-generation-to-college, low-income, Black, Latinx, Chicanx, and Indigenous students. We pair each student with a Berkeley graduate-student mentor and host workshops to help demystify the transfer process and careers in science. We launched in the Fall of 2020 with a fully virtual program. We now hold on-campus retreats that bring mentees and mentors together for workshops, lab tours, and community-building activities. One of my major contributions has been to co-develop (initially with Hannah S. Kenagy) the workshops, panel discussions, and activities we offer. I believe that (informed) mentorship is one of the most high-impact ways to support students from groups that are historically excluded from and currently underrepresented in STEM. Mentorship improves access to science experiences and supports students' sense of belonging – two critical components of student success.

2020-2021	Graduate Liaison for Undergraduate Programs
2020-2021	Mentor & Coordinator, Berkeley Astro Scholars
2020	Invited Speaker, Roots to STEM series at West Valley College
2019	Panelist, Women in STEM conference at West Valley College
2018	Speaker, Girls Paving the Way (Lakeview Middle School visit)
2018-2024	Mentor: Physics Course for Transfer Students, CalBridge, Berkeley Compass Project, Lamat community, Cal transfer students

UC Santa Cruz:

2018 Mentor, SPS / WiPA Physics Mentoring Program

2017 Host, Watsonville High School Tours, SLUG Lab

2016 Host, Astronomy Department External Review Committee SLUG Lab visit

2016-2018 Transfer Panelist and Lab Tour Host, STEM Transfer Day

2016-2018 Director, UCSC Supercomputer Lab for Undergrads (SLUG)

2015 Member of Lamat REU Selection Committee

West Valley College:

2015 Student Learning and Program Effectiveness Committee member

2014 West Valley STEM Club founding Co-President & Science Fair organizer

Publications

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Andrea Antoni, Yan-Fei Jiang, and Eliot Quataert, 2025, *Radiation Hydrodynamic Simulations of Low Energy Explosions of Red and Yellow Supergiants.* Submitted to ApJ.

Kishalay De, Morgan MacLeod, Jacob E. Jencson, Elizabeth Lovegrove, **Andrea Antoni**, Erin Kara, Mansi M. Kasliwal, Ryan M. Lau, Abraham Loeb, Megan Masterson, Aaron M. Meisner, Christos Panagiotou, Eliot Quataert, and Robert Simcoe, 2024, submitted. *The disappearance of a massive star marking the birth of a black hole in M31*.

Alejandra Rosselli-Calderon, Ricardo Yarza, Ariadna Murguia-Berthier, Valeriia Rohoza, Rosa Wallace Everson, **Andrea Antoni**, Morgan MacLeod, Enrico Ramirez-Ruiz, 2024, ApJ, accepted. *The evolution of binaries embedded within common envelopes*.

Morgan MacLeod, **Andrea Antoni**, Caroline D. Huang, Andrea Dupree, and Abraham Loeb, 2023, ApJ, 956, 12. *Left Ringing: Betelgeuse Illuminates the Connection Between Convective outbursts, Mode switching, and Mass Ejection in Red Supergiants*.

Andrea Antoni and Eliot Quataert, 2023, MNRAS, 525, 16. *Numerical Simulations of the Random Angular Momentum in Convection II: Delayed Explosions of Red Supergiants Following "Failed" Supernovae*.

Ricardo Yarza, Naela Razo Lopez, Ariadna Murguia-Berthier, Rosa Wallace Everson, **Andrea Antoni**, Morgan MacLeod, Melinda Soares-Furtado, Dongwook Lee, & Enrico Ramirez-Ruiz, 2023, ApJ, 954, 16. *Hydrodynamics and survivability during post-main-sequence planetary engulfment*.

Andrea Antoni and Eliot Quataert, 2022, MNRAS, 511, 21. *Numerical Simulations of the Random Angular Momentum in Convection: Implications for Supergiant Collapse to Form Black Holes*.

Nicholas Kaaz, Sophie Lund Schrøder, Jeff J. Andrews, **Andrea Antoni**, & Enrico Ramirez-Ruiz, 2023, ApJ, 944, 17. *The hydrodynamic evolution of binary black holes embedded within the vertically stratified disks of active galactic nuclei*. ApJ accepted.

Soumi De, Morgan MacLeod, Rosa Wallace-Everson, **Andrea Antoni**, Ilya Mandel, & Enrico Ramirez-Ruiz, 2020, ApJ, 897, 22. *Common Envelope Wind Tunnel: The Effects of Binary Mass Ratio and Implications for the Accretion-Driven Growth of LIGO Binary Black Holes*.

Andrea Antoni, Morgan MacLeod, and Enrico Ramirez-Ruiz, 2019, ApJ, 884, 23. *The Evolution of Binaries in a Gaseous Medium: Three-Dimensional Simulations of Binary Bondi-Hoyle-Lyttleton Accretion*.

Nicolas Kaaz, **Andrea Antoni**, and Enrico Ramirez-Ruiz, 2019, ApJ, 876, 11. *Bondi-Hoyle-Lyttleton Accretion onto Star Clusters*.

Morgan MacLeod, **Andrea Antoni**, Ariadna Murguia-Berthier, Phillip Macias, and Enrico Ramirez-Ruiz, 2017, ApJ, 838, 17. *Common Envelope Wind Tunnel: Coefficients of Drag and Accretion in a Simplified Context for Studying Flows Around Objects Embedded Within Stellar Envelopes*.

Ariadna Murguia-Berthier, Morgan MacLeod, Enrico Ramirez-Ruiz, **Andrea Antoni**, and Phillip Macias, 2017, ApJ, 845, 10. *Accretion Disk Assembly During Common Envelope Evolution: Implications for Feedback and LIGO Binary Black Hole Formation*.

Presentations

Upcoming:

Invited Talk, Astro Seminar, Carnegie Mellon University, 2025
Contributed Talk, Stellar Populations and Their Explosions: Bridging the Gap, Ringberg, 2025
Invited Review Lecture, Frank N. Bash Symposium, UT Austin, 2025

Recent:

Contributed Talk, Transients from Space, STSci, 2025
Invited Chalkboard Talk, Pizza Lunch, Columbia Astrophysics, 2024
Invited Talk, Cosmology Seminar, University of California, Davis, 2024
Invited Talk, Physics Colloquium, San Francisco State University, 2024
Invited Talk, Tapir Seminar, CalTech, 2024
Contributed Dissertation Talk, AAS Winter Meeting, 2023
Invited Talk, ITC Colloquium, Harvard CfA, 2023
Invited Talk, ITC Lunch, Harvard CfA, 2023
Invited Talk, Stars & Compact Objects Group Meeting, CCA, 2023
Invited Talk, Astro Coffee, IAS, 2022
Invited Talk, ZTF Theory Network Meeting, 2022