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&

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Education

UNIVERSITY OF CALIFORNIA, SANTA CRUZ

Ph.D, Astronomy & Astrophysics

June 2022

M.Sc., Astronomy & Astrophysics

December 2018

CORNELL UNIVERSITY

B.A. Physics and College Scholar

May 2016

Research Appointments

Assistant Professor of Physics & Astronomy, UC Davis

2025 - present

Carnegie Theoretical Astrophysics Center Postdoctoral Research Fellow

2023 - present

UCLA Chancellor's Postdoctoral Research Fellow

2022

Selected Awards & Fellowships

HEAD Dissertation Prize Honorable Mention

2023

AAUW American Dissertation Fellowship

2021-2022

UC Santa Cruz President's Dissertation Year Fellowship

2021-2022

Denice Denton Excellence in Research Award

2021

NSF Graduate Research Fellowship Honorable Mention

2018

UC Santa Cruz Astronomy Award for Excellence in Mentoring

2017-2018

UC Santa Cruz Chancellor's Fellowship

2016 - 2017

UC Santa Cruz Regents' Fellowship

2016 - 2017

Member of Mortar Board Der Hexenkreis Senior Honor Society

2016 - present

Research Grants (PI)

NASA Swift Cycle 17 Guest Investigator Grant

2021-2022

Invited Talks

EAS (Cork) – review talk

2025

'Exploring galactic nuclei with tidal disruption events'

QPEs and Repeating Transients in Madrid (ESAC) - review talk

2025

'Constraining stars & SMBHs with Tidal Disruption Events'

Astrophysical Dynamics Copenhagen (Niels Bohr Institute) <i>'Stars & SMBHs in galactic nuclei: Tidal Disruption Events & Stellar Collisions'</i>	2025
Sexten Workshop <i>'TDE light curves from emission to observations'</i>	2025
Carnegie Mellon Seminar <i>'Lighting up Supermassive Black Holes'</i>	2025
University of Hawaii Colloquium <i>'Lighting up Supermassive Black Holes'</i>	2025
Penn State Colloquium <i>'Lighting up Supermassive Black Holes'</i>	2025
UC San Diego Seminar <i>'Exploring galactic nuclei with tidal disruption events'</i>	2024
UC Davis Colloquium <i>'Lighting up Supermassive Black Holes'</i>	2024
University of Michigan Colloquium <i>'Exploring galactic nuclei with tidal disruption events'</i>	2024
UC Davis Cosmology and Astronomy Seminar <i>'Exploring galactic nuclei with tidal disruption events'</i>	2024
Tidal Disruption Events and Nuclear Transients: Entering the Data-Rich Era (Crete) <i>'TDE light curves from emission to observations'</i>	2024
Rise_Time 2024 (Purdue) <i>'Exploring galactic nuclei with tidal disruption events'</i>	2024
Anticipating the Rising Tide of TDEs: Theory and Observations (KITP blackboard talk) <i>'Lighting up Supermassive Black Holes with TDEs'</i> , watch here	2024
HEAD Dissertation Prize talk <i>'Exploring galactic nuclei with tidal disruption events'</i>	2024
UC Berkeley TAC Seminar <i>'TDEs as probes of SMBH binaries & stellar populations in galactic nuclei'</i>	2024
Monash University Colloquium <i>'Exploring galactic nuclei with tidal disruption events'</i>	2024
Loss Cones in Como – review talk <i>'TDEs: theory and observations'</i>	2024
Flares and Bursts in Galactic Nuclei (IAS) <i>'Finding hidden massive black hole binaries and repeated TDEs with the eccentric Kozai-Lidov mechanism'</i>	2023
Institute for Advanced Study Seminar <i>'Exploring galactic nuclei with tidal disruption events'</i>	2023

19th High Energy Astrophysics Division meeting <i>'Exploring galactic nuclei with tidal disruption events'</i>	2022
Caltech TAPIR seminar <i>'Exploring galactic nuclei with tidal disruption events'</i>	2021
University of Melbourne Colloquium <i>'Exploring galactic nuclei with tidal disruption events'</i>	2021
TDEs in the Golden Age of Time Domain Astronomy – 235th AAS Meeting <i>'Weighing Black Holes with Tidal Disruption Events'</i>	2020
University of Nova Gorica Colloquium <i>'Weighing Black Holes with Tidal Disruption Events'</i>	2019
DARK Institute for Cosmology <i>'The future of Black Hole population studies'</i>	2018

Mentoring & Advising

Research Mentor - UCLA & Carnegie Observatories 2020 - current
I am one of the primary research mentors for a UCLA Ph.D. student (Denyz Melchor). We have published three papers together and are working on a fourth.

Carnegie CASSI Program - Carnegie Observatories 2023 - current
Project advisor & mentor
The Carnegie CASSI program provides summer research opportunities for undergraduate students from local California schools. I have been part of the mentoring teams for 4 summer students, and I am currently the primary science mentor for one student.

Lamat REU program - UC Santa Cruz 2020 - 2022
Project advisor
I was the primary advisor for an REU student (Angela Twum, current Ph.D. student at UC Santa Cruz). Our work together led to a published paper.

Thesis advisor - UC Santa Cruz 2016 - 2020
Primary advisor to undergraduate student (Michael Miller, B.S. UC Santa Cruz, 2020). Thesis project: "The phase space of astronomical transients".

AY9: Introduction to Research in Astronomy - UC Santa Cruz 2016 - 2017
Project advisor
As part of an intro to research class aimed at students from under-resourced and minority backgrounds, I lead a group of students in an original research project which they presented to the department at the end of the year.

Women in Physics and Astronomy Group - UC Santa Cruz 2016 - 2022
Mentor
General academic mentor to undergraduate students through WiPA program. This has included editing students' applications, connecting students with potential research advisors, and helping

students navigate general on campus resources.

Outreach Activities

Carnegie CASSI Program - Carnegie Observatories 2023 - current
Workshop Leader

In addition to the mentoring described above, I have also led workshops for the CASSI program on writing abstracts, building community in astronomy, and presenting research.

Letters to a Pre-Scientist 2024 - current
Pen pal

I am a pen pal to school-age children from under-resourced schools to help them learn about what careers in STEM look like.

KITP Teacher's Conference - KITP 2024
Talk

I gave a talk to high school science teachers about tidal disruption events and transients.

Lamat REU Program - UC Santa Cruz 2020 - 2022
Workshop Leader

The Lamat REU program is focused on increasing the retention of diverse students in astronomy and planetary science, and recruits from local community colleges. I lead workshops for the program on research methods in astrophysics, aimed at students who are learning to code in Python.

Astro on Tap, Science on Tap - Santa Cruz 2020 - 2022
I give public, informal public talks on my research (watch example [here](#)).

Women in Physics & Astronomy Group - UC Santa Cruz 2016 - 2022
Talk Chair

As a chair of the WiPA group at UCSC, I organize outreach and community building events. In particular, I organize and lead discussions with visiting scientists and UCSC undergraduate and graduate students on life in academia, common challenges faced, and advice for students.

Undergraduate Women in Physics Group - Cornell University 2015 - 2016
Founder of UWIP at Cornell

I organized and procured for funding for community building activities for women in physics at Cornell with the goal of increasing retention rates in the undergraduate physics program.

Recent Press Releases

Astronomical breakthrough reveals star that survived destructive encounter with black hole
<https://www.eurekalert.org/news-releases/1091862> 2025

Chandra Studies a Moderately Massive Star Destroyed by a Giant Black Hole In Another Galaxy
<https://chandra.harvard.edu/blog/node/855> 2023

Publications

Summary: 31 published, 1 in press, 2 in review (6 second author, 6 first author)

Mockler, B., Coughlin, E., Hammerstein, E., & Nicholl, M. 2025, in press (Elsevier)
Encyclopedia of Astrophysics: Tidal Disruption Events

Melchor, D., et al. inc. **Mockler, B.**, 2025, [submitted to ApJ](#)
Tidal Disruption Event Demographics in Supermassive Black Hole Binaries Over Cosmic Times

Li, W. -X., et al. inc. **Mockler, B.**, 2025, [submitted to Nature Astronomy](#)
An extremely soft and weak fast X-ray transient associated with a luminous supernova

Makrygianni, L., et al. inc. **Mockler, B.**, 2025, [ApJL, 987, 1](#)
The Double Tidal Disruption Event AT 2022dbl Implies That at Least Some "Standard" Optical TDEs are Partial Disruptions

Piro, T. & **Mockler, B.**, 2025, [ApJ, 985, 77](#)
Late-time Evolution and Instabilities of Tidal Disruption Disks

Rose, S. & **Mockler, B.**, 2025, [ApJL, 985, 40](#)
On the Orbital Effects of Stellar Collisions in Galactic Nuclei: Tidal Disruption Events and Ejected Stars

Earl, N., et al. inc. **Mockler, B.**, 2025, [ApJ, 983, 28](#)
AT 2020nov: Evidence for Disk Reprocessing in a Rare Tidal Disruption Event

Gibson, C., et al. inc. **Mockler, B.**, 2025, [ApJ, 980, 109](#)
Formation of Stripped Stars From Stellar Collisions in Galactic Nuclei

Mockler, B., et al. 2024, [ApJL, 973, 9](#)
Tidal Disruption Events from Stripped Stars

Xiang, X., et al. inc. **Mockler, B.**, 2024, [ApJ, 973, 9](#)
Investigating the Mass of the Black Hole and Possible Wind Outflow of the Accretion Disk in the Tidal Disruption Event AT2021ehb

Melchor, D., **Mockler, B.**, et al. 2024, [ApJ, 960, 39](#)
Tidal Disruption Events from the Combined Effects of Two-Body Relaxation and the Eccentric Kozai-Lidov Mechanism

Mockler, B., et al. 2023, [ApJ, 959, 18](#)
Uncovering Hidden Massive Black Hole Companions with Tidal Disruption Events

Miller, J., **Mockler, B.**, et al. 2023, [ApJL, 953, 2](#)
Evidence of a Massive Stellar Disruption in the X-Ray Spectrum of ASASSN-14li

Kremer, K., **Mockler, B.**, et al. 2023, [MNRAS, 524, 4](#)
Wind-reprocessed transients from stellar-mass black hole Tidal Disruption Events

Wiseman, P., et al. inc. **Mockler, B.**, 2023, [MNRAS, 522, 3](#)
Multiwavelength observations of the extraordinary accretion event AT2021lwx

- Angus, C.R., et al. inc. **Mockler, B.**, 2023, [Nature Astronomy](#), 6, 1452
A fast-rising tidal disruption event from a candidate intermediate-mass black hole
- Liu, C., **Mockler, B.**, et al., 2022, [ApJ](#), 944, 184
Tidal disruption events from eccentric orbits and lessons learned from the noteworthy ASASSN-14ko
- Nicholl, M., et al. inc. **Mockler, B.**, 2022, [MNRAS](#), 515, 4
Systematic light curve modelling of TDEs: statistical differences between the spectroscopic classes
- Naoz, S., et al. inc. **Mockler, B.**, 2022, [ApJ](#), 927, 18
The Combined Effects of Two-body Relaxation Processes and the Eccentric Kozai-Lidov Mechanism on the Extreme-mass-ratio Inspirals Rate
- Mockler, B.**, et al. 2022, [ApJ](#), 924, 70
Evidence for the preferential disruption of moderately massive stars by supermassive black holes
- Gagliano, A., et al. inc. **Mockler, B.**, 2021, [ApJ](#), 924, 55
An Early-Time Optical and Ultraviolet Excess in the type-Ic SN 2020oi
- Hung, T., et al. inc. **Mockler, B.**, 2021, [ApJ](#), 917, 9
Discovery of a Fast Iron Low-ionization Outflow in the Early Evolution of the Nearby Tidal Disruption Event AT2019qiz
- Jones, D.O., et al. inc. **Mockler, B.**, 2021, [ApJ](#), 908, 143
The Young Supernova Experiment: Survey Goals, Overview, and Operations
- Mockler, B.** & Ramirez-Ruiz, E., 2021, [ApJ](#), 906, 101
An Energy Inventory of Tidal Disruption Events
- Roth, N., et al. inc. **Mockler, B.**, 2020, [Space Sci. Rev.](#), 216, 114
Radiative Emission Mechanisms of Tidal Disruption Events
- Law-Smith, J. A. P., et al. inc. **Mockler, B.**, 2020, [ApJ](#), 905, 141
Stellar TDEs with Abundances and Realistic Structures (STARS): Library of Fallback Rates
- Hung, T., et al. inc. **Mockler, B.**, 2020, [ApJ](#), 903, 31
Double-peaked Balmer Emission Indicating Prompt Accretion Disk Formation in an X-Ray Faint Tidal Disruption Event
- Holoien, T.W.-S., et al. inc. **Mockler, B.**, 2020, [ApJ](#), 898, 161
The Rise and Fall of ASASSN-18pg: Following a TDE from Early To Late Times
- Leloudas, G., et al. inc. **Mockler, B.**, 2019, [ApJ](#), 887, 218
The spectral evolution of AT 2018dyb and the presence of metal lines in tidal disruption events
- Mockler, B.**, Guillochon, J., & Ramirez-Ruiz, E., 2019, [ApJ](#), 872, 151
Weighing Black Holes with Tidal Disruption Events
- Ascenzi, S., et al. inc. **Mockler, B.**, 2019, [MNRAS](#), 486, 672
A luminosity distribution for kilonovae based on short gamma-ray burst afterglows
- Perley, D., et al. inc. **Mockler, B.**, 2019, [MNRAS](#), 484, 1031
The fast, luminous ultraviolet transient AT2018cow: extreme supernova, or disruption of a star by an

intermediate-mass black hole?

Guillochon, J., et al. inc. **Mockler, B.**, 2018, [ApJS](#), 236, 6

MOSFiT: Modular Open-Source Fitter for Transients

Gallardo., P. A. et al. inc. **Mockler, B.**, 2017, [Appl. Opt.](#) 56, 2796

Deep reactive ion etched anti-reflection coatings for sub-millimeter silicon optics