

Erica Hammerstein

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RESEARCH INTERESTS

Time domain astronomy; Sky surveys; Multi-wavelength discovery, classification, and characterization of astrophysical transients, particularly black hole-related transients; Studies of tidal disruption events and their host galaxies; Accretion and jet physics; Supermassive black hole and host galaxy connections

EDUCATION

Ph.D., Astronomy, University of Maryland, College Park	2024
Thesis: <i>Population Studies of Tidal Disruption Events and their Hosts: Understanding Host Galaxy Preferences & the Origin of the UV/Optical Emission</i>	
Advisors: Brad Cenko and Sylvain Veilleux	
M.Sc., Astronomy, University of Maryland, College Park	2020
Advisor: Suvi Gezari	
B.Sc., Astronomy, University of Michigan, Ann Arbor	2018

RESEARCH EXPERIENCE

Postdoctoral Scholar, University of California, Berkeley	September 2024 – present
Postdoctoral Associate, University of Maryland/GSFC	June 2024 – September 2024
Graduate Research Assistant, University of Maryland/GSFC	2019 – 2024
REU Research Assistant, Wayne State University	Summer 2017
Undergraduate Research Assistant, University of Michigan	2016 – 2018
UROP Research Assistant, University of Michigan	2015 – 2016

PUBLICATIONS

- Total publications (including submitted) / **as first author**: 29 / **5**
- Citations: >1,229 / >**175**
- h-index: 15 / **3**
- 31/17 TNS Classification Reports/AstroNotes, 7 GCN Circulars, 3 ATels

First Author Publications

- [5] **Hammerstein, E.**, Cenko, S. B., Gezari, S., et al. 2023 The Astrophysical Journal, 957, 86.
Integral Field Spectroscopy of 13 Tidal Disruption Event Hosts from the Zwicky Transient Facility Survey

- [4] **Hammerstein E.**, van Velzen S., Gezari S., et al. 2023 The Astrophysical Journal, 942, 9.
The Final Season Reimagined: 30 Tidal Disruption Events from the ZTF-I Survey
- [3] **Hammerstein E.**, Gezari S., van Velzen S., et al. 2021 The Astrophysical Journal, 908, L20.
Tidal Disruption Event Hosts Are Green and Centrally Concentrated: Signatures of a Post-merger System
- [2] **Hammerstein E.**, Gültekin K., King A. 2019 The Astrophysical Journal, 875, 82.
Probing the Jet Turnover Frequency Dependence on Black Hole Mass and Mass Accretion Rate
- [1] **Hammerstein E. K.**, Cackett E. M., Reynolds M. T., et al. 2018 Monthly Notices of the Royal Astronomical Society, 478, 4317.
Constraining the inclination of the low-mass X-ray binary Cen X-4

Co-Author Publications

- [24] Milán Veres P., Franckowiak A., van Velzen S., et al. 2024, arXiv e-prints, arXiv:2408.17419.
Back from the dead: AT2019aal as a candidate repeating TDE in an AGN
- [23] Das K. K., Fremling C., Kasliwal M. M., et al. 2024, The Astrophysical Journal Letters, 969, L11.
SN 2023zaw: An Ultrastripped, Nickel-poor Supernova from a Low-mass Progenitor
- [22] Yao Y., Guolo M., Tombesi F., et al. 2024, arXiv e-prints, arXiv:2405.11343.
Sub-relativistic Outflow and Hours-Timescale Large-amplitude X-ray Dips during Super-Eddington Accretion onto a Low-mass Massive Black Hole in the Tidal Disruption Event AT2022lri
- [21] Guolo M., Gezari S., Yao Y., et al. 2024, The Astrophysical Journal, 966, 160.
A Systematic Analysis of the X-Ray Emission in Optically Selected Tidal Disruption Events: Observational Evidence for the Unification of the Optically and X-Ray-selected Populations
- [20] Dodd, S. A., Nukala, A., Connor, I., et al. 2023 The Astrophysical Journal, 959, L19.
Mid-infrared Outbursts in Nearby Galaxies: Nuclear Obscuration and Connections to Hidden Tidal Disruption Events and Changing-look Active Galactic Nuclei
- [19] Stein R., Mahabal A., Reusch S., et al. 2023 arXiv e-prints, arXiv:2312.00139.
tdescore: An Accurate Photometric Classifier for Tidal Disruption Events
- [18] Srinivasaragavan, G. P., Swain, V., O'Connor, B. M., et al. 2023 arXiv e-prints, arXiv:2310.14397.
Characterizing the Ordinary Broad-lined Type Ic SN 2023pel from the Energetic GRB 230812B
- [17] Somalwar, J. J., Ravi, V., Dong, D. Z., et al. 2023 arXiv e-prints, arXiv:2310.03791.
VLAASS tidal disruption events with optical flares I: the sample and a comparison to optically-selected TDEs
- [16] Somalwar, J. J., Ravi, V., Yao, Y., et al. 2023 arXiv e-prints, arXiv:2310.03782.
The first systematically identified repeating partial tidal disruption event
- [15] Mummery, A., van Velzen, S., Nathan, E., et al. 2023 Monthly Notices of the Royal Astronomical Society, 527, 2452.
Fundamental scaling relationships revealed in the optical light curves of tidal disruption events
- [14] Ward C., Gezari S., Nugent P., et al. 2023 arXiv e-prints, arXiv:2309.02516.
Panic at the ISCO: the visible accretion disks powering optical variability in ZTF AGN
- [13] Ghosh R., Laha S., Meyer E., et al. 2023 The Astrophysical Journal, 955, 3.
A Reemerging Bright Soft X-Ray State of the Changing-look Active Galactic Nucleus 1ES 1927+654: A Multiwavelength View
- [12] Guolo M., Gezari S., Yao Y., et al. 2023 arXiv e-prints, arXiv:2308.13019.
A systematic analysis of the X-ray emission in optically selected tidal disruption events: observational evidence for the unification of the optically and X-ray selected populations

- [11] O'Connor B., Troja E., Ryan G., et al. 2023 Science Advances, 9, eadi1405.
A structured jet explains the extreme GRB 221009A
- [10] Srinivasaragavan G. P., O'Connor B., Cenko S. B., et al. 2023 The Astrophysical Journal, 949, L39.
A Sensitive Search for Supernova Emission Associated with the Extremely Energetic and Nearby GRB 221009A
- [9] Yao Y., Ravi V., Gezari S., et al. 2023 arXiv e-prints, arXiv:2303.06523.
Tidal Disruption Event Demographics with the Zwicky Transient Facility: Volumetric Rates, Luminosity Function, and Implications for the Local Black Hole Mass Function
- [8] Andreoni I., Coughlin M. W., Perley D. A., et al. 2022 Nature, 612, 430.
A very luminous jet from the disruption of a star by a massive black hole
- [7] Yao Y., Lu W., Guolo M., et al. 2022 The Astrophysical Journal, 937, 8.
The Tidal Disruption Event AT2021ebb: Evidence of Relativistic Disk Reflection, and Rapid Evolution of the Disk-Corona System
- [6] Goodwin A. J., van Velzen S., Miller-Jones J. C. A., et al. 2022 Monthly Notices of the Royal Astronomical Society, 511, 5328.
AT2019azh: an unusually long-lived, radio-bright thermal tidal disruption event
- [5] Frederick S., Gezari S., Graham M. J., et al. 2021 The Astrophysical Journal, 920, 56.
A Family Tree of Optical Transients from Narrow-line Seyfert 1 Galaxies
- [4] Ahumada T., Singer L. P., Anand S., et al. 2021 Nature Astronomy, 5, 917.
Discovery and confirmation of the shortest gamma-ray burst from a collapsar
- [3] Ward C., Gezari S., Frederick S., et al. 2021 The Astrophysical Journal, 913, 102.
AGNs on the Move: A Search for Off-nuclear AGNs from Recoiling Supermassive Black Holes and Ongoing Galaxy Mergers with the Zwicky Transient Facility
- [2] Stein R., van Velzen S., Kowalski M., et al. 2021 Nature Astronomy, 5, 510.
A tidal disruption event coincident with a high-energy neutrino
- [1] van Velzen S., Gezari S., **Hammerstein E.**, et al. 2021 The Astrophysical Journal, 908, 4.
Seventeen Tidal Disruption Events from the First Half of ZTF Survey Observations: Entering a New Era of Population Studies

Other Works

- [1] Mockler B., Coughlin E., **Hammerstein E.**, Nicholl M.
Tidal disruption events, Encyclopedia of Astrophysics, 1st Edition, Elsevier (in preparation)

PROPOSALS (as PI*)

Swift Observatory	Cycle 21*: 230ks / \$40k awarded
Kast, Shane Telescope	2025A*: 6 ToOs
DeVeny/LMI, Lowell Discovery Telescope	2022B*: 5 nights, 2023A*: 5 nights, 2023B*: 6 nights, 2024A*: 5 nights, 2024B*: 1.5 nights
HST/XMM	Cycle 32 (PI: Chornock): 24 orbits/45 ksec
SED machine (SEDM), P60	2021 – 2023*: 70 hours

KCWI, Keck-II telescope
XRT/UVOT, *Swift*

2021B (PI: Gezari): 1 night
14 ToO requests, 52 ksec approved

OBSERVING EXPERIENCE

Keck-I Telescope, Keck Observatory	3+ nights
Low Resolution Imaging Spectrometer (LRIS)	
Shane Telescope, Lick Observatory	3+ nights
Kast spectrograph	
Keck-II Telescope, Keck Observatory	1 night
Keck Cosmic Web Imager (KCWI)	
Lowell Discovery Telescope (LDT), Lowell Observatory	40+ nights
DeVeny optical spectrograph	
Large Monolithic Imager (LMI)	
2.4-m Hiltner Telescope, MDM Observatory	3 nights
Ohio State Multi-Object Spectrograph (OSMOS)	

SELECTED TALKS

<i>Contributed Talk</i>	Celebrating 20 Years of Swift Discoveries	2025
<i>Invited Seminar</i>	Stanford/KITP Compact Objects Group Meeting	2025
<i>Invited Talk</i>	KITP TDE Conference	2024
<i>Dissertation Talk</i>	243rd AAS Meeting, New Orleans, Louisiana	2024
<i>Invited Seminar</i>	Multi-messenger Seminar, Carnegie Mellon University	2023
<i>Invited Talk</i>	Lowell Discovery Telescope Partners' meeting, virtual	2023
<i>Invited Seminar</i>	Galaxy/AGN Journal Club, STScI/JHU	2023
<i>Invited Seminar</i>	Galread, Princeton University	2023
<i>Contributed Talk</i>	DMV Astrophysics Graduate Student Conference	2023
<i>Invited Seminar</i>	Data Analysis Seminar, George Washington University	2023
<i>Contributed Talk</i>	241st AAS Meeting, Seattle, Washington	2023
<i>Contributed Talk</i>	Lowell Discovery Telescope Partners' meeting, virtual	2022
<i>Invited Talk</i>	Workshop on Supermassive Black Holes, Cornell University	2022
<i>Contributed Talks</i>	ZTF Team meetings in Chicago, Paris, and virtual	2020 – 2022
<i>Invited Seminar</i>	CIERA Observational Astronomy Lunch, Northwestern	2022
<i>Contributed Talk</i>	240th AAS Meeting, Pasadena, California	2022
<i>Invited Seminar</i>	CGCA Seminar, University of Wisconsin – Milwaukee	2022

LEADERSHIP, **AWARDS**, & PROFESSIONAL SERVICE

Journal Referee, AAS Journals	
Journal Referee, MNRAS	
4th NASA TDAMM Workshop SOC	2025

NSF Review Panelist	2025
Departmental Awards Panel (UMD)	2024
Department of Astronomy Faculty Search Committee (UMD)	2023 – 2024
Department of Astronomy Service Award (UMD)	2023
UMD CMNS Dean's Graduate Advisory Council	2022 – 2025
Astronomy Graduate Council Representative (UMD)	2021 – 2025
Department of Astronomy FAMILÉ ¹ Search Committee (UMD)	2022 – 2023
Astronomy Graduate Council Vice President (UMD)	2021 – 2023
Graduate Admissions Interviewer (UMD)	2020 – 2023
Department of Astronomy Chair Review Committee (UMD)	2021 – 2022
Prospective Graduate Student Visit Coordinator (UMD)	2019 – 2021
Gemini Fast Turnaround Proposal Reviewer	2021

TEACHING, MENTORING, & OUTREACH

POWER Bay Area Mentor	2025 – present
Bay Area Scientists Inspiring Students (BASIS) Volunteer	2024 – present
Science in the Park Volunteer, Cal State East Bay	2024
UMD Space Science Outreach Cooperative Volunteer	2023 – 2024
Skype a Scientist Volunteer	2019 – 2024
Volunteer Classroom Outreach Coordinator/Educator St. Michael School, Livonia, MI	2017 – 2023
Maryland Day Volunteer	2022
Lowell Observatory Live Stream Talk	2022
GRAD-MAP Winter Workshop Research Mentor	2019, 2021
GROWTH Summer School TA	2021
GRAD-MAP Python bootcamp TA	2019
TA for ASTR101	Fall 2018, Spring 2019

PRESS COVERAGE

AAS Nova highlight of my study of 30 TDEs published in ApJ	2023/01
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AFFILIATIONS + COLLABORATIONS

American Astronomical Society Member
 Zwicky Transient Facility Collaboration / TDE + AGN Science Working Group
 Rubin Observatory Transients and Variable Stars Collaboration
 La Silla Southern Sky Survey Massive Black Hole Working Group

¹ <https://faculty.umd.edu/famile-initiative>