Jamie Alexander Powell Law-Smith

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Citizenship: Canada, UK, US permanent resident

EDUCATION

2015-2021 (expected)	University of California Santa Cruz, Ph.D. in Astronomy & Astrophysics
2010-2014	Harvard University, A.B. cum laude with honors in Physics, Astrophysics

POSITIONS HELD

2015-present	PhD student, University of California Santa Cruz

RESEARCH INTERESTS

High energy astrophysics theory, tidal disruption events, black holes, neutron stars, common envelope episodes, gravitational wave sources, host galaxies, AGN accretion disks, de Sitter space in string theory

AWARDS

2020	Elmer A. Fridley Scholarship in the Physical Sciences (UC Santa Cruz)
2019	Regents' Fellowship (UC Santa Cruz)
2017	Whitford Prize for highest achievement in research, coursework, and preliminary exam (UCSC)
2015	NR Tuition Fellowship (UC Santa Cruz)
2013	Leo Goldberg Award for outstanding Junior thesis in Astronomy (Harvard University)
2012	David Rockefeller International Experience Grant
2012	Harvard College Research Program Fellowship (Harvard University)

PUBLICATIONS

(∗ indicates alphabetical authorship order. ∗∗ indicates advised student. Up-to-date list available on ADS.)

1. **Jamie A. P. Law-Smith**, Rosa Wallace Everson, Enrico Ramirez-Ruiz, Ylva Götberg, Lieke A. C. van Son, Selma E. de Mink, Stefan Zellmann, Tenley Hutchinson-Smith, Alejandro Vigna-Gómez, Samantha Wu, & Ryan J. Foley "Common Envelope Ejection and Binary Neutron Star Formation in 3D Hydrodynamics," submitted to ApJ
2. **Jamie A. P. Law-Smith**, David A. Coulter, James Guillochon, Brenna Mockler, & Enrico Ramirez-Ruiz, 2020, "Stellar TDEs with Abundances and Realistic Structures (STARS): Library of Fallback Rates," accepted for publication in ApJ [arxiv/astro-ph: 2007.10996]
3. ∗ Michael Dine, **Jamie A. P. Law-Smith**, Shijun Sun, Duncan Wood, & Yan Yu, 2020, "Obstacles to Constructing de Sitter Space in String Theory," submitted to JHEP [arxiv/hep-th: 2008.12399]

4. ✱✱ Sierra A. Dodd, **Jamie A. P. Law-Smith**, Katie Auchettl, Enrico Ramirez-Ruiz, & Ryan J. Foley, 2020 "The Landscape of Galaxies Harboring Changing-Look Active Galactic Nuclei in the Local Universe," submitted to ApJ [arxiv/astro-ph: 2010.10527]
5. David O. Jones, Ryan J. Foley, Gautham Narayan, et al., incl. **Jamie A. P. Law-Smith**, 2020, "The Young Supernova Experiment: Survey Goals, Overview, and Operations," submitted to ApJ [arxiv/astro-ph: 2010.09724]
6. Tiara Hung, Ryan J. Foley, Enrico Ramirez-Ruiz, Jane L. Dai, Katie Auchettl, Charles D. Kilpatrick, Brenna Mockler, Jon Brown, David A. Coulter, Georgios Dimitriadis, Tom Holoien, **Jamie A. P. Law-Smith**, Anthony L. Piro, Aremin Rest, César Rojas-Bravo, Matthew R. Siebert, 2020, "Prompt Accretion Disk Formation in an X-Ray Faint Tidal Disruption Event," ApJ, 903, 31 [arxiv/astro-ph: 2003.09427]
7. K. Decker French, Thomas Wevers, **Jamie A. P. Law-Smith**, Or Graur, & Anne I. Zabludoff, 2020, "The Host Galaxies of Tidal Disruption Events," Space Sci Rev 216, 32 [arxiv/astro-ph: 2003.02863]
8. Elena M. Rossi, Nicholas C. Stone, **Jamie A. P. Law-Smith**, Morgan MacLeod, Giuseppe Lodato, Jane L. Dai, & Ilya Mandel, 2020, "The Process of Stellar Tidal Disruption by Supermassive Black Holes. The first pericenter passage," to appear in Springer Space Science Reviews [arxiv/astro-ph: 2005.12528]
9. **Jamie A. P. Law-Smith**, James Guillochon, & Enrico Ramirez-Ruiz, 2019, "The Tidal Disruption of Sun-like Stars by Massive Black Holes," ApJL, 882, L25 [arxiv/astro-ph: 1907.04859]
10. ✱✱ Monica Gallegos-Garcia, **Jamie A. P. Law-Smith**, & Enrico Ramirez-Ruiz, 2018, "Tidal Disruptions of Main-sequence Stars of Varying Mass and Age: Inferences from the Composition of the Fallback Material," ApJ, 857, 109 [arxiv/astro-ph: 1801.03497]
11. **Jamie A. P. Law-Smith**, Enrico Ramirez-Ruiz, Sara L. Ellison, & Ryan J. Foley, 2017, "Tidal Disruption Event Host Galaxies in the Context of the Local Galaxy Population," ApJ, 850, 22 [arxiv/astro-ph: 1707.01559]
12. **Jamie A. P. Law-Smith**, Morgan MacLeod, James Guillochon, Philip Macias, & Enrico Ramirez-Ruiz, 2017, "Low-mass White Dwarfs with Hydrogen Envelopes as a Missing Link in the Tidal Disruption Menu," ApJ, 841, 132 [arxiv/astro-ph: 1701.08162]
13. **Jamie A. P. Law-Smith** & Daniel J. Eisenstein, 2017, "The Color and Stellar Mass Dependence of Small-Scale Galaxy Clustering in SDSS-III BOSS," ApJ, 836, 87 [arxiv/astro-ph: 1702.03933]

SOFTWARE

1. **Jamie A. P. Law-Smith**, David A. Coulter, & Brenna Mockler, 2020, "`jamielaw-smith/STARS_library`", v1.0.5, Zenodo, 10.5281/zenodo.4062018

INVITED TALKS

Caltech TAPIR Seminar, "Interactions between black holes, stars, neutron stars, and the galaxy in the era of LIGO, LISA, and LSST", Caltech, Pasadena, CA, 2020

Harvard CfA Galaxies & Cosmology and Stars & Planets Seminar, “Interactions between black holes, stars, neutron stars, and the galaxy in the era of LIGO, LISA, and LSST”, Center for Astrophysics, Harvard University, Cambridge, MA, 2020

Princeton, Quataert group meeting, “Interactions between black holes, stars, neutron stars, and the galaxy in the era of LIGO, LISA, and LSST”, Princeton University, Princeton, NJ, 2020

SFSU Colloquium, “Tidal disruptions of stars by massive black holes”, Department of Physics and Astronomy, San Francisco State University, 2020

MIT Brown Bag Lunch, “Interactions between black holes, stars, neutron stars, and the galaxy in the era of LIGO, LISA, and LSST”, Department of Physics, MIT, Cambridge, MA, 2020

Harvard-Monash Meeting, “How to eject a common envelope in 3D hydrodynamics”, School of Physics & Astronomy, Monash University, Australia, and Department of Astronomy, Harvard University, Cambridge, MA, 2020

Northwestern CIERA, “Interactions between black holes, stars, neutron stars, and the galaxy in the era of LIGO, LISA, and LSST”, Department of Astronomy, Northwestern University, Evanston, IL, 2020

DARK Cake Talk, “Tidal disruptions of stars by massive black holes”, DARK Cosmology Centre, Niels Bohr Institute, University of Copenhagen, 2020

Compact Objects for All, “Tidal disruption events in the era of celestial cinematography”, Lund Observatory, Sweden, 2020

CONTRIBUTED TALKS

Tidal Disruptions in Kyoto: Confronting Theory with Observations, “Composition and Stellar Structure in TDEs using FLASH+MESA”, Kyoto, Japan, 2020

Dunlap Institute for Astronomy & Astrophysics, University of Toronto, “Tidal Disruptions of Stars by Massive Black Holes”, Toronto, Canada, 2018

Using Tidal Disruption Events to Study Supermassive Black Holes, “Tidal Disruptions of Real Stars”, Aspen, CO, 2018

TDE17: Piercing the sphere of influence, “TDE Host Galaxies in the Context of the Local Galaxy Population”, Cambridge, UK, 2017

UC Santa Cruz FLASH Seminar, “Tidal Disruptions: Fingerprints of Quiescent Massive Black Holes”, Santa Cruz, CA, 2017

UC Santa Cruz Transient Lunch, “Low-mass White Dwarfs with Hydrogen Envelopes as a Missing Link in the TDE Menu”, Santa Cruz, CA, 2017

Jerusalem Tidal Disruption Event Workshop, “Helium-core Hydrogen-envelope WDs as a Missing Link in TDE Demographics”, Jerusalem, Israel, 2015

TDE Fest at UCSC, “The Stellar Menu of TDEs”, Santa Cruz, CA, 2015

TEACHING

2019 Teaching Assistant, Astronomy 1, Introduction to the Cosmos, UCSC

2018 Teaching Assistant, Astronomy 111, Order of Magnitude Astrophysics, UCSC. Taught half of lecture, developed course material (~40 students).

2018 Teaching Assistant, Astronomy 119, Introduction to Scientific Computing, UCSC

2016 Teaching Assistant, Astronomy 111, Order of Magnitude Astrophysics, UCSC. Taught half of lecture, developed course material (~25 students).

2015 Teaching Assistant, Astronomy 111, Order of Magnitude Astrophysics, UCSC. Taught half of lecture, developed course material (~25 students).

2011 Teaching Fellow, Physics 15B Laboratory, Introductory Electromagnetism, Harvard University

OUTREACH

2016 Mentor, Lamat Summer Research Program, UCSC. Mentor for undergraduate research program aimed at underrepresented minorities. Helped students with research and posters that were presented at conferences.

2014 Visiting Teacher, Taktse International School, Sikkim, India. Physics, Astronomy, and Computer Science teaching, curriculum design, and mentoring for K-12. Developed new Computer Science course and helped two mentees become first-generation college students at schools in the US.

STUDENTS ADVISED

2020-present	Chang Liu, undergraduate (Peking University)
2015-2018	Monica Gallegos-Garcia, undergraduate (UCSC); paper published; now PhD at Northwestern.
2016-2017	Priscilla Camacho Olachea, “post-bac” student (UCSC)

SKILLS

Programming languages: Python, C/C++, FORTRAN, Javascript, SQL, MATLAB, Mathematica
Codes: FLASH, MESA
High-performance computing: use of several supercomputing facilities, including NASA Pleiades, >1e7 CPU-hrs.
Languages: English (native), French (fluent)