

Jamie Alexander Powell Law-Smith

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## EDUCATION

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

## POSITIONS HELD

PhD student, University of California Santa Cruz, 2015-present

## RESEARCH INTERESTS

Black holes, tidal disruption events, common envelope evolution, gravitational wave sources, extragalactic astronomy, active galactic nuclei, vacuum decay, de Sitter space in string theory

## AWARDS

AAS Doherty Prize, 2021  
Elmer A. Fridley Scholarship in the Physical Sciences (UC Santa Cruz), 2020  
Regents' Fellowship (UC Santa Cruz), 2019  
Whitford Prize for highest achievement in research, coursework, and preliminary exam (UCSC), 2017  
NR Tuition Fellowship (UC Santa Cruz), 2015  
Leo Goldberg Award for outstanding Junior thesis in Astronomy (Harvard University), 2013  
David Rockefeller International Experience Grant, 2012  
Harvard College Research Program Fellowship (Harvard University), 2012

## PUBLICATIONS

\* indicates alphabetical authorship order. † indicates advised student. Up-to-date list available on [ADS](#).

1. **Law-Smith, J. A. P.**, Everson, R. W., Ramirez-Ruiz, E., de Mink, S. E., van Son, L. A. C., Göteborg, Y., Zellmann, S., Vigna-Gómez, A., Renzo, M., Wu, S., Schröder, S. L., Foley, R. J., Hutchinson-Smith, T., 2020, “Successful Common Envelope Ejection and Binary Neutron Star Formation in 3D Hydrodynamics,” submitted to ApJ [arXiv/astro-ph:2011.06630]
2. **Law-Smith, J. A. P.**, Coulter, D. A., Guillochon, J., Mockler, M., & Ramirez-Ruiz, E., 2020, “Stellar Tidal Disruption Events with Abundances and Realistic Structures (STARS): Library of Fallback Rates,” ApJ, 905, 141 [arXiv/astro-ph:2007.10996]
3. \* Dine, M., **Law-Smith, J. A. P.**, Sun, S., Wood, D., & Yu, Y., 2021, “Obstacles to Constructing de Sitter Space in String Theory,” JHEP, 50 (2021) [arXiv/hep-th:2008.12399]

4. † Dodd, S. A., **Law-Smith, J. A. P.**, Auchettl, K., Ramirez-Ruiz, E. & Foley, R. J., 2020 “The Landscape of Galaxies Harboring Changing-Look Active Galactic Nuclei in the Local Universe,” *ApJL*, 907, L21 [arXiv/astro-ph:2010.10527]
5. David O. Jones, Ryan J. Foley, Gautham Narayan, et al., incl. **Law-Smith, J. A. P.**, 2020, “The Young Supernova Experiment: Survey Goals, Overview, and Operations,” submitted to *ApJ* [arXiv/astro-ph:2010.09724]
6. Hung, T., Foley, R. J., Ramirez-Ruiz, E., Dai, J. L., Auchettl, K., Kilpatrick, C. D., Mockler, B., Brown, J., Coulter, D. A., Dimitriadis, G., Holoien, H., **Law-Smith, J. A. P.**, Piro, A. L., Rest, A., Rojas-Bravo, C., Siebert, M. R., 2020, “Prompt Accretion Disk Formation in an X-Ray Faint Tidal Disruption Event,” *ApJ*, 903, 31 [arXiv/astro-ph:2003.09427]
7. French, K. D., Wevers, T., **Law-Smith, J. A. P.**, Graur, O., & Zabludoff, A. I., 2020, “The Host Galaxies of Tidal Disruption Events,” *Space Sci Rev* 216, 32 [arXiv/astro-ph:2003.02863]
8. Rossi, E. M., Stone, N. C., **Law-Smith, J. A. P.**, MacLeod, M., Lodato, G., Dai, J. L., & Mandel, I., 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. **Law-Smith, J. A. P.**, Guillochon, J., & Ramirez-Ruiz, E., 2019, “The Tidal Disruption of Sun-like Stars by Massive Black Holes,” *ApJL*, 882, L25 [arXiv/astro-ph:1907.04859]
10. † Gallegos-Garcia, M., **Law-Smith, J. A. P.**, & Ramirez-Ruiz, E., 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. **Law-Smith, J. A. P.**, Ramirez-Ruiz, E., Ellison, S. L., & Foley, R. J., 2017, “Tidal Disruption Event Host Galaxies in the Context of the Local Galaxy Population,” *ApJ*, 850, 22 [arXiv/astro-ph:1707.01559]
12. **Law-Smith, J. A. P.**, MacLeod, M., Guillochon, J., Macias, P., & Ramirez-Ruiz, E., 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. **Law-Smith, J. A. P.** & Eisenstein, D. J., 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. **Law-Smith, J. A. P.**, Coulter, D. A., & Mockler, B., 2020, “jamielaw-smith/STARS\_library”, v1.0.5, Zenodo, doi:10.5281/zenodo.4062018

## INVITED TALKS

Caltech TAPIR Seminar, Caltech, Pasadena, CA, 2020  
 Harvard CfA Galaxies & Cosmology and Stars & Planets Seminar, Cambridge, MA, 2020  
 SFSU Colloquium, Department of Physics and Astronomy, San Francisco State University, 2020  
 MIT Brown Bag Lunch, MIT, Cambridge, MA, 2020  
 UC Berkeley “Explosive Astro”, UC Berkeley, Berkeley, CA 2020  
 Harvard-Monash Meeting, Monash University, Australia, and Harvard University, USA, 2020  
 Princeton University, Quataert group meeting, Princeton, NJ, 2020  
 Northwestern CIERA Seminar, Department of Astronomy, Northwestern University, Evanston, IL, 2020

DARK Cake Talk, DARK Cosmology Centre, Niels Bohr Institute, University of Copenhagen, 2020  
Compact Objects for All Conference (review talk), Lund Observatory, Sweden, 2020

## CONTRIBUTED TALKS

237th Annual Meeting of the AAS, Virtual, 2021  
Tidal Disruptions in Kyoto: Confronting Theory with Observations, Kyoto, Japan, 2020  
Dunlap Institute for Astronomy & Astrophysics, University of Toronto, Toronto, Canada, 2018  
Using Tidal Disruption Events to Study Supermassive Black Holes, Aspen, CO, 2018  
TDE17: Piercing the sphere of influence, Cambridge, UK, 2017  
UC Santa Cruz FLASH Seminar, Santa Cruz, CA, 2017  
UC Santa Cruz Transient Lunch, Santa Cruz, CA, 2017  
Jerusalem Tidal Disruption Event Workshop, Jerusalem, Israel, 2015  
TDE Fest at UCSC, Santa Cruz, CA, 2015

## TEACHING

Astronomy 2, Overview of the Universe, UCSC, Teaching Assistant, 2021  
Astronomy 1, Introduction to the Cosmos, UCSC, Teaching Assistant, 2019  
Astronomy 111, Order of Magnitude Astrophysics, UCSC. Taught half of lecture (~40 students), 2018  
Astronomy 119, Introduction to Scientific Computing, UCSC, Teaching Assistant, 2018  
Astronomy 111, Order of Magnitude Astrophysics, UCSC. Taught half of lecture (~25 students), 2016  
Astronomy 111, Order of Magnitude Astrophysics, UCSC. Taught half of lecture (~25 students), 2015  
Physics 15B Laboratory, Introductory Electromagnetism, Harvard University, Teaching Fellow, 2011

## OUTREACH

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, 2016.

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, 2014.

## STUDENTS ADVISED

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

## SKILLS

Programming languages: Python, C/C++, FORTRAN, Javascript, SQL, MATLAB, Mathematica  
Codes: FLASH, MESA  
High-performance computing: use of 10+ supercomputing facilities, incl. NASA Pleiades, >1e7 CPU-hrs.  
Languages: English (native), French (fluent)