

Emily R. Liepold

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Education

University of California, Berkeley <i>Ph.D., Physics</i>	2023
University of California, Berkeley <i>M.A., Physics</i>	2019
University of Chicago <i>B.A., Physics with Honors, specialization in Astronomy and Astrophysics</i>	2016

Research Positions

Postdoctoral Researcher <i>Department of Astronomy, University of California, Berkeley</i>	October 2023 – Present <i>Berkeley, CA</i>
Graduate Student Researcher <i>Department of Astronomy, University of California, Berkeley</i>	April 2018 – August 2023 <i>Berkeley, CA</i>
Post-Baccalaureate Researcher <i>James Franck Institute and MRSEC, University of Chicago</i>	June 2016 – August 2017 <i>Chicago, IL</i>
Undergraduate Researcher <i>James Franck Institute, University of Chicago</i>	March 2015 – June 2016 <i>Chicago, IL</i>

Publications

11. Pilawa, J. D., Liepold, E. R., & Ma, C.-P., "*TriOS Schwarzschild Orbit Modeling: Robustness of Parameter Inference for Masses and Shapes of Triaxial Galaxies with Supermassive Black Holes*," 2024, *Astrophys. J.*, 966, 205.
10. Liepold, E. R. "*Realizing the Full Potential: Detecting and Measuring Supermassive Black Holes in Triaxial Galaxies*," University of California, Berkeley ProQuest Dissertations Publishing, 2023. 30633852.
9. Liepold, E. R., Ma, C.-P., & Walsh, J. L., "*Keck Integral-Field Spectroscopy of M87 Reveals an Intrinsically Triaxial Galaxy and a Revised Black Hole Mass*," 2023, *Astrophys. J. Lett.*, 945 L35.
8. Pilawa, J. D., Liepold, E. R., Delgado Andrade, S. C., et al., "*The MASSIVE Survey. XVII. A Triaxial Orbit-based Determination of the Black Hole Mass and Intrinsic Shape of Elliptical Galaxy NGC 2693*," 2022, *Astrophys. J.*, 928, 178.
7. Quenneville, M. E., Liepold, E. R., & Ma, C.-P., "*Triaxial Orbit-based Dynamical Modeling of Galaxies with Supermassive Black Holes and an Application to Massive Elliptical Galaxy NGC 1453*," 2022, *Astrophys. J.*, 926, 30.
6. Quenneville, M. E., Liepold, E. R., & Ma, C.-P., "*Dynamical Modeling of Galaxies and Supermassive Black Holes: Axisymmetry in Triaxial Schwarzschild Orbit Superposition Models*," 2021, *Astrophys. J. Suppl. Ser.*, 254, 25.
5. Liepold, E. R., Quenneville, M. E., & Ma, C.-P., et al., "*The MASSIVE Survey. XV. A Stellar Dynamical Mass Measurement of the Supermassive Black Hole in Massive Elliptical Galaxy NGC 1453*," 2020, *Astrophys. J.*, 891, 4.
4. Liepold, E. R., Smith, A., Lin, B., de Pablo, J., & Rice, S. A., "*Pair and many-body interactions between ligated Au nanoparticles*," 2019, *J. Chem. Phys.* 150, 044904.

3. Krebs, Z., Roitman, A. B., Nowack, L.N., **Liepold, E. R.**, Lin, B., & Rice, S. A., "*Transient Structured Fluctuations in a Two-dimensional System with Multiple Ordered Phases*," 2018, J. Chem. Phys. 149, 034503.
2. Wolfson, M., **Liepold, E. R.**, Lin, B., & Rice, S. A., "*A comment on the position dependent diffusion coefficient representation of structural heterogeneity*," 2018, J. Chem. Phys. 148, 194901.
1. **Liepold, E. R.**, Zarcone, R., Heumann, T., Rice, S. A., & Lin, B., "*Colloid-colloid hydrodynamic interaction around a bend in a quasi-one-dimensional channel*," 2017, Phys. Rev. E 96, 012606.

Talks

AAS Summer Meeting, Madison, WI	June 2024
Black Hole Initiative Annual Conference, Cambridge, MA	May 2024
Basic Science Lights the Way, Berkeley, CA	March 2024
EHT group meeting, Black Hole Initiative, Harvard University, Cambridge, MA	March 2023
GMT Community Science Meeting, Sedona, AZ	Sept 2022
Astrophysics Roundtable, Berkeley, CA	Nov 2021
APS March Meeting, New Orleans, LA	March 2017

Successful Telescope Proposals (as Co-Investigator)

5 Keck KCWI Proposals, 2020-2022	6.0 Nights
4 Keck OSIRIS Proposals, 2022-2023	5.0 Nights
2 JWST NIRSPEC Proposals, 2021-2024	32.4 hours

Successful Computational Resource Proposals (as Co-Investigator)

2 XSEDE proposals, 2020-2021	3,468,000 core-hours
1 ACCESS proposal, 2022	750,000 core-hours

Teaching Experience

Reader, Astronomy C202	Spring 2023
<i>Astrophysical Fluid Dynamics</i>	UC Berkeley
Reader, Astronomy C228	Fall 2021, Fall 2022
<i>Extragalactic Astronomy and Cosmology</i>	UC Berkeley
Graduate Student Instructor, Astronomy C202	Spring 2022
<i>Astrophysical Fluid Dynamics</i>	UC Berkeley
Graduate Student Instructor, Astronomy C161	Spring 2019
<i>Relativistic Astrophysics and Cosmology</i>	UC Berkeley
Graduate Student Instructor, Physics 7A	Fall 2017, Spring 2018, Fall 2018
<i>Physics for Scientists and Engineers</i>	UC Berkeley
Physics Core Tutor	Spring 2015 - Spring 2016
<i>Core Tutor Program</i>	University of Chicago
Teaching Assistant, Math 13100-13200-13300	Fall 2013 - Spring 2015
<i>Elementary Functions and Calculus I-II-III</i>	University of Chicago

Awards and Honors

AAS FAMOUS Travel Grant	May 2024
<i>(Funds for Astronomical Meetings: Outreach to Underrepresented Scientists)</i>	
Mary Elizabeth Uhl Prize	May 2023
<i>For outstanding scholarly achievement by a graduate student finishing their dissertation in Astronomy or in Physics</i>	

Mentoring Experience

Ningyuan Xu	2022-2023
<i>Explored improvements to orbit model parameter search scheme</i>	<i>UC Berkeley</i>
Shaunak Modak	2020-2021
<i>Developed and tested methods for generating mock galaxy data</i>	<i>UC Berkeley</i>
Brandon Read	2017
<i>REU student from UCLA; assisted in expanding a code for modelling Au nanoparticles</i>	<i>University of Chicago</i>
Linsey Nowack	2016-2017
<i>Metcalf intern; Explored novel phase transitions in 2D simulations</i>	<i>University of Chicago</i>

Specialized Skills

Programming Languages: Python, IDL, C, Fortran, Julia
Computing: Linux, bash, L^AT_EX, git
Data Reduction: pPXF, vorbin, IRAF, Astropy, MGEfit
Instruments: KCWI, NIFS, HST, NIRSpc