

# Mitchell Karmen

mkarmen1@jhu.edu, mitchell@nyu.edu

Astrophysics Graduate Student, NSF GRFP Fellow, Johns Hopkins University

## Education

PhD Expected 2028, Department of Physics and Astronomy, Johns Hopkins University. Advisor: Suvi Gezari

BA 2020, Department of Physics, New York University. Advisors: David Hogg, Sjoert van Velzen, Glennys Farrar

## Positions

Graduate Student, Johns Hopkins University, 2022–present.

Research Assistant, Lawrence Berkeley National Lab, 2021–2022.

SULI Intern, Lawrence Berkeley National Lab, 2020–2021

Scientific Software Developer, Zwicky Transient Facility, 2020.

## Publications

### Refereed publications

- 2 Aldoroty, L.; Wang, L.; Hoefflich, P.; Yang, J.; *et al.* (incl. **M. Karmen**), 2023, *Bump Morphology of the CMAGIC Diagram*, The Astrophysical Journal, **948**, 10 (arXiv:2210.06708) [2 citations]
- 1 Stein, George; Seljak, Uroš; Böhm, Vanessa; Aldering, G.; *et al.* (incl. **M. Karmen**), 2022, *A Probabilistic Autoencoder for Type Ia Supernova Spectral Time Series*, The Astrophysical Journal, **935**, 5 (arXiv:2207.07645) [6 citations]

### Preprints & white papers

- 2 Gomez, Sebastian; Alexander, Kate; Berger, Edo; Blanchard, Peter K.; *et al.* (incl. **M. Karmen**), 2023, *Roman CCS White Paper: Characterizing Superluminous Supernovae with Roman*, ArXiv (arXiv:2306.17233)
- 1 **Karmen, Mitchell**; Gezari, Suvi; Gomez, Sebastian; Guolo, Muryel; Norman, Colin; 2023, *Roman CCS White Paper: A Sweet Spot for Tidal Disruption Events with the Roman Space Telescope*

## Selected invited talks & presentations

*A new window into the first black holes with JWST observations of high-redshift TDEs*, 2024, Contributed Talk, COSMOS-Web Collaboration Meeting, IPMU, Tokyo, Japan.  
2024, Contributed Talk, First Stars VII, Center for Computational Astrophysics, New York City.

*Enabling Discovery of High Redshift TDEs through Roman*, 2023, Invited Talk, Roman Community Forum, Virtual.

*Extending the Twins Embedding for Use by the Roman/WFIRST Supernova Survey*, 2021, Contributed Talk, Roman Science Team Community Briefing, Virtual.

*Investigating the Variability of Type Ia Supernovae Using Deep Learning*,  
2021, Poster, Lawrence Berkeley Lab Summer Intern Poster Session, Berkeley, CA.  
*A New All-Sky Catalog of Compact Galaxies*,  
2020, Poster, American Astronomical Society Meeting 225, Honolulu, HI.  
*A New All-Sky Catalog of Compact Galaxies: Opportunities for Electromagnetic Transient Follow-Up*,  
2019, Poster, Gotham AstroFest, New York, NY.

## Awards and Honors

NSF Graduate Research Fellowship, 2024.  
George Granger Brown Award (NYU), 2020.  
Dean's Undergraduate Research Award (NYU), 2019.

## Teaching

*Physics and Astronomy Teaching Assistant*  
General Physics Lab II, Johns Hopkins University, 2023.  
Planets, Life and the Universe, Johns Hopkins University, 2022.  
General Physics Lab I, Johns Hopkins University, 2022.  
Berkeley Lab Director's Apprenticeship Program, Volunteer Coding Instructor, 2021,  
Department Tutor (NYU)  
General Physics I: Kinematics General Physics II: Electricity and Magnetism  
7th Grade Mathematics Teaching Assistant, America Counts, 2017–2018.

## Outreach and Leadership

*Johns Hopkins University / Space Telescope Science Institute Liason* 2023–Present,  
I lead organization of joint events between graduate students at JHU and scientists at STScI  
*Berkeley Lab Director's Apprenticeship Program*, 2021,  
Helped to instruct low-income high school students in the basics of Python programming;  
mentored a small group of students in applying to college, writing application essays, etc.  
*Tampa Heights Junior Civic Association*, 2021,  
One-on-one mentor to a low-income middle school student who is interested in science.  
*NYU Society of Physics Students* 2019–2020,  
President  
*NYC BioBus* 2019–2020,  
Volunteer Instructor; Led groups of high school students through physics demonstrations

## Additional Education

Summer School in Statistics for Astronomers XVII, Penn State University, 2023.  
Center for Teaching Excellence and Innovation Teaching Institute, Johns Hopkins University,  
2023.  
GROWN Multi-Wavelength Astronomy Summer School, Virtual, 2020.

Data Analysis Boot Camp, Center for Computational Astrophysics, 2019.