

TIFFANY LIOU

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EDUCATION

Northwestern University <i>M.S Physics</i>	<i>Sept 2024 - Dec 2025</i>
University of California, San Diego <i>B.S. Physics w/ Specialization in Astrophysics</i>	<i>Sept 2020 - Jun 2024</i>

RESEARCH EXPERIENCE

Northwestern University	
Graduate Student Researcher , Strom Group	<i>Sept 2024 - Dec 2025</i>
- <i>Advisors: Xinfeng Xu, Allison Strom</i>	
- Investigate scaling relationships of galactic outflows of redshift 2–3 galaxies from Keck Baryonic Structure Survey (KBSS) and Keck Lyman Continuum Survey (KLCS)	
- Develop pipeline in Python for fitting broad and narrow emission line components	
UC San Diego	
Undergraduate Student Researcher , Cool Star Lab	<i>Sept 2022 - Sept 2024</i>
- <i>Advisor: Adam Burgasser</i>	
- Fit evolutionary spectral models for JWST Y-type brown dwarfs	
- Reduced spectra of galaxies and brown dwarfs from the IRTF Legacy Archives	
Undergraduate Student Researcher , Lin Group	<i>Nov 2022 - Jun 2024</i>
- <i>Advisors: Tongyan Lin, Mukul Sholapurkar</i>	
- Created mock stellar stream simulations using the Gala Python package	
- Analyzed degeneracies of dark matter subhalo parameters using Markov chain Monte Carlo	
SPS Intern , STScI & American Institute for Physics	<i>Jun 2023 - Aug 2023</i>
- <i>Advisor: Nimisha Kumari</i>	
- Studied Ly α emitter galaxies of redshifts $2.8 < z < 4.0$ from MUSE DR2	
- Analyzed galaxy scaling relations and compared results to local galaxies	
CASSI Intern , Carnegie Observatories	<i>Jun 2022 - Aug 2022</i>
- <i>Advisor: Josh Simon</i>	
- Investigated kinematic effects of dark matter subhalo perturbations using simulated Palomar 5 and GD 1-like stellar streams	

TEACHING EXPERIENCE

Teaching Assistant , Northwestern University	<i>Oct 2024 - Present</i>
- Phys 131-A Mechanics Lab (Fall 2024, Fall 2025)	
- Phys 131-B Electromagnetism Lab (Winter 2025)	
- Phys 131-C Modern Physics Lab (Spring 2025)	
Supplemental Instruction Leader , UCSD Teaching & Learning Commons	<i>Jan 2022 - Jun 2024</i>
- Courses: Lower division mechanics, E&M, fluids & thermodynamics, modern physics	
- Designed and facilitated weekly topic sessions relating to supported course	
- Fostered inclusive environments that are conducive to student learning	
- Collaborated with physics faculty to discuss student needs and methods for better support	

Physics SI Team Course Leader

- Provide weekly training for the Physics SI Team
- Conduct session observations of other Physics SI Leaders and provide constructive feedback
- Complete administrative checks for the Physics Team

Physics Learning Assistant, UCSD Physics Department

Sep 2023 - Mar 2024

- Facilitate discussion sessions for the Physics 2 series at UC San Diego
- Assist students in Problem Solving Sessions using pedagogical techniques

SKILLS

Programming Languages and Frameworks

Python, MATLAB, HTML, Mathematica, LaTeX

AWARDS

Chambliss Award, 243rd American Astronomical Society Meeting

Jan 2024

Physical Sciences Dean's Undergraduate Awards for Excellence, UC San Diego

Jan 2024

Outstanding Chapter Award, Society of Physics Students

Oct 2022, 2024

PRESENTATIONS

Harder, Better, Faster, Stronger: Warm-ionized Outflows at Cosmic Noon

- Physics and Astronomy Graduate Student Council PAECRs Seminar *Oct 2025*

Rest-UV Properties of MUSE HUDF DR2 Galaxies

- [iPoster](#): 243st American Astronomical Society Meeting in New Orleans, LA *Jan 2024*
- SPS Symposium 2023 *Aug 2023*

Measuring Dark Matter with Stellar Streams

- [iPoster](#) 241st American Astronomical Society Meeting in Seattle, WA *Jan 2023*
- Rubin Observatory Stellar Stream Group *May 2023*

PUBLICATIONS

- The SPS Observer: [Lyman-Alpha Emitters Offer a Peek into Galactic Evolution](#), 2024

LEADERSHIP AND MENTORSHIP EXPERIENCE

STARTastro Program Assistant, UCSD A&A

Jul 2024 - Aug 2024

- Served 8 community college transfer students in STEM in the inaugural STARTastro summer program at UCSD
- Designed mentorship workshops to help students transition into a four-year university and navigate potential barriers in education (e.g. campus life, imposter syndrome)

Society of Physics Students, SPS at UC San Diego

2020-2024

President SP23 - SP24

- Facilitate weekly board meetings and plan large scale events

CASSI Alum Mentor, Carnegie Observatories

Mentees:

- 2024: Lizzy Teryoshin (UC San Diego)
- 2023: Domani Sharkey (Caltech)

OUTREACH

Letters to a Pre-Scientist	<i>Aug 2025 - Present</i>
CIERA Astronomer Evenings <i>with Northwestern CIERA</i>	<i>May 2025</i>
Barrio Logan Science Expo <i>with UCSD Physics Department, San Diego</i>	<i>April 2024</i>
Preuss School UCSD Science Expo <i>with Society of Physics Students, San Diego</i>	<i>March 2024</i>
Astronomy on the Mall <i>with SPS National, Washington D.C.</i>	<i>Jun 2023</i>
Petco Park Science Expo <i>with UCSD Physics Department</i>	<i>Mar 2023</i>
Outreach Team <i>Society of Physics Students at UC San Diego</i>	<i>2020-2022</i>