

Lindsey A. Kwok

Graduate Fellow at Rutgers University

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EDUCATION

Rutgers University

Ph.D. Candidate in Physics and Astronomy, *Advisor: Prof. Saurabh W. Jha* 2019 – present
Qualifier: “Spectral Synthesis Models of SN 2014ad using TARDIS”

California Institute of Technology

B.S. in Physics, *Advisors: Prof. Mansi M. Kasliwal & Dr. Ragnhild Lunnan* 2017
Thesis: “iPTF16asu: A Luminous, Rapidly Evolving, and High-velocity Supernova”

ACADEMIC POSITIONS

Rutgers University

NASA FINESST Fellow 2022 – present

Rutgers Academy for the Scholarship of Teaching and Learning Fellow 2022 – present

Teaching Assistant 2019 – 2022

California Institute of Technology

Undergraduate Researcher at the Palomar Transient Factory (iPTF) 2016 – 2017

Summer Undergraduate Research Fellow at the 2015
Laser Interferometer Gravitational-wave Observatory (LIGO)

Summer Undergraduate Research Fellow at the 2014
NASA Jet Propulsion Laboratory (JPL)

AWARDS & PROPOSALS

NASA FINESST Fellow, PI: S. W. Jha, FI: L. Kwok, \$150,000 over 3 years 2022 – present

Flatiron Institute’s Machine Learning X Science Summer School Internship 2022

Rutgers Academy for the Scholarship of Teaching and Learning Fellow 2022 – present

NSF Graduate Research Fellowship Program (GRFP) Honorable Mention 2021

Co-Investigator of *JWST* Cycle 1+2+3 GO Proposal 2072, PI: Jha, 20 hours/cycle 2021
“See Through Supernovae: Nebular Spectroscopy of Exploding White Dwarfs”

Co-Investigator of *HST* Cycle 29 GO Proposal 16683, PI: Jha, 9 orbits 2021
“Radioactive Stars: Bound Remnants from White Dwarf Supernovae”

Rutgers DELTA-P Certificate of Training in Physics Education 2019

Caltech Summer Undergraduate Research Fellow at LIGO 2015

Caltech Summer Undergraduate Research Fellow at JPL 2014

CONFERENCES & TALKS

Invited Seminars & Talks

SuperNova Explosions (SNEx) Group Meeting (<i>scheduled</i>)	May 2023
Florida State University Astrophysics Seminar	February 2023
Princeton University Astro-ph Coffee	November 2022
Michigan State University Astro-ph Coffee	October 2022

Conference Talks & Posters:

241 st AAS Meeting, Seattle WA (talk)	January 2023
First Science Results from JWST, Baltimore MD (poster)	December 2022
SuperVirtual 2022, virtual (talk)	November 2022
SuperVirtual 2021, virtual (poster)	November 2021
229 th AAS Meeting, Grapevine, TX (poster)	January 2017

TEACHING EXPERIENCE

Rutgers University, Independent Instructor: (*scheduled*)

PHY 110: <i>Astronomy and Cosmology</i> , online synchronous, introductory course about the structure of the universe and astronomical methods	Summer 2023
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Rutgers University, Teaching Assistant:

PHY 441/541: <i>Stars and Star Formation</i> , Grader, advanced course on observed properties and physics of stars for astro majors & masters students	Spring 2022
PHY 272: <i>Honors Physics II</i> , Grader, introduction to electricity and magnetism for physics majors on the Honors track	Spring 2022
PHY 341: <i>Principles of Astrophysics</i> , Grader, course on gravitation for astrophysics majors including orbital mechanics, galaxies, cosmology, and relativity	Fall 2021 Fall 2020
PHY 115/116: <i>Extended Analytical Physics</i> , Recitation Instructor, in-person, introductory classical mechanics for engineering majors	2019 – 2020
Developing Educational Leaders among TAs in Physics (DELTA-P) Seminar	2019
The Westminster Schools, Upper School Physics Teacher (Atlanta, GA): Honors and Regular 9 th Grade Physics; Coached FIRST Robotics	2018 – 2019
Phillips Academy, Andover, Instructor in Physics (Andover, MA): PHY 400: <i>College Physics</i> ; PHY 440: <i>Astronomy</i> (11 th & 12 th grade)	2017 – 2018
California Institute of Technology, Undergraduate Teaching Assistant: Ph 7: <i>Intermediate Physics Laboratory</i>	Spring 2016 Spring 2017

MENTORING EXPERIENCE

Rutgers University, Research Advisor:

Teresa Boland (undergraduate honors thesis student)	2022 – present
Michaela Schwab (undergraduate student)	2023 – present

Google Summer of Code: TARDIS Collaboration, Co-Mentor:

Jaladh Singhal (undergraduate student from India)	Summer 2021
TBD (<i>scheduled</i>)	Summer 2023

Summer Science Program (SSP), Teaching Assistant & Residential Mentor:

CU Boulder (Boulder, CO): TA & RM for 36 high school students	Summer 2016
New Mexico Tech (Socorro, NM): TA & RM 36 high school students	Summer 2017
SSP Connect Mentor for Elizabeth Rogers & Aleezay Sheikh	Fall 2021

OUTREACH & INCLUSION WORK

Physics demonstrations at minority-serving New Brunswick Health Sciences Technology High School: 12-1-2023, 12-2-2012, 3-24-2023

Wiley research talk for Rutgers Upward Bound program serving first-generation college students and students from low-income families (virtual), 7-2-2022

Physics demonstrations for Nature Thru Nurture program at minority-serving New Brunswick High School: 3-4-2022, 3-8-2022, 3-29-2022, 4-1-2022

Physics demonstrations for Nature Thru Nurture program at minority-serving New Brunswick Middle School: 1-29-2020, 3-4-2020

Participant in Rutgers Equity and Inclusion Journal Club

Weekly ESL classes for 8 adult hispanic immigrants in local community from August 2019 – January 2021 (virtual after March 2020)

Member of Phillips Academy, Andover Gender Studies Advisory Board, 2017 – 2018

Supervised weekly STEM study sessions pairing female students with female tutors at Phillips Academy, Andover, 2017 – 2018

Volunteered at Caltech Stargazing and Lecture Series, 2017

Activity to build spectrographs at Caltech with iChicas, an after-school program in Los Angeles for middle-school Latina girls interested in STEM, March 2017

PUBLICATIONS

(ORCID: 0000-0003-3108-1328)

*Whitesides is maiden name

First-Author Papers (3):

3. **Kwok, L.** et al. (2023), “*A JWST Near- and Mid-infrared Nebular Spectrum of the Type Ia Supernova 2021aefx*,” ApJL, 944, L3, DOI: [10.3847/2041-8213/acb4ec](https://doi.org/10.3847/2041-8213/acb4ec)
2. **Kwok, L.** et al. (2022), “*UV Spectroscopy and TARDIS Models of Broad-lined Type-Ic Supernova 2014ad*,” ApJ, 937, 40, DOI: [10.3847/1538-4357/ac8989](https://doi.org/10.3847/1538-4357/ac8989)
1. ***Whitesides, L.** et al. (2017), “*iPTF 16asu: A Luminous, Rapidly Evolving, and High-velocity Supernova*,” ApJ, 851, 107, DOI: [10.3847/1538-4357/aa99de](https://doi.org/10.3847/1538-4357/aa99de)

Contributing-Author Papers (10):

10. DerKacy, J. M. et al. (including **L. Kwok**) (2023), “*JWST Low-resolution MIRI Spectral Observations of SN 2021aefx: High-density Burning in a Type Ia Supernova*,” ApJL, 945, L2, DOI: [10.3847/2041-8213/acb8a8](https://doi.org/10.3847/2041-8213/acb8a8)
 9. Camacho-Neves, Y. et al. (including **L. Kwok**) (2023), “*Over 500 Days in the Life of the Photosphere of the Type Iax Supernova SN 2014dt*,” submitted to ApJ, eprint arXiv: [10.48550/arXiv.2302.03105](https://arxiv.org/abs/10.48550/arXiv.2302.03105)
 8. Williamson, M. et al. (including **L. Kwok**) (2023), “*SN 2019ewu: A Peculiar Supernova with Early Strong Carbon and Weak Oxygen Features from a New Sample of Young SN Ic Spectra*,” ApJL, 944, L49, DOI: [10.3847/2041-8213/acb549](https://doi.org/10.3847/2041-8213/acb549)
 7. Mayker Chen, N. et al. (including **L. Kwok**) (2023), “*Serendipitous Nebular-phase JWST Imaging of SN Ia SN 2021aefx: Testing the Confinement of ^{56}Co Decay Energy*,” ApJL, 944, L28, DOI: [10.3847/2041-8213/acb6d8](https://doi.org/10.3847/2041-8213/acb6d8)
 6. Davis, K. W. et al. (including **L. Kwok**) (2022), “*SN 2022ann: A type Icn supernova from a dwarf galaxy that reveals helium in its circumstellar environment*,” submitted to MNRAS, eprint arXiv: [10.48550/arXiv.2211.05134](https://arxiv.org/abs/10.48550/arXiv.2211.05134)
 5. Pierel, J. D. R., et al. (including **L. Kwok**) (2022), “*SALT3-NIR: Taking the Open-source Type Ia Supernova Model to Longer Wavelengths for Next-generation Cosmological Measurements*,” ApJ, 939, 11, DOI: [10.3847/1538-4357/ac93f9](https://doi.org/10.3847/1538-4357/ac93f9)
 4. Hosseinzadeh, G. et al. (including **L. Kwok**) (2022), “*Constraining the Progenitor System of the Type Ia Supernova 2021aefx*,” ApJL, 933, L45, DOI: [10.3847/2041-8213/ac7cef](https://doi.org/10.3847/2041-8213/ac7cef)
 3. Fraser, M. et al. (including **L. Kwok**) (2021), “*SN 2021csp – the explosion of a stripped envelope star within a H and He-poor circumstellar medium*,” eprint arXiv: [10.48550/arXiv.2108.07278](https://arxiv.org/abs/10.48550/arXiv.2108.07278)
 2. Barna, B. et al. (including **L. Kwok**) (2021), “*SN 2019muj – a well-observed Type Iax supernova that bridges the luminosity gap of the class*,” MNRAS, 501, 1078, DOI: [10.1093/mnras/staa3543](https://doi.org/10.1093/mnras/staa3543)
 1. Dong, Y. et al. (including **L. Kwok**) (2021), “*Supernova 2018cuf: A Type IIP Supernova with a Slow Fall from Plateau*,” ApJ, 906, 56, DOI: [10.3847/1538-4357/abc417](https://doi.org/10.3847/1538-4357/abc417)
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TECHNICAL SKILLS

Computational: Python, Matplotlib, Jupyter Lab, Unix, Mathematica, LaTeX, AstroPy, GitHub, IRAF/Pyraf, SLURM

Programs: SAO DS9, JWST ETC & APT, Canvas, Microsoft Office