

Ekta Patel, PhD

Postdoctoral Fellow | University of California, Berkeley

✉ ektapatel@berkeley.edu • 🌐 ektapatelastro.com • 🇺🇸 Citizenship: USA

Research Interests: Near-field cosmology, satellite galaxies, dwarf galaxies, computational astrophysics

Education

University of Arizona

M.S., Ph.D. in Astronomy & Astrophysics

Thesis: "Dynamics of Local Group Satellite Galaxies in the Era of Precision Astrometry"

Advisor: Dr. Gurtina Besla

Tucson, AZ

2017, 2019

New York University

B.A. in Physics (with Honors)

Senior Honors Thesis: "The Sloan Digital Sky Survey Large Galaxy Atlas"

Advisor: Dr. David Hogg

New York, NY

2014

Appointments

Postdoctoral Fellow | *August 2022–2023*

Department of Astronomy, University of California, Berkeley

Miller Research Fellow | *August 2019–2022*

Miller Institute for Basic Research in Science, University of California, Berkeley

Honors, Awards, and Professional Affiliations

- 2019-2022 Miller Research Fellowship, Miller Institute for Basic Research in Science
- 2019 Division of Dynamical Astronomy Raynor L. Duncombe Student Research Prize
- 2019 National Science Foundation Astronomy & Astrophysics Postdoc Fellowship Recipient (Declined)
- 2016-2019 National Science Foundation Graduate Research Fellowship Recipient
- 2016 University of Arizona College of Science Service Award Recipient
- 2015 Ford Foundation Pre-Doctoral Fellowship Honorable Mention and Alternate Candidate
- 2014 Sigma Pi Sigma National Physics Honors Society Initiate

Publications

18 refereed journal articles

6 as 1st/corresponding author, 6 as 2nd/3rd author

[see full list on ADS here]

Selected Press & Media Features.....

- 2022 Discover Magazine, [Our Galaxy is on a Collision Course. And It's Not the First Time](#)
- 2022 Scientific American, [Women Are Creating a New Culture for Astronomy](#)
- 2021 Sky & Telescope, [How Our Largest Dwarf Galaxy Keeps the Others in Line](#)
- 2021 Miller Institute Newsletter, [Spring 2021 Miller Fellow Focus: Ekta Patel](#)
- 2020 STEAM Squad Curriculum Book - Blasts Off!, [Meet Ekta Patel, Ph.D.](#)
- 2019 European Space Agency, [Gaia clocks new speeds for Milky Way-Andromeda collision](#)
- 2019 The New York Times, [Andromeda Is Coming for Our Milky Way Galaxy, Eventually](#)

- 2019 Astronomy Magazine Ask Astro Column Response, [Will the Pinwheel Galaxy \(M33\) merge with the Andromeda Galaxy \(M31\) prior to Andromeda merging with the Milky Way?](#)
- 2019 National Geographic, [Our galaxy is due to crash into its neighbor—but when?](#)
- 2019 Space.com, [We Finally Know When Our Milky Way Will Crash Into the Andromeda Galaxy](#)
- 2019 Active Galactic Women of Discovery Series, [Galaxy Evolution with Ekta Patel](#)
- 2019 LiveScience.com, [How Massive is the Milky Way?](#)
- 2018 University of Arizona Press Release, [How do you Weigh a Galaxy? Especially the One You're In?](#)
- 2018 Air & Space Magazine, [How to Weigh a Galaxy](#)
- 2018 International Business Times, [Milky Way's Mass Estimated More Reliably Using Satellite Galaxies Angular Momentum](#)
- 2018 Nature Research Highlights, [Measuring the Milky Way's mind-boggling mass](#)
- 2018 American Astronomical Society Nova, [Using Satellite Galaxies to Weigh the Milky Way](#)
- 2018 Space.com, [Milky Weigh: New Method Pins Down Our Galaxy's Mass](#)
- 2018 Astronomy Magazine, [A whole new way to weigh the Milky Way](#)

Selected Talks & Presentations

Invited: 22.....

- Nov 2022 University of Virginia/NRAO Colloquium
- Feb 2022 Carnegie Observatories Lunch Talk Seminar Series
- Feb 2022 University of Florida Astronomy Colloquium
- Feb 2022 University of Maryland Astronomy Colloquium
- Nov 2021 Miller Institute Lunch Seminar
- Jun 2021 Space Telescope Science Institute ISM* Seminar
- Apr 2021 New York University Center for Cosmology and Particle Physics Astro Seminar
- Apr 2021 University of Michigan Astronomy Colloquium
- Feb 2021 University of California, Santa Cruz Astronomy Colloquium
- Feb 2021 University of Oklahoma Astronomy Colloquium
- Nov 2020 University of California, Berkeley Astrophysics Roundtable on Near-field Cosmology
- Nov 2020 Yale University Astronomy Colloquium
- Oct 2020 Princeton University Institute for Advanced Study Seminar
- Sep 2020 Rutgers University Astrophysics Seminar
- Sep 2020 University of California, Berkeley Astronomy Colloquium
- Mar 2020 Las Cumbres Observatory Seminar
- Jun 2019 Division of Dynamical Astronomy Raynor L. Duncombe Student Research Prize Talk
- Nov 2018 Ohio State University Center for Cosmology and Astroparticle Physics Seminar
- Oct 2018 University of California, Berkeley Astronomy Department Lunch Talk
- Oct 2018 American Museum of Natural History Astrophysics Seminar, New York, NY
- Jul 2018 PHAT Collaboration Team Meeting, Ringberg Castle
- Jun 2018 [232nd American Astronomical Society Meeting Press Conference](#), Denver, CO

Contributed Conference Presentations: 12.....

- Mar 2023 IAUS379: Dynamical Masses of Local Group Galaxies
- Nov 2022 Linking the Galactic and Extragalactic, Australia
- Aug 2022 IAU General Assembly Division H Meeting, South Korea
- Dec 2020 [Linking the Galactic and Extragalactic \(virtual\) *](#), Australia (*runner-up for best contributed talk)
- Sep 2020 The Local Group: Assembly and Evolution, Space Telescope Science Institute
- Nov 2019 Bay Area Local Group Meeting, Kavli Institute/SLAC National Accelerator Laboratory
- Jul 2019 Small Galaxies, Cosmic Questions, Durham University, United Kingdom
- Jun 2018 232nd American Astronomical Society Meeting, Milky Way Session 402, Denver, CO

Jul 2017 Large Surveys of the Great Andromeda Galaxy, Lorentz Center, Netherlands
Apr 2017 Marc Aaronson Symposium, University of (poster)
Jun 2015 Local Group Astrostatistics Conference, University of Michigan (poster)
Jan 2014 Midwest Conference for Undergraduate Women in Physics, University of Chicago (poster)

Other Talks: 6.....

Dec 2019 University of California, Berkeley Astronomy Department Lunch Talk
Apr 2018 University of Texas at Austin ExGal Seminar
Dec 2017 University of Colorado JILA Seminar
Oct 2017 Columbia University Galaxies Lunch Seminar
Dec 2016 Space Telescope Science Institute Galaxy Club
Nov 2016 National Optical Astronomy Observatory FLASH Talk

Telescope Time Awarded

As Principal Investigator: 1 proposal

HST Cycle 29, *Establishing a New Framework for Quantifying Quenching in Low-Mass Satellite Galaxies using Gaia and HST*, AR 16628 (\$205,049)

As Co-Investigator: 10 proposals

8.3hr awarded for **Gemini S22B**
(GN-2022B-Q-231)

620 orbits awarded for **HST Cycles 26-30**
(GO 17174, 16737, 16778, 16293, 16274, 16273, 15902, 15911, 15658)

Science Communication

Invited Public Presentations: 9.....

2021 [Satellite Galaxies in the Local Group](#), Eastbay Astronomical Society 2020
2020 [Satellite Galaxies in the Local Group](#), UC Berkeley Astronomy Night
2020 [Satellite Galaxies in the Local Group](#), Mount Diablo Astronomical Society
2020 [Satellite Galaxies in the Local Group](#), San Francisco Amateur Astronomers
2020 Satellite Galaxies in the Local Group, San Mateo County Astronomical Society
2019 Satellite Galaxies in the Local Group, Huachuca Astronomical Society
2018 Satellite Galaxies and Dwarfs in the Local Group, Sonora Astronomical Society
2018 [Estimating the Mass of the Milky Way Using Satellite Galaxies](#), 232nd American Astronomical Society Meeting Press Conference
2017 Satellite Galaxies and Dwarfs in the Local Group, Tucson Amateur Astronomy Association

Community Engagement.....

o Meet a Miller Fellow × El Cerrito High School

Speaker | 2020–2021

- Participate in virtual visits to high school physics and environmental science classes aimed at humanizing science by highlighting scientific career paths and modern areas of research

o University of California, Santa Cruz Lamat Program

Speaker | 2020

- Discussed my career path and area of research in the *Meeting of the Minds* series with California community college students participating in the Lamat summer research program

o **National Optical Astronomy Observatory (now NOIRLab)**

Teen Astronomy Cafe

Speaker & Instructor | 2018–2019

- Designed and presented an original 40 minute research talk entitled *Galactic Archaeology: From Little to Big* accessible to high school students in Tucson, AZ
- Designed and facilitated a 40 minute activity applying skills in basic computer programming, data visualization, and graph interpretation to determine the collision timescale of the Milky Way and Andromeda galaxies

Project ASTRO

Classroom Astronomer | 2015–2017

- Paired with a local elementary (2015-2016) and high school (2016-2017) teachers to bring astronomy themed hands-on activities to students in the classroom

o **Academy of Tucson High School**

Keynote Speaker | 2018

- Gave a keynote speech at the Academy of Tucson High School's Class of 2018 graduation

o **Colors of Nature Summer Academy Tucson**

Instructor | 2017–2018

- Arizona-Sonora Desert Museum (2017, 2018): Co-instructed a one week summer academy for middle school students to explore the science of color in nature through both scientific and artistic lenses
- Kitt Peak, AZ (2018): Co-instructed a one week summer academy specifically for middle school girls of the Tohono O'odham Nation, the Indigenous people of the Sonoran Desert

Leadership & Service Experience

Leadership Experience.....

o **UC Berkeley Astronomy Department**

Cal-URSA (Undergraduate Research Scholarships in Astronomy)

Lead Developer & Coordinator | 2021

- Develop a paid, semester-long undergraduate research opportunity for Bay Area students majoring in physics and astronomy, especially those individuals who identify with groups that have been historically excluded from STEM, to work on scientific research at UC Berkeley Astronomy
- Request and secure funds from UC Berkeley Department of Astronomy
- Solicit project submissions from UC Berkeley postdocs and research staff
- Advertise and evaluate candidate applications using an equitable and inclusive process
- Coordinate hiring logistics and organize professional development events for inaugural cohort of students

Postdoc Representative | 2020–2021

- Serve as a liaison between postdoctoral scholars and department leadership
- Attend bi-weekly meetings to communicate requests from the postdoc community and receive department updates
- Organize once per semester town halls to collect feedback from the postdoc community

Diversity, Equity, Inclusion, & Climate Committee

Postdoc Representative | 2020–2021

- Work with faculty, students, postdocs, and staff to outline recommendations addressing representation and support networks for individuals belonging to marginalized groups in astronomy
- Contribute to the development of a climate advisors program to promote positive department culture

- **Miller Institute for Basic Research in Science**

Diversity, Equity, and Inclusion Working Group Member | 2020–2022

- Work with Miller Research Fellows and faculty to provide recommendations for improving the overall climate and hiring practices at the Miller Institute
- Contribute to the development of the Meet a Miller Fellow × El Cerrito High School community outreach program

- **University of Arizona Department of Astronomy and Steward Observatory**

Graduate Council Member | 2015–2017

- Acted as a liaison between astronomy graduate students and faculty, including department leadership
- Launched a seminar series highlighting non-academic career trajectories

Mentoring & Academic Support

- **I have served as a scientific mentor for the following students:**

- Katie Chamberlain, PhD Student (University of Arizona)
Project: Occurrence rate of galaxy pairs across cosmic time (to be submitted in 2022)
- Hannah Richstein, PhD Student (University of Virginia)
Project: Structural parameters and possible association of the UFDs Pegasus III and Pisces II (ApJ, 2022)
- Sal Wanying Fu, PhD Student (University of California, Berkeley)
Project: Metallicity Distribution Function of the Eridanus II Ultra-Faint Dwarf Galaxy from Hubble Space Telescope Narrow-band Imaging, (ApJ, 2022)
- Amanda Quirk, PhD student (University of California, Santa Cruz)
Project: Asymmetric drift of Andromeda analogues in the IllustrisTNG simulation (ApJ, 2020)
- Nicolas Garavito-Camargo, PhD (University of Arizona), now at the Center for Computational Astrophysics

- **Physical science Opportunities for Womxn in Education and Research (POWER) Bay Area**

Mentor | 2020–2021

- Provide in-depth mentoring in academic and life skills to a Bay Area community college student majoring in STEM

- **University of Arizona Graduate College Application Support Program**

Editor | Summer 2017

- Worked with graduate students in individual and group settings to revise application materials for pre-doctoral, graduate, and dissertation fellowship grant applications

- **University of Arizona Department of Astronomy and Steward Observatory**

Tucson Initiative for Minority Engagement in Science and TEchnology Program (TIMESTEP)

Mentor | 2015–2019

- Mentored undergraduate STEM majors in a group setting on topics centered around professional development

Tucson Women in Astronomy Mentoring Program

Mentor | 2014–2016

- Mentored undergraduate women majoring in physics and/or astronomy one-on-one and provided general guidance in navigating academic life

Graduate Student-Postdoc Mentoring Program

Mentor | 2017

- Provided in-depth mentoring to first and second year women in the astronomy graduate program on best research practices, teaching skills, and managing coursework responsibilities

Academic Service.....

- o Volunteer, Black in Physics Week 2022, Community Engagement Team
- o Journal Referee: *The Astrophysical Journal*, *Monthly Notices of the Royal Astronomical Society*, *Astronomy & Astrophysics*
- o Member, Roman-Rubin Synergy Working Group
- o Former Member, Hot Universe Baryon Surveyor Milky Way and Local Group Science Working Group
- o Panelist, APS Conference for Undergraduate Women in Physics 2023, Texas Christian University
- o Panelist, Space Telescope Science Institute Hubble Space Telescope Time Allocation Committee
- o Panelist, NASA Astrophysics Data Analysis Grants Program
- o Reviewer, Swiss National Science Foundation
- o Reviewer, NASA FINESST Graduate Fellowship Program
- o Executive Secretary, NASA Astrophysics Theory Grants Program

Teaching Experience

- o 2017-2018 | University of Arizona
 - ASTR400B: Galactic & Extragalactic Astronomy and Cosmology (Teaching Assistant)
 - Astronomy Tutoring for Majors & Minors Program (Tutor)
- o 2015-2017 | Ph.G. Tutoring, Tucson, AZ
 - Tutor for elementary through high school students in mathematics
- o 2013-2014 | New York University
 - Einstein's Universe (Laboratory Teaching Assistant)
 - Physics II: Intro to Electromagnetism (Teaching Assistant)
 - General Physics I (Adjunct)

Revised on February 17, 2023