

Ekta Patel, PhD

Publications

[see my full list of publications on ADS here]

26 journal articles, 5 white papers/proceedings, 3 in preparation
6 as 1st/corresponding author, 9 as 2nd/3rd author
h-index: 15

In Preparation: 3.....

- (34) **Patel, E.**, Garavito-Camargo, N., et al., to be submitted to ApJ, *Quantifying the Reflex Motion and Displacement of M31 Owing to M33*
- (33) Bennet, P., **Patel, E.**, et al., to be submitted to ApJ, *Proper Motions and Orbits of Distant Local Group Dwarf Galaxies*
- (32) **Patel, E.**, Garavito-Camargo, N., et al., to be submitted to ApJ, *Clustering of Satellite Galaxies in a Time-Dependent Milky Way Halo Including the Large Magellanic Cloud*

First Author Publications: 6.....

- (31) **Patel, E.** & Mandel, K., 2023, ApJ, 948, 104, *Evidence for a Massive Andromeda Galaxy Using HST and Gaia Satellite Galaxy Proper Motions*
- (30) **Patel, E.** et al., 2020, ApJ, 893, 121, *The Orbital Histories of Magellanic Satellites Using Gaia DR2 Proper Motions*
- (29) **Patel, E.**, Carlin, J., Tollerud, E., Collins, M., Dooley, G., 2018, MNRAS, 480, 1883-1897, *ΛCDM Predictions for the Satellite Population of M33*
- (28) **Patel, E.**, Besla, G., Mandel, K., Sohn, S.T., 2018, ApJ, 857, 78-94, *Estimating the Mass of the Milky Way Using the Ensemble of Classical Satellite Galaxies*
- (27) **Patel, E.**, Besla, G., Mandel, K., 2017, MNRAS, 468, 3428-3449, *The Orbits of Massive Satellite Galaxies - II. Bayesian Estimates of the Milky Way and Andromeda masses using high precision astrometry and cosmological simulations*
- (26) **Patel, E.**, Besla, G., Sohn, S.T., 2017, MNRAS, 464, 3825-3849, *The Orbits of Massive Satellite Galaxies - I. A Close Look at the Large Magellanic Cloud and a New Orbital History for M33*

Substantial Contributions: 5.....

- (25) Chamberlain, K., Besla, G., **Patel, E.**, et al., submitted to ApJ, *A physically motivated framework for measuring the mass and redshift dependence of galaxy pair fractions across cosmic time*
- (24) Garavito-Camargo, N., **Patel, E.**, et al., 2021, ApJ, 923, 140, *The Clustering of Orbital Poles Induced by the LMC: Hints for the Origin of Planes of Satellites*
- (23) Sohn, S.T., **Patel, E.**, et al., 2020, ApJ, 901, 43, *HST Proper Motions of NGC 147 and NGC 185: Orbital Histories and Tests of a Dynamically Coherent Andromeda Satellite Plane*
- (22) van der Marel, R. P., Fardal, M., Sohn, S.T., **Patel, E.**, et al., 2019, ApJ, 872, 24, *First Gaia Dynamics of the Andromeda System: DR2 Proper Motions, Orbits, and Rotation of M31 and M33*
- (21) Sohn, S.T., **Patel, E.**, et al., 2017, ApJ, 849, 93, *Space Motions of the Dwarf Spheroidal Galaxies Draco and Sculptor Based on HST Proper Motions with ~ 10 Year Base-Line*

Student Led Publications: 7 (including 4 with substantial contributions).....

* indicates publications for which I served as the primary advisor

- (20) Liu, Q., Danieli, S., Ceppas de Castro, R., **Patel, E.**, submitted to ApJL, *An Enigmatic Blue Blob in the Vicinity of M33 - Another Dwarf Satellite?*
- (19) Hayati, E., Behroozi, P., **Patel, E.**, submitted to The Open Journal of Astrophysics (arXiv:2309.06476), *Machine Learning the Dark Matter Halo Mass of Milky Way-Like Systems*
- (18) Setton, D., Besla, G., **Patel, E.**, et al., 2023, submitted to ApJL (arXiv:2308.10963), *The Large Magellanic Cloud's ~ 30 Kiloparsec Bow Shock and its Impact on the Circumgalactic Medium*
- (17) Fu, S.W., Weisz, D.R., Starkenburg, E., ..., **Patel, E.**, et al., 2023, accepted to ApJ (arXiv:2306.06260), *Metallicity Distribution Functions of 13 Ultra-Faint Dwarf Galaxy Candidates from Hubble Space Telescope Narrowband Imaging*
- (16) Richstein, H., **Patel, E.**, et al., 2022, ApJ, 933, 217, *Structural parameters and possible association of the UFDs Pegasus III and Pisces II*
- (15) Fu, S.W., Weisz, D.R., Starkenburg, E., ..., **Patel, E.**, et al., 2022, ApJ, 925, 6, *Metallicity Distribution Function of the Eridanus II Ultra-Faint Dwarf Galaxy from Hubble Space Telescope Narrow-band Imaging*
- (14) * Quirk, A. & **Patel, E.**, 2020, MNRAS, 497, 2870-2882, *Asymmetric Drift of Andromeda Analogs in the Illustris Simulations*

Other Publications: 8.....

- (13) Santistevan, I., Wetzel, A., Tollerud, E., ..., **Patel, E.**, et al., 2023, submitted to MNRAS (arXiv:2309.05708), *Modeling the orbital histories of satellites of Milky Way-mass galaxies: testing static host potentials against cosmological simulations*
- (12) Garavito-Camargo, N., Price-Whelan, A., Samuel, J., ..., **Patel, E.**, et al., 2023, submitted to ApJ, *On the co-rotation of Milky Way satellites: LMC-mass satellites induce apparent motions in outer halo tracers*
- (11) Savino, A., Weisz, D. R., Skillman, E., ..., **Patel, E.**, et al., 2023, submitted to ApJ (arXiv:2305.13360), *The Hubble Space Telescope Survey of M31 Satellite Galaxies II. The Star Formation Histories of Ultra-Faint Dwarf Galaxies*
- (10) Dey, A., Najita, J. R., Koposov, S. E., ..., **Patel, E.**, et al., 2023, ApJ, 944, 1, *DESI Observations of the Andromeda Galaxy: Revealing the Immigration History of our Nearest Neighbor*
- (9) Savino, A., Weisz, D. R., Skillman, E., ..., **Patel, E.**, et al., 2022, ApJ, 938, 101, *The Hubble Space Telescope Survey of M31 Satellite Galaxies I. RR Lyrae-based Distances and Refined 3D Geometric Structure*
- (8) Quirk, A., Guhathakurta, P., Gilbert, K., Chemin, L., Dalcanton, J., ..., **Patel, E.**, et al., 2022, AJ, 163, 166, *The Triangulum Extended (TRES) Survey: The Stellar Disk Dynamics of M33 as a Function of Stellar Age*
- (7) Sacchi, E., Richstein, H., Kallivayalil, N., ..., **Patel, E.**, et al., 2021, ApJL, 920, L19, *Star Formation Histories of Ultra-faint Dwarf Galaxies: Environmental Differences between Magellanic and Non-Magellanic Satellites?*
- (6) Besla, G., Patton, D., Stierwalt, S., Rodriguez-Gomez, V., **Patel, E.**, et al., 2018, MNRAS, 480, 3376-3396, *The Frequency of Dwarf Galaxy Multiples at Low Redshift in SDSS vs. Cosmological Expectations*

White Papers/Proceedings: 5.....

- (5) *Proper Motions of M31 Satellite Galaxies*
Sohn, S. T., Fardal, M., **Patel, E.**, et al., 2023, Dynamical Masses of Local Group Galaxies: IAU Symposium 379

- (4) *RomAndromeda: The Roman Survey of the Andromeda Halo*
Dey, A., Najita, J., Fillion, C., ..., **Patel, E.**, 2023, arXiv:2306.12302
- (3) *Snowmass2021 Cosmic Frontier White Paper: Prospects for obtaining Dark Matter Constraints with DESI*
Valluri, M., Chabanier, S., Iršič, V., ..., **Patel, E.**, 2022, arXiv:2203.07491
- (2) *R2–D2: Roman and Rubin – from Data to Discovery*
Roman Rubin Synergy Working Group, including **Patel, E.**, 2022, arXiv:2202.12311
- (1) *Construction of an L_* — Galaxy: the Transformative Power of Wide Fields for Revealing the Past, Present and Future of the Great Andromeda System*
Gilbert, K., ..., **Patel, E.**, et al., 2019, Astro2020: Decadal Survey on Astronomy and Astrophysics, Bulletin of the American Astronomical Society, Vol. 51, Issue 3, id. 540

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](#)