Adrian M. Price-Whelan

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Education

PhD 2016, Astronomy, Columbia University. Advisor: K. V. Johnston

MA 2013, MPhil 2014, Astronomy, Columbia University. Advisor: K. V. Johnston

Honors BA 2010, Physics, New York University. Advisor: D. W. Hogg

Honors and awards

Dr. Pliny A. and Margaret H. Price Prize in Cosmology and AstroParticle Physics, (2015)

NSF Graduate Research Fellowship (2012–)

Survey architect, SDSS-III, (2011–2014)

Dean's List, New York University (2007–2010)

Phi Beta Kappa, Beta of New York (2010–)

Summa cum laude, New York University (2010)

Samuel F.B. Morse Medal, awarded for excellence in physics (2010)

Sigma Pi Sigma, National Physics Honors Society (2009–)

George Granger Brown Scholarship (2009)

Selected recent publications by topic (ADS) (2017-05-05)

refereed: 28 — first author: 8 — citations: 5658 — h-index: 16

Gaia and stellar astrophysics

Anderson, L.; Hogg, D. W.; Leistedt, B.; **Price-Whelan, A. M.**; Bovy, J., *Improving Gaia parallax precision with a data-driven model of stars*, submitted (arXiv:1706.05055)

Oh, S.; **Price-Whelan, A. M.**; Hogg, D. W.; Morton, T. D.; Spergel, D. N., *Co-moving stars in Gaia DR1: An abundance of very wide separation co-moving pairs*, AJ, 153, 257, 2017 (arXiv:1612.02440)

Sesar, B.; Fouesneau, M.; **Price-Whelan, A. M.**; Bailer-Jones, C. A. L.; Gould, A.; Rix, H-W, *A Probabilistic Approach to Fitting Period-luminosity Relations and Validating Gaia Parallaxes*, ApJ, 838, 107, 2017 (arXiv:1703.05384)

Price-Whelan, A. M.; Hogg, D. W.; Foreman-Mackey, D.; Rix, H-W, *The Joker: A Custom Monte Carlo Sampler for Binary-star and Exoplanet Radial Velocity Data*, ApJ, 837, 20, 2017 (arXiv:1610.07602)

Milky Way substructure and stellar stream dynamics

Li, T. S.; Sheffield, A. A.; Johnston, K. V.; Marshall, J. L.; Majewski, S. R.; **Price-Whelan, A. M.**, et al. (+5 additional authors), *Exploring Halo Substructure with Giant Stars. XV. Discovery of a Connection between the Monoceros Ring and the Triangulum-Andromeda Overdensity?*, ApJ, 844, 74, 2017 (arXiv:1703.05384)

Pearson, S.; **Price-Whelan, A. M.**; Johnston, K. V., *Gaps and length asymmetry in the stellar stream Palomar 5 as effects of Galactic bar rotation*, Nature Astronomy, 1, 633, 2017 (arXiv:1703.04627)

Price-Whelan, A. M.; Sesar, B.; Johnston, K. V.; Rix, H-W, *Spending Too Much Time at the Galactic Bar: Chaotic Fanning of the Ophiuchus Stream*, ApJ, 824, 104, 2016 (arXiv:1601.06790)

Sesar, B.; **Price-Whelan, A. M.**, et al. (+12 additional authors), *Evidence of Fanning in the Ophiuchus Stream*, ApJL, 816, L4, 2016 (arXiv:1512.00469)

Price-Whelan, A. M.; Johnston, K. V. et al., *Chaotic Dispersal of Tidal Debris*, MNRAS, 455, 1079, 2016 (arXiv:1507.08662)

Price-Whelan, A. M.; Johnston, K. V. et al., 2015, *A re-interpretation of the Triangulum-Andromeda stellar clouds: a population of halo stars kicked out of the Galactic disc*,
MNRAS, 452, 676, 2015 (arXiv:1503.08780)

Price-Whelan, A. M.; Hogg, D. W.; Johnston, K. V.; Hendel, D., *Inferring the Gravitational Potential of the Milky Way with a Few Precisely Measured Stars*, ApJ, 794, 4, 2014 (arXiv:1405.6721)

Open source software

Astropy Collaboration et al., *Astropy: A community Python package for astronomy*, A&A, 558, A33, 2013 (arXiv:1307.6212)

Grants and observing

Comoving stars in Gaia DR1, optical spectroscopy, Hiltner Telescope, MDM Observatory (PI, 2017)

TRACSSS-2: Tracing More Cold Stellar Streams with Spitzer, Spitzer mission, Cycle 13 (Co-I, 2016-2017)

The Triangulum-Andromeda stellar clouds: a population of halo stars kicked out of the Galactic disk?, optical spectroscopy, Hiltner Telescope, MDM Observatory (PI, 2015)

Spitzer Merger History and Shape of the Galactic Halo, Spitzer mission, Cycle 10 (Co-I, 2014-2015)

Gaia, Spitzer, and the potential of the Milky Way, NASA theory grant (Co-I, 2014-2016)

Sigma Xi Grants in Aid of Research (PI, 2013-2014)

Probing the Milky Way's dark matter halo with RR Lyraes, optical spectroscopy, Hiltner Telescope, MDM Observatory (PI, 2013)

Recent presentations

The Galactic bar and its effect on stellar streams, Princeton, 2017 (seminar)

The Galactic bar and its effect on stellar streams, STScI, 2017 (seminar, invited)

Fitting a straight line to data, Computational Astrophysics Workshop, Princeton, 2017 (invited talk)

Chaos, stellar streams, and the Galactic matter distribution, University of Michigan, 2016 (seminar, invited)

Chaos, stellar streams, and the Galactic matter distribution, IAS, 2016 (seminar, invited)

Chaos, stellar streams, and the Galactic matter distribution, University of Delaware, 2016 (seminar, invited)

Chaos and Stellar Streams, AAS 227, 2016 (dissertation talk)

Software testing, AAS 227, 2016 (invited talk)

Tidal streams in triaxial systems, Price Prize Lecture, the Ohio State University, 2015 (invited talk)

Tidal streams in triaxial systems, Stellar streams in the local universe, Ringberg Castle, 2015 (contributed talk)

Inferring the gravitational potential of the Milky Way with a few precisely measured stars, Local Group Astrostatistics, University of Michigan, 2015 (contributed talk)

Tidal streams in triaxial potentials, Galaxy lunch, Yale University, 2015 (seminar)

Modeling tidal streams and weighing the Milky Way, Tea talk, Caltech, 2015 (seminar)

Tidal streams in triaxial systems, AAS 225, 2015 (poster)

Rewinder, 2014, Gaia Data Challenge, MPIA (contributed talk)

Bayesian statistics, 2014, Course lecture, Statistics and machine learning in astronomy, Columbia University (lecture)

Angle-action coordinates, 2014, Galaxies lunch, Columbia University (lecture)

The potential of the Milky Way, 2014, Galaxy lunch, Yale University (seminar)

Spitzer, Gaia, and the potential of the Milky Way, 2014, AAS 223 (poster)

Probing the Galactic potential with 6D information, 2013, Gaia Data Challenge, University of Surrey (contributed talk)

Open source development (GitHub profile)

Core contributor to the Astropy project and maintainer of Astropy Tutorials

Core developer of gala, schwimmbad, D3PO,

Contributor to matplotlib, emcee, ccdproc

Student advising

Bethlee Lindor (Undergraduate student, Princeton, 2017–)

Sarah Pearson (Graduate student, Columbia, 2016–)

Semyeong Oh (Graduate student, Princeton, 2016–)

Tze P. Goh (Columbia, 2015–2016)

Jazmin Berlanga (Google Summer of Code, 2015)

Adrian Meyers (senior thesis, now graduate student at Yale, 2014–2015)

Teaching

AST 542: Statistics and Machine Learning, Co-instructor (with Ed Turner), 2017, Princeton University

Galaxies, Teaching assistant, 2014, Columbia University

Stars, Planets, and Galaxies, Lab instructor, 2013, Columbia University

Earth, Moon, and Planets, Lab instructor, 2012, Columbia University

Stars, Planets, and Galaxies, Teaching assistant, 2012, Columbia University

Life in the Universe, Teaching assistant, 2011, Columbia University

Classical and Quantum Waves Lab, Teaching assistant, 2011, New York University

Physics III Lab, Teaching assistant, 2010, New York University

Workshop and meeting organization

Co-organizer of SciCoder workshop, 2011–2013, 2015

AstroHackNY, NYC astronomy & statistics group meetings, (organizer, 2014-2015)

NYCastroML, machine learning and statistics group meetings, (co-organizer, 2013-2014)

Scicoder@AAS, workshop instructor and co-organizer, AAS 223, Washington, DC, 2014

Scicoder@AAS, workshop instructor and co-organizer, AAS 221, Long Beach, CA, 2013

Public outreach

The bar at the center of the Galaxy, 2016, public outreach talk, Astronomy on Tap, New York, NY

Galactic synthesizers, 2015, public outreach talk, Columbia University, New York, NY

Dark matter, 2015, public outreach talk, 100% Outer Space, Silent Barn, Brooklyn, NY

Organizer for Astronomy on Tap (uptown), 2013-2014, public outreach talks at bars in NYC

Light, 2012, public outreach talk for middle school girls, astro4girls, Ridgefield Library, Ridgefield, CT

Member of Rooftop variables, 2011–present, Isaac E. Young Middle School, New Rochelle, NY (partner teacher: Scott Misner)

Roof captain and manager, 2011–present, bi-weekly events for Columbia Astronomy outreach

Professional services & activities

Referee: MNRAS, ApJ

Member: American Astronomical Society