

Adrian M. Price-Whelan — Curriculum Vitae

Lyman Spitzer Jr. Postdoctoral Fellow

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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

Publications — ADS search

refereed: 47 — first author: 15 — citations: 9467 — h-index: 20 (2018-12-27)

Refereed

- 47 **Price-Whelan, A. M.**; Goodman, J., *Binary Companions of Evolved Stars in APOGEE DR14: Orbital Circularization*, ApJ, **867**, 5, 2018 (arXiv:1804.06841)
- 46 De Rosa, G. et al. (incl. **APW**), *Velocity-resolved Reverberation Mapping of Five Bright Seyfert 1 Galaxies*, ApJ, **866**, 133, 2018 (arXiv:1807.04784)
- 45 Kado-Fong, E.; Greene, J. E.; Hendel, D.; **Price-Whelan, A. M.** et al., *Tidal Features at $0.05 < z < 0.45$ in the Hyper Suprime-Cam Subaru Strategic Program: Properties and Formation Channels*, ApJ, **866**, 103, 2018 (arXiv:1805.05970) [4 citations]
- 44 Anderson, L.; Hogg, D. W.; Leistedt, B.; **Price-Whelan, A. M.** et al., *Improving Gaia Parallax Precision with a Data-driven Model of Stars*, AJ, **156**, 145, 2018 (arXiv:1706.05055) [11 citations]
- 43 Astropy Collaboration; **Price-Whelan, A. M.**; Sipócz, B. M.; Günther, H. M. et al., *The Astropy Project: Building an Open-science Project and Status of the v2.0 Core Package*, AJ, **156**, 123, 2018 (arXiv:1801.02634) [224 citations]
- 42 Hendel, D. et al. (incl. **APW**), *SMHASH: anatomy of the Orphan Stream using RR Lyrae stars*, MNRAS, **479**, 570, 2018 (arXiv:1711.04663) [10 citations]
- 41 **Price-Whelan, A. M.**; Bonaca, A., *Off the Beaten Path: Gaia Reveals GD-1 Stars outside of the Main Stream*, ApJ, **863**, 2018 (arXiv:1805.00425) [10 citations]
- 40 **Price-Whelan, A. M.**; Hogg, D. W.; Rix, H.; De Lee, N. et al., *Binary Companions of Evolved Stars in APOGEE DR14: Search Method and Catalog of ~5000 Companions*, AJ, **156**, 18, 2018 (arXiv:1804.04662) [6 citations]
- 39 Hayes, C. R. et al. (incl. **APW**), *Disk-like Chemistry of the Triangulum-Andromeda Overdensity as Seen by APOGEE*, ApJ, **859**, 2018 (arXiv:1805.03706) [2 citations]
- 38 Bergemann, M. et al. (incl. **APW**), *Two chemically similar stellar overdensities on opposite sides of the plane of the Galactic disk*, Nature, **555**, 334, 2018 (arXiv:1803.00563) [11 citations]

- 37 Morris, B. M. et al. (incl. **APW**), *astroplan: An Open Source Observation Planning Package in Python*, AJ, **155**, 128, 2018 (arXiv:1712.09631) [9 citations]
- 36 Oh, S.; **Price-Whelan, A. M.**; Brewer, J. M.; Hogg, D. W. et al., *Kronos and Krios: Evidence for Accretion of a Massive, Rocky Planetary System in a Comoving Pair of Solar-type Stars*, ApJ, **854**, 138, 2018 (arXiv:1709.05344) [15 citations]
- 35 Sheffield, A. A.; **Price-Whelan, A. M.**; Tzanidakis, A.; Johnston, K. V. et al., *A Disk Origin for the Monoceros Ring and A13 Stellar Overdensities*, ApJ, **854**, 47, 2018 (arXiv:1801.01171) [8 citations]
- 34 Greco, J. P.; Greene, J. E.; **Price-Whelan, A. M.**; Leauthaud, A. et al., *Sumo Puff: Tidal debris or disturbed ultra-diffuse galaxy?*, PASJ, **70**, 2018 (arXiv:1704.06681) [7 citations]
- 33 Goulding, A. D. et al. (incl. **APW**), *Galaxy interactions trigger rapid black hole growth: An unprecedented view from the Hyper Suprime-Cam survey*, PASJ, **70**, 2018 (arXiv:1706.07436) [17 citations]
- 32 **Price-Whelan, A. M.**, *Gala: A Python package for galactic dynamics*, JOSS, **2**, 388, 2017 [10 citations]
- 31 Alam, S. et al. (incl. **APW**), *The clustering of galaxies in the completed SDSS-III Baryon Oscillation Spectroscopic Survey: cosmological analysis of the DR12 galaxy sample*, MNRAS, **470**, 2617, 2017 (arXiv:1607.03155) [404 citations]
- 30 **Price-Whelan, A. M.**; Foreman-Mackey, D., *schwimmbad: A uniform interface to parallel processing pools in Python*, JOSS, **2**, 357, 2017 [4 citations]
- 29 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) [18 citations]
- 28 Johnston, K. V.; **Price-Whelan, A. M.**; Bergemann, M.; Laporte, C. et al., *Disk Heating, Galactoseismology, and the Formation of Stellar Halos*, MDPI: galaxies, **5**, 44, 2017 (arXiv:1709.00491) [4 citations]
- 27 Li, T. S. et al. (incl. **APW**), *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) [11 citations]
- 26 Oh, S.; **Price-Whelan, A. M.**; Hogg, D. W.; Morton, T. D. et al., *Comoving Stars in Gaia DR1: An Abundance of Very Wide Separation Comoving Pairs*, AJ, **153**, 257, 2017 (arXiv:1612.02440) [30 citations]
- 25 Sesar, B.; Fouesneau, M.; **Price-Whelan, A. M.**; Bailer-Jones, C. A. L. et al., *A Probabilistic Approach to Fitting Period-luminosity Relations and Validating Gaia Parallaxes*, ApJ, **838**, 107, 2017 (arXiv:1611.07035) [28 citations]
- 24 **Price-Whelan, A. M.**; Hogg, D. W.; Foreman-Mackey, D.; Rix, H., *The Joker: A Custom Monte Carlo Sampler for Binary-star and Exoplanet Radial Velocity Data*, ApJ, **837**, 20, 2017 (arXiv:1610.07602) [16 citations]
- 23 Charisi, M.; Bartos, I.; Haiman, Z.; **Price-Whelan, A. M.** et al., *A population of short-period variable quasars from PTF as supermassive black hole binary candidates*, MNRAS, **463**, 2145, 2016 (arXiv:1604.01020) [49 citations]

- 22 **Price-Whelan, A. M.**; Sesar, B.; Johnston, K. V.; Rix, H., *Spending Too Much Time at the Galactic Bar: Chaotic Fanning of the Ophiuchus Stream*, ApJ, **824**, 104, 2016 (arXiv:1601.06790) [12 citations]
- 21 Sesar, B.; **Price-Whelan, A. M.**; Cohen, J. G.; Rix, H. et al., *Evidence of Fanning in the Ophiuchus Stream*, ApJ, **816**, 2016 (arXiv:1512.00469) [3 citations]
- 20 **Price-Whelan, A. M.**; Johnston, K. V.; Valluri, M.; Pearson, S. et al., *Chaotic dispersal of tidal debris*, MNRAS, **455**, 1079, 2016 (arXiv:1507.08662) [22 citations]
- 19 Charisi, M.; Bartos, I.; Haiman, Z.; **Price-Whelan, A. M.** et al., *Multiple periods in the variability of the supermassive black hole binary candidate quasar PG1302-102?*, MNRAS, **454**, 2015 (arXiv:1502.03113) [14 citations]
- 18 **Price-Whelan, A. M.**; Johnston, K. V.; Sheffield, A. A.; Laporte, C. F. P. et al., *Areinterpretation of the Triangulum-Andromeda stellar clouds: a population of halo stars kicked out of the Galactic disc*, MNRAS, **452**, 676, 2015 (arXiv:1503.08780) [42 citations]
- 17 Sesar, B. et al. (incl. **APW**), *The Nature and Orbit of the Ophiuchus Stream*, ApJ, **809**, 59, 2015 (arXiv:1501.00581) [19 citations]
- 16 Alam, S. et al. (incl. **APW**), *The Eleventh and Twelfth Data Releases of the Sloan Digital Sky Survey: Final Data from SDSS-III*, ApJS, **219**, 12, 2015 (arXiv:1501.00963) [984 citations]
- 15 Pearson, S.; Küpper, A. H. W.; Johnston, K. V.; **Price-Whelan, A. M.**, *Tidal Stream Morphology as an Indicator of Dark Matter Halo Geometry: The Case of Palomar 5*, ApJ, **799**, 28, 2015 (arXiv:1410.3477) [40 citations]
- 14 Andrews, J. J.; **Price-Whelan, A. M.**; Agüeros, M. A., *The Mass Distribution of Companions to Low-mass White Dwarfs*, ApJ, **797**, 2014 (arXiv:1412.0114) [15 citations]
- 13 **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) [29 citations]
- 12 Anderson, L. et al. (incl. **APW**), *The clustering of galaxies in the SDSS-III Baryon Oscillation Spectroscopic Survey: baryon acoustic oscillations in the Data Releases 10 and 11 Galaxy samples*, MNRAS, **441**, 24, 2014 (arXiv:1312.4877) [799 citations]
- 11 Ahn, C. P. et al. (incl. **APW**), *The Tenth Data Release of the Sloan Digital Sky Survey: First Spectroscopic Data from the SDSS-III Apache Point Observatory Galactic Evolution Experiment*, ApJS, **211**, 17, 2014 (arXiv:1307.7735) [690 citations]
- 10 **Price-Whelan, A. M.**; Agüeros, M. A.; Fournier, A. P.; Street, R. et al., *Statistical Searches for Microlensing Events in Large, Non-uniformly Sampled Time-Domain Surveys: A Test Using Palomar Transient Factory Data*, ApJ, **781**, 35, 2014 (arXiv:1311.3683) [7 citations]
- 9 **Price-Whelan, A. M.**; Johnston, K. V., *Spitzer, Gaia, and the Potential of the Milky Way*, ApJ, **778**, 2013 (arXiv:1308.2670) [25 citations]
- 8 Astropy Collaboration et al. (incl. **APW**), *Astropy: A community Python package for astronomy*, A&A, **558**, 2013 (arXiv:1307.6212) [1660 citations]
- 7 Dawson, K. S. et al. (incl. **APW**), *The Baryon Oscillation Spectroscopic Survey of SDSS-III*, AJ, **145**, 10, 2013 (arXiv:1208.0022) [952 citations]
- 6 Ahn, C. P. et al. (incl. **APW**), *The Ninth Data Release of the Sloan Digital Sky Survey: First*

- Spectroscopic Data from the SDSS-III Baryon Oscillation Spectroscopic Survey*, ApJS, **203**, 21, 2012 ([arXiv:1207.7137](#)) [904 citations]
- 5 Eisenstein, D. J. et al. (incl. **APW**), *SDSS-III: Massive Spectroscopic Surveys of the Distant Universe, the Milky Way, and Extra-Solar Planetary Systems*, AJ, **142**, 72, 2011 ([arXiv:1101.1529](#)) [1162 citations]
 - 4 Aihara, H. et al. (incl. **APW**), *Erratum: "The Eighth Data Release of the Sloan Digital Sky Survey: First Data from SDSS-III"* (2011, ApJS, 193, 29), ApJS, **195**, 26, 2011 [43 citations]
 - 3 Blanton, M. R. et al. (incl. **APW**), *Improved Background Subtraction for the Sloan Digital Sky Survey Images*, AJ, **142**, 31, 2011 ([arXiv:1105.1960](#)) [162 citations]
 - 2 Aihara, H. et al. (incl. **APW**), *The Eighth Data Release of the Sloan Digital Sky Survey: First Data from SDSS-III*, ApJS, **193**, 29, 2011 ([arXiv:1101.1559](#)) [955 citations]
 - 1 **Price-Whelan, A. M.**; Hogg, D. W., *What Bandwidth Do I Need for My Image?*, PASP, **122**, 207, 2010 ([arXiv:0910.2375](#)) [4 citations]

Preprints & other

- 6 Erkal, D. et al. (incl. **APW**), *The total mass of the Large Magellanic Cloud from its perturbation on the Orphan stream*, 2018 ([arXiv:1812.08192](#))
- 5 Koposov, S. E. et al. (incl. **APW**), *Piercing the Milky Way: an all-sky view of the Orphan Stream*, 2018 ([arXiv:1812.08172](#))
- 4 **Price-Whelan, A. M.**; Nidever, D. L.; Choi, Y.; Schlafly, E. F. et al., *Discovery of a disrupting open cluster far into the Milky Way halo: a recent star formation event in the leading arm of the Magellanic stream?*, 2018 ([arXiv:1811.05991](#))
- 3 Bonaca, A.; Hogg, D. W.; **Price-Whelan, A. M.**; Conroy, C., *The Spur and the Gap in GD-1: Dynamical evidence for a dark substructure in the Milky Way halo*, 2018 ([arXiv:1811.03631](#)) [4 citations]
- 2 Rasskazov, A. et al. (incl. **APW**), *Hypervelocity Stars from a Supermassive Black Hole-Intermediate Mass Black Hole binary*, 2018 ([arXiv:1810.12354](#))
- 1 **Price-Whelan, A. M.**; Oh, S.; Spergel, D. N., *Spectroscopic confirmation of very-wide stellar binaries and large-separation comoving pairs from Gaia DR1*, 2017 ([arXiv:1709.03532](#)) [9 citations]

Grants and observing

Three-dimensional kinematics of the GD-1 stellar stream, MMT 6.5m, 2018

Comoving stars in Gaia DR1, Hiltner Telescope, MDM, 2017

TRACSSS-2: Tracing More Cold Stellar Streams with Spitzer, Spitzer mission, Cycle 13, 2016

The Triangulum-Andromeda stellar clouds: a population of halo stars kicked out of the Galactic disk?, Hiltner Telescope, MDM, 2015

Spitzer Merger History and Shape of the Galactic Halo, Spitzer mission, Cycle 10, 2014

Gaia, Spitzer, and the potential of the Milky Way, NASA theory grant, 2014–2016

Sigma Xi Grants in Aid of Research, 2013

Probing the Milky Way's dark matter halo with RR Lyraes, Hiltner Telescope, MDM, 2013

Honors and awards

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

NSF Graduate Research Fellowship (2012–2016)

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

Phi Beta Kappa, Beta of New York (2010–2016)

Summa cum laude, New York University (2010)

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

Selected recent presentations

The Dynamic Milky Way in the Gaia Era, University of Arizona, Arizona, 2018 (colloquium)

The Dynamic Milky Way in the Gaia Era, Princeton/IAS, Princeton, 2018 (colloquium)

A disk origin for inner stellar halo structures, Stellar halos, Heidelberg, 2018 (contributed talk)

An Overview of the Astropy Project, Python in Astronomy, NYC, 2018 (invited keynote)

Binary star science with many targets, few epochs, SnowPAC, Utah, 2018 (conference)

The Galactic bar and its effect on stellar streams, University of Kentucky, 2018 (seminar)

Comoving stars in the Gaia era, HAA, NRC-Herzberg, 2018 (seminar)

Comoving stars in the Gaia era, University of British Columbia, 2018 (colloquium)

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

Open source development

Core contributor to the [Astropy](#) project and maintainer of [Astropy Tutorials](#)

Core developer of [gala](#), [schwimmbad](#), [D3PO](#),

Contributor to [matplotlib](#), [emcee](#), [ccdproc](#)

Student advising

Princeton undergraduates: Samuel Moore, Bethlee Lindor

Columbia undergraduates: Tze P. Goh, Adrian Meyers

Google Summer of Code: Manan Agarwal, Jazmin Berlanga, Brett Morris

Graduate students: Sarah Pearson (Columbia, 2016–2017; now postdoc at Flatiron Institute), Semyeong Oh (Princeton, 2016–2018; now postdoc at Cambridge), Tomer Yavetz (Columbia, 2018–)

Teaching

Lecturer, breakout leader, participant at Astro Hack Week (2014–2018)
Data science seminar, co-organized with Peter Melchior, 2018, Princeton University
PHY121: Intro to Astronomy, Prison Teaching Initiative, Fort Dix Correctional Facility
AST 542: Statistics and Machine Learning, Co-instructor, 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

Workshop and meeting organization

Co-organizer of the [Gaia sprints](#), 2016–present
Instructor (Astropy) at [PyData NYC](#), 2017
Instructor (Machine Learning) at [AstroHackWeek](#), 2017
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)

Public outreach

Volunteer with the Prison Teaching Initiative, 2017
The bar at the center of the Galaxy, 2016, public outreach talk, Astronomy on Tap, NYC
Galactic synthesizers, 2015, public outreach talk, Columbia University, NYC
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
Member of [Rooftop variables](#), 2011–2016, Isaac E. Young Middle School, New Rochelle, NY (partner teacher: Scott Misner)
Roof captain and manager, 2011–2016, bi-weekly events for [Columbia Astronomy outreach](#)

Professional services & activities

Referee: MNRAS, ApJ, A&A
Member: American Astronomical Society
TACs: NASA, NOAO