

Evan Kirby

University of Notre Dame
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Education

Ph.D. in Astronomy, University of California Santa Cruz Dissertation: <i>Iron and Alpha Element Distributions in Milky Way Dwarf Satellites from Medium-Resolution Spectroscopy</i> Advisor: Puragra (Raja) Guhathakurta	2009
M.S. in Astronomy, University of California Santa Cruz	2006
B.S. in Physics, Stanford University with Honors and Distinction, concentration in Astrophysics	2004

Employment

Associate Professor University of Notre Dame	2022 –
Research Professor California Institute of Technology	2021 – 2022
Assistant Professor California Institute of Technology	2014 – 2021
Center for Galaxy Evolution Fellow University of California Irvine	2012 – 2014
Hubble Fellow California Institute of Technology	2009 – 2012

Research Interests

- The origin of the elements
- Chemical evolution of dwarf galaxies
- Type Ia supernovae
- The oldest, most metal-poor stars in the Universe
- Dark matter in dwarf galaxies
- The construction and refinement of efficient spectrographs

Awards

NSF CAREER	2019-2024
Cottrell Scholar	2018-2021
Associated Students of Caltech Teaching Award	2017
Newton Lacy Pierce Prize from the American Astronomical Society	2017
Chancellor's Dissertation Year Fellowship, UC Santa Cruz	2008–2009
National Science Foundation Graduate Research Fellowship	2005–2008
Whitford Prize, UC Santa Cruz	2006
Chancellor's Fellowship, UC Santa Cruz	2004–2005
Jeffrey A. Willick Award, Stanford University	2004

Teaching

Phys50201: Physics of Astrophysics (undergraduate+graduate)	2022
Ay20: Basic Astronomy and the Galaxy (undergraduate)	2017, 2018
Ay101: Physics of Stars (undergraduate)	2017, 2018, 2020
Ay121: Radiative Processes (graduate)	2015, 2016, 2018
Ay123: Structure and Evolution of Stars (graduate)	2016, 2019
Ay219: Elements in the Universe and Galactic Chemical Evolution (graduate)	2015
International Summer School at the San Diego Supercomputer Center	2014

Advising

- PhD students
 - **Nicha Leethochawalit**: “The Redshift Evolution of the Stellar Mass-Stellar Metallicity Relation,” PhD 2019, Caltech
 - **Gina Duggan**: “Signatures of the r -process in Ancient Stellar Populations Using Barium Abundances,” PhD 2020, Caltech
 - **Ivanna Escala**: “The Chemical Evolution of M31 Satellite Galaxies,” PhD 2020, Caltech
 - **Brent Belland**: “The Subaru Prime Focus Spectrograph and Dark Matter in Dwarf Galaxies,” PhD 2021, Caltech
 - **Mithi Alexa de los Reyes**: “Manganese and Type Ia Supernova Nucleosynthesis,” PhD expected 2022, Caltech
 - **Zhuyun Zhuang**: PhD expected 2024, Caltech
 - **Evan Núñez**: PhD expected 2024, Caltech
- Postdocs and research staff
 - **Anders Overaa Thygesen**: “The Stellar Isotope Survey” (2015-17, Caltech)
 - **Borja Anguiano**: assistant research professor (2022-, Notre Dame)
- Undergraduate research
 - Six Summer Undergraduate Research Fellows (SURFs), Caltech
 - Seven Freshman Summer Research Institute (FSRI) students, Caltech
 - One REU student, Notre Dame
- As a postdoc, guided the dissertations of two masters students
 - **Lei Yang** (2012, Peking University)
 - **Xiaoting Fu** (2012, National Astronomical Observatories of China)
- Mentored 28 high school students on 23 separate projects related to Keck/DEIMOS, Keck/ESI, Keck/HIRES, Palomar/DBSP, and Lick/Hamilton spectroscopy
 - Regeneron Science Talent Search: one national finalist
 - Intel Science Talent Search: one national finalist and one semifinalist
 - Siemens Science Competition: three regional finalists and seven semifinalists
 - California State Science Fair: two first-place finishers

University and Departmental Service

Notre Dame Physics & Astronomy Undergraduate Research Committee	2022-
Notre Dame Physics & Astronomy Graduate Recruitment Committee	2022-
Notre Dame Physics & Astronomy Preliminary Exam Committee	2022-
Caltech Center for Inclusion & Diversity Faculty Advisory Committee	2016-2017
Caltech Astronomy Graduate Admissions Committee (chair: 2017, 2019)	2014-2019
Caltech Astronomy Qualifying Exam Committee	2016-2017, 2019
Caltech Astronomy Colloquium Committee	2015-2016
Caltech Astronomy Prize Postdoc Selection Committee	2015
Thirteen PhD Committees	2017-2022

Observatory Service

Keck/DEIMOS Throughput Upgrade, PI	2018-
Next Generation Palomar Spectrograph, PI	2015-2021
Keck Observatory Science Steering Committee	2015-2020
Caltech Time Allocation Committee (chair: 2020A)	2010B, 2011A, 2015A, 2017B, 2020A

Selected Science Activities

Subaru Prime Focus Spectrograph: Galactic Archaeology Working Group, co-chair	2011-
TMT/WFOS Science Advisory Committee	2019-
Keck/Liger Science Advisory Committee	2019-
Subaru PFS Collaboration Meeting, LOC	2019
AAS Meeting-in-a-Meeting: “Abundances of Dwarf Galaxies,” SOC chair	2018
HST TAC, Cycles 24-25	2016-2017
The Galactic Renaissance (“JudyFest”) SOC & LOC chair	2017
Spitzer Science Center Oversight Committee	2016-2018
Kavli Institute for Astronomy & Astrophysics Visiting Scholar	2016
Keck Science Meeting SOC (2016 chair, 2019 co-chair)	2015, 2016, 2017, and 2019
NOAO Time Allocation Committee	2013-2015

Referee/reviewer:

- ApJ
- ApJL
- MNRAS
- A&A
- PASA
- Nature Astronomy
- Nature Communications
- NSF
- Polish National Science Center
- Canadian TAC
- University of Sydney Thesis Examiner
- Macquarie University Thesis Examiner
- Royal Society Fellowship Reviewer
- French National Research Agency
- Chile FONDECYT

Grants

Keck Observatory: DEIMOS Upgrade	\$1,141,489	2020-2021
NSF MRI: Next Generation Palomar Spectrograph	\$999,999	2020
Heising-Simons Foundation: Next Generation Palomar Spectrograph	\$1,000,000	2020
Schmidt Scholars Program at Caltech	\$100,000	2020
HST Guest Observer Cycle 27	\$31,991	2019
NSF CAREER	\$758,451	2019
Keck Observatory Science Steering Committee: white paper funds	\$30,000	2019
HST Guest Observer Cycle 25	\$11,952	2018
Cottrell Scholarship	\$100,000	2018
NSF Mid-Scale Innovations Program (co-PI; PI: Judy Cohen)	\$1,024,386	2016
NSF Astronomy & Astrophysics Research Grant	\$375,525	2016
HST Guest Observer Cycle 24	\$13,374	2016
Keck Science Steering Committee: diffraction grating for DEIMOS	\$74,321	2016
Private Donation	\$50,000	2016

Refereed Publications

Evan N. Kirby

H-index: 46 (when restricted to first-author publications: 22)

First Author

1. “The DEEP2 Galaxy Redshift Survey: Redshift Identification of Single-Line Emission Galaxies”
Kirby, E. N., Guhathakurta, P., Faber, S. M., Koo, D. C., Weiner, B. J., & Cooper, M. C., 2007, *ApJ*, 660, 62
2. “Metallicity and Alpha-Element Abundance Measurement in Red Giant Stars from Medium Resolution Spectra”
Kirby, E. N., Guhathakurta, P., & Sneden, C., 2008, *ApJ*, 682, 1217
3. “Uncovering the Extremely Metal-Poor Stars in the Ultra-Faint Dwarf Spheroidal Galaxies”
Kirby, E. N., Simon, J. D., Geha, M. C., Guhathakurta, P., & Frebel, A., 2008, *ApJL*, 685, L43
4. “Multi-Element Abundance Measurements from Medium-Resolution Spectra. I. The Sculptor Dwarf Spheroidal Galaxy”
Kirby, E. N., Guhathakurta, P., Bolte, M., Sneden, C., & Geha, M. C., 2009, *ApJ*, 705, 328
5. “Multi-Element Abundance Measurements from Medium-Resolution Spectra. II. Catalog of Stars in Milky Way Dwarf Satellite Galaxies”
Kirby, E. N., Guhathakurta, P., Simon, J. D., Geha, M. C., Rockosi, C. M., Sneden, C., Cohen, J. G., Sohn, S. T., Majewski, S. R., & Siegel, M., 2010, *ApJS*, 191, 352
6. “Multi-Element Abundance Measurements from Medium-Resolution Spectra. III. Metallicity Distributions of Milky Way Dwarf Satellite Galaxies”
Kirby, E. N., Lanfranchi, G. A., Simon, J. D., Cohen, J. G., & Guhathakurta, P., 2011, *ApJ*, 727, 78
7. “Multi-Element Abundance Measurements from Medium-Resolution Spectra. IV. Alpha Element Distributions in Milky Way Satellite Galaxies”
Kirby, E. N., Cohen, J. G., Smith, G. H., Majewski, S. R., Sohn, S. T., & Guhathakurta, P., 2011, *ApJ*, 727, 79
8. “Grids of ATLAS9 Atmospheres and MOOG Synthetic Spectra”
Kirby, E. N., 2011, *PASP*, 123, 521
9. “Metals Removed by Outflows from Milky Way Dwarf Spheroidal Galaxies”
Kirby, E. N., Martin, C. L., & Finlator, K., 2011, *ApJL*, 742, L25
10. “The Dynamics and Metallicity Distribution of the Local Group Galaxy VV124”
Kirby, E. N., Cohen, J. G., & Bellazzini, M., 2012, *ApJ*, 751, 46
11. “Detailed Abundances of Two Very Metal-Poor Stars in Dwarf Galaxies”
Kirby, E. N., & Cohen, J. G., 2012, *AJ*, 144, 168
12. “Discovery of Super-Li Rich Red Giants in Dwarf Spheroidal Galaxies”
Kirby, E. N., Fu, X., Guhathakurta, P., & Deng, L., 2012, *ApJL*, 752, L16
13. “Segue 2: The Least Massive Galaxy”
Kirby, E. N., Boylan-Kolchin, M., Cohen, J. G., Geha, M., Bullock, J. S., & Kaplinghat, M. 2013, *ApJ*, 770, 16
14. “The Universal Stellar Mass–Stellar Metallicity Relation for Dwarf Galaxies”
Kirby, E. N., Cohen, J. G., Guhathakurta, P., Cheng, L., Bullock, J. S., & Gallazzi, A., 2013, *ApJ*, 779, 102
15. “The Dynamics of Isolated Local Group Galaxies”
Kirby, E. N., Bullock, J. S., Boylan-Kolchin, J. G., Kaplinghat, M., & Cohen, J. G., 2014, *MNRAS*, 439, 1015
16. “Carbon in Red Giants in Globular Clusters and Dwarf Spheroidal Galaxies”
Kirby, E. N., Guo, M., Zhang, A. J., Deng, M., Cohen, J. G., Guhathakurta, P., Shetrone, M. D., Lee, Y. S., & Rizzi, L., 2015, *ApJ*, 801, 125

17. “Spectroscopic Confirmation of the Dwarf Galaxies Hydra II and Pisces II and the Globular Cluster Laevens 1”
Kirby, E. N., Simon, J. D., & Cohen, J. G., 2015, ApJ, 810, 56
 18. “Triangulum II: A Very Dense Ultra-Faint Dwarf Galaxy”
Kirby, E. N., Cohen, J. G., Simon, J. D., & Guhathakurta, P., ApJL, 2015, 814, L7
 19. “Lithium-Rich Giants in Globular Clusters”
Kirby, E. N., Guhathakurta, P., Zhang, A. J., Hong, J., Guo, M., Guo, R., Cohen, J. G., & Cunha, K. 2016, ApJ, 819, 135
 20. “Chemistry and Kinematics of the Late-Forming Dwarf Irregular Galaxies Leo A, Aquarius, and Sagittarius DIG”
Kirby, E. N., Rizzi, L., Held, E. V., Cohen, J. G., Cole, A. A., Manning, E. M., Skillman, E. D., & Weisz, D. R. 2017, ApJ, 834, 9
 21. “Triangulum II: Not Especially Dense After All”
Kirby, E. N., Cohen, J. G., Simon, J. D., Guhathakurta, P., Thygesen, A. O., & Duggan, G. E., 2017, ApJ, 838, 83
 22. “Catalog of Chromium, Cobalt, and Nickel Abundances in Globular Clusters and Dwarf Galaxies”
Kirby, E. N., Xie, J. L., Guo, R., Kovalev, M., & Bergemann, M., 2018, ApJS, 237, 18
 23. “Evidence for Sub-Chandrasekhar Type Ia Supernovae from Stellar Abundances in Dwarf Galaxies”
Kirby, E. N., Xie, J. L., Guo, R., de los Reyes, M. A. C., Bergemann, M., Kovalev, M., Shen, K. J., Piro, A. L., & McWilliam, A., 2019, ApJ, 881, 45
 24. “Elemental Abundances in M31: The Kinematics and Chemical Evolution of Dwarf Spheroidal Satellite Galaxies”
Kirby, E. N., Gilbert, K. M., Escala, I., Wojno, J., Guhathakurta, P., Majewski, S. R., & Beaton, R. L. 2020, AJ, 159, 46
 25. “The Stars in M15 Were Born with the *r*-process”
Kirby, E. N., Duggan, G. E., Ramirez-Ruiz, E., & Macias, P. 2020, ApJL, 891, L13
- Second Author
26. “NGC 2419 — Another Remnant of Accretion by the Milky Way”
Cohen, J. G., **Kirby, E. N.**, Simon, J. D., & Geha, M. C., ApJ, 2010, 725, 288
 27. “Linking Dwarf Galaxies to Halo Building Blocks with the Most Metal-Poor Star in Sculptor”
Frebel, A., **Kirby, E. N.**, & Simon, J. D., 2010, Nature, 464, 72
 28. “The Bizarre Chemical Inventory of NGC 2419, An Extreme Outer Halo Globular Cluster”
Cohen, J. G. & **Kirby, E. N.** 2012, ApJ, 760, 86
 29. “Measuring Detailed Chemical Abundances from Co-added Medium Resolution Spectra. I. Tests Using Milky Way Dwarf Spheroidal Galaxies and Globular Clusters”
Lei, Y., **Kirby, E. N.**, Guhathakurta, P., Peng, E. W., & Cheng, L., 2013, ApJ, 768, 4
 30. “Detailed Abundance Analysis of the Brightest Star in Segue 2, the Least Massive Galaxy”
Roederer, I. U. & **Kirby, E. N.**, 2014, MNRAS, 440, 2665
 31. “An Investigation of the Formation and Line Properties of MgH in 3D Hydrodynamical Model Stellar Atmospheres”
Thygesen, A. O., **Kirby, E. N.**, Gallagher, A. J., Ludwig, H.-G., Caffau, E., Bonifacio, P., & Sbordone, L. 2017, ApJ, 843, 144
 32. “Evolution of the Stellar Mass–Metallicity Relation. I. Galaxies in the $z \sim 0.4$ Cluster Cl0024”
Leethochawalit, N., **Kirby, E. N.**, Moran, S., Ellis, R. S., & Treu, T. 2018, ApJ, 856, 15
 33. “Neutron Stars are the Dominant Source of the *r*-process in the Early Evolution of Dwarf Galaxies”
Duggan, G. E., **Kirby, E. N.**, Andrievsky, S. M., & Korotin, S. A., 2018, ApJ, 869, 50

34. “Elemental Abundances in M31: Alpha and Iron Element Abundances from Low-resolution Resolved Stellar Spectroscopy in the Stellar Halo”
Escala, I. E., **Kirby, E. N.**, Gilbert, K. M., Cunningham, E. C., & Wojno, J., 2019, ApJ, 878, 42
35. “Elemental Abundances in M31: First Alpha and Iron Abundance Measurements in M31’s Giant Stellar Stream”
Gilbert, K. M., **Kirby, E. N.**, Escala, I., Wojno, J., Kalirai, J. S., & Guhathakurta, P., 2019, ApJ, 883, 128
36. “Evolution of the Stellar Mass–Metallicity Relation. II. Constraints on Galactic Outflows from the Mg Abundances of Quiescent Galaxies”
Leethochawalit, N., **Kirby, E. N.**, Moran, S., Ellis, R. S., & Treu, T., 2019, ApJ, 885, 100
37. “Manganese Indicates a Transition from Sub- to Near-Chandrasekhar Type Ia Supernovae in Dwarf Galaxies”
de los Reyes, M. A. C., **Kirby, E. N.**, Seitzzahl, I. R., & Shen, K. J., 2020, ApJ, 891, 85
38. “Elemental Abundances in M31: Properties of the Inner Stellar Halo”
Escala, I. E., **Kirby, E. N.**, Gilbert, K. M., & Wojno, J., 2020, ApJ, 902, 51
39. “NGC 6822 as a Probe of Dwarf Galactic Evolution”
Belland, B., **Kirby, E. N.**, Boylan-Kolchin, M., & Wheeler, C., 2020, ApJ, 903, 10
40. “NGC 147 Corroborates the Break in the Stellar Mass-Stellar Metallicity Relation for Galaxies”
Zhuang, Z., **Kirby, E. N.**, Leethochawalit, N., & de los Reyes, M. A. C., 2021, ApJ, 920, 63
41. “Simultaneous Constraints on the Star Formation History and Nucleosynthesis of Sculptor dSph”
de los Reyes, M. A. C., **Kirby, E. N.**, Ji, A. P. & Haze Nuñez, E., 2022, ApJ, 925, 66
42. “Empirical Constraints on Core Collapse Supernova Yields using Very Metal Poor Damped Lyman Alpha Absorbers”
Nuñez, E. H., **Kirby, E. N.**, & Steidel, C. S., 2022, ApJ, 927, 64

*n*th Author

43. “Millimeter-Wave Profiled Corrugated Horns for the Quad Cosmic Background Polarization Experiment”
Murphy, J. A., Gleeson, E., Cahill, G., Lanigan, W., O’Sullivan, C., Cartwright, E., Church, S. E., Hinderks, J., **Kirby, E. N.**, Thompson, K., Rusholme, B., Gear, W. K., Maffei, B., Ade, P. A. R., Tucker, C., & Jones, B., 2005, International Journal of Infrared and Millimeter Waves, 26, 505
44. “Corrugated waveguide band edge filters for CMB experiments in the far infrared”
Gleeson, E., Murphy, J. A., Maffei, B., Lanigan, W., Brossard, J., Cahill, G., Cartwright, E., Church, S. E., Hinderks, J., **Kirby, E. N.**, & O’Sullivan, C., 2005, Infrared Physics & Technology, 46, 493
45. “The All-wavelength Extended Groth Strip International Survey (AEGIS) Data Sets”
Davis, M., et al., 2007, ApJL, 660, L1
46. “AEGIS: Galaxy Spectral Energy Distributions from the X-Ray to Radio”
Konidakis, N. P., et al., 2007, ApJL, 660, L7
47. “Stellar Kinematics in the Complicated Inner Spheroid of M31: Discovery of Substructure Along the Southeastern Minor Axis and its Relationship to the Giant Southern Stream”
Gilbert, K. M., et al., 2007, ApJ, 668, 245
48. “Lyman Alpha Emitters in the DEEP2 Spectroscopic Database”
Sawicki, M., Lemaux, B. C., Guhathakurta, P., **Kirby, E. N.**, Konidakis, N. P., Martin, C. L., Cooper, M. C., Newman, J. A., & Weiner, B. J., 2008, ApJ, 687, 884
49. “BH Accretion in Galaxies Since $z \sim 1$ ”
Shi, Y., Rieke, G., Donley, J., Cooper, M. C., Willmer, C., **Kirby, E. N.**, 2008, ApJ, 688, 794
50. “QUaD: A High-Resolution Cosmic Microwave Background Polarimeter”
Hinderks, J., et al., 2009, ApJ, 692, 1221

51. “The Least Luminous Galaxy: Spectroscopy of the Milky Way Satellite Segue 1”
Geha, M. C., Willman, B., Simon, J. D., Strigari, L. E., **Kirby, E. N.**, Law, D. R., & Strader, J., 2009, ApJ, 692, 1464
52. “The SPLASH Survey: A Spectroscopic Portrait of Andromeda's Giant Southern Stream”
Gilbert, K. M., Guhathakurta, P., Kollipara, P., Beaton, R. L., Geha, M. C., Kalirai, J. S., **Kirby, E. N.**, Majewski, S. R., & Patterson, R. J., 2009, ApJ, 705, 1275
53. “Local Group Dwarf Elliptical Galaxies. II. Stellar Kinematics to Large Radii in NGC 147 and NGC 185”
Geha, M. C., van der Marel, R. P., Guhathakurta, P., Gilbert, K. M., Kalirai, J. S., & **Kirby, E. N.**, 2010, ApJ, 711, 361
54. “The SPLASH Survey: Internal Kinematics, Chemical Abundances, and Masses of the Andromeda I, II, III, VII, X, and XIV dSphs”
Kalirai, J. S., Beaton, R. L., Geha, M. C., Gilbert, K. M., Guhathakurta, P., **Kirby, E. N.**, Majewski, S. R., Ostheimer, J. C., Patterson, R. J., & Wolf, J., 2010, ApJ, 711, 671
55. “High-resolution Spectroscopy of Extremely Metal-poor Stars in the Least Evolved Galaxies: Leo IV”
Simon, J. D., Frebel, A., McWilliam, A., **Kirby, E. N.**, & Thompson, I. B., 2010, ApJ, 716, 446
56. “Willman 1 — A Probable Dwarf Galaxy with an Irregular Kinematic Distribution”
Willman, B., Geha, M. C., Strader, J., Strigari, L. E., Simon, J. D., **Kirby, E. N.**, & Warres, A., 2011, AJ, 142, 128
57. “A Complete Spectroscopic Survey of the Milky Way Satellite Segue 1: The Darkest Galaxy”
Simon, J. D., Geha, M. C., Minor, Q. E., Martinez, G. D., **Kirby, E. N.**, Bullock, J. S., Kaplinghat, M., Strigari, L. E., Willman, B., Choi, P. I., Tollerud, E. J., & Wolf, J., 2011, ApJ, 733, 46
58. “The Peculiar Chemical Inventory of NGC 2419 - An Extreme Outer Halo 'Globular Cluster'”
Cohen, J. G., Huang, W., & **Kirby, E. N.**, 2011, ApJ, 740, 60
59. “Structure and Dynamics of the Globular Cluster Palomar 13”
Bradford, J. D., Geha, M., Muñoz, R., Santana, F. A., Simon, J. D., Côté, P., Stetson, P. B., **Kirby, E. N.**, & Djorgovski, S. G., 2011, ApJ, 743, 167
60. “Characterizing the Cool KOIs III. KOI-961: A Small Star with Large Proper Motion and Three Sub-Earth-Sized Planets”
Muirhead, P., et al., 2012, ApJ, 747, 144
61. “The SPLASH Survey: Spectroscopy of 15 M31 Dwarf Spheroidal Satellites”
Tollerud, E. J., et al., 2012, ApJ, 752, 45
62. “The Primeval Populations of Ultra-Faint Dwarf Galaxies”
Brown, T., Tumlinson, J., Geha, M., **Kirby, E. N.**, VandenBerg, D. A., Muñoz, R., Kalirai, J. S., Simon, J. D., Avila, R. J., Guhathakurta, P., Renzini, A., & Ferguson, H. C., 2012, ApJL, 753, L21
63. “Two Distant Halo Velocity Groups Discovered by the Palomar Transient Factory”
Sesar, B., Cohen, J. G., Levitan, D., Grillmair, C. J., Jurić, M., **Kirby, E. N.**, Laher, R. R., Ofek, E. O., Surace, J. A., Kulkarni, S. R., & Prince, T. A., 2012, ApJ, 755, 134
64. “A Unique, Isolated Dwarf Galaxy at $D = 1.9$ Mpc”
Makarov, D., Makarova, L., Sharina, M., Uklein, R., Tikhonov, A., Guhathakurta, P., **Kirby, E. N.**, & Terekhova, N., 2012, MNRAS, 425, 709
65. “Global Properties of M31's Stellar Halo from the SPLASH Survey: I. Surface Brightness Profile”
Gilbert, K. M., Guhathakurta, P., Beaton, R. L., Bullock, J., Geha, M. C., Kalirai, J. S., **Kirby, E. N.**, Majewski, S. R., Ostheimer, J. C., Patterson, R. J., Tollerud, E. J., Tanaka, M., & Chiba, M., 2012, ApJ, 760, 76
66. “Internal Stellar Kinematics of M32 from the SPLASH Survey: Dark Halo Constraints”
Howley, K., Guhathakurta, P., Van der Marel, R., Geha, M., Kalirai, J., Yniguez, B., **Kirby, E. N.**, Cuillandre, J.-C., & Gilbert, K., 2013, ApJ, 765, 65

67. “The Distribution of Alpha Elements in Ultra-faint Dwarf Galaxies”
Vargas, L. C., Geha, M., **Kirby, E. N.**, & Simon, J. D., 2013, ApJ, 767, 134
68. “The Stellar Initial Mass Function of Ultra-Faint Dwarf Galaxies: Evidence for IMF Variations with Galactic Environment”
Geha, M., Brown, T. M., Tumlinson, J., Kalirai, J. S., Simon, J. D., **Kirby, E. N.**, Vandenberg, D. A., Muñoz, R., Avila, R. J., Guhathakurta, P. & Ferguson, H. C., 2013, ApJ, 771, 29
69. “The DEEP2 Galaxy Redshift Survey: Design, Observations, Data Reduction, and Redshifts”
Newman, J. A., et al., 2013, ApJS, 208, 5
70. “Normal and Outlying Populations in the Milky Way Stellar Halo at $[\text{Fe}/\text{H}] < -2$ ”
Cohen, J. G., Christlieb, N., Thompson, I., McWilliam, A., Shectman, S., Reimers, D., Wisotzki, L., & **Kirby, E. N.**, 2013, ApJ, 778, 56
71. “Segue 1: An Unevolved Fossil from the Early Galaxy”
Frebel, A., Simon, J. D., & **Kirby, E. N.**, 2014, ApJ, 786, 74
72. “Too Big To Fail in the Local Group”
Garrison-Kimmel, S., Boylan-Kolchin, M., Bullock, J. S., & **Kirby, E. N.**, 2014, MNRAS, 444, 222
73. “Global Properties of M31’s Stellar Halo from the SPLASH Survey: II. Metallicity Profile”
Gilbert, K. M., Kalirai, J. S., Guhathakurta, P., Beaton, R. L., Geha, M. C., **Kirby, E. N.**, Majewski, S. R., Patterson, R. J., Tollerud, E. J., Bullock, J. S., Tanaka, M., & Chiba, M., 2014, ApJ, 796, 76
74. “The Quenching of the Ultra-Faint Dwarf Galaxies in the Reionization Era”
Brown, T. M., Tumlinson, J., Geha, M. C., Simon, J. D., Vargas, L. C., Vandenberg, D. A., **Kirby, E. N.**, Kalirai, J. S., Avila, R. J., Gennaro, M., Ferguson, H. C., Muñoz, R. R., Guhathakurta, P., & Renzini, A., 2014, ApJ, 796, 91
75. “[α /Fe] Abundances of Four Outer M31 Halo Stars”
Vargas, L. C., Gilbert, K. M., Geha, M. C., Tollerud, E. J., **Kirby, E. N.**, & Guhathakurta, P., 2014, ApJL, 797, L2
76. “Stellar Mass–Gas-phase Metallicity Relation at $0.5 \leq z \leq 0.7$: A Power Law with Increasing Scatter toward the Low-mass Regime”
Guo, Y., et al., 2016, ApJ, 822, 103
77. “First results from the MADCASH Survey: A Faint Dwarf Galaxy Companion to the Low Mass Spiral Galaxy NGC 2403 at 3.2 Mpc ”
Carlin, J. L., Sand, D. J., Price, P., Willman, B., Karunakaran, A., Spekkens, K., Bell, E. F., Brodie, J. P., Crnojević, D., Forbes, D. A., Hargis, J., **Kirby, E. N.**, Lupton, R., Peter, A. H. G., Romanowsky, A. J., & Strader, J., 2016, ApJL, 828, L5
78. “The Structure and Dynamical Evolution of the Stellar Disk of a Simulated Milky Way-Mass Galaxy”
Ma, X., Hopkins, P. F., Wetzel, A. R., **Kirby, E. N.**, Angles-Alcazar, D., Faucher-Giguere, C.-A., Kereš, D., & Quataert, E., 2017, MNRAS, 467, 2430
79. “The Binary Fraction of Stars in Dwarf Galaxies: The Case of Leo II”
Spencer, M., Mateo, M., Walker, M., Olszewski, E., McConnachie, A., **Kirby, E. N.**, & Koch, A., 2017, AJ, 153, 254
80. “Deep Subaru Hyper Suprime-Cam observations of Milky Way satellites Columba I and Triangulum II”
Carlin, J. L., Sand, D. J., Muñoz, R. R., Spekkens, K., Willman, B., Crnojević, D., Forbes, D. A., Hargis, J., **Kirby, E. N.**, Peter, A. H. G., Romanowsky, A. J., & Strader, J. 2017, AJ, 154, 267
81. “Global Properties of M31’s Stellar Halo from the SPLASH Survey: III. Measuring the Stellar Velocity Dispersion Profile”
Gilbert, K. M., Tollerud, E., Beaton, R. L., Guhathakurta, P., Bullock, J. S., Chiba, M., Kalirai, J. S., **Kirby, E. N.**, Majewski, S. R., & Tanaka, M., 2018, ApJ, 852, 128

82. “Stellar Stream and Halo Structure in the Andromeda Galaxy From a Subaru/Hyper Suprime-Cam Survey”
Komiya, Y., Chiba, M., Tanaka, M., Tanaka, M., Kirihara, T., Mori, M., Lupton, R. H., Guhathakurta, P., Kalirai, J. S., Gilbert, K., **Kirby, E. N.**, Lee, M. G., Jang, I. S., Sharma, S., & Hayashi, K. 2018, *ApJ*, 853, 29
83. “Modeling chemical abundance distributions for dwarf galaxies in the Local Group: the impact of turbulent metal diffusion”
Escala, I., Wetzel, A., **Kirby, E. N.**, Hopkins, P. F., Ma, X., Wheeler, C., Kereš, D., Faucher-Giguère, C.-A., & Quataert, E. 2018, *MNRAS*, 474, 2194
84. “Evidence of a Non Universal Stellar Initial Mass Function. Insights from HST Optical Imaging of 6 Ultra Faint Dwarf Milky Way Satellites”
Gennaro, M., Tchernyshyov, K., Brown, T. M., Geha, M., Avila, R. J., Guhathakurta, P., Kalirai, J. S., **Kirby, E. N.**, Renzini, A., Simon, J. D., Tumlinson, J., & Vargas, L. C. 2018, *ApJ*, 855, 20
85. “The Binary Fraction of Stars in Dwarf Galaxies: The Cases of Draco and Ursa Minor”
Spencer, M., Mateo, M., Walker, M. G., Olszewski, E., McConnachie, A., & **Kirby, E. N.** 2018, *AJ*, 156, 257
86. “Focal Ratio Degradation for Fiber Positioner Operation in Astronomical Spectrographs”
Belland, B., Gunn, J., Reiley, D., Cohen, J., **Kirby, E.**, de Oliveira, A. C., de Oliveira, L. S., Roberts, M., & Seiffert, M. 2019, *JAI*, 8, 1950007
87. “HALO7D I: The Line of Sight Velocities of Distant Main Sequence Stars in the Milky Way Halo”
Cunningham, E. C., Deason, A. J., Rockosi, C. M., Guhathakurta, P., Jennings, Z. G., **Kirby, E. N.**, Toloba, E., & Barro, G. 2019, *ApJ*, 876, 124
88. “Tentative detection of the circumgalactic medium of the isolated low-mass dwarf galaxy WLM”
Zheng, Y., Putman, M. E., Emerick, A., McQuinn, K. B. W., Werk, J. K., Lockman, F. J., Oppenheimer, B. D., Fox, A. J., **Kirby, E. N.**, & Burchett, J. N. 2019, *MNRAS*, 490, 467
89. “Elemental Abundances in M31: A Comparative Analysis of Alpha and Iron Element Abundances in the the Outer Disk, Giant Stellar Stream, and Inner Halo of M31”
Escala, I., Gilbert, K. M., **Kirby, E. N.**, Wojno, J., Cunningham, E. C., & Guhathakurta, P. 2020, *ApJ*, 889, 177
90. “Elemental Abundances in M31: [Fe/H] and [α /Fe] in M31 Dwarf Galaxies Using Coadded Spectra”
Wojno, J., Gilbert, K. M., **Kirby, E. N.**, Escala, I., Beaton, R. L., Tollerud, E., Majewski, S. R., & Guhathakurta, P. 2020, *ApJ*, 895, 78
91. “Multiple Chemodynamic Stellar Populations of the Ursa Minor Dwarf Spheroidal Galaxy”
Pace, A. B., Kaplinghat, M., **Kirby, E. N.**, Simon, J. D., Tollerud, E., Muñoz, R. R., Côté, P., Djorgovski, S. G., & Geha, M. 2020, *MNRAS*, 495, 3022
92. “Elemental Abundances in M31: Iron and Alpha Element Abundances in M31’s Outer Halo”
Gilbert, K. M., Wojno, J., **Kirby, E. N.**, Escala, I., Beaton, R. L., Guhathakurta, P., & Majewski, S. R. 2020, *AJ*, 160, 41
93. “Characterizing the Circumgalactic Medium of the Lowest-Mass Galaxies: A Case Study of IC 1613”
Zheng, Y., Emerick, A., Putman, M. E., Werk, J. K., **Kirby, E. N.**, & Peek, J. E. G. 2020, *ApJ*, 905, 133
94. “Elemental Abundances in M31: Gradients in the Giant Stellar Stream”
Escala, I., Gilbert, K. M., Wojno, J., **Kirby, E. N.**, & Guhathakurta, P. 2021, *AJ*, 162, 45
95. “Star Formation Histories of Ultra-Faint Dwarf Galaxies: environmental differences between Magellanic and non-Magellanic satellites?”
Saachi, E., Richstein, H., Kallivayalil, N., van der Marel, R., Libralato, M., Zivick, P., Besla, G., Brown, T. M., Choi, Y., Deason, A., Fritz, T., Geha, M., Guhathakurta, P., Jeon, M., **Kirby, E. N.**, Majewski, S. R., Patel, E., Simon, J. D., Sohn, S. T., Tollerud, E., & Wetzel, A. 2021, *ApJL*, 920, L19
96. “Stellar kinematics of dwarf galaxies from multi-epoch spectroscopy: application to Triangulum II”
Buttry, R., Pace, A. B., Koposov, S. E., Walker, M. G., Caldwell, N., **Kirby, E. N.**, Martin, N. F., Mateo, M., Olszewski, E. W., Starkenburg, E., Badenes, C., & Daher, C. M. 2021, *MNRAS*, 514, 1706

97. “Structural parameters and possible association of the Ultra-Faint Dwarfs Pegasus III and Pisces II from deep Hubble Space Telescope photometry”
Richstein, H., Patel, E., Kallivayalil, N., Simon, J. D., Zivick, P., Tollerud, E., Fritz, T., Warfield, J. T., Besla, G., van der Marel, R. P., Wetzel, A., Choi, Y., Deason, A., Geha, M., Guhathakurta, P., Jeon, M., **Kirby, E. N.**, Libralato, M., Sacchi, E., Sohn, S. T. 2022, ApJ, 933, 217