

Evan Kirby

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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

Assistant Professor California Institute of Technology	2014 – present
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

Ay20: Basic Astronomy and the Galaxy (undergraduate)	2017, 2018
Ay101: Physics of Stars (undergraduate)	2017, 2018
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

- Caltech PhD students
 - **Nicha Leethochawalit**: “The Redshift Evolution of the Stellar Mass-Stellar Metallicity Relation,” PhD 2019
 - **Gina Duggan**: “Signatures of the r -process in Ancient Stellar Populations Using Barium Abundances,” PhD 2020
 - **Ivanna Escala**: “The Chemical Evolution of M31 Satellite Galaxies,” PhD 2020
 - **Brent Belland**: “The Subaru Prime Focus Spectrograph and Dark Matter in Dwarf Galaxies,” PhD expected 2021
 - **Mithi Alexa de los Reyes**: “Manganese and Type Ia Supernova Nucleosynthesis,” PhD expected 2022
 - **Zhuyun Zhuang**: PhD expected 2024
 - **Evan Núñez**: PhD expected 2024
- Caltech postdoctoral alumnus
 - **Anders Overaa Thygesen**: “The Stellar Isotope Survey” (2015-17)
- Caltech undergraduate research
 - Six Summer Undergraduate Research Fellows (SURFs)
 - Five Freshman Summer Research Institute (FSRI) students
- As a postdoc, guided the dissertations of two masters students
 - **Lei Yang** (2012, Peking University)
 - **Xiaoting Fu** (2012, National Astronomical Observatories of China)
- Mentored 27 high school students on 22 separate projects related to Keck/DEIMOS, Keck/ESI, 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

Caltech Astronomy Department Service

Astronomy Graduate Admissions Committee (chair: 2017, 2019)	2014-2019
Astronomy Qualifying Exam Committee	2016-2017, 2019
Astronomy Colloquium Committee	2015-2016
Astronomy Prize Postdoc Selection Committee	2015
Eleven PhD Defenses	2017-2020
Nineteen Candidacy Exams	2014-2020

Caltech Optical Observatories Service

Next Generation Palomar Spectrograph, PI	2015-present
Keck Observatory Science Steering Committee	2015-present
Caltech Time Allocation Committee (chair: 2020A)	2010B, 2011A, 2015A, 2017B, 2020A

Selected Science Activities (during appointment at Caltech)

Subaru Prime Focus Spectrograph: Galactic Archaeology Working Group	2011-present
“Galactic Archaeology from Low-Resolution Spectra,” Kunming, China, SOC	2020
Subaru PFS Collaboration Meeting, LOC	2019
TMT/WFOS Science Advisory Committee	2019-present
Keck/Liger Science Advisory Committee	2019-present
AAS Meeting-in-a-Meeting: “Abundances of Dwarf Galaxies,” SOC chair	2018
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 (since appointment at Caltech)

Keck Observatory: DEIMOS Upgrade	\$1,060,000	2020
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

To date, these grants have supported four PhD students, one postdoc, 14 months of my effort, and 38 publications. They also enabled the purchase of some equipment. Active grants will support at least one additional postdoc and one additional PhD student.

Invited Talks (since appointment at Caltech)

Indiana University Astronomy Colloquium	October 2020
Ohio State University Astronomy Colloquium	January 2020
“Chemical Evolution of Galaxies,” Sexten, Italy	January 2020
UC Santa Cruz Science Internship Program Reunion, Keynote Talk	December 2019
University of Chicago Astrophysics Colloquium	November 2019
Caltech Astronomy Colloquium	October 2019
UC Santa Cruz Friday Lunch Astronomy Seminar Hour (FLASH)	June 2019
STScI/JHU Astronomy Colloquium	April 2019
MIT Astrophysics Seminar	April 2019
University of Hawaii Astronomy Colloquium	March 2019
NAOJ/Subaru Observatory Seminar	March 2019
Caltech TeachWeek “Ignite Your Teaching”	January 2019
“Stellar Archaeology as a Time Machine to the First Stars,” IPMU	December 2018
Palomar Observatory Science Meeting	July 2018
“The Metal-Poor Galaxy,” Ringberg, Germany	July 2018
American Astronomical Society Plenary Lecture	June 2018
Yale Astronomy Colloquium	March 2018
University of Washington Astronomy Colloquium	January 2018
Caltech Convocation	September 2017
Caltech-Swinburne Workshop	September 2017
Caltech Seminar Day	May 2017
Caltech Tea Talk (“Subaru Prime Focus Spectrograph”)	March 2017
“Panoramas of the Evolving Cosmos,” Hiroshima, Japan	December 2016
Stanford Astrophysics Colloquium	April 2016
Peking University KIAA Colloquium	April 2016
Tsinghua University Astronomy Colloquium	April 2016
UC Riverside Physics Colloquium	March 2016
Carnegie Observatories Colloquium	December 2015
University of Iowa Physics Colloquium	September 2015
Steward Observatory/NOAO Colloquium	August 2015
JPL Astrophysics Colloquium	March 2015
Pomona College Physics Colloquium	November 2014
UC Berkeley Astronomy Colloquium	September 2014

References

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Refereed Publications

H-index: 43 (when restricted to first-author publications: 20)

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: Global Properties of the Inner Stellar Halo”
Escala, I. E., **Kirby, E. N.**, Gilbert, K. M., & Wojno, J., 2020, ApJ, in press, arXiv:2009.00529
39. “NGC 6822 as a Probe of Dwarf Galactic Evolution”
Belland, B., **Kirby, E. N.**, Boylan-Kolchin, M., & Wheeler, C., 2020, ApJ, in press

*n*th Author

40. “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
41. “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
42. “The All-wavelength Extended Groth Strip International Survey (AEGIS) Data Sets”
Davis, M., et al., 2007, ApJL, 660, L1
43. “AEGIS: Galaxy Spectral Energy Distributions from the X-Ray to Radio”
Konidaris, N. P., et al., 2007, ApJL, 660, L7
44. “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
45. “Lyman Alpha Emitters in the DEEP2 Spectroscopic Database”
Sawicki, M., Lemaux, B. C., Guhathakurta, P., **Kirby, E. N.**, Konidaris, N. P., Martin, C. L., Cooper, M. C., Newman, J. A., & Weiner, B. J., 2008, ApJ, 687, 884
46. “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
47. “QUaD: A High-Resolution Cosmic Microwave Background Polarimeter”
Hinderks, J., et al., 2009, ApJ, 692, 1221
48. “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
49. “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

50. “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
51. “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
52. “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
53. “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.**, & Warren, A., 2011, *AJ*, 142, 128
54. “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
55. “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
56. “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
57. “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
58. “The SPLASH Survey: Spectroscopy of 15 M31 Dwarf Spheroidal Satellites”
Tollerud, E. J., et al., 2012, *ApJ*, 752, 45
59. “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
60. “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
61. “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
62. “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
63. “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
64. “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
65. “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

66. “The DEEP2 Galaxy Redshift Survey: Design, Observations, Data Reduction, and Redshifts”
Newman, J. A., et al., 2013, *ApJS*, 208, 5
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