

Kyle Dawson

CURRICULUM VITAE

CONTACT INFORMATION

Kyle Dawson
Associate Professor
Department of Physics and Astronomy
University of Utah
kdawson@astro.utah.edu

EDUCATION

University of California - Berkeley, Berkeley, CA
PhD, Physics, 2004
Thesis – “**BIMA Survey of Arcminute Scale CMB Anisotropy**”
Cornell University, Ithaca, NY
BA, Physics, 1998

RESEARCH INTERESTS

Observational Cosmology (formerly CMB, galaxy clusters, and SNe; now large-scale structure)
CCD Development and Instrumentation
Large Spectroscopic Surveys

PROFESSIONAL EXPERIENCE

Associate Professor, 2015 – present
Assistant Professor, 2009 – 2015
University of Utah, Salt Lake City, UT
SDSS – BOSS Survey Scientist (2010-2014), eBOSS Instrument Scientist (2014-present)
DESI Project Construction – lead on Survey Design (2013-present); Survey Validation Scientist
DESI Science Collaboration – Chair of working group on Survey (2014-present)
Willard L. Eccles Observatory – Site Development and Characterization

Postdoctoral Researcher, 2004 – 2008
Lawrence Berkeley National Laboratory, Berkeley, CA
Supernova (SN) Cosmology Project: HST Studies of $z > 1$ SNe and Galaxy Clusters
SN Acceleration Probe (proposed): CCD Detector Development

Graduate Student Researcher, 2000 – 2004
University of California - Berkeley, Berkeley, CA
30 GHz studies of CMB Anisotropy and Sunyaev-Zel'dovich in Clusters

External GRANTS and SUPPORT - \$2,982,746 total since 2009

Spectral Templates and Models of Small-scale Clustering for eBOSS and DESI

DOE-HEP Comparative Review, 2016–2019, \$550,000

Conference Support for 2016 SnowPAC: The Galaxy/Halo Connection

NSF & DOE-HEP, 2016, \$14,900

The Extended Baryon Oscillation Spectroscopic Survey (eBOSS)

DOE-High Energy Physics – Operations, 2015–2018, \$1,350,000

eBOSS Instrument Scientist Support

Astrophysical Research Consortium, SDSS-IV, 2013–2017, \$442,846

Modeling Spectra of 160,000 BOSS Quasars for Lyman Alpha Studies

DOE-HEP Comparative Review, \$340,000, 2013-2016

Survey Planning for BigBOSS Research and Development

DOE/LBNL, 2012, \$35,000

The Effect of Host Galaxy Environment on Type Ia Supernovae

SWIFT Guest Investigator Grant (PI: Peter Brown, postdoc), 2011, \$15,000

Ultra-Violet Effects of Environment on Type Ia SNe

SWIFT Guest Investigator Grant (PI: Peter Brown, postdoc), 2010, \$35,000

BOSS Survey Scientist Support

Astrophysical Research Consortium, SDSS-III, 2009–2014, ~\$200,000

PRIVATE and LOCAL GRANTS - \$892,900 total since 2009

Outreach Activities in the Department of Physics and Astronomy

W.L. Eccles Foundation (on behalf of Department), 2016-2017, \$50,000

Exhibit of University of Utah Astronomy Research at Clark Planetarium

Clark Foundation, anonymous, and Weinholz Foundation, 2015, \$12,500

Graduate Student Support (summer and final year)

W.L. and Ruth P. Eccles Foundation (on behalf of Astro), 2015, 2016, \$100,000

Outreach Activities in the Department of Physics and Astronomy

Miller Family Foundation (PI Skollingsberg, on behalf of Department), 2015, 2016, \$125,000

Cosmology with eBOSS

University of Utah Seed Grant, 2014–2015, \$33,000

University of Utah Membership to SDSS-IV

W.L. Eccles Foundation (with Adam Bolton, on behalf of Astro), 2013, \$350,000

Augmentation Grant for Development of Frisco Peak Observatory

NASA Space Grant Consortium of Utah, 2012, \$10,000 + \$10,000 U match

Infrared Imaging Camera for Classroom Demonstrations

L3-Communications, 2012, ~\$5000

Upgrade to South Physics and Frisco Peak Observatories

W.L. Eccles Foundation (With Anil Seth and Wayne Springer), 2012, \$100,000

Dedicated 4x4 Truck for Access to Frisco Peak Observatory

Larry Miller Foundation and W.L. Eccles Foundation, 2010, ~\$25,000

Development of Remote Capabilities for the Willard L. Eccles Observatory

NASA Space Grant Consortium of Utah, 2010, \$25,000+\$25,000 U match

First Observations with the Southern Utah Astronomical Observatory

University of Utah Seed Grant, 2009, \$22,400

PUBLICATIONS (112 publications; 13,000 citations; h-index = 51)

Publications and a brief research statement can be found here:

<http://www.astro.utah.edu/~kdawson/research.html>

SELECTED TALKS

- “**Survey Validation for DESI**”, DESI/eBOSS Collaboration meeting, Ohio State, 2016
- “**eBOSS: Status and Lessons Learned**”, DESI/eBOSS Collaboration meeting, Ohio State, 2016
- “**High Density Galaxy Survey: BOA**”, Future Cosmic Surveys Workshop, U Chicago, 2016
- “**Survey Planning/Optimization & SV**”, CD-3 DOE-HEP Review, LBNL, 2016
- “**Survey Planning, Optimization, and Science Verification**”, DESI Director’s Review, LBNL, 2016
- “**Survey Strategy and Science Verification**”, DESI Science Readiness Review, LBNL, 2016
- “**Survey Planning and Operations**”, DESI Data Systems Final Design Review, LBNL, 2016
- “**The Extended Baryon Oscillation Spectroscopic Survey**”, SnowPAC, Snowbird, UT, 2016
- “**Spectroscopic Surveys: High Density Clustering After DESI; aka Billion Object Apparatus (BOA)**”, Cosmic Visions Workshop for future facilities, Fermi Lab, 2015
- “**Survey Simulations**”, DESI Science Workshop, Argonne Lab, 2015
- “**eBOSS: Survey and Challenges**”, CPAD DOE Workshop, Grand Challenges for Detector Development over the next Ten Years, 2015, University of Texas-Arlington
- “**eBOSS: Survey Design and Early Data**”, eBOSS Data Workshop, University of Utah, 2015
- “**DESI Survey Design and Optimization**”, CD-2 DOE-HEP Review, LBNL, 2015
- “**DESI Survey Design and Optimization**”, Director’s Review, LBNL, 2015
- “**Next Field Selector and Spectral Quicklook**”, Preliminary Design Review, LBNL, 2015
- “**BOSS Operations**”, DOE Operations Review, 2014, Bethesda
- “**eBOSS: Proposal for Six Years of Funding**”, DOE Operations Review, 2014, Bethesda
- “**eBOSS: Survey Status and Development Efforts**”, eBOSS Collaboration meeting, 2014, Cloudcroft, NM
- “**eBOSS Data Requirements**”, SDSS-IV Data Review, 2014, Johns Hopkins University
- “**The Next Ten Years of Cosmology with Spectroscopic Surveys**”, Cosmology Workshop, 2014, Corfu, Greece
- “**Survey Planning and Operations**”, Cosmology Workshop, 2014, Corfu, Greece
- “**Improving the Standard Candle**”, HEAP seminar, University of Utah, 2014
- “**Cosmology with Supernovae, Galaxies, and Quasars**”, Department Colloquium, University of Utah, 2014
- “**Survey Planning for the Dark Energy Spectroscopic Instrument**”, CD-1 DOE-HEP Review, LBNL, 2014, Berkeley
- “**eBOSS and eBOSS Planning**”, eBOSS project review, 2013, Berkeley
- “**The Extended Baryon Oscillations Spectroscopic Survey**”, DOE-HEP, Snowmass, 2013, Minneapolis
- “**BOSS Survey Status**”, APC/IAP, SDSS-III Collaboration Meeting, Paris, France, Sept, 2010, BOSS
- “**Clusters and Supernovae with HST**”, Cosmology Seminar, Brookhaven National Laboratory, Brookhaven, NY, June, 2011.
- “**Clusters and Supernovae with HST**”, SnowPAC, Snowbird, UT, Feb., 2011.
- “**Cosmology with Supernovae and Galaxy Clusters**” Fermi National Laboratory, Astrophysics Colloquium, Batavia, IL, Dec, 2010.
- “**BOSS Survey Strategy: What Will be the Impact on Ly α Measurements?**”, Carnegie Mellon University, Lyman Alpha Forest Working Group, Pittsburg, PA, June, 2010.
- “**Supernova Cosmology with the Hubble Space Telescope**”, Utah Valley University, Department Colloquium, Orem, UT, May, 2010.
- “**Supernova Cosmology**”, University of Wyoming, Department Colloquium, Wyoming, February, 2010.
- “**Supernova Cosmology with the Hubble Space Telescope**”, Brigham Young University, Department Colloquium, Provo, UT, February, 2010.
- “**HST Survey for High Redshift SNe**”, 43rd Rencontres de Moriond, La Thuile Italy, March 15, 2008.

“Decelerating and Dustfree: Dark Energy Studies of Supernovae with the Hubble Space Telescope”, University of Utah, Physics Colloquium, March 6, 2008.

“Decelerating and Dustfree: Targeting SNe in Very High Redshift Galaxy Clusters”, LBNL Dept of Energy Review, Berkeley, CA – 2007.

“Radiation Tolerance of High-Resistivity LBNL CCDs”, IEEE Nuclear Science Symposium, San Diego, CA – 2006.

“Final Results from the BIMA Survey of Arcminute Scale CMB Anisotropy”, INPA colloquium, LBNL, Berkeley, CA – 2004.

“A BIMA Survey of Arcminute Scale CMB Anisotropy”, Kavli Institute for Cosmological Physics, University of Chicago, Chicago, IL – 2003.

COURSES TAUGHT

Astr/Phys 4080, “Introduction to Cosmology”, Spring 2009

Astr/Phys 4080, “Introduction to Cosmology”, Spring 2010, 2012, 2014

Introduced new textbook: “Introduction to Cosmology” by Barbara Ryden

Astr/Phys 5015, “Observational Methods and Data Analysis”, Fall 2010, 2011, 2013

New course developed around Frisco Peak Observatory

Phys 3740, “Introduction to Quantum Mechanics and Special Relativity”, Spring 2011, 2013

Group problem solving to improve student interaction

STUDENTS/POSTDOCS SUPERVISED

Julian Bautista, Postdoctoral Researcher, University of Utah, 2014 – present

Vivek Mariappan, Postdoctoral Researcher, University of Utah, 2014 – present

Peter Brown, Postdoctoral Researcher, University of Utah, 2009 – 2012, (Postdoc: Texas A&M)

Timothy Hutchinson, Graduate Student, University of Utah, 2015 – present

Donna Taylor, Graduate Student, University of Utah, 2015

Vikrant Kamble, Graduate Student, University of Utah, 2014 – present

Suchit Maindola, Graduate Student, University of Utah (EECS), 2011

Matthew Olmstead, Graduate Student/Postdoc, University of Utah, 2009 – 2014, (Asst prof: King’s College)

David Harris, Graduate Student, University of Utah, 2009 – 2015, (lecturer: US Coast Guard Academy)

Jamie Dyer, Undergraduate, University of Utah, 2016 – present

Trey Jensen, Undergraduate, University of Utah, 2013 – 2016 (PhD program: NYU)

Sarah Moran, Undergraduate, Barnard College, REU at University of Utah, 2013 (PhD program: JHU)

Chris Ahn, Undergraduate, University of Utah, 2012 – 2013 (PhD program: University of Utah)

Erika Loertscher, Undergraduate, University of Utah, 2012

Dennis Della Corte, Undergraduate, University of Utah, 2010 – 2011 (PhD: Forschungszentrum Julich)

Nic Ramsrud, Undergraduate, University of Utah, 2010 – 2011

UNIVERSITY COMMITTEES

Development Committee – 2010-present

Student Awards Committee – 2013, 2014, 2016

Lecturer and Outreach Staff hire - 2011

Curriculum Committee – 2010

Graduate Student Admissions Committee – 2009, 2010, 2014, 2016

BOWTIE Seminar – 2009-2011

Astronomy Task Force – 2009-present

Astronomy Faculty Search Committee – 2009, 2011, 2016

TELESCOPE EXPERIENCE

Hubble Space Telescope
Subaru Observatory
Caltech Submillimeter Observatory
Kitt Peak National Observatory 4-m
Keck Observatory
Apache Point Observatory 3.5-m
Apache Point Observatory 2.5-m
University of California Lick 3-m
Owens Valley Radio Observatory
Very Large Array
Berkeley-Illinois-Maryland Association Array

SYNERGISTIC ACTIVITIES

External Reviewer for NASA (Postdoc Fellowships, time allocation for Keck Telescope)
External Reviewer for DOE-HEP – Cosmic Frontiers Comparative Review, Early Career
External Reviewer for NSF – AAG
External Reviewer for LSST – Operations
External Reviewer for Swiss NSF
Organizing Committee for SnowPAC conference - 2009, 2010, 2011, 2016
Organizing Committee for SDSS-III/IV Collaboration meeting – 2014
Referee (Astrophysical Journal, Astronomy and Astrophysics, Reports on Progress in Physics, Astronomical Journal, Monthly Notices of the Royal Astronomical Society)

COMMUNITY INVOLVEMENT/ VOLUNTEER WORK

Public Lectures – College of Science, SL Astronomy Society, and Utah Film Center, once per year
Physics associated with film (Parallel Universes and Space Junk) and cosmology
Fundraising – Formal presentations and grant writing in support of Dept. priorities 2010 – present
Maintain relations with private donors for support of outreach, graduate education, and research
Consultant – Exhibit on “The Sky” at the Utah Museum of Natural History, 2010
Osher Series Lecturer – Adult education, astronomy and cosmology, 2009, 2010, 2016
Astronomy writer for NPR/KQED QUEST series, (www.kqed.org/quest), 2007 – 2008
Wrote astronomy articles as part of a multi-media campaign in the SF Bay Area
Math instructor – San Quentin Prison, 2003
Taught High School equivalency algebra and problem solving to inmates
Guide – extended canoe trips in northern Ontario and northern Quebec, 1994 – 1999
Led groups of 13-16 yr olds on 500+ mile canoe trips through remote Canadian wilderness

FORMER ADVISORS

William Holzappel, PhD advisor, 2000 – 2004, UC-Berkeley
Natalie Roe, postdoctoral advisor, 2004 – 2008, Lawrence Berkeley National Laboratory