Alice E. Shapley

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Education

Ph.D. in Astronomy,
California Institute of Technology, 2003
Thesis Title: "Detailed Astrophysical Properties of Lyman Break Galaxies"
Research Advisor: Professor Charles C. Steidel

A.B. in Astronomy and Astrophysics, and Physics,
Magna Cum Laude with Highest Honors in Astronomy/Physics,
Harvard-Radcliffe University, 1997

Employment

Vice Chair for Astronomy and Astrophysics,
Department of Physics and Astronony
University of California, Los Angeles, 2018–present

Professor, Department of Physics and Astronony
University of California, Los Angeles, 2013–present

Associate Professor, Department of Physics and Astronony
University of California, Los Angeles, 2008–2013

Assistant Professor, Department of Astrophysical Sciences
Princeton University, 2005–2008

Miller Postdoctoral Fellow
University of California at Berkeley, 2003–2005

Research Interests

Galaxy formation and evolution

Feedback processes in starburst galaxies

Stellar populations and chemical evolution at high redshift

Evolution of the inter-galactic medium at high redshift

Awards and Honors

132nd Faculty Research Lecturer, UCLA, 2021–2022

Nominated Participant, UCLA Faculty Leadership Academy, 2019–2020

Kavli Lecturer, American Astronomical Society Meeting, 2019

Biermann Lecturer, Max Planck Institute for Astrophysics, 2018

Distinguished Women Scholar Series Lecturer, University of Victoria, 2016

Marc Aaronson Memorial Lecturer, University of Arizona, 2014

UCLA Department of Physics and Astronomy Teacher of the Year, 2012

UCLA Department of Physics and Astronomy Teaching Award, 2011, 2013, 2016, 2017, 2018, 2020

McMaster Cosmology Lecturer, University of Toledo, 2010

Member of "Galaxies Across Cosmic Time" Science Frontier Panel for Astro2010 Decadal Survey, 2009–2010

David and Lucile Packard Fellow, 2006–2011

Alfred P. Sloan Research Fellow, 2006–2008

NSF Graduate Research Fellowship, 1998–2001

Virginia Gilloon Fellowship, Caltech, 1997–1998

Leo Goldberg Prize, Harvard, 1997

Publication Summary

Refereed Articles: 174

Citations: 26099

h-index: 80

(Smithsonian/NASA Astrophysics Data System 06/21/2021)

Observing Experience

Extensive experience in optical and near-infrared imaging and spectroscopy

Principal investigator: Hubble Space Telescope; Cycle 14 ACS program (20 orbits); Cycle 15 NICMOS program (28 orbits); Cycle 20 WFC3/ACS program (32 orbits); Cycle 25 WFC3/ACS program (87 orbits). Principal investigator: James Webb Space Telescope; Cycle 1 NIRSpec program (63.8 hours). Co-I on many additional HST, JWST, and Spitzer programs. Co-I on "EXPO," WFIRST Science Investigation Team.

Principal Investigator: Keck Observatory; 126 nights since 2007, (LRIS, NIRSPEC, OSIRIS, MOSFIRE, NIRC).

Principal Investigator: Keck/MOSFIRE MOSDEF Survey; Large (LMAP) Program approved by the UC Time Allocation committee for a total of 45.5 nights spanning from 2013 – 2016.

Additional observing experience: Palomar 200-inch telescope (COSMIC, LFC), Keck Observatory (HIRES, ESI), Very Large Telescope (ISAAC), Gemini-South Telescope (GNIRS), Subaru Observatory (MOIRCS), Hubble Space Telescope (WFPC2, ACS, NICMOS, WFC3), Spitzer Space Telescope (IRAC), Kitt Peak National Observatory (NEWFIRM)

Research Funding

2021 NASA/JPL, Keck Observing Program, **$13.65K**, "EXPOsing the Emission-line properties of Distant Galaxies to WFIRST."

2021 NASA/JPL, Keck Observing Program, **$16K**, "EXPOsing the Emission-line properties of Distant Galaxies to WFIRST."

2020 NASA/JPL, Keck Observing Program, **$22K**, "EXPOsing the Emission-line properties of Distant Galaxies to WFIRST."

2020 National Science Foundation, Astronomy and Astrophysics Grant, **$353K** (total $975K), "Collaborative Research: Addressing the Burning Questions in the Baryon Cycle at $z \sim 2$."

2020 NASA/JPL, Keck Observing Program, **$22K**, "EXPOsing the Emission-line properties of Distant Galaxies to WFIRST."

2017 Hubble Space Telescope, General Observer Program, **$216K** (total $430K), "The Path Forward for Lyman-Continuum Studies at $z \sim 3$."

2015 NASA/UC Santa Cruz, Funding for WFIRST Telescope Science Investigation Team, **$417K**, "EXPO: (EXtragalactic Potential Observations) Science Investigation Team."

2015 NASA, Astrophysics Data Analysis Program, **$91K** (total $225K), "Enhancing the Legacy of Spitzer and Herschel with the MOSFIRE Deep Evolution Field Survey."

2014 Hubble Space Telescope, Archival Legacy Program, **$24K** (total $275K), "Maximizing the Impact of CANDELS: Rest-frame Optical Spectroscopy of 2000 Galaxies at $z = 1.4-3.8$."

2013 National Science Foundation, Astronomy and Astrophysics Grant, **$198K** (total $975K), "Collaborative Research: The MOSFIRE Deep Evolution Field Survey."

2012 Hubble Space Telescope, General Observer Program, **$147K**, "A Critical Test of the Nature of Lyman Continuum Emission at $z \sim 3$."

2011 UC Office of the President, Multi-Campus Research Unit, **$136K** (total $1250K), "The Southern California Center for Galaxy Evolution."

2011 Hubble Space Telescope, General Observer Program, **$37K** (total $137K), "Resolving Lyman Continuum Emission from Lya-Emitters."

2010 Hubble Space Telescope, General Observer Program, **$34K**, "Lyman Continuum Escape Fractions with a Lensed LBG in the 'Sweet Spot.'"

2008 NASA/Spitzer Space Telescope, General Observer Program, **$20K**, "Spitzer Observations of the Brightest Lensed Galaxies."

2008 Hubble Space Telescope, General Observer Program, **$36K**, "High-resolution imaging of three new UV-bright lensed arcs."

2006 Packard Foundation Fellowship, **$694K**.

2006 Sloan Foundation Fellowship, **$45K**.

2006 Hubble Space Telescope, General Observer Program, **$105K**, "Constraints on the Assembly and Dynamical Masses of $z \sim 2$ Galaxies."

2005 Hubble Space Telescope, General Observer Program, **$81K**, "Imaging a Proto-cluster at $z = 2.3$: The Morphology-Density Relation at High Redshift."

Service

Peer Review

Referee, 2002–present: *Nature*, *Nature Astronomy*, *The Astrophysical Journal*, *The Astrophysical Journal Letters*, *Astronomy & Astrophysics*, *Astronomy & Astrophysics Letters*, *Monthly Notices of the Royal Astronomical Society*, *Proceedings of the Astronomical Society of Australia*, *Publications of the Astronomical Society of Japan*

Panel Member, NSF AAG Program, Spring 2015

Outside Referee, James Webb Space Telescope Time Allocation Committee, Cycle 1, Spring 2021

Outside Referee, Hubble Space Telescope Time Allocation Committee, Cycle 22, Spring 2014

Panel Chair and TAC Member, Hubble Space Telescope Time Allocation Committee, Cycle 18, Spring 2010

Member, UC/Keck Time Allocation Committee, 2008–2012, 2017–2020

Member, Spitzer Space Telescope Time Allocation Committee, Cycles 4 and 14, Spring 2007, 2018

Member, NOAO Time Allocation Committee, Spring 2005–Fall 2008

Panel Member, Hubble Space Telescope Time Allocation Committee, Cycles 14, 17, 25, 26, Spring 2005, 2008, 2017, Fall 2018

Referee, Canada-France-Hawaii Telescope Canadian Time Allocation Committee, 2002–2004

Scientific Organizing Committees

"Multi-Object Spectroscopy for Statistical Measures of Galaxy Evolution", Space Telescope Science Institute (virtual), May 2021

"The growth of galaxies in the Early Universe - VI", Sesto, Italy, January 2020

"Art of Measuring Galaxy Physical Properties", Milano, November 2019

"Extremely Big Eyes on the Early Universe", UCLA, January 2019

"The growth of galaxies in the Early Universe - V", Sesto, Italy, January 2019

"Tokyo Spring Cosmic Lyman-Alpha Workshop (Sakura CLAW)", Tokyo, March 2018

"Characterizing Galaxies with Spectroscopy with a View for JWST", Leiden, October 2017

"Emission Line Galaxies with MOS: From Cosmic Noon to the Reionization Era," Cambridge, September 2017

"SnowPAC2017: Lyα-emitting Galaxies," Snowbird, Utah, March 2017

"Cosmic dawn of galaxy formation: linking observations and theory with new-generation spectral models," Paris, June 2016

Kavli Foundation Meeting on the Future of Radio/Mm/Submm Astronomy, Chicago, December 2015

Keck Science Meeting, UCLA, September 2015, (SOC Chair)

"Galaxy Masses as Constraints of Formation Models,", Oxford, UK, July 2014

"Tracing Cosmic Evolution with Clusters of Galaxies," Sesto Pusteria, Italy, July 2013

"Physical Processes in Galaxy Formation," Aix-en-Provence, France, July 2013

"Galactic Winds Near and Far," Schloss Ringberg, Germany, June 2013

"Metals in Tuscany 2012," Spineto, Italy, June 2012

"The Baryon Cycle," Irvine, June 2012

"High Energy Views of Galaxies and their Nuclei," Tulum, Mexico, November 2011

Keck Science Meeting, Caltech, September 2011

"Galaxies in the Distant Universe: Dynamics and Early Evolution," Schloss Ringberg, Germany, May 2010

"Galaxy Evolution and Environment," Kuala Lumpur, March 2009

"Galaxy Growth In a Dark Universe," Heidelberg, July 2007

"Searching for Strong Lenses in Large Imaging Surveys" Workshop, Fermilab, June 2007

"The Impact of AGN Feedback on Galaxy Evolution: Theoretical Modelling and Observational Signatures," Schloss Ringberg, May 2007

"Massive Galaxies over Cosmic Time," Tucson, November 2006

UCLA Department of Physics and Astronomy

Vice Chair for Astronomy and Astrophysics, 2018–present

Member of Astronomy Faculty Search Committee, 2009, 2018

Member of Astronomy 2nd-year Graduate Comprehensive Exam Committee, 2017, 2018

Member of Astronomy Colloquium Committee, 2008–present

Member of Astronomy Graduate Admissions Committee, 2010, 2016, 2017, 2018

Co-chair of Astronomy Graduate Admissions Committee, 2011, 2012

Member of Astronomy Graduate Curriculum Committee, 2010

Member of Physics & Astronomy Appointments Committee, 2013–2014, 2018–present

Member of Physics & Astronomy Academic Affairs Committee, 2009–2011, 2013–2014

Member of Physics & Astronomy Diversity, Equity, and Inclusion Committee 2019–present

Organizer of Weekly Extragalactic Reading Group, 2008–present

Organizer of DiversiTea Journal Club, Summer 2020

Member of Physics Graduate Bridge Program Admissions Committee, 2021

University of California

Member, UC Observatory Advisory Council (UCOAC), Fall 2013–2017

Member, UC/Keck Time Allocation Committee, Spring 2008–Fall 2012, Fall 2017–2020

Member, Thirty Meter Telescope WFOS/MOBIE Instrument Science Team, 2008–2012

Member, Governance Board of the Southern California Center for Galaxy Evolution (multi-campus research program sponsored by UC Office of Research), 2009–2015

National/International

External U.S. Panel Member, Canadian Long Range Plan (LRP2020), 2019–2020

Member, Nancy Grace Roman Space Telescope Science Interest Group, 2020–present

Teaching Experience

UCLA:

Astronomy 3, "The Nature of the Universe," Spring 2011, Winter 2014, Fall 2015, 2016, 2017, 2018

Astronomy 4, "Black Holes and Cosmic Catastrophes," Fall 2008, 2009, 2010, 2011, 2012, 2013, Spring 2012, 2014, 2015, 2016, 2017, 2018, 2020

Astronomy 6, "Cosmology: Our Changing Concepts of the Universe," Winter 2017

Astronomy 274, "Galaxies," Winter 2009, 2011

Astronomy 278, "The Formation of Galaxies and the IGM," Winter 2010

Astronomy 278, "AGNs, Galaxies, and Scientific Writing," Winter 2012

Astronomy 278, "Scientific Writing," Winter 2016, 2018, 2020

Astronomy M297/297, "The Practice of Scientific Presentations in Astronomy," 2019–2021

Princeton:

Astronomy 204, "Topics in Modern Astronomy," Spring 2007

Princeton SCS Summer School on Galaxy Clusters, June 2006

Astronomy 542, Graduate Observational Seminar, Spring 2006

Astronomy 105, "Our Place in the Universe," Fall 2005

Postdocs and Students Supervised

Princeton:

Annika Peter (graduate student)

Xin Liu (graduate student)

Charlie Conroy (graduate student)

UCLA:

Daniel Nestor (postdoc)

Molly Peeples (postdoc, Center for Galaxy Evolution Fellow)

Xin Liu (postdoc, Hubble Fellow)

Katherine Kornei (graduate student, PhD August 2012)

Kevin Hainline (graduate student, PhD July 2012)

Kristin Kulas (graduate student, PhD June 2013)

Robin Mostardi (graduate student, PhD June 2015)

Ryan Sanders (graduate student, PhD June 2018)

Michelle Consiglio (graduate student)
Xinnan Du (graduate student, PhD June 2018)
Michael Topping (graduate student, PhD May 2020)
Anthony Pahl (graduate student)
Jordan Runco (graduate student)
Katie Kaufman (undergraduate student)
Clarissa Valencia (undergraduate student)
Sarah Nagy (undergraduate student)
Cicero Lu (undergraduate student)
Peng Shao (undergraduate student)
Timothy Wilson (undergraduate student)
Katelyn Horstman (undergraduate student)
Bronson Jeong (undergraduate student)
Audrey Dunn (undergraduate student)

Invited Presentations

Invited review talk at Workshop, "A Holistic View of Stellar Feedback and Galaxy Evolution," Ascona, Switzerland, July 2022

Invited (virtual) seminar at BC Galaxy Summer Seminars, June 2021

Public (virtal) Lecture, Keck Observatory, June 2021

Invited (virtual) colloquium at University of Pittsburgh / Carnegie Mellon, April 2021

Invited (virtual) colloquium at the University of Massachusetts, Amherst, March 2021

Invited (virtual) colloquium at the Kapteyn Institute, University of Groningen, Netherlands, February 2021

Invited (virtual) colloquium at the Institute of Astronomy, Cambridge, February 2021

Invited (virtual) colloquium at UC Santa Cruz, October 2020

Invited (virtual) colloquium at the University of Southern California, September 2020

Invited talk at workshop, "In Situ View of Galaxy Formation 2," Schloss Ringberg, Bavaria, July 2020 (cancelled)

Invited speaker at conference, "DAWN Inauguration Conference 2020," Copenhagen, Denmark, June 2020 (postponed)

Invited colloquium at UC Santa Cruz, April 2020 (cancelled)

Invited colloquium at the University of Southern California, April 2020 (cancelled)

Invited colloquium at Michigan State University, March 2020 (cancelled)

Invited speaker at conference, "The early growth of galaxies VI," Sesto, January 2020

Invited speaker and summary panel member at conference, "KICC 10th Anniversary Symposium: Cosmology: the end of the beginning. Future prospects in cosmology, large scale structure and galaxy formation," Cambridge, UK, September 2019

Kavli Lecture, American Astronomical Society Meeting, June 2019

Invited colloquium, New York University, April 2019

Invited colloquium, University of Texas, Austin, February 2019

Invited speaker at conference, "Understanding Emission-line galaxies for the next generation of cosmological surveys," Teruel, Spain, September 2018

Biermann Lectures, Max Planck Institute for Astrophysics, July 2018

Invited colloquium, MIT, May 2018

Invited colloquium, University of Illinois and Urbana Champaign, March 2018

Invited seminar, UC Davis, March 2018

Invited speaker at conference, "The growth of galaxies in the early universe IV," Sesto, January 2018

Invited colloquium, UC Berkeley, November 2017

Invited speaker at conference, "Emission Line Galaxies with MOS: From Cosmic Noon to the Reionization Era," Cambridge, September 2017"

Invited speaker at conference, "Challenges in Galaxy Evolution: from black holes to the cosmic web," Florence, August 2017

Invited speaker at "Marc Aaronson Memorial Lecture 30 Conference," Tucson, AZ, April 2017

Invited colloquium, Harvard, March 2017

Invited colloquium, UC Riverside, February 2017

Invited colloquium, UC Santa Barbara, November 2016

Invited talk at workshop, "Physical Characteristics of Normal Galaxies at $z > 2$," Leiden, October 2016

Invited Review at conference, "Cosmic dawn of galaxy formation", Paris, June 2016

Invited colloquium, UC Santa Cruz, April 2016

Distinguished Women Scholar Lecturer (3 talks), University of Victoria, March 2016

Invited colloquium, Carnegie Observatory, January 2016

Invited seminar, Carnegie Symposium in Honor of Leonard Searle, Pasadena, CA, July 2015

Invited review, Carnegie Symposium in Honor of Leonard Searle, Pasadena, CA, July 2015

Invited seminar, KITP, Santa Barbara, June 2014

Invited talk at Miller Institute Annual Interdisciplinary Symposium, Tomales Bay, CA, June 2014

Invited colloquium, Caltech, May 2014

Invited talk at conference, "The formation and growth of galaxies in the young Universe," Obergurgl, Austria, April 2014

Invited Astronomy Seminar, University of Utah, April 2014

Invited Astronomy Seminar, Texas A&M University, March 2014

Invited colloquium, University of Texas, Austin, March 2014

Invited Marc Aaronson Memorial Lecture, University of Arizona, February 2014

Joint NOAO/Steward Observatory Colloquium, February 2014

Invited colloquium, University of Chicago, February 2014

Invited talk at workshop, "Galaxies: Insight Out," Leiden, July 2012

Invited Closing Review at the May Symposium, "Gas Flows in Galaxies," Space Telescope Science Institute, May 2012

Invited Presentation at Annual Meeting of UCLA Division of Physical Sciences Board of Visitors, May 2012

Invited colloquium, Whittier College, April 2012

Joint NOAO/Steward Observatory Colloquium, March 2012

Invited colloquium, University of Wisconsin, March 2012

Invited talk at workshop, "Watching Galaxies Grow Up," Schloss Ringberg, Bavaria, December 2011

Invited Seminar, Harvard Center for Astrophysics, September 2011

Invited colloquium, MIT, September 2011

Invited Review, "The Cosmic Odyssey of Baryons" conference, Marseille, June 2011

Invited Review, "Frontier Science Opportunities with the James Webb Space Telescope" conference, June 2011

Invited colloquium, University of Maryland, April 2011

Invited colloquium, University of Michigan, March 2011

Invited colloquium, NRAO, November 2010

Public Lecture, Keck Observatory, September 2010

Invited McMaster Cosmology Lecture, University of Toledo, April 2010

Invited talk at workshop, "Lyman Alpha Emitters," Ohio State University, April 2010

Invited colloquium, Harvard University, March 2010

Invited colloquium, UCB, February 2010

Invited Seminar, UCSD, January 2010

Invited talk at workshop, "The Gaseous Evolution of Galaxies," Schloss Ringberg, Bavaria, November 2009

Invited colloquium, Carnegie Observatory, November 2009

Invited Review, XXVth IAP Annual Colloquium, "The Lyman Alpha Universe," July 2009

Invited Seminar, UCI, May 2009

Invited colloquium, University of Toronto, March 2009

Invited colloquium, Leiden Observatory, September 2008

Invited Review at workshop, "Galaxies in Real Life and Simulations," Leiden, September 2008

Invited Seminar, McGill, April 2008

Colloquia, Hertzberg Institute of Astrophysics / UVic, March 2008

Colloquium, UCSC, February 2008

Invited Seminar, Yale, December 2007

Invited Seminar, Penn, November 2007

Invited Seminar, Institute for Advanced Study, October 2007

Colloquium, UMass, Amherst, October 2007

Invited Review at conference, "Astrophysics in the Next Decade: JWST and Concurrent Facilities," Tucson, September 2007

Invited talk at workshop, "Science in the Era of TMT," UC Irvine, July 2007

Invited Review at conference, "Galaxy growth in a dark Universe," Heidelberg, July 2007

Invited Review at conference, "Tracing Cosmic Evolution with Clusters of Galaxies: Six Years Later," Sesto, June 2007

Invited Astrophysics Seminar, SUNY Stony Brook, April 2007

Invited Astrophysics Seminar, Rutgers University, March 2007

ITC Colloquium, Harvard Center for Astrophysics, March 2007

Colloquium, CU-Boulder, January 2007

Invited Review, "Astrophysics Enabled by the Return to the Moon," November 2006

Conference Summary, "Massive Galaxies over Cosmic Time II," November 2006

Colloquium, Cornell University, October 2006

Joint NOAO/Steward Observatory Colloquium, September 2006

Invited Review, IAU Symposium 235, "Evolution of Galaxies across the Hubble Time," August 2006

Joint Astronomy Colloquium, MPA/MPE/ESO, May 2006

Colloquium, Penn State, March 2006

Invited Seminar, NYU, March 2006

ITC Colloquium, Harvard Center for Astrophysics, February 2006

Invited review at "New Views of the Universe" KICP Inaugural Symposium, December 2005

Colloquium, Space Telescope Science Institute, December 2005

Colloquium, Columbia University, November 2005

Colloquium, Institute of Astronomy, Cambridge, May 2005

Invited Astrophysics Seminar, UC Santa Barbara, April 2005

Colloquium, University of Chicago, December 2004

Invited review at conference, "The High Redshift Frontier," Tucson, AZ, December 2004

Invited review at workshop, "The Role of Mergers and Feedback in Galaxy Evolution," Schloss Ringberg, Bavaria, November 2004

Invited Seminar, Lawrence Livermore National Laboratory, September 2004

Invited review talk at Aspen Workshop on Star Formation in Galaxies, Aspen Center for Physics, July 2004

Invited Cosmology Seminar, Max Planck Institute for Extraterrestrial Physics, May 2004

Invited Review at the May Symposium, "Planets to Cosmology: Essential Science in Hubble's Final Years," Space Telescope Science Institute, May 2004

Invited Departmental Seminar, Harvard University, February 2004

Invited Departmental Seminar, UC Berkeley, February 2004

Colloquium, University of Washington, February 2004

Colloquium, UC Santa Cruz, January 2004

Invited Seminar, Princeton, November 2003

Invited Cosmology Seminar, UC Davis, November 2003

Invited Oral Presentations at "Galaxy Formation: A Herculean Challenge", Banff, Canada, November 2003

Cosmology Group Seminar, UC Berkeley, October 2003

Colloquium, UC Los Angeles, October 2003

Colloquium, UC Santa Barbara, October 2002

Colloquium, UC San Diego, April 2002

Invited talk, Galaxy Formation Workshop, UC Santa Cruz, August 2001

Lunch talk, IPAC/Caltech, May 2001

Invited talk, Galaxy Formation Workshop, UC Santa Cruz, August 2000