

Matthew B. Bayliss, Ph.D.

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Scientific Expertise: Gravitational Lensing; Observational Cosmology; Giant Arc Statistics; Spectroscopy; Galaxy Cluster Astrophysics; Star Formation, Massive Stars and the ISM at High Redshift

EDUCATION

2011 – Ph.D. – The University of Chicago – Astronomy & Astrophysics (advisor: Michael Gladders)

2007 – M.Sc. – The University of Chicago – Astronomy & Astrophysics

2003 – B.Sc. – The University of North Carolina at Chapel Hill – Physics (minor in Mathematics)

PROFESSIONAL EXPERIENCE

2016–present – MIT Kavli Institute for Astrophysics & Space Science – Research Scientist (2018–) and Postdoctoral Research Scholar (Sponsor: Michael McDonald 2016–2018) in the

2015-2016 – Colby College – Faculty Fellow in the Department of Physics & Astronomy

2011-2015 – Harvard University – Postdoctoral Research Scholar in the Department of Physics and the Harvard-Smithsonian Center for Astrophysics (Sponsor: Christopher Stubbs)

2010-2011 – University of Chicago – Graduate Student and Illinois Space Grant Fellow (2010–2011) in the Kavli Institute for Cosmological Physics and the Department of Astronomy & Astrophysics

2004-2005 – University of North Carolina at Chapel Hill – Visiting Scholar w/ Daniel Reichart & Lab Assistant w/ Christopher Clemens in the Department of Physics & Astronomy

GRANTS/AWARDS AS PRINCIPAL INVESTIGATOR (>\$500k since 2017, ~\$630k to date)

2017: *Chandra X-ray Observatory* Large Program 19800436 (500 kiloseconds + \$287,186 awarded)

2017: *Hubble Space Telescope* GO Program 15418 (U.S. Budget PI; 3 orbits + \$37,314 awarded)

2017: *Hubble Space Telescope* GO Program 15378 (7 orbits + \$84,899 awarded)

2017: *Hubble Space Telescope* GO Program 15377 (4 orbits + \$42,594 awarded)

2017: *Chandra X-ray Observatory* GO Program 19700449 (40 kiloseconds + \$50,093 awarded)

2016: *Hubble Space Telescope* GO Program 14896 (5 orbits + \$40,168 awarded)

2016: Colby College Faculty Research Travel Grant (\$2000 awarded)

2014: *Hubble Space Telescope* GO Program 13639 (15 orbits + \$85,238 awarded)

2012: *Herschel Space Observatory:* PACS DDT Program (0.4 hours; Obs: 1342245182, 1342245183)

2008-2018: 25 Classical Observing Programs (65 nights) on 4m+ Ground-Based Telescopes

GRANTS/AWARDS AS CO-INVESTIGATOR

2017: *James Webb Space Telescope* Early Release Science Program #1355 (50.1 hours)

2015: *Hubble Space Telescope* Frontier Fields Modeling Grant NAS5-26555

2010-2017: *Hubble Space Telescope* – 10 GO programs and one SNAP program in Cycles 18-25 (219 GO orbits, and 293 Snapshot orbits in total)

2009, 2010, 2016: *Spitzer Space Telescope* – Three GO programs in Cycle 6, 7 & 13 (72.9 hours)

SCHOLARSHIPS/FELLOWSHIPS (\$27,500 in total)

- 2010** – Illinois Space Grant Consortium Graduate Fellowship (\$10,000)
- 2008** – Sigma Xi Scientific Research Society Grant-in-Aid of Research (\$5,000)
- 2003** – UNC Chapel Hill Undergraduate Research Fellowship (\$4,000)
- 2003** – UNC Chapel Hill Frances L. Phillips Scholarship (\$6,000)
- 2002** – Bridging Institute National Exchange Student Scholarship (\$2,500)

INVITED TALKS/SEMINARS/COLLOQUIA

- 2018 Feb** – Colloquium – UNC–Chapel Hill, Department of Physics & Astronomy, Chapel Hill, NC
- 2017 Sept** – Colloquium – UMass Amherst & the Five College Astronomy Dept., Amherst, MA
- 2017 Mar** – Colloquium – Boston University Department of Astronomy, Boston, MA
- 2016 Jan** – Seminar – Dept. of Physics, Ludwig-Maximilians Univ., Munich, Germany
- 2015 Dec** – Seminar – UCLA Division of Astronomy & Astrophysics, Los Angeles, CA
- 2015 Mar** – Colloquium – Department of Physics & Astronomy, UNC-Asheville, Asheville, NC
- 2015 Feb** – Colloquium – Department of Physics & Astronomy, Colby College, Waterville, ME
- 2014 Mar** – Seminar – Department of Astronomy, Yale University, New Haven, CT
- 2013 Nov** – Seminar – Dept. of Physics & Astronomy, Carnegie Mellon University, Pittsburg, PA
- 2013 Oct** – Colloquium – Department of Astronomy, Pontifica Univ. de Catolica, Santiago, Chile
- 2013 Sept** – Colloquium – Dept. of Astronomy, University of Michigan, Ann Arbor, MI
- 2013 Feb** – Review Talk – CfA-ITC Seminar Series, “Galaxy Clusters”, Cambridge, MA
- 2012 Oct** – Review Talk – CfA-ITC Seminar Series, “The Nature of Dark Matter”, Cambridge, MA
- 2012 Mar** – Invited Talk – SnowPAC 2012, “Lensing in the Era of Survey Science”, Snowbird, UT
- 2012 Jan** – Invited Talk – Essential Cosmology for the Next Generation Workshop, Cancun, Mexico
- 2010 Dec** – Astrophysics Seminar – Space Telescope Science Institute, Baltimore, MD
- 2010 Dec** – Astrophysics Seminar – NASA Goddard Space Flight Center, Goddard, MD

SELECTED CONFERENCE TALKS

- 2018 Sept** – Contributed Talk – The Universe as a (Strong Lensing) Telescope, Milan, Italy
- 2017 Dec** – Contributed Talk – Distant Galaxies from the Far South, Bariloche, Argentina
- 2017 Jul** – Contributed Talk – Galaxy Clusters 2017, Santander, Spain
- 2016 May** – Contributed Talk – Thirty Meter Telescope Science Forum, Kyoto, Japan
- 2014 Jul** – Contributed Talk – IAU Symposium #309: Galaxies in 3D, Vienna, Austria
- 2014 Jul** – Contributed Talk – EWASS Cluster Lensing, Geneva, Switzerland
- 2014 Jun** – Contributed Talk – Future Directions in Galaxy Cluster Surveys, Paris, France
- 2013 Apr** – Contributed Talk – Cluster Lensing: Past & Future, STScI, Baltimore, MD
- 2013 Mar** – Contributed Talk – SnowCluster 2013: Physics of Galaxy Clusters, Snowbird, UT
- 2012 Jul** – Contributed Talk – Gemini Observatory Science Meeting, San Fransisco, CA
- 2011 Apr** – Contributed Talk – A Decade of Exploration With Magellan, Pasadena, CA

RESEARCH ADVISING/MENTORING EXPERIENCE

- 2018–2019** — **Janel Williams** — MIT Summer UROP; currently a senior at Wellesley College
- 2015–2016** — **Chandler Blake** — Colby senior physics research project, now in the private sector
- 2015–2016** — **Kyle Zengo** — Colby senior physics research project, now in the private sector
- 2013 Summer** — **Jocelyn Ferrara** — SAO REU student, now at Gemini Observatory
- 2012 Summer** — **Peter Blanchard** — SAO REU student, now PhD student at Harvard
- 2011–2014** — **Cristina García-Vergara** — Masters at Pontifica Univ. de Catolica, now PhD
- 2011–2014** — **Jonathan Ruel** — Harvard PhD student, now physics lecturer in Montreal, CA

TEACHING EXPERIENCE

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|------------------------|--|-------------|
| Professor | AS151 (Introduction to Stars and Galaxies) – Colby College | Spring 2016 |
| Professor | PH145L (Electromagnetism & Optics) – Colby College | Fall 2015 |
| Professor | AS231 (Observational Astrophysics) – Colby College | Fall 2015 |
| Professor | PH415 (Senior Research Project) – Colby College | 2015-16 |
| Organizer | PH405 (Senior Seminar Talk Series) – Colby College | 2015-16 |
| Teaching Fellow | Harvard University – Science of the Physical Universe 30 | Spring 2012 |
| Graduate TA | The University of Chicago – PHYS 119 & 120, and NTSC 102 | 2005-2006 |
| Grader/TA | The University of North Carolina, Chapel Hill – PHYS 25 & 28 | 2003 |

PROFESSIONAL & DEPARTMENTAL SERVICE

2018-present – U.S. National Optical Astronomy Observatory (NOAO) TAC Member
2018, 2016, 2014, 2012 – NSF Astronomy Division Grant Review Service (Cosmology)
2018 – NASA *Chandra X-ray Observatory* TAC Panel (Cycle 20)
2015–2018 – NASA *Hubble Space Telescope* TAC Panel (C23, C25) & Mid-cycle review (C24, C25)
2015–present – U.S. National Representative on the Gemini Observatory Users Committee
2015–2016 – Committee to Create Astrophysics Concentration and Astronomy Minor, Colby College Department of Physics & Astronomy
2014–2015 – NASA Fellowship Review Service
2013–2014 – Harvard University Department of Physics Undergrad Curriculum Review Committee
2011–present – Referee for *ApJ*, *ApJ Letters*, *MNRAS*, and *AJ*
2012–2013 – American Astronomical Society Chambliss Award Judge
2011 – Student Rep on Admission Committee, Astronomy & Astrophysics,, University of Chicago
2008–2011 – Student Rep for Brinson Lectureship Selection, University of Chicago
2005–2007 – Student Rep to the Faculty, Astronomy & Astrophysics, University of Chicago

PUBLIC OUTREACH SERVICE

2016–present Co-founder & MC, Boston Area Astronomy on Tap, Cambridge, MA
2014 – Invited Speaker, Keene Public Library Astronomy Lecture Series, Keene, NH
2013 – Invited Speaker, Harvard/CfA Observatory Nights Public Talk Series, Cambridge, MA
2012 – Guest Speaker, Citizen Schools STEM Outreach Program, Boston, MA
2010 – Guest Lecturer, Chicago Public Schools STEM Program, Adler Planetarium, Chicago, IL
2009 – Public Liaison, Space Visualization Lab, Adler Planetarium, Chicago, IL
2006–2010 – Instructor, Yerkes Summer & Winter Institute, Yerkes Observatory, Williams Bay, WI
2006–2007 – Organizer, Yerkes Summer & Winter Institute, Yerkes Observatory, Williams Bay, WI
2006–2010 – Instructor, Space Explorers at the University of Chicago Office of Special Programs

PUBLICATION STATISTICS

90 Total Journal Articles (12 First/Corresponding Author)

18 Total Conference Proceedings/Abstracts (5 First author)

3480+ total citations; h-index = 32, i10-index = 62