

# CHARLOTTE A. MASON

*High Redshift — Galaxy Evolution — Reionization*  
*Luminosity Functions — Gravitational Lensing*

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## EDUCATION

<i>Current</i> 2015 - 2018 (expected)	<b>Doctor of Philosophy (PhD) Candidate</b> in Astronomy <i>University of California, Los Angeles, California, USA</i> Thesis: “ <i>Galaxies at the Epoch of Cosmic Reionization</i> ” Advisor: Prof. Tommaso Treu
2013 - 2015	<b>Master of Arts (MA)</b> in Physics, with Astrophysics Emphasis <i>University of California, Santa Barbara, California, USA</i>
2009 - 2013	<b>Master of Physics (MPhys)</b> , 4 Year Undergraduate Honours Degree <i>Merton College, University of Oxford, Oxford, UK</i> Thesis: “ <i>High-Redshift Disk Formation</i> ” Supervisors: Dr. Julien Devriendt & Dr. Adrienne Slyz

## HONOURS, FELLOWSHIPS, AND AWARDS

Rodger Doxsey Travel Prize to AAS Winter Meeting, *AAS*, 2018  
Dr. Pliny A. and Margaret H. Price Prize in Cosmology and AstroParticle Physics, *CCAPP, Ohio State University*, 2017  
Doctoral Student Travel Grant, *UCLA*, 2017, \$1,000  
NASA Earth and Space Science Fellowship (NESSF), 2016 - 2018, \$75,000 (7% success rate)  
Chair’s Outstanding Service Award, *Physics Department, UC Santa Barbara*, 2015  
International Travel Grant to XXIX IAU General Assembly, *AAS*, 2015, \$1,000  
Yzurdiaga Graduate Fellowship, *UC Santa Barbara*, 2013, \$7,000  
Haigh Tie for Achievement and Service to College Sport, *Merton College, University of Oxford*, 2013  
Fowler Prize for Achievement, 4 times, *Merton College, University of Oxford*, 2009 - 2013  
Exhibition (Prize Scholarship), *Merton College, University of Oxford*, 2012  
Summer Undergraduate Research Fellowship, *California Institute of Technology*, 2011  
Book Prize, Physics Undergraduate Speaking Competition, *University of Oxford*, 2011  
Prize for Excellence in Physics, *Oxford High School GDST*, 2009  
Prize for Academic Achievement and Service to the School, *Oxford High School GDST*, 2009  
Scholar, International Summer School for Young Physicists, *Perimeter Institute*, 2008  
Academic Scholarship & Best Astronomer Award, *Senior Space School UK*, 2007

## PUBLICATIONS

18 journal articles (14 peer reviewed and 4 submitted), including 5 as first author.  
77 first author paper citations, 305 total citations (ADS Jan 2, 2018).

### First Author Publications

5. Mason, C. A., et al. Beacons into the Cosmic Dark Ages: Boosted transmission of Ly $\alpha$  from UV bright galaxies at  $z \gtrsim 7$ . Submitted to *ApJL*, 2018. [arXiv:1801.01891](https://arxiv.org/abs/1801.01891).
4. Mason, C. A., et al. The Universe is Reionizing at  $z \sim 7$ : Bayesian Inference of the IGM Neutral Fraction Using Ly $\alpha$  Emission from Galaxies. Submitted to *ApJ*, 2017. [arXiv:1709.05356](https://arxiv.org/abs/1709.05356).
3. Mason, C. A., et al. First Results from the KMOS Lens-Amplified Spectroscopic Survey (KLASS): Kinematics of Lensed Galaxies at Cosmic Noon. *ApJ*, **838:14**, 2017.
2. Mason, C. A., Trenti, M., and Treu, T. The Galaxy UV Luminosity Function before the Epoch of Reionization. *ApJ*, **813:21**, 2015.
1. Mason, C. A., et al. Correcting the  $z \sim 8$  Galaxy Luminosity Function for Gravitational Lensing Magnification Bias. *ApJ*, **805:79**, 2015.

### Contributing Author Publications

13. Abramson, L. E., et al. The Grism Lens-Amplified Survey from Space (GLASS). XII. Spatially Resolved Galaxy Star Formation Histories and True Evolutionary Paths at  $z > 1$ . Submitted to ApJ, 2017. [arXiv:1710.00843](#).
12. Hoag, A., et al. HST Grism Observations of a Gravitationally Lensed Redshift 10 Galaxy. Submitted to ApJ, 2017. [arXiv:1709.03992](#).
11. Schmidt, K. B., et al. The Grism Lens-Amplified Survey from Space (GLASS). XI. Detection of C IV in Multiple Images of the  $z = 6.11$  Ly $\alpha$  Emitter behind RXC J2248.7-4431. [ApJ, 839:17, 2017](#).
10. Hoag, A., et al. Spectroscopic confirmation of an ultra-faint galaxy at the epoch of reionization. [Nature Astronomy, 1:0091, 2017](#).
9. Wang, X., et al. The Grism Lens-Amplified Survey from Space (GLASS). X. Sub-kiloparsec Resolution Gas-phase Metallicity Maps at Cosmic Noon behind the Hubble Frontier Fields Cluster MACS1149.6+2223. [ApJ, 837:89, 2017](#).
8. Santini, P., et al. Characterizing elusive, faint dusty star-forming galaxies: a lensed, optically undetected ALMA galaxy at  $z = 3.3$ . [A&A, 596:A75, 2016](#).
7. Bernard, S. R., et al. Galaxy Candidates at  $z \sim 10$  in Archival Data from the Brightest of Reionizing Galaxies (BORG[z8]) Survey. [ApJ, 827:76, 2016](#).
6. Agnello, A., et al. Spectroscopy and high-resolution imaging of the gravitational lens SDSS J1206+4332. [MNRAS, 458:3830–3838, 2016](#).
5. Huang, K.-H., et al. Detection of Lyman-alpha Emission from a Triply Imaged  $z = 6.85$  Galaxy behind MACS J2129.4-0741. [ApJ, 823:L14, 2016](#).
4. Schmidt, K. B., et al. The Grism Lens-Amplified Survey from Space (GLASS). III. A Census of Ly $\alpha$  Emission at  $z \gtrsim 7$  from HST Spectroscopy. [ApJ, 818:38, 2016](#).
3. Calvi, V., et al. Bright Galaxies at Hubble's Redshift Detection Frontier: Preliminary Results and Design from the Redshift  $z \sim 9 - 10$  BoRG Pure-Parallel HST Survey. [ApJ, 817:120, 2016](#).
2. Treu, T., et al. The Grism Lens-Amplified Survey from Space (GLASS). I. Survey Overview and First Data Release. [ApJ, 812:114, 2015](#).
1. Schmidt, K. B., et al. Through the Looking GLASS: HST Spectroscopy of Faint Galaxies Lensed by the Frontier Fields Cluster MACSJ0717.5+3745. [ApJ, 782:L36, 2014](#).

INVITED TALKS	Harvard-Smithsonian CfA, 2018	Galaxies & Cosmology Seminar (upcoming)
	UC Berkeley, 2017	Cosmology Seminar
	KIPAC, Stanford University, 2017	Cosmology Seminar
	UC Santa Barbara, 2017	Lunch Talk
	CCAPP, Ohio State University, 2017	Price Prize Seminar
	University of Oxford, UK, 2016	Galaxy Evolution Seminar
	UC Davis, 2016	Cosmology Seminar
	Institute for Cosmology and Gravitation, Portsmouth, UK, 2015	Lunch Talk
CONFERENCES	Cosmic Dawn with JWST, STScI, Baltimore, MD, 2017	Contributed Talk
	EWASS SS15: Unravelling the First Billion Years, Prague, CZ, 2017	Contributed Talk
	Physical Characteristics of Normal Galaxies at $z > 2$ , Leiden, NL, 2016	Contributed Talk
	Galaxy Workshop, UC Santa Cruz, CA, 2016	Contributed Talk
	The Reionization Epoch, Aspen Center for Physics, Aspen, CO, 2016	Contributed Talk
	Early Growth of Galaxies, Sexten Center for Astrophysics, Italy, 2016	Contributed Talk
	First Light & Cosmology, Institut Astrophysique de Paris, France, 2015	Contributed Talk
	Cosmic Dawn Initiative Workshop, UC Irvine, CA, 2015	Poster
	IAU Symposium 319, Honolulu, HI, 2015	Poster
	South by High Redshift, UT Austin, TX, 2015	Poster
IAU Symposium 311, University of Oxford, UK, 2014	Poster	

APPROVED OBSERVING PROPOSALS (CoI)	<ol style="list-style-type: none"> <li>7. JWST-ERS-1324, PI Treu: Through the Looking GLASS: A JWST Exploration of Galaxy Formation and Evolution from Cosmic Dawn to Present Day</li> <li>6. HST-15212, PI Trenti: [BoRG4JWST] The brightest galaxies in the first 700 Myr</li> <li>5. HST-14701, PI Trenti: Is galaxy formation different during the epoch of reionization?</li> <li>4. Spitzer-12058, PI Bouwens: The Brightest Galaxies at Cosmic Dawn: Securing the Largest Samples of <math>z = 9 - 11</math> galaxies for JWST by leveraging the HST archive with Spitzer/IRAC</li> <li>3. VLT-196.A-0778, PI Fontana: The formation and evolution of galaxies from cosmic dawn to high-noon under a magnifying GLASS</li> <li>2. HST-14280, PI Bradač: Breaking Cosmic Dawn: Observing the <math>z \geq 7</math> Universe Through Cosmic Telescopes</li> <li>1. HST-13767, PI Trenti: Bright Galaxies at Hubble's Detection Frontier: The redshift <math>z \sim 9 - 10</math> BoRG pure-parallel survey</li> </ol>	
TEACHING EXPERIENCE	<p><b>Adjunct Faculty</b>, Earth &amp; Planetary Science Department, Santa Barbara City College</p> <ul style="list-style-type: none"> <li>• <i>Astronomy Lab</i>, 2015-2017 Interactive class for non-science majors, taught in a planetarium and observatory</li> </ul> <p><b>Teaching Assistant</b>, Physics Department, UCSB</p> <ul style="list-style-type: none"> <li>• <i>Quantum Mechanics</i>, Fall 2013 (Upper Division)</li> <li>• <i>Physics 1</i>, Spring 2014 (Lower Division, mechanics for non-Physics students)</li> </ul>	
OBSERVING EXPERIENCE	<p>KMOS, VLT, design and reduction of ongoing 140 hour Large Program</p> <p>DEIMOS, Keck II, 3 nights</p> <p>MOSFIRE, Keck I, 1 half night (remote)</p> <p>NASA IRTF, 3 nights (remote)</p>	<p>2015 - 2017</p> <p>2015</p> <p>2015</p> <p>2011</p>
PROFESSIONAL SERVICE	<ul style="list-style-type: none"> <li>• Referee for MNRAS, A&amp;A</li> <li>• Committee Member of UCSB Women in Physics group</li> </ul>	
UNDERGRADUATE RESEARCH EXPERIENCE	<p><b>Summer Studentship in String Theory</b></p> <p>Rudolf Peierls Center for Theoretical Physics, University of Oxford, Oxford, UK</p> <p><b>Caltech Summer Undergraduate Research Fellowship</b></p> <p>NASA Jet Propulsion Laboratory, Pasadena, California, USA</p>	<p>2012</p> <p>2011</p>
POSITIONS OF RESPONSIBILITY	<p><b>Women's Captain</b>, Merton College Boat Club, 2012 - 13</p> <p><b>Publicity Officer</b>, Oxford Society for Females in Engineering, Science and Technology, 2012 - 13</p> <p><b>Creative Director</b>, <a href="#">Bang!</a> Popular Science Magazine, University of Oxford, 2011</p> <p><b>Vice President of Junior Common Room</b>, Merton College, University of Oxford, 2010 - 11</p>	
OUTREACH AND DIVERSITY	<ul style="list-style-type: none"> <li>• AAS Astronomy Ambassador</li> <li>• Host and speaker at <a href="#">Astronomy on Tap, Santa Barbara</a></li> <li>• Invited Public Talks at Santa Barbara City College, Santa Barbara Salon, and Santa Barbara Astronomical Unit</li> <li>• Started a mentorship program for women in STEM at Oxford University</li> <li>• Created string theory outreach website <a href="http://www.whystringtheory.com">http://www.whystringtheory.com</a></li> <li>• Co-ordinated the Merton College undergraduate admissions process</li> <li>• Organized 3 Open Days for undergraduates at Merton College</li> <li>• BBC Mastermind contestant, 2012. Specialist Subject: Gemini Space Program.</li> </ul>	