

Jonathan R. Pritchard

CONTACT INFORMATION	Center for Astrophysics 60 Garden Street MS-51 Cambridge, MA 02138 USA	<i>Voice:</i> (617) 495-6279 <i>Fax:</i> (617) 495-7093 <i>E-mail:</i> jpritchard@cfa.harvard.edu <i>WWW:</i> www.cfa.harvard.edu/~jpritchard
BIOGRAPHICAL INFORMATION	<i>Date of Birth:</i> 26 January 1980	<i>Citizenship:</i> British
RESEARCH INTERESTS	Theoretical cosmology, CMB polarisation, reionization, cosmological 21 cm line, large scale structure, inflation	
EDUCATION	California Institute of Technology , Pasadena, California, USA Ph.D., Physics, June 2007. <ul style="list-style-type: none">• Advisor: Marc Kamionkowski• Thesis: Extracting the cosmic history from diffuse backgrounds Cambridge University, Pembroke College , Cambridge, Cambridgeshire, UK M.A. (Cantab), Natural Sciences, March, 2004. M.Sci., Natural Sciences, June, 2002. B.A., Natural Sciences, June, 2002.	
HONORS AND AWARDS	Hubble Fellowship, 2007. Cambridge University, graduated with double First in Physics, 2002. Foundress Prize, Pembroke College, Cambridge University, 2001. Foundation scholar, Pembroke College, Cambridge University, 2000. College scholar, Pembroke College, Cambridge University, 1999.	
ACADEMIC EXPERIENCE	Harvard-Smithsonian Center for Astrophysics , Cambridge, Massachusetts, USA <i>Hubble Fellow</i> September, 2007 - Present Post-doctoral research. California Institute of Technology , Pasadena, California, USA <i>Graduate Student</i> September, 2002 - June 2007 Ph.D. research into cosmology and the early Universe and Ph.D. level coursework. <i>Teaching Assistant</i> October, 2002 - March, 2005 Duties at various times have included small group teaching, leading problem sessions, office hours, and grading. Ph 125. Quantum Mechanics. Fall term 2005 Ph 125. Quantum Mechanics. Spring term 2005 Ph 236. General Relativity. Winter term 2004 Ph 125. Quantum Mechanics. Fall term 2004 Ph 5, 6, and 7. Sophmore Physics Lab. Fall, Winter and Spring terms 2003-4 Ph 6, and 7. Sophmore Physics Lab. Winter and Spring terms 2002-3 Ph 3. Freshman Physics Lab. Fall term 2002	

Cambridge University, Cambridge, UK

Part III Research project

December, 2001 - August, 2002

Master's level research into bound fermionic states around black holes, using a gauge theory of gravity. Advisor: Anthony Lasenby.

California Institute of Technology, Pasadena, California, USA

Summer Undergraduate Research Fellowship

July, 2001 - September, 2001

Undergraduate level research into complex quintessence models for dark energy. Advisor: Marc Kamionkowski.

CONFERENCE /
SEMINAR
PRESENTATIONS

Pritchard, J.R. and Furlanetto, S.R. "Probing the First Sources with the Redshifted 21 cm Line". 209th Meeting of the American Astronomical Society. Seattle, January, 2007.

KIPAC tea talk. KIPAC/Stanford. November, 2006.

TAC seminar. Berkeley Astrophysics. November, 2006.

ISCAP seminar. Columbia University. October, 2006.

ITC seminar. Harvard-Smithsonian Center for Astrophysics. October, 2006.

Pritchard, J.R. and Furlanetto, S.R. "Radiation fields from the first stars and the redshifted 21 cm line". Radiation Backgrounds from the First Stars, Galaxies and Black Holes. Maryland, October, 2006.

Pritchard, J.R. and Furlanetto, S.R. "Radiation fields from the first stars and the redshifted 21 cm line". The first stars and evolution of the early Universe. INT Seattle, August, 2006.

Pritchard, J.R. and Furlanetto, S.R. "Descending from on high: Lyman series cascades and spin-kinetic temperature coupling in the 21 cm line". Reionizing the Universe 2005. Groningen, Netherlands, July 2005.

Pritchard, J.R. and Kamionkowski, M. "Tensor modes and the cosmic microwave background" (poster). 2nd Advanced Chilean Winter School. Santiago, Chile, November 2004.

CONFERENCES /
SCHOOLS ATTENDED

"From IRAS to Herschel/Planck ", London, UK, July, 2007.

209th Meeting of the American Astronomical Society. Seattle, January, 2007.

"Particle Physics and Cosmology: The Fabric of Spacetime", Les Houches, France, August, 2006.

"The First Stars and Evolution of the Early Universe", INT Seattle, USA, July, 2006.

"Cosmological Probes of Baryons and Dark Matter", Aspen, USA, January, 2006.

"Reionizing the Universe", Groningen, Netherlands, June 2005.

"First Light and Reionization", UC Irvine, USA, May, 2005.

"SLAC Summer Institute: Nature's Greatest Puzzles", Stanford, USA, July, 2004.

"2nd Advanced Chilean Winter School", Santiago, Chile, November, 2004.

“Plumian 300 - The Quest for a Concordance Cosmology and Beyond”, Cambridge, UK, July, 2003.

PROFESSIONAL
MEMBERSHIP

AAS (2006-present)

PROFESSIONAL
SERVICE

Referee: Physics Review D, Astrophysics Journal

PROFESSIONAL
EXPERIENCE

Systems Engineering and Assessment Ltd., Beckington, Somerset, UK

Summer researcher

July, 2000 - September, 2000

Assisted with implementation of new IT network and web presence during company image change.

Systems Engineering and Assessment Ltd., Beckington, Somerset, UK

Summer researcher

July, 1998 - September, 1999

Performed research into using sonar sounding to probe the seabed for use in the ECHOplus system.

Systems Engineering and Assessment Ltd., Beckington, Somerset, UK

Summer researcher

July, 1997 - September, 1998

Carried out research into MATLAB simulations of medical ultrasound as a way of testing artefact removal algorithms.

COMPUTER SKILLS

- Languages: C, Fortran 77 & 90, HTML, some use of Perl scripts.
- Applications: Mathematica, Matlab, L^AT_EX, SM, common Windows spreadsheet and presentation software.
- Cosmology: CMBFAST, CAMB.
- Operating Systems: Unix/Linux, Windows, Mac OSX.

PUBLICATIONS

Santos, M.G., Amblard, A., Pritchard, J., Trac, H., Cen, R., Cooray, A. “Cosmic reionization and the 21 cm signal: simulations and analytical models”, *ApJ*, submitted, 2007. [arXiv:0708.2424]

Pritchard, J.R. and Furlanetto, S.R. “21 cm fluctuations from inhomogeneous X-ray heating before reionization”, *MNRAS*, **376**, 1680 (2007). [astro-ph/0607234]

Furlanetto, S.R. and Pritchard, J.R. “The scattering of Lyman-series photons in the IGM”, *MNRAS*, **372**, 1093 (2006). [astro-ph/0605680]

Pritchard, J.R., Furlanetto, S.R. and Kamionkowski, M. “Galaxy surveys, inhomogeneous reionization, and dark energy”, *MNRAS*, **374**, 159 (2007). [astro-ph/0604358]

Pritchard, J.R. and Furlanetto, S.R. “Descending from on high: Lyman series cascades and spin-kinetic temperature coupling in the 21 cm line”, *MNRAS*, **367**, 1057 (2006). [astro-ph/0508381]

Pritchard, J.R. and Kamionkowski, M. “Cosmic microwave background fluctuations from gravitational waves: an analytic approach”, *Annals of Physics*, **318**, 2 (2005). [astro-ph/0412581]

Lasenby, L., Doran, C., Pritchard, J., Caceres, A. “Bound states and decay times of fermions in a Schwarzschild black hole background”, *PRD*, **72**, 105014 (2005). [gr-qc/0209090]