

CONTACT INFORMATION	Imperial College Astrophysics Group Blackett Laboratory Prince Consort Road London SW7 2AZ UK	<i>Office:</i> +44 (0)207 594 7557 <i>Fax:</i> +44 (0)207 594 7772 <i>Cell:</i> +44 (0)751 841 8007 <i>E-mail:</i> j.pritchard@imperial.ac.uk <i>WWW:</i> http://pritchardjr.github.io <i>ORCID:</i> http://orcid.org/0000-0003-4127-5353
BIOGRAPHICAL INFORMATION	<i>Date of Birth:</i> 26 January 1980	<i>Citizenship:</i> British
RESEARCH INTERESTS	Theoretical cosmology, reionization, cosmological 21 cm line, large scale structure, cosmic microwave background, inflation, dark energy, neutrino mass, radio astronomy.	
RESEARCH EXPERIENCE	<p>Max Planck Institute for Radio Astronomy, Bonn, Germany <i>Research Group Leader (W2)</i> July, 2024 - present Research in cosmology, the epoch of reionization, radio astronomy, and astrostatistics.</p> <p>Imperial College, London, UK <i>Professor of Astrostatistics</i> September, 2024 - present <i>Reader in Astrostatistics</i> September, 2018 - August 2024 <i>Senior Lecturer in Astrostatistics</i> September, 2015 - August 2018 <i>Lecturer in Astrostatistics</i> October, 2011 - August, 2015 Research in cosmology, the epoch of reionization, and astrostatistics. Teaching of undergraduate physics. Supervision of MSc and PhD projects. Mentoring of postdoctoral researchers.</p> <p>Harvard-Smithsonian Center for Astrophysics, Cambridge, Massachusetts, USA <i>ITC Fellow</i> September, 2010 - August, 2011 <i>Hubble Fellow</i> September, 2007 - August, 2010 Post-doctoral research in cosmology, the epoch of reionization, and the theory of the 21 cm line.</p> <p>California Institute of Technology, Pasadena, California, USA <i>Graduate Student</i> September, 2002 - June, 2007 Ph.D. research in cosmology, CMB B-modes, and the early Universe.</p> <p>Cambridge University, Cambridge, UK <i>Part III Research project</i> December, 2001 - August, 2002 Master's level research into bound fermionic states around black holes, using a gauge theory of gravity. Advisor: Anthony Lasenby.</p> <p>California Institute of Technology, Pasadena, California, USA <i>Summer Undergraduate Research Fellowship</i> July, 2001 - September, 2001 Undergraduate level research into quintessence models for dark energy. Advisor: Marc Kamionkowski.</p>	
EDUCATION	<p>Imperial College, London, UK Postgraduate Diploma in University Learning & Teaching, Sept, 2014. Postgraduate Certificate in University Learning & Teaching, Sept, 2013.</p> <p>California Institute of Technology, Pasadena, California, USA</p>	

Ph.D., Physics, June 2007.

- 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

FDM Everywoman in Technology Awards - Male Agent of Change - Finalist, 2019.

Fowler Award for early career achievement, Royal Astronomical Society, 2017.

Faculty of Natural Sciences Prize for Excellence in Teaching, 2019 - Imperial College London.

President's Award for Excellence in Teaching 2016 - Imperial College London.

Faculty of Natural Sciences Prize for Excellence in Teaching, 2015 - Imperial College London.

Rees Rawlings Prize for best PGCert portfolio, 2013 - Imperial College London.

Nominated for Student Academic Choice Award. 2016, 2018, 2019, 2021. Imperial College London.

Hubble Fellowship, 2007 - NASA/Harvard College Observatory.

Cambridge University, graduated with double First in Natural Sciences, 2002.

Foundress Prize, Pembroke College, Cambridge University, 2001.

Foundation scholar, Pembroke College, Cambridge University, 2000.

College scholar, Pembroke College, Cambridge University, 1999.

POSTDOC MENTORING

Romain Meriot, STFC postdoc, Imperial, 2024-present.

Catherine Watkinson, ERC postdoc, Imperial, 2017-2020 (→ PDRA, QMUL).

Suman Majumdar, ERC postdoc, Imperial, 2015-18 (→ A.Prof, IIT Indore).

Emma Chapman, RAS fellow, Imperial, 2015-18 (→ RS DHF, Imperial).

—————, RS DH fellow, Imperial, 2018-21 (→ Lecturer, Nottingham).

PHD SUPERVISION

Nadia Cooper, Imperial, 2023-present.

Carina Norrgaard, Imperial, 2022-present.

Yordan Ignatov, Imperial, 2021-present.

Kimeel Sooknunan (w/ Daniel Mortlock, Emma Chapman), Imperial, 2019-2024.

Ian Hothi (w/ Emma Chapman), Imperial, 2018 - 2022. (→ PDRA Observatoire de Paris)

Adelie Gorce (w/ Marian Douspis), Imperial/Paris-Orsay, 2017 - 2020 (→ PDRA McGill).

- Winner of 2022 A&A Best thesis prize.

Tom Binnie, Imperial, 2016-2021 (→ PDRA Tsinghua).

Claude Schmit (w/ Alan Heavens), Imperial, 2014-2018 (→ Head of Technology, Biosensors Beyond Borders).

Catherine Watkinson, Imperial, 2011-2015 (→ PDRA UCL).

- Winner of department Winton Capital Prize for best PhD thesis.

UNDERGRADUATE SUPERVISION

Louis Arts MSc self-study project, Imperial, 2023-24

Kevin Sohn, MSc self-study project, Imperial, 2022-23

Adele Julia, MSci Imperial, 2022-23

Sadab Shiraj MSci Imperial, 2022-23

Joey Bhangal, MSc (extended), Imperial, 2022-23

Joey Bhangal, MSc self-study project, Imperial, 2021-22

Suhail Mall, MSci Imperial, 2021-22

Linus Thummel, MSc (extended) Imperial, 2021-22

Yuqing Wu, UROP, Imperial, Summer 2021
 Marie Drevelt-Mulard, MSc Imperial, Summer 2021
 Jack Bagness, MSc Imperial, Summer 2021
 Jesse Cross, MSci Imperial, 2020-21
 Yi Lim, MSci Imperial, 2020-21
 Michelle Gurevich, MSc self-study project, Imperial, 2020-21
 Madalina Tudorache, MSci Imperial, 2019-20
 Matthew Thomas, MSci Imperial, 2019-20
 Hirokazu Katori, MSci Imperial, 2018-19
 Joschka Ziesche, MSci Imperial, 2018-19
 Sina Varaei, MSc self-study project, Imperial, 2018-19
 Marcus Halson, MSc self-study project, Imperial, 2018-19
 Lawnish Rampat, MSc self-study project, Imperial, 2018-19
 Jeremy Lo, MSci project, Imperial, 2017-18
 Federico de Vito, MSci project, Imperial, 2017-18
 Solene Chabanier, MSc project, Imperial, Summer 2017
 Elisabeth Niels, Erasmus project, Imperial 2016-17
 Tristan Lauens, MSci project, Imperial, 2016-17
 Ronadir Dutta, MSci project, Imperial, 2016-17
 Saad Ahmed, MSc self-study project, Imperial, 2016-17
 Sophie Koudmani, UROP, Oxford, Summer 2016
 Martin Pernot-Borras, Erasmus project, Imperial 2016
 Martin Rey, MSc project, Imperial, Summer 2015
 Luke Walley, MSci project, Imperial, 2014-15
 Fred Piech, MSci project, Imperial, 2014-15
 Hannah Collingwood, MSc self-study project, Imperial, 2014-15
 Martin Rey, MSc self-study project, Imperial, 2014-15
 Elizabeth Campbell, UROP, Imperial, Summer 2014
 Michelle Whitehead, MSc project, Imperial, Summer 2013
 Claude Schmit, MSc project co-supervisor, Edinburgh, Summer 2013
 Jasmina Music, MSc self-study project, Imperial, 2011-12
 Jared Phau, MSc self-study project, Imperial, 2011-12

TEACHING
EXPERIENCE

Imperial College London, UK.

Lecturer: Cosmology Spring 2023, 2024, 2025
Academic tutor: Second year physics. 2023-24
Lecturer: MSc Data Analysis Spring 2021
Lecturer: Quantum Mechanics Autumn 2017, '18, '19, '20, '21
Head of experiment: Interferometry and holography 2016-17
Lecturer: Cosmology Spring 2013, '14, '15, '16
Academic tutor: Second year quantum mechanics. 2014-15
Academic tutor: First year undergraduate physics. 2011-12, 2013-14, 2015-16
Demonstrator: Second year Python programming 2013-15, 2020-2025.

Harvard-Smithsonian Center for Astrophysics, Cambridge, Massachusetts, USA

Guest lecturer
 Ay 202a. Galaxies and dynamics. "Gravitational lensing" Fall term 2009

California Institute of Technology, Pasadena, California, USA

Teaching Assistant **October, 2002 - March, 2005**
 Duties included small group teaching, leading problem sessions, office hours, and grading.

Ph 125. Quantum Mechanics. Fall and 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

OBSERVING
EXPERIENCE

Submillimetre Array (SMA) - five nights. Oct 2010.

RESEARCH GRANTS

“Building Indo-UK collaborations towards the Square Kilometre Array”, DAE-STFC. (Co-I/GBP 1.8M, 5 Co-Is, 2023-5)

“Exploring the EDGES signal with models of the 21cm global signal”, RAS bursary for Miss Yuqing Wu. (PI/GBP 1200, 1-Co-I, 2021)

“Inference of star formation maps from 21cm maps of the epoch of reionization”, RAS bursary for Miss Sophie Koudmani. (PI/GBP 1200, 1-Co-I, 2016)

“FirstDawn”, ERC-Starting Grant (PI/EUR 1,495,000,0-Co-Is, 2015-2020)

Imperial College Space Physics and Astrophysics STFC Consolidated grant (Co-I/GBP ~4M,16 Co-Is, 2013-2016)

“Detecting patchy reionization and the first galaxies using the 21 cm and Lyman alpha lines (21Alpha)”, FP7 Marie Curie Career Integration Grant (PI/EUR 100k, 0 Co-Is, 2012-2016)

“Optimal Statistics for Redshifted 21 cm Observations of the Reionization Epoch ”, NSF-AST (collaborator / US\$ 341,224, 2 PIs, 2011-2014)

“Probing the end of the dark ages and the epoch of reionization with the 21 cm line”, Hubble Fellowship. HST-HF-01211.01-A, NASA/STScI (PI / US\$ 320,487, 0 Co-Is, 2007-2010)

COMMITTEE WORK
AND SERVICE

STFC UK Radio Astronomy Review Panel. Member (Jun 2017-Dec 2017).

STFC UK-SKA science committee. Chair. (Jan 2017 - Dec 2019)
Member (Aug 2014-Dec 2016). Pro tem (May 2014-Aug 2014).

Imperial Physics SL/R Panel. Member, Sept 2020 - present.

Imperial Physics Teaching Committee. Elected member, Dec 2020-Oct 2023.

Imperial Physics UG admissions committee. Member, Sept 2019 - 2020.

Imperial Physics JUNO committee. Member, Aug 2018 - June 2023.

Imperial Physics Graduate Studies Committee. Member, Oct 2016 - Sept 2023.

Imperial Astro Group. PG Academic Tutor, Oct 2016 - Sept 2023.

PARTICIPATION IN
PROJECTS

Square Kilometer Array (SKA) - UK board member of SKA-EoR Science Team (2017-present);
Chair of SKA-EoR Science Working Group (2015-2017).
Vice-Chair of SKA-EoR Science Team (2012-2015);
Member Cosmology SWG; Member Science Working Group (2011-present)

Radio Experiment for the Analysis of Cosmic Hydrogen (REACH) - PI: E. de Lera Acedo - Member (2020-present)

Hydrogen Epoch of Reionization Array (HERA) - PI: A. Parsons - Collaborator (2014-present)

Euclid - Primeval Universe Science Working Group (PU-SWG) (2013-present)

Dark Ages Radio Explorer (DARE) PI: J. Burns - Co-I and Science Working Group (2010-present)

Lunar University Network for Astrophysics Research (LUNAR) - Collaborator (2009-present)

Cosmic Inflation Probe (CIP) PI: G. Melnick - Science Working Group (2008-2010)

STUDENT
EXAMINATION

PhD external - Fraser Kennedy (Advisor: Phil Bull), QMUL, Dec 2024.

PhD internal - Yifan Ding (Advisor: David Clements), Imperial, Oct 2024.

PhD external - Thomas Gessey-Jones (Advisor: Anastasia Fialkov), Cambridge, Jun 2024.

PhD external - Anurag Deshpande (Advisor: Tom Kitching), MSSL, Feb 2023.

PhD external - Tomas Soltinsky (Advisor: Jamie Bolton), Nottingham, Jan 2023.

PhD external - Katie Short (Advisor: Licia Verde), Barcelona, Dec 2022.

PhD internal - Joe Cairns (Advisor: David Clements), Imperial, Dec 2022.

PhD external - Atrideb Chatterjee (Advisor: Tirthankar Roy Choudhury), NCRA-TIFR. Nov 2022.

PhD external - Terry Jin (Advisor: Richard Saunders), Cambridge University. May 2022.

PhD internal - Arrykrishna Mootoovaloo (Advisor: Alan Heavens/Andrew Jaffe), Imperial College. Oct 2021.

PhD external - Aristide Doussot (Advisor: Benoit Semellin), Observatoire de Paris. Sept 2021.

PhD external - Jennifer Yik Chan (Advisor: Jason McEwen), MSSL. Sept 2020.

PhD external - Sarah Shon (Advisor: Katie Mack), Melbourne. Jun 2017.

PhD external - Raghunath Ghara (Advisor: Tirthankar Roy Choudhury), NCRA-TIFR. Oct 2016.

MSc external - Mikael Toresen (Advisor: Mark Dijkstra), Oslo. Nov 2015.

PhD external - Marta Silva (Advisor: Mario Santos), Lisbon. Oct 2014.

PhD external - Emma Chapman (Advisor: Fillipe Abdalla), UCL. Dec 2013.

PhD opponent - Martina Friedrich (Advisor: G. Mellema), Stockholm. March 2012.

PROFESSIONAL
ACTIVITIES

SOC “SKA Cosmic Dawn / Epoch of Reionization (CD/EoR) Science Team Meeting”. Tsinghua University, Beijing. July 2024.

SOC “SAZERAC sip: Cosmology with 21-cm Signal”. March 2022.

Steering committee “Summer All Zoom EoR Astronomy Conference (SAZERAC)”, Sep 2020

Organiser “SKA-EoR Science Team meeting” RAS, London. Sep 2018.

Organiser “UK SKA Community meeting” RAS, London. Jul 2018.

SOC “Rise and Shine” Strasbourg. Jun 2018.

SOC “UK SKA Community meeting” Edinburgh. Sep 2017.

SOC “SKA 2016: The SKA generation”. Goa. Nov 2016.

SOC “UK Dark Energy Strategy 2020 Meeting”. RAS. Jan 2016.

SOC “Building an open UK SKA Science community” RAS specialist meeting. Nov 2015. Manch-

ester, UK.

Co-organiser “Building an open UK SKA Science community” RAS specialist meeting. Mar 2015. London, UK.

Co-organiser “Observation and Theory of the first galaxies” NAM2014 parallel session. July 2014. Portsmouth, UK.

Organiser “Reionization and galaxy formation in the first billion years” NAM2013 parallel session. July 2013. St Andrews, Scotland.

SOC “The Epoch of Reionization” Apr 2012. Strasbourg, France.

SOC “LUNAR Workshop: Robotic science from the Moon” Oct 2010, Boulder, CO.

CfA-ITC postdoctoral fellowship selection committee 2009

Co-organiser of CfA-ITC seminar series 2008-9

Member: RAS (2012-present), IAU (2022-present), IOP (2012-present), AAS (2006-2018), APS (2010-2011).

Editor: Journal of Cosmology and Astroparticle Physics, Scientific Editor (2022-present).

Referee: Physics Review D, Physics Review Letters, Astrophysics Journal, Monthly Notices of the Royal Astronomical Society, Physics Letters B, Astronomy and Astrophysics, Journal of Cosmology and Astroparticle Physics, The Harvard Undergraduate Research Journal, Classical and Quantum Gravity.

Reviewer: France-ANR, Canada-NSERC, SA-NRF, NSF-AAG, GMRT-TAC, RAS Penston prize, Royal Society URF, STFC-Rutherford, RAS fellowship, STFC-Consolidated grants.

PUBLIC
ENGAGEMENT

“The Cosmic Dawn and the First Galaxies”. Imperial Astronomical Society. Feb 2019.

“Cosmic Dawn and the SKA @ Imperial”. Imperial Festival stand. April 2018.

“The Cosmic Dawn and the First Galaxies”. Beckington Astronomical Society. Apr 2018.

Speech to “March for Science London”. Apr 2018.

Square Kilometre Array stand. New Scientist Live. Sep 2017.

“FIRSTDAWN: Imaging the epoch of reionization in the 21cm line” stand. Imperial ERC 10th anniversary festival. Jun 2017.

“The Cosmic Dawn and the First Galaxies”. Society for Popular Astronomy, London. Jan 2017.

“Looking back into the first billion years”. Panel discussion. ESOF 2016.

“Cosmic Dawn and the SKA”. Peek into research for Imperial Physics A-level Open Day. Jun 2015

“The Cosmic Dawn Initiative”. Talk for Secret Cantina. Jun 2015.

“Stellar Graffiti” painting stand. Imperial Festival. May 2015.

Short interview segment on Hubble Telescope at 25. ITV News. Apr 2015.

“Twitter and researchers: Friend or foe?” #solo14ECR panel discussion. Science Online London. Nov 2014.

“Cosmic swiss cheese and FM radios”. Science Showoff. London. Nov 2014.

“Don’t feed the scientists!” Live science installation. Loncon3. Aug 2014.

“Cosmic Dawn”. Research Frontiers talk for 1st year ICL physics students. Feb 2014.

Interviewed for Jodcast. Manchester. Nov 2013.

Talk for Big Ideas discussion series. “What are the limits to our knowledge of the Cosmos”. London. 29 Oct 2013.

Interviewed for Dara O Briain’s Science Club. “Adventures in Time”. BBC Two. Air date: 1 August 2013.

Talk to Imperial College Astronomical Society. “Illuminating the cosmic dark ages with the Square Kilometer Array”. Jun, 2013.

Big Bang Fair - Career Networker, 2013.

Science week: Cambridge Explore’s the Universe: Ask an Astronomer 2009, 2010.

Science consultant: “Instant Egghead Guide: the Universe” (2009) by JR Minkel.

SUMMER/WINTER
SCHOOL TEACHING

“Radio Cosmology and Continuum Observations in the SKA Era”. ICTS, Bengaluru. Apr 2025.

“ICIC data analysis school”. Imperial College London. Sep 2021.

“ICIC data analysis school”. Imperial College London. Sep 2016.

“ICIC data analysis school”. Imperial College London. Sep 2014.

“The Universe through the 21 cm line”. 5 lecture series for the 6th TRR33 Winter school on Cosmology. Passo del Tonale, Italy. Dec 2012.

INVITED
CONFERENCE
PRESENTATIONS

“Theory strand update”. UK-Indian SKA Collaboration meeting. Oxford. Apr (2025).

“21cm studies of reionization and cosmic dawn (at different resolutions)”. ICTS-TIFR, Bengaluru, India. Apr (2025).

“Shedding light on Cosmic Dawn”. HI as a Cosmological probe across Cosmic Time. May 2023.

“Reionization and the Simons Observatory”. SO-UK community meeting. London. Sept 2022.

“21cm Cosmology from the Cosmic Dawn”. VI Fundamental Cosmology Meeting. Granada. May 2018.

“Mapping the epoch of reionization with the 21cm line”. RAS Ordinary meeting. London. Jan 2018.

“Reionization and Cosmology from 21cm observations”. Broad Impact of Low Frequency Observations. Bologna. Jun 2017.

“Fundamental physics from the EoR with SKA”. Fundamental Physics with SKA. Mauritius. May 2017.

“Reionization with CMB, 21cm and galaxies”. 21cm/CMB/LSS workshop. Madrid. Jun 2016.

“Reionization with SKA”. MIAPP workshop. April 2016.

“Linking 21cm statistics and astrophysics”. IAP 2015 meeting. Paris. Dec 2015.

“Update on Stockholm SKA Key Science Project meeting”. UK-SKA meeting. Manchester. Oct 2015.

“Introduction to the Epoch of Reionization/Cosmic Dawn”. SKA KSP Workshop. Stockholm. Aug 2015.

“Olympian Symposium summary”. Olympian Symposium 2015. Greece. May 2015.

“21cm mapping of the EoR in theory, simulation, and practice”. Wetton Workshop on Simulating the Universe. Oxford. Apr 2015.

“Early-universe physics from 21cm surveys”. The Primordial Universe After Planck. IAP, Paris, France. Dec 2014.

“Epoch of reionization/cosmic dawn science with SKA” UK-SKA Science meeting. Birmingham. Jul 2014.

“Seeking $z > 7$ galaxies with 21cm observations”. Galaxy Evolution over Five Decades. Cambridge, UK. Sept 2013.

“New science from the high- z 21cm signal”. Cosmological signals and foregrounds in the radio domain. PCCP, Paris. May 2013.

SKA-EoR Science Team Workshop. SKA Project office, Jodrell Bank, UK. Mar 2013.

“Mapping the Epoch of Reionization”. Oxford Intensity Mapping Workshop. Oxford, Nov 2012.

“21 cm Cosmology”. AIU2010 - Axion Cosmophysics. KEK, Japan, Nov 2012.

“Recent developments in EoR science and the DRM”. PrepSKA WP2. Manchester, Oct 2011.

“Prospects for future 21 cm arrays”. PPC2011. CERN, Geneva, Jun 2011.

“Constraining the epoch of reionization and the dawn of structure with atomic and molecular lines”. Hydrogen Cosmology. ITAMP, Cambridge, MA, May 2011.

“Constraining the dawn of structure with the 21 cm line”. AAS 217 HERA special session. Seattle, Jan 2011.

“HI Science through cosmic time”. AAVP2010: Realising the Aperture Array Programme for SKA. Cavendish, Cambridge, UK, Dec 2010.

“Lessons from constraining the global 21 cm spectrum in the presence of foregrounds”. The First Billion Years. Keck Institute of Space Studies, Pasadena CA, Aug 2010.

“Pre-reionization 21 cm signatures”. Astrophysics and Cosmology with the 21 cm background, Aspen, June 2010.

“Atomic physics and the 21 cm line”. DAMOP2010, Houston TX, May 2010.

“Paths to astrophysics with SKA”. SKA2010, Manchester, UK, March 2010. Invited plenary talk.

“21 cm signal throughout cosmic history”. Sackler conference on 21 cm cosmology, Cambridge MA, May 2008.

“Atomic physics and the cosmological 21 cm signal”. Atomic and Molecular Physics of the Early Universe, ITAMP, Cambridge MA, March 2008.

CONTRIBUTED
CONFERENCE
PRESENTATIONS

“Reionization and Cosmic Dawn as a percolation process”. RAS specialist meeting. London. Feb 2018.

“Epoch of reionization science with SKA and synergies with Euclid”. Euclid Consortium meeting. London. Jun 2017.

“Epoch of Reionization/Cosmic Dawn with the SKA”. EWASS2016. Athens. Jul 2016.

“Parameter estimation for 21cm global experiments”. HI 21cm Cosmology Meeting. Cambridge. Jun 2016.

“Galaxy formation, Cosmology, and the epoch of reionization with the SKA”. UK-SKA Science meeting. RAS, London. Nov 2014.

“Statistics of Reionization and Cosmic Dawn” Unsolved Problems in Astrophysics and Cosmology. Budapest. Jul 2014.

“Cosmology from the EoR/CD”. Advancing Astrophysics with the SKA. Giardini Naxos, Sicily. Jun 2014.

“Cosmology from the EoR”. SKA Cosmology Science Assessment meeting. SKA-HQ, Jodrell Bank. Jan 2014.

“CMB physics”. London Cosmology Meeting. RAS, London. Apr 2013.

“Reionization physics”. London Cosmology Meeting. RAS, London. Jan 2013.

“CO intensity mapping of the epoch of reionization”. EAWSS 2012, Rome. Jul 2012.

“Observational and theoretical constraints on reionization”. Reionization and Dark Ages with SKA workshop, Stockholm. Jan 2012.

“Extracting the astrophysics of the first sources from the 21 cm global signal”. New Horizons for High Redshifts, Cambridge, UK. Jul 2011.

“The global 21 cm signal”. Robotic science from the moon, Boulder, CO. Oct 2010.

“Extracting science from the global 21 cm signal”. Astrophysics and Cosmology with the 21 cm

background, Aspen. June 2010.

“Constraining reionization using 21 cm experiments in combination with CMB and Lyman alpha forest data”. The High Redshift Universe. Aspen. Jan 2010.

“Constraining reionization using 21 cm experiments in combination with CMB and Lyman alpha forest data”. Reionization with Multi-frequency datasets. Stockholm, Sweden. August 2009.

“21 cm cosmology”. Fingerprints of Inflation. Aspen. June, 2009.

“Lyman series photons and the 21 cm signal”. Reionization@Ringberg. Ringberg Castle, Germany. March 2009.

“Cosmology from high redshift 21 cm observations”. Foundations of modern cosmology. GGI, Florence Italy. January, 2009.

“Neutrino mass from cosmological 21 cm observations”. Neutrino Oscillation Workshop 2008, Otranto Italy, September 2008.

“Probing the First Sources with the Redshifted 21 cm Line”. 209th Meeting of the American Astronomical Society. Seattle, January, 2007.

“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.

“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.

“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.

“Tensor modes and the cosmic microwave background” (poster). 2nd Advanced Chilean Winter School. Santiago, Chile, November 2004.

SEMINAR PRESENTATIONS

2025: NCRA. *2023*: Bonn. *2016*: Zurich. *2015*: Glasgow, MSSL, Warwick.

2013: Birmingham, Cavendish, Oxford, Manchester.

2012: Aachen, APC-Paris, Copenhagen-NBI, Durham, Edinburgh, Portsmouth, Sussex, UCL.

2011: Brown, Cambridge - IoA, CCAPP-OSU, Imperial, ITAMP-CfA, Leiden, Perimeter, Princeton, Waterloo.

2010: Berkeley, Cambridge - Kavli, Carnegie Mellon, CITA, Chicago, Oxford, Yale.

2009: CfA. *2008*: UT Austin. *2006*: KIPAC, Berkeley, Columbia ISCAP, Harvard ITC.

COMPUTER SKILLS

- Languages: C, C++, Fortran 77 & 90, HTML, IDL, Perl, Python.
- Cosmology: CMBFAST, CAMB, COSMOMC, HEALPIX.

SUBMITTED
PUBLICATIONS

[4] S. Leeney et al. “Radiometer Calibration using Machine Learning”. Nature Communications submitted (2025) [arXiv:2502.16791].

[3] T. Binnie, Xiaosheng Zhao, J. R. Pritchard, Yi Mao. “Likelihood-free Model Selection in Cosmic Reionization with Three-dimensional Tomographic 21 cm Lightcone Images”. (2025). [arXiv:2502.08152].

[2] A. Bonaldi et al. “Square Kilometre Array Science Data Challenge 3a: foreground removal for an EoR experiment”. MNRAS submitted, (2025). [arXiv:2503.11740].

[1] Kimeel Sooknunan, Emma Chapman, Luke Conaboy, Daniel Mortlock, Jonathan Pritchard. “Reproducibility of machine learning analyses of 21 cm reionization maps”. MNRAS submitted, (2024). [arXiv:2412.15893].

REFEREED
PUBLICATIONS

[56] Leon Noble, Mohd Kamran, Suman Majumdar, Chandra Shekhar Murmu, Raghunath Ghara, Garrelt Mellema, Ilian T. Iliev, Jonathan R. Pritchard. “Impact of the Epoch of Reionization sources on the 21-cm bispectrum”. JCAP, 10, 003 (2024). [arXiv:2406.03118]

[55] Yordan D. Ignatov, **Jonathan R. Pritchard**, Yuqing Wu. “Measuring the cosmological 21-cm dipole with 21-cm global experiments”. MNRAS, 527, 11206 (2024). [arXiv:2310.06063]

[54] Nima Razavi-Ghods et al. “Receiver design for the REACH global 21-cm signal experiment”. Experimental Astronomy, accepted (2024) [arXiv:2307.00099]

[53] Mohd Kamran, Raghunath Ghara, Suman Majumdar, Garrelt Mellema, Somnath Bharadwaj, Jonathan R. Pritchard, Rajesh Mondal, Ilian T. Iliev. “Redshifted 21-cm bispectrum: Impact of the source models on the signal and IGM physics from the Cosmic Dawn”. JCAP, 11, 001 (2022) [arXiv:2207.09128]

[52] E. de Lera Acedo, et al. “The REACH radiometer for detecting the 21-cm hydrogen signal from redshift ~ 7.5 to 28”. Nat. Astron. 6, 984 (2022) [arXiv:2210.07409]

[51] J. Cumner, et al. “Radio antenna design for sky-averaged 21 cm cosmology experiments: the REACH case”. J.Astro.Instr., 11, 2250001 (2021) [arXiv:2109.10098]

[50] Mohd Kamran, Suman Majumdar, Raghunath Ghara, Garrelt Mellema, Somnath Bharadwaj, Jonathan R. Pritchard, Rajesh Mondal, Ilian T. Iliev. “Probing IGM Physics during Cosmic Dawn using the Redshifted 21-cm Bispectrum”. PRL submitted (2021) [arXiv:2108.08201]

[49] A. Gorce, A. Hutter, **J.R. Pritchard** “Using the sample variance of 21cm maps as a tracer of the ionisation topology”. A&A in press (2021) [arXiv:2102.04352]

[48] Mohd Kamran, Raghunath Ghara, Suman Majumdar, Rajesh Mondal, Garrelt Mellema, Somnath Bharadwaj, **Jonathan R. Pritchard**, Ilian T. Iliev “Redshifted 21-cm bispectrum II: Impact of the spin temperature fluctuations and redshift space distortions on the signal from the Cosmic Dawn”. MNRAS in press (2020) [arXiv:2012.11616]

[47] Ian Hothi, Emma Chapman, **Jonathan Pritchard**, et al. “Comparing Foreground Removal Techniques for Recovery of the LOFAR-EoR 21cm Power Spectrum”. MNRAS, 500, 2264 (2020) [arXiv:2011.01284]

[46] Suman Majumdar, Mohd Kamran, **Jonathan R. Pritchard**, Rajesh Mondal, Arindam Mazumdar, Somnath Bharadwaj, Garrelt Mellema. “Redshifted 21-cm Bispectrum I: Impact of the Redshift Space Distortions on the Signal from the Epoch of Reionization”. MNRAS in press (2020) [arXiv:2007.06584]

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