

# Jiten Dhandha

PhD student - University of Cambridge

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## Employment

Jun. 2021 - Aug. 2021	<b>Summer research project</b> , University of Manchester. Modelling the cosmological 21-cm signal in <a href="#">Recfast++</a> and <a href="#">CosmoTherm</a> to study their synergy with CMB spectral distortions. Supervised by Prof. Jens Chluba.
Jun. 2020 - Sep. 2020	<b>Summer research project</b> , University of Manchester. Testing and debugging LOFAR-VLBI calibration/imaging pipeline for gravitational lenses. Supervised by Dr. Neal Jackson.
Jul. 2019 - Sep. 2019	<b>Summer Intern Programme</b> , British Petroleum / University of Manchester. Simulating mitigation techniques for sulphate reducing bacteria responsible for fouling crude oil. Supervised by Dr. Thomas Waigh.

## Education

2022 - present	<b>PhD in Astronomy</b> , Institute of Astronomy, University of Cambridge. Funded by <a href="#">Boustany Astronomy Scholarship</a> & <a href="#">Isaac Newton Studentship</a> . Supervised by Prof. Anastasia Fialkov and Dr. Eloy de Lera Acedo.
2018 - 2022	<b>MPhys. Physics with Astrophysics</b> First Class, University of Manchester. Project involved simulating turbulent molecular clouds in ISM and studying filament and star formation. Performed with Zoe Faes and supervised by Dr. Rowan Smith.
2016 - 2018	<b>All India Senior School Certificate Examination</b> , DPS - Modern Indian School, Doha, Qatar. Average of 95.2% in AISSCE (A-level equivalent) examination.

## Publications

### First Author

July 2023	<b>J. Dhandha</b> , Z. Faes, R. J. Smith. <a href="#">Decaying turbulence in molecular clouds: how does it affect filament networks and star formation?</a> , arXiv:astro-ph.GA, arXiv:2307.12428.
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### Contributing Author

March 2024	A. Fialkov, T. Gessey-Jones, <b>J. Dhandha</b> . <a href="#">Cosmic mysteries and the hydrogen 21-cm line: bridging the gap with lunar observations</a> , Philosophical Transactions of the Royal Society A, Volume 382, Issue 2271, arXiv:2311.05366.
February 2024	O. S. D. O'Hara, F. Dulwich, E. de Lera Acedo, <b>J. Dhandha</b> , T. Gessey-Jones, D. Anstey, A. Fialkov. <a href="#">Understanding spectral artefacts in SKA-LOW 21-cm cosmology experiments: the impact of cable reflections</a> , arXiv:astro-ph.CO, arXiv:2402.04008.
September 2022	S. K. Acharya, <b>J. Dhandha</b> , J. Chluba. <a href="#">Can accreting primordial black holes explain the excess radio background?</a> , Monthly Notices of the Royal Astronomy Societ, Volume 517, Issue 2, Pages 2454-2461, arXiv:2208.03816.
February 2022	S. Badole, D. Venkattu, N. Jackson, S. Wallace, <b>J. Dhandha</b> , P. Hartley, C. Riddell-Rovira, A. Townsend, L. K. Morabito, J. P. McKean. <a href="#">High-resolution imaging with the International LOFAR Telescope: Observations of the gravitational lenses MG 0751+2716 and CLASS B1600+434</a> , Astronomy & Astrophysics, Volume 658, Issue 11, arXiv:2108.07293.

## Talks

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### Conference and Workshop talks

February 2024	<i>Synergies between 21-cm experiments and JWST observations</i> , Science with the 21-cm line, KICC, University of Cambridge.
September 2023	<i>Bringing 21-cm simulations to the JWST era</i> , REACH Annual Meeting, University of Malta.
September 2023	<i>FllamEntary STructure Analysis (fiesta)</i> , AREPO-ISM workshop, University of Manchester.
October 2022	<i>Can accreting primordial black holes explain the excess radio background?</i> , PDAT Laboratory, K. N. Toosi University of Technology (virtual webinar).

### Outreach talks

October 2022	<i>Like beads on a string... Where do massive stars in our Universe come from? A brief look into studying our cosmos</i> , Pembroke Papers, Pembroke College, University of Cambridge.
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## Grants and awards

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April 2024	<b>DiRAC Resource Allocation Committee 16th Call</b> , awarded 4.15M CPUh (worth £41,500) on DiRAC's COSMA-8 supercomputer.
July 2022	<b>Tessella Prize for Software</b> (£125), for outstanding work implementing software in Mphys project.
April 2019	<b>BP Achievement Award</b> (£1000), for best essay on petrophysical logging tools.
December 2018	<b>Physics Success Scholarship</b> (£2000), for academic excellence in physics and maths.

## Conference organisation

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February 2024	<a href="#">Kavli Science Focus: Science with the 21-cm line</a> , member of Organising Committee and session chair, KICC, University of Cambridge.
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## Teaching responsibilities

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Oct. 2023 - <i>present</i>	<b>Co-Supervision</b> of Rachel Incley (Masters student) with Prof. Anastasia Fialkov. Working on comparison of Epoch of Reionization in simulation codes <b>21cmSPACE</b> and <b>C2-Ray</b> .
Feb. 2023 - Mar. 2023	<b>Demonstration of Part IA Scientific Computing</b> for 22 hours, University of Cambridge.

## Software

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<a href="#">CFit</a>	Main author and maintainer: Smart curve fitting tool using method of least squares in Python.
<a href="#">fiesta</a>	Main author and maintainer: Toolkit for analyzing filament networks and density field meshes.
<a href="#">luminobs</a>	Main author and maintainer: Compendium of high-redshift galaxy UVLF observations.

## In the media

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August 2021	<a href="#">Most detailed-ever images of galaxies revealed using LOFAR</a> . Press release for LOFAR observations from ASTRON.
August 2021	<a href="#">Astronomers develop novel way to 'see' first stars through fog of early Universe</a> . Press release for LOFAR observations from BBC.

## Extracurricular activities

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May 2023 - <i>present</i>	<b>Inclusion and Fairness</b> committee member, Institute of Astronomy, University of Cambridge.
Jul. 2023 - <i>present</i>	<b>Graduate Parlour</b> , Ethnic Minorities officer, Pembroke College, University of Cambridge.
Oct. 2022 - <i>present</i>	<b>Postgraduate Forum</b> representative, Institute of Astronomy, University of Cambridge.
Oct. 2022 - Apr. 2023	<b>Pembroke Papers</b> committee member, Pembroke College, University of Cambridge.
Sep. 2021 - Jul. 2022	<b>Student Representative</b> representing astronomy/astrophysics, University of Manchester.
Jul. 2020 - Jul. 2022	<b>Touch Rugby Society</b> , Inclusion officer and COVID-19 safety officer, University of Manchester.
Sep. 2019 - Jun. 2020	<b>Peer-Assisted Study Session</b> leader, Peer Support Scheme, University of Manchester.
Nov. 2016 - <i>present</i>	<b>English Wikipedia</b> , volunteer editor.

## Skills

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Programming	<b>Proficient:</b> Python, MATLAB, <b>Experienced:</b> C++, Java
Markup	<b>Experienced:</b> LaTeX, Wikitext, <b>Intermediate:</b> HTML, CSS, reStructuredText, Markdown
Languages	<b>Proficient:</b> English, Hindi, <b>Intermediate:</b> Gujarati