

# Leah Bigwood

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Institute of Astronomy, Madingley Rd, Cambridge CB3 0HA

## EDUCATION

### INSTITUTE OF ASTRONOMY, UNIVERSITY OF CAMBRIDGE

October 2022 - Present

#### PhD in Astronomy

**Thesis title:** *‘Towards an Understanding of Baryonic Feedback: Deciphering the Impact of Galaxy Formation Physics on Cosmology’* (Prof. Alexandra Amon & Prof. Debora Sijacki)

### DURHAM UNIVERSITY Durham, UK

October 2018 - July 2022

#### MPhys Physics and Astronomy: First Class Honours

**Thesis title:** *‘Discerning the Real Universe from the Matrix with the DESI Bright Galaxy Survey’* (Prof. Shaun Cole & Dr. Michael Wilson)

## RESEARCH

### Princeton University, NJ, USA

Visiting graduate student.

### Durham University, Durham, UK

Summer research student with Dr. Michael Wilson.

### Massachusetts Institute of Technology, Cambridge, MA, USA (remote)

Summer research student with Prof. Anna-Christina Eilers.

### University of St. Andrews, St Andrews, UK (remote)

Summer research student with Dr. Juan Venancio Hernandez Santisteban.

October 2023 & March 2024

July 2022 - August 2022

June 2021 - August 2021

July 2020 - August 2020

## AWARDS & FUNDING

Clare Hall Research Awards from the Tutors’ Fund (£500)

MIAPbP PhD student stipend (£800)

John Barrow Travel Award (£500)

D. A. Wright Prize

Durham Physics Award for Outstanding Achievement

Durham University Level 4 Prize for Theoretical Astrophysics

John Simpson Greenwell Memorial Fund (£1000)

March 2025

September 2024

June 2024

July 2022

July 2020, July 2021, July 2022

July 2022

April 2020, April 2021, May 2022

## PUBLICATIONS

**Bigwood, L.** et al. (2025); Submitted to MNRAS

[The case for large-scale AGN feedback in galaxy formation simulations: insights from XFABLE](#)

**Bigwood, L.** & Amon, A. et al. (2024); Accepted in MNRAS

[Weak lensing combined with the kinetic Sunyaev Zel’dovich effect: A study of baryonic feedback](#)

**Bigwood, L.**, Eilers, A-C., Simcoe, R.A. (2024); Accepted in MNRAS

[Evidence for episodic black hole growth of reionization-era quasars observed with Magellan/FIRE](#)

McCarthy, I.G., Amon, A., ... **Bigwood, Leah** et al. (2024); Submitted to MNRAS

[FLAMINGO: combining kinetic SZ effect and galaxy-galaxy lensing measurements to gauge the impact of feedback on large-scale structure](#)

Martin-Alvarez, S., ... **Bigwood, Leah** et al. (2024); Accepted in MNRAS

[Stirring the cosmic pot: how black hole feedback shapes the matter power spectrum in the Fable simulations](#)

Lasker, J., ... **Bigwood, Leah** et al. (2024); Accepted in JCAP

[Production of alternate realizations of DESI fiber assignment for unbiased clustering measurement in data and simulations](#)

## SELECTED TALKS

Galaxies Discussion Group, Kavli Institute for Cosmology, Cambridge

Cosmology Seminar, Yale University (invited)

Bahcall Lunch, Institute of Advanced Study, Princeton, NJ (invited)

DES WL-LSS-TP Working Group (remote)

Cambridge-LMU Cosmology Meeting, Kavli Institute for Cosmology, Cambridge

March 2025

November 2024

November 2024

October 2024

October 2024

New Physics from Old Light workshop, Cambridge	September 2024
University Observatory, LMU Munich Galaxies and Lensing Seminar (invited, remote)	August 2024
LSST Dark Energy Science Collaboration Modelling & Combined Probes General Meeting (remote)	June 2024
Baryons in the Universe Conference (with Alexandra Amon), Kavli IPMU, Tokyo	April 2024
CMB/LSS Discussion Group, Kavli Institute for Cosmology, Cambridge	April 2024, March 2025
Cosmology Group Meeting, Princeton University, NJ	March 2024, March 2025
Galaxy Formation Meeting, Flatiron Center for Computational Astrophysics, New York	March 2024
Cambridge-LMU Cosmology Meeting, Max-Planck-Institute for Extraterrestrial Physics, Munich	December 2024
Wednesday Seminar Series, Institute of Astronomy, Cambridge	November 2023
Dark Energy Survey Collaboration Meeting (remote)	June 2023

## TEACHING, SUPERVISION & MENTORING

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Co-supervision of Kaitlyn Shavelle, Princeton University PhD rotation student	October 2024 - present
Gonville & Caius Bridging Week Natural Sciences supervisor, Cambridge University	October 2023
Co-ran the Undergraduate Journal Club, Institute of Astronomy	October 2022 - March 2023
Stars and Galaxies 2 module demonstrator, Durham University	October 2021 - July 2022
Mathematics, physics and chemistry private tutor	October 2017 - present
Mentor in Oxbridge undergraduate applications and entrance exam preparation	August 2024 - November 2024
‘Leveling Up: Aspire Higher’ physics mentor	March 2021 - July 2021

## OUTREACH & SERVICE

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International Women’s Day 2025 Committee	January 2025 - April 2025
LOC Massive Black Holes across Cosmic Time, Cambridge	September 2024 - present
LOC New Physics from Old Light workshop, Cambridge	September 2024
<i>Institute of Astronomy public open evening lectures:</i>	
‘Shedding light on the dark Universe’	February 2024
‘Black hole feedback: how extreme is too extreme?’	March 2025
Institute of Astronomy public open evening volunteer	October 2024 - March 2025
‘How big really is the Universe?’ talk at University of Cambridge Primary School	February 2025
Maths Explorers volunteer, DAMTP, University of Cambridge	February 2025
<i>Science communication articles:</i>	
‘The case for large-scale AGN feedback in galaxy formation simulations’	March 2025
‘Extreme AGN feedback: Could X-ray observations restore trust in our cosmological model?’	February 2025
‘Characterising the Risk to Earth of Potentially Hazardous Asteroids’	September 2021
‘Investigating the Dark Matter in M82 using the Mass-to-Light Ratio’	November 2020
Poster presentation at the Conference for Undergraduate Women in Physics	March 2021

## OBSERVING EXPERIENCE

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Magellan/FIRE (remote) (1 night)	July 2021
Durham University/AstroLab (15 nights)	January 2020 - November 2020