

CALLUM WITTEN

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Cavendish Laboratory, University of Cambridge, United Kingdom

Education

October 2021–October 2024	PhD, Astronomy Institute of Astronomy, University of Cambridge New insights into primeval galaxies in the era of JWST Supervisors: Prof Debora Sijacki and Dr Nicolas Laporte
2017–2021	MPhys, First class, Physics with Astrophysics University of Bath

Research Experience

September 2026–Present	Postdoctoral Researcher , University of Cambridge Cavendish Laboratory, Roberto Maiolino
November 2024–August 2026	Postdoctoral Researcher , University of Geneva Observatory of Geneva, Pascal Oesch

Summary of Publications

Publications: 36 total (8 first author), of which 27 refereed (7 first author). [ADS link](#).
Bibliometrics: 1,808 total citations (275 first author), h -index of 20. Last updated 08/09/2026.

Collaboration Memberships

Lumina simulations protocluster lead · VLT/MOONS extragalactic GTO team · ELT/MOSAIC science team · GTC/EMIR commissioning team

Summary of Observing Time

Four PI (nineteen Co-I) proposals, total of ~ 100 hrs on *JWST* and the VLT.

Accepted PI Proposals

2024	VLT P114 · XSHOOTER Spectroscopy C. WITTEN · 275V · THE FIRST STRUCTURES IN THE UNIVERSE: UNVEILING THE PROPERTIES OF THE MOST DISTANT IONISED BUBBLE AT $z = 7.9$ · 25 HOURS
2024	VLT P113 · KMOS Spectroscopy C. WITTEN · 26CO · THE PROPERTIES OF GALAXIES RESIDING WITHIN AN IONISED BUBBLE AND PROTOCLUSTER AT $z \sim 7$ · 24.5 HOURS
2023	JWST Cycle 2 · NIRCам WFSS C. WITTEN · 4043 · UNVEILING THE BUILD-UP OF LARGE SCALE STRUCTURE IN THE EARLY UNIVERSE · 19.9 HOURS
2023	VLT P112 · KMOS Spectroscopy C. WITTEN · 25RJ · THE PROPERTIES OF GALAXIES RESIDING WITHIN AN IONISED BUBBLE AND PROTOCLUSTER AT $z \sim 7$ · 24.5 HOURS

Awards and Funding

(converted to USD)

2026	SNF Grant Awarded to facilitate the Miracles of the early Universe II conference	\$18,400
2025	Murdin Prize Best publication by a PhD student	\$700
2024	JWST Grant Funding Program 4043	\$69,800
2024	IoA Summer Internship Bursar Funding to host a summer intern	\$4,700
2023	Wolfson Research Grant Award to attend conferences	\$1,600

Supervision and Teaching Experience

2026	Guest lecture GALAXIES AND COSMOLOGY · <i>Cosmic Microwave Background</i>
2025–2026	Supervision of a Master's research project (full-time duration: 9 months) Corentin Meuwly (GENEVA) · <i>Unveiling the lifecycle of the earliest galaxies in the Universe with JWST</i>
2025	Supervision of a Master's research project (full-time duration: 2 weeks) Parker Abbott Fairfield Jr (GENEVA) · <i>Deciphering the origins of the UV emission from the enigmatic Little Red Dots</i>
2025	Lecture SAAS-FEE WINTER SCHOOL · <i>JWST workshop</i>
2023–2024	Supervision of a Master's research project and summer internship Billy Hayes (CAMBRIDGE) · <i>Hunting for evidence of the first galaxies hidden in JWST data</i>
2021–2023	Supervision of Master's and Bachelor's student problem classes 26 STUDENTS · <i>Formation of Structure in the Universe, Stellar Dynamics and Structure of Galaxies</i>

Conferences and Seminars

Twenty-two contributed and four invited talks at prestigious conferences across Europe.

Talk Highlights

August 2026	Santander · Collaborative Frontiers in Extragalactic Astronomy <i>Invited talk</i> · RESOLVING THE OVERABUNDANCE OF PROTOCLUSTERS IN THE EARLY UNIVERSE
December 2025	Marseille · Seminar <i>Invited talk</i> · EXTREME ENVIRONMENTS IN THE EARLY UNIVERSE
July 2025	Heidelberg · Quo Vadis Galaxy Evolution? <i>Contributed Talk</i> · PROTOCLUSTERS IN THE EARLY UNIVERSE: POWERHOUSES BEHIND IONISED BUBBLES AND EVOLVED GALAXIES
April 2025	Oxford · First Galaxies: Building blocks of galaxies across cosmic time <i>Contributed Talk</i> · AN EVOLVED PROTOCLUSTER IN THE EARLY UNIVERSE
August 2024	Ascona · Observing and Simulating Galaxy Evolution in the Era of JWST <i>Contributed Talk</i> · EVIDENCE OF OLD STELLAR POPULATIONS AND REJUVENATION EVENTS IN THE VERY EARLY UNIVERSE

July 2023 | **Sesto · The James Webb Space Telescope turns one: the birth and growth of galaxies**
Contributed Talk · UNVEILING THE DRIVERS OF LAEs AT $z > 7$

Professional Service

2026 | **SOC Chair** NAM 2026 SESSION: FORGING STARS AND GALAXIES IN THE FIRST BILLION YEARS
 2026 | **SOC Chair** EAS 2026 SPECIAL SESSION: FROM MOLECULAR CLOUDS TO GALAXY CLUSTERS: TOWARDS A UNIFIED UNDERSTANDING OF STOCHASTIC STAR FORMATION IN THE EARLY UNIVERSE
 2026 | **SOC & LOC Chair** MIRACLES OF THE EARLY UNIVERSE II CONFERENCE, 50 PEOPLE IN GENEVA
 2026 | **LOC Member** BEYOND HUBBLE 2026 CONFERENCE
 2025 | **SOC & LOC Chair** MIRACLES OF THE EARLY UNIVERSE CONFERENCE, 40 PEOPLE IN GENEVA
 Since 2025 | **Referee** FOR NATURE ASTRONOMY
 Since 2025 | **Referee** FOR A&A
 Since 2023 | **Referee** FOR APJ
 Since 2023 | **Referee** FOR MNRAS

Press Releases and Outreach

May 2026 | **A&A Cover Image** VOLUME 709
 July 2024 | **New Scientist Article** ZOMBIE GALAXY CAME BACK TO LIFE AFTER 20 MILLION YEARS
 Spring 2024 | **Mexborough & Swinton Astronomical Society** INVITED TO SPEAK TO A PUBLIC ASTRONOMICAL SOCIETY ABOUT RESULTS FROM JWST
 January 2024 | **New Scientist Article** GALAXY SMASH-UPS MAY EXPLAIN STRANGE LIGHT FROM EARLY UNIVERSE
 January 2024 | **ESA Press Release** WEBB REVEALS THAT GALAXY MERGERS ARE THE SOLUTION TO EARLY UNIVERSE MYSTERY
 January 2024 | **Nature Research Briefing** GALAXY MERGERS CAN EXPLAIN THE UNEXPECTED HYDROGEN EMISSION IN THE EARLY UNIVERSE
 August 2022 | **Buckland Primary School, Oxfordshire** ASTRONOMY ENGAGEMENT TALK FOR 10-11 YEAR OLD SCHOOL CHILDREN

Full Publication List [ADS link](#)

First-author Publications

2026 | Quasi-hostless LRDs with intrinsically red, faint UV continua
C. WITTEN ET AL. · *in prep.*
 2026 | Too many protoclusters? Reconciling the overabundance of cluster progenitors within the first billion years of the Universe
C. WITTEN ET AL. · *A&A, submitted*
 2026 | Not all protoclusters host evolved galaxies: Evidence for reduced environmental effects in a lower halo mass protocluster at $z = 7.66$
C. WITTEN ET AL. · *A&A, 711, A114*
 2026 | Before its time: a remarkably evolved protocluster core at $z = 7.88$
C. WITTEN ET AL. · *A&A, 709, A176*

2025	Rising from the ashes: evidence of old stellar populations and rejuvenation events in the very early Universe C. WITTEN ET AL. · <i>MNRAS</i> , 537, 1
2024	GN-z11: The environment of an active galactic nucleus at $z = 10.603$. New insights into the most distant Ly α detection J. SCHOLTZ & C. WITTEN ET AL. · <i>A&A</i> , 687 (co-first author paper)
2024	Deciphering Lyman- α Emission Deep into the Epoch of Reionisation C. WITTEN ET AL. · <i>NatAst</i> , 8, 384
2023	Evidence for a Low Lyman Continuum Escape Fraction in Three Massive, Ultraviolet-bright Galaxies at $z > 7$ C. WITTEN , N. LAPORTE & H. KATZ · <i>ApJ</i> , 944, 1
2022	Information content of BP/RP spectra in Gaia DR3 C. WITTEN ET AL. · <i>MNRAS</i> , 516, 3

Significant Contribution to Publications

2026	Life After the Quasar: Overmassive Black Holes and Remnant Ionised Bubbles in and Around Two $z \sim 6.6$ Galaxies R. MEYER, P. OESCH, C. WITTEN ET AL. · <i>Nature Astronomy</i> , submitted • CONTRIBUTED TO INTERPRETATION OF RESULTS AND MANUSCRIPT WRITING
2026	A systematic search for dormant galaxies at $z \sim 5 - 7$ from the JWST NIRSpec archive A. COVELO-PAZ, C. MEUWLY, P. OESCH, C. WITTEN ET AL. · <i>A&A</i> , 705, A155 • CONTRIBUTED TO INTERPRETATION OF RESULTS AND MANUSCRIPT WRITING
2025	The density-bounded twilight of starbursts in the early Universe W. MCCLYMONT, S. TACHELLA, F. D'EUGENIO, C. WITTEN ET AL. · <i>MNRAS</i> , 540, 1 • PRODUCED COMPOSITE SPECTRUM; CONTRIBUTED TO INTERPRETATION OF RESULTS AND MANUSCRIPT WRITING
2024	Nebular dominated galaxies: insights into the stellar initial mass function at high redshift A. CAMERON & H. KATZ, C. WITTEN ET AL. · <i>MNRAS</i> , 534, 1 • CONTRIBUTED TO ANALYSIS AFTER JOINING PAPERS
2023	Resolving ambiguities in the inferred star formation histories of intense [O III] emitters in the reionization Era N. LAPORTE, R. ELLIS, C. WITTEN ET AL. · <i>MNRAS</i> , 523, 2 • REDUCED AND ANALYSED THE NIRCAM/WFSS DATA; CONTRIBUTED TO INTERPRETATION OF RESULTS AND MANUSCRIPT WRITING
2022	3D intrinsic shapes of quiescent galaxies in observations and simulations J. ZHANG, S. WUYTS, C. WITTEN ET AL. · <i>MNRAS</i> , 513, 4 • PRODUCED THE SIMULATION ANALYSIS; CONTRIBUTED TO INTERPRETATION OF RESULTS

Co-author Publications

2026	A gas-enshrouded and gas-reddened black hole at cosmic dawn R. NAIDU ET AL. · <i>Nature</i> , 656, 8127
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- 2026 Reionization driven by the few: the ionizing budget of galaxies at $z = 5 - 10$ from JWST/NIRSpec
E. GIOVINAZZO ET AL. · *A&A, submitted*
- 2026 JWST COSMOS-3D: Spectroscopic Census and Luminosity Function of [O III] Emitters at $6.75 < z < 9.05$ in COSMOS
R. MEYER ET AL. · *A&A, 712, A16*
- 2026 Characterising Ly α damping wings at the onset of reionisation: Evidence for highly efficient star formation driven by dense, neutral gas in UV-bright galaxies at $z > 9$
C. POLLOCK ET AL. · *A&A, 711, A29*
- 2026 Black Hole Stars Across the Universe: Identifying Central Engine Dominated Little Red Dots at $z \sim 1.5 - 9.5$
A. WEIBEL ET AL. · *OJAp, submitted*
- 2026 Chemical signatures from the first stars embedded in metal-poor gas in galaxies at cosmic dawn
C. POLLOCK ET AL. · *Science, submitted*
- 2026 HST's Deep Blue: extremely deep UV imaging to reveal the contributors to reionization
I. GOOVAERTS ET AL. · *HST white paper*
- 2026 All the Massive Galaxy Overdensities during Reionization: JWST Rest-Frame Optical Selection Reveals Young, Chemically Evolved Galaxies Embedded in Dense, Neutral Gas at $z > 5$
C. TERP ET AL. · *A&A, 710, A290*
- 2026 Holes in the BH*? AGN signatures in the FUV spectrum of a black-hole dominated Little Red Dot at $z = 7.04$
X. JI ET AL. · *MNRAS, submitted*
- 2026 BlackTHUNDER strikes twice: rest-frame Balmer-line absorption and high Edington accretion rate in a Little Red Dot at $z = 7.04$
F. D'EUGENIO ET AL. · *MNRAS, 547, 4*
- 2026 The search for Population III: Confirmation of a HeII emitter with no metal lines at $z = 10.6$
R. MAIOLINO ET AL. · *MNRAS, submitted*
- 2026 Exploring Spatially-Resolved Metallicities, Dynamics and Outflows in Low-Mass Galaxies at $z \sim 7.6$
L. IVEY ET AL. · *A&A, 546, 3*
- 2026 Breaking Through the Cosmic Fog: JWST/NIRSpec Constraints on Ionizing Photon Escape in Reionization-Era Galaxies
E. GIOVINAZZO ET AL. · *A&A, 707, A352*
- 2026 A Cosmic Miracle: A Remarkably Luminous Galaxy at $z_{\text{spec}}=14.44$ Confirmed with JWST
R. NAIDU ET AL. · *OJAp, 9*
- 2025 BlackTHUNDER – A non-stellar Balmer break in a black hole-dominated little red dot at $z = 7.04$
X. JI ET AL. · *MNRAS, 544, 4*
- 2025 Stochastic star formation activity of galaxies within the first billion years probed by JWST
C. CARVAJAL-BOHORQUEZ ET AL. · *A&A, 704, A290*

- 2025 | Early massive galaxy formation in the core of a galaxy protocluster 650 million years after the Big Bang
Y. FUDAMOTO ET AL. · *Nature Astronomy*, *submitted*
- 2024 | JADES. Possible Population III signatures at $z=10.6$ in the halo of GN-z11
R. MAIOLINO ET AL. · *A&A*, *687*
- 2024 | Low-mass bursty galaxies in JADES efficiently produce ionizing photons and could represent the main drivers of reionization
C. SIMMONDS ET AL. · *MNRAS*, *527*, 3
- 2024 | The growth of the gargantuan black holes powering high-redshift quasars and their impact on the formation of early galaxies and protoclusters
J. BENNETT ET AL. · *MNRAS*, *527*, 1
- 2023 | The ionizing photon production efficiency at $z > 6$ for Lyman-alpha emitters using JEMS and MUSE
C. SIMMONDS ET AL. · *MNRAS*, *523*, 4
- 2022 | A lensed protocluster candidate at $z = 7.66$ identified in JWST observations of the galaxy cluster SMACS0723-7327
N. LAPORTE ET AL. · *A&A*, *667*, 3
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