Observatoire de Genève
Chemin Pegasi 51
1290 Versoix
Switzerland
callum.witten@unige.ch

CALLUM **WITTEN**

Education

2021–2024	**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**, Physics with Astrophysics University of Bath

Research Experience

2024–Present	**Postdoctoral Researcher**, University of Geneva

Awards and Funding

2025	**Murdin Prize** Award for the best published paper by an Institute of Astronomy PhD student
2024	**IoA Summer Internship Bursar** Funding to host a summer intern
2024	**JWST Grant Funding** $69,794 awarded to facilitate the completion of my proposed JWST observations
2023	**Wolfson Research Grant** £1,200 to attend "The James Webb Space Telescope turns one" conference in Sesto, Italy

Supervision Experience

2025–2026	Supervision of a Master's research project (full-time duration: 9 months) Corentin Meuwly · Unveiling the lifecycle of the earliest galaxies in the Universe with JWST
2025	Supervision of a Master's research project (full-time duration: 2 weeks) Parker Abbott Fairfield Jr · Deciphering the origins of the UV emission from the enigmatic Little Red Dots
2023–2024	Supervision of a Master's research project Billy Hayes · Hunting for evidence of the first galaxies hidden in JWST data
2021–2023	Supervision of Master's and Batchelor's student problem classes 26 students · Formation of Structure in the Universe, Stellar Dynamics and Structure of Galaxies

Professional Service

2025	**Chair** Submitted special session proposal EAS 2026
2025	**Chair** Miracles of the Early Universe Meeting, 40 people in Geneva
Since 2023	**Referee** for ApJ
Since 2023	**Referee** for MNRAS

Accepted Proposals

Thirteen accepted proposals, four as PI on JWST and the VLT, in highly competitive cycles.

Data Reduction and Analysis

MOSFIRE data reduction · XSHOOTER data reduction · NIRCam imaging and WFSS data reduction · `BAGPIPES` and `Prospector` spectroscopic and photometric fitting · Spectral stacking · Photometric selection of high-redshift candidates · Analysis of TNG, THESAN and SPHINX simulation data

Conferences and Seminars

Nineteen contributed talks at conferences across Europe. Lectured at Saas-Fee 2025 winter school. Invited seminar at Aix-Marseille University.

Selection of talks

December 2025	**Marseille** · **Seminar** Invited talk · Extreme environments in the early Universe
July 2025	**Heidelberg** · **Quo Vadis Galaxy Evolution?** Talk · Protoclusters in the early Universe: Powerhouses behind ionised bubbles and evolved galaxies
April 2025	**Oxford** · **First Galaxies: Building blocks of galaxies across cosmic time** Talk · An evolved protocluster in the early Universe
August 2024	**Ascona** · **Observing and Simulating Galaxy Evolution in the Era of JWST** Talk · 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** Talk · Unveiling the drivers of LAEs at $z > 7$

Collaborations

VLT/MOONS extragalactic GTO team · ELT/MOSAIC science team · GTC/EMIR commissioning team · Mirage or Miracle JWST collaboration · COSMOS-3D JWST collaboration · THRIFTY JWST collaboration · JWST PRIMER collaboration · THESAN-XL protocluster lead

Press Releases

July 2024	**New Scientist Article** Zombie galaxy came back to life after 20 million years
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

Publication List

Twenty-six papers with seven as the first author. A total of 1,143 citations and an H-index of 16. ADS link. Last updated 15th November 2025.

First-author Publications

2025	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, submitted
2025	Before its time: a remarkably evolved protocluster core at $z = 7.88$ **C. WITTEN** et al. · A&A, submitted
2025	Rising from the ashes: evidence of old stellar populations and rejuvenation events in the very early Universe **C. WITTEN** et al. · MNRAS, 537, 1
2024	GN-z11: The environment of an active galactic nucleus at $z = 10.603$. New insights into the most distant Lyα detection J. Scholtz & **C. WITTEN** et al. · A&A, 687 (co-first author paper)
2024	Deciphering Lyman-α Emission Deep into the Epoch of Reionisation **C. WITTEN** et al. · NatAst, 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 · ApJ, 944, 1
2022	Information content of BP/RP spectra in Gaia DR3 **C. WITTEN** et al. · MNRAS, 516, 3

Significant Contribution to Publications

2025	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. · A&A, submitted • contributed to interpretation of results and manuscript writing
2025	The density-bounded twilight of starbursts in the early Universe W. McClymont, S. Tacchella, F. D'Eugenio, **C. WITTEN** et al. · MNRAS, 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. · MNRAS, 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. · MNRAS, 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. · MNRAS, 513, 4 • produced the simulation analysis; contributed to interpretation of results

Co-author Publications

2025	Early massive galaxy formation in the core of a galaxy protocluster 650 million years after the Big Bang Y. Fudamoto et al. · NatAst, submitted
2025	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, submitted
2025	Exploring Spatially-Resolved Metallicities, Dynamics and Outflows in Low-Mass Galaxies at $z \sim 7.6$ L. Ivey et al. · A&A, submitted
2025	Stochastic star formation activity of galaxies within the first billion years probed by JWST C. Carvajal-Bohorquez et al. · A&A, submitted
2025	Breaking Through the Cosmic Fog: JWST/NIRSpec Constraints on Ionizing Photon Escape in Reionization-Era Galaxies E. Giovinazzo et al. · A&A, submitted
2025	A Cosmic Miracle: A Remarkably Luminous Galaxy at zspec=14.44 Confirmed with JWST R, Naidu et al. · OJAp, submitted
2025	A "Black Hole Star" Reveals the Remarkable Gas-Enshrouded Hearts of the Little Red Dots R, Naidu et al. · Nature, submitted
2025	BlackTHUNDER strikes twice: rest-frame Balmer-line absorption and high Eddington accretion rate in a Little Red Dot at $z = 7.04$ F. D'Eugenio et al. · MNRAS, submitted
2025	BlackTHUNDER – A non-stellar Balmer break in a black hole-dominated little red dot at $z = 7.04$ X. Ji et al. · MNRAS, submitted
2024	JWST-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