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Dr. Romain A. Meyer

RESEARCH INTERESTS

Using a wide range of observational probes and facilities from the optical and infrared to the millimeter domain, I aim to characterise the properties of galaxies in the first billion years of the Universe, their role in cosmic hydrogen reionisation, and their co-evolution with their central supermassive black holes.

Keywords: Cosmic Reionisation, First Galaxies & AGN/SMBH, Multi-wavelength

EMPLOYMENT

Maître-Assistant (Research & Teaching Fellow) April 2023 - Present
Geneva Observatory, University of Geneva, Switzerland
Group of Prof. Pascal Oesch

Postdoctoral Researcher October 2020 - March 2023
Max Planck Institute for Astronomy, Heidelberg, Germany
Group of Dr. Fabian Walter

EDUCATION

PhD in Astrophysics 2017 - 2020
University College London, United Kingdom
Thesis: *The Role of Galaxies and Quasars in Reionising the High Redshift Intergalactic Medium*
Supervisor: Prof. Richard S. Ellis
Thesis official electronic version: <https://discovery.ucl.ac.uk/id/eprint/10112095/>

MSc in Physics 2015 - 2017
Ecole Polytechnique Fédérale de Lausanne, Switzerland
Thesis: *PSF Interpolation via Artificial Neural Networks*
Supervisors: Prof. Frédéric Courbin, Dr. Thibault Kuntzer

BSc in Physics 2012 - 2015
Ecole Polytechnique Fédérale de Lausanne, Switzerland / Erasmus at Imperial College, London
Thesis: *Cross-calibration of the Herschel SPIRE instruments*
Supervisor: Prof. Dave Clements, Dr. Rosalind Hopwood

PUBLICATIONS

61 (13 first-author) refereed papers published in major astronomical journals (A&A, MNRAS, ApJ, Nature, PASA) since 2018, totaling 3250 citations and an h-index of 30. A further 14 preprints under review, 2 proceedings publications and open source software releases. The full list of my publications can also be found on [NASA ADS](#) or on my [ORCID](#) profile.

GRANTS AND THIRD-PARTY FUNDING

SNSF Scientific Exchange (19'200 CHF) October 2024
Funding for the organisation of the Saas-Fee Advanced Course 2025

MERAC funding and travel award (2400 CHF) May 2024
Funding for collaboration visits to support research projects on $z > 6$ quasar host galaxies

AWARDED TELESCOPE TIME

PI-led Programmes:

ALMA Band 1 - 34.3h	2025
"Weighing the molecular gas reservoirs of UV-faint $z > 6$ quasars" (2025.1.01221.S)	
JWST NIRSpec IFU SURVEY - 236.2h	2025
"THRIFTY: The High-Redshift Frontier survey" (Cycle 4, #7208)	
IRAM/NOEMA Band 3 - 30h	2024
"Characterising the ISM of a $z=6.5$ post-quasar galaxy" (W24EN)	
ALMA Band 1 - 32h	2024
"A survey of cold molecular gas in $z \sim 6.5$ quasars and their companion galaxies" (2024.1.00106.S)	
XShooter/VLT - 2.9h	2023
"Characterising a $z \sim 6$ gravitationally-lensed BAL quasar candidate" (113.26CY)	
JWST NIRSpec IFU - 10.5h	2022
"Characterizing the Source of Ionising Photons in the Epoch of Reionization" (#3767)	
Gemini (DDT) Flamingos-2 - 4.2h	2022
"Measuring the mass of the SMBHs powering two lensed $z \sim 6$ quasars" (DT-2022B-029)	
NOEMA Band 3 - 12h	2022
"Disentangling the nature of JWST ultra-high-redshift candidates with NOEMA" (W22EG)	
MUSE/VLT - 30h	2022
"A conclusive detection of galaxy overdensities around the first luminous quasars" (110.23UT)	
ALMA Band 6 - 14.6h	2021
"The Large-Scale Environment of the First Quasars" (2021.1.01557.S)	
ALMA Band 8/9 - 16.3h	2021
"Extreme Super-Eddington Star Formation in a Quasar Host at $z \sim 7$?" (2021.1.01350.S)	
FOSC2/NTT - 4 nights	2019
"A search for the missing gravitationally-lensed $z \sim 6$ quasars" (0104.A-0662(A))	

Selected Co-I Programmes:

ALMA LP - 113h	2025
"PHOENIX: the Emergence of Dust, Obscured Star Formation and ISM Physics at Cosmic Dawn" (PI: S. Shouws)	
JWST LP #5893 - 266h	2024
"COSMOS-3D: A Legacy Spectroscopic/Imaging Survey of the Early Universe" (PI: K. Kakiichi)	
JWST #5645 - 389h	2024
"A 3D view of the first QSOs: A JWST/NIRSpec survey program" (PI: E. Farina)	
VLT/MUSE LP - 147h	2023
"The cosmic Ecosystem of the first QSOs and Galaxies" (PI: E. Farina)	
ALMA - 49h	2023
"Delivering the Needed Large Samples of Extremely High SFR Sources at $z > 6$ to Characterize Early Stellar+Black-Hole Growth" (PI: R. Bouwens)	
JWST #2078 - 61h	2021
"A Spectroscopic survey of biased halos In the Reionization Era (ASPIRE)" (PI: F. Wang)	

Other Co-I Programmes: 314h with JWST, 290.1h with ALMA, 50.7h on the VLT (MUSE/XShooter/FORS2), 22h on MEGARA/GTC, 2×0.5 nights on Subaru/IRCS+LGS-AO, 6 nights on NTT, 92h on NOEMA, 38h on GEMINI GMOS, 2 orbits on HST, 333 ks on CHANDRA ACIS-S

STUDENTS SUPERVISION

Alexandre Pozzi, UNIGE MSc Thesis	February 2025 - January 2026
Lavinia Arpaia, UNIGE MSc Semester Project	Spring 2024
Alexandre Pozzi, UNIGE MSc Semester Project	Fall 2023
Xander Byrne, MPIA Summer Internship	Summer 2022
1 publication accepted in MNRAS (link here). Xander is now a PhD student at the University of Cambridge.	

TEACHING

Guest Lecturer - Galaxies & Cosmology I & II (UNIGE)	2024 - present
MSc level Lectures on the Epoch of Reionisation / AGN / Observational Cosmology	
Teaching Assistant (UCL)	2019
Classical Mechanics	
Teaching Assistant (EPFL)	2016 - 2017
2nd year Physics Labs	
Teaching Assistant (EPFL)	2013 - 2016
General Physics for Engineers	

PROFESSIONAL SERVICE

COSMOS-3D Collaboration - IGM & Reionisation WG Lead	2025 -
Expert Panel Member - ESO Observing Programmes Committee	2025
Saas-Fee Advanced Course 2025 Organiser	27-31 January 2025
EAS 2024 Special Session 1 Co-Organiser and Chair	July 2024
EPFL-UNIGE Journal Club Organiser	2023 - 2025
Galaxy Coffee Seminar Organiser, MPIA, Heidelberg	2021 - 2022
Walter Group Meetings Organiser, MPIA, Heidelberg	2021 - 2022
ApJ/AJ Reviewer	since 2021
MNRAS Reviewer	since 2020
Astronomy PhD Student Representative, UCL	2017- 2020

OBSERVING AND TECHNICAL EXPERIENCE

- **Observing experience:** 3 nights on Keck/MOSFIRE, 3 nights on Keck/DEIMOS, 4 nights on NTT/ EFOSC2, 3 nights (remote) on MEGARA/GTC
- **Data reduction & analysis:** optical/NIR multi/long-slit spectroscopy (DEIMOS/Keck, MOSFIRE/Keck, EFOSC2/NTT, GMOS/Gemini, Flamingos2/Gemini, VLT/XShooter), optical IFU (MUSE/VLT), mm interferometry (ALMA/NOEMA), JWST NIRISS/NIRCam WFSS and imaging data, JWST NIRSpec IFU
- **Current main developer** and maintainer of [interferopy](#); an open-source, public python library for radio/mm interferometry data analysis.
- **Computing:** Python, C++, Fortran, IDL
- **Astronomy software:** CASA, GILDAS, ESORex, ESOReflex, PyeIt, DS9, Topcat, SourceExtractor, VPFit, GalSim, GALFIT, Grizli, MIRAGE, JWST pipeline
- **Summer schools:** European Radio Interferometry School 2019, Chalmers, Gothenburg / Astrostat 2021, Penn State (Virtual) / ISM Galaxies 2021, Marseille (Virtual)

INVITED AND CONTRIBUTED TALKS

Invited Talks and Colloquia:

Hamburg Observatory Colloquium <i>The ALMA View of Quasars in the First Billion Years</i>	January 2025
Galaxy Evolution Circle - LAM, Marseille <i>Can we solve Reionisation on the scales of individual ionised bubbles?</i>	December 2024
Cake Talk - DAWN, Copenhagen <i>Probing early galaxy formation with an unbiased sample of $6.8 < z < 9$ [OIII] emitters</i>	May 2024
Galaxies Discussion Group - KICC, Cambridge <i>A resolved view of $z > 6$ quasar host galaxies</i>	October 2022
Extragalactic Seminar - UCL, London <i>A 100-300 pc view of $z > 6.5$ quasar host galaxies</i>	October 2022
Young Astronomers on AGN 2022 - DIPC, San Sebastian <i>Quasar Host Galaxies at Cosmic Dawn</i>	October 2022
Astronomy Seminar - University of Southampton <i>Quasar Host Galaxies at Cosmic Dawn</i>	March 2022
Königstuhl Colloquium - MPIA, Heidelberg <i>Finding the sources of reionisation</i>	April 2021
Galaxies Discussion Group - KICC, Cambridge <i>IGM-galaxy cross-correlations during Reionization</i>	April 2020
MPIA Galaxy Coffee - MPIA, Heidelberg <i>Probing reionisation with cross-correlations of galaxies and the Lyman-α forest at $z \sim 6$</i>	November 2019
London Cosmology Discussion Meeting - RAS, London <i>Probing the epoch of reionisation with cross-correlations of high-redshift galaxies and the IGM transmission</i>	November 2018

Contributed Talks:

Massive Black Holes across Cosmic Time <i>Discovery of two $z \sim 6.5$ post-quasar galaxies in large ionised bubbles</i>	September 2025
EREBUS Collaboration Meeting - Bologna, Italy <i>A MUSE Archival View of $z \sim 6$ Quasar Environments</i>	June 2025
Miracles of the Early Universe - Geneva, Switzerland <i>Towards a 3D view of Reionisation: Connecting the Sources to the IGM topology</i>	June 2025
Galaxy Origins in the JWST era - Toledo, Spain <i>Discovery of two $z \sim 6.5$ post-quasar galaxies in large ionised bubbles</i>	May 2025
Views on the multi-phase ISM in galaxies - Bologna, Italy <i>Pushing ALMA to the limit: 140-pc resolution [CII] and continuum observations of a $z=6.6$ quasar-galaxy merger</i>	September 2024
Observing and Simulating Galaxy Evolution - Ascona, Switzerland <i>Constraining early galaxy formation with an unbiased sample of $6.8 < z < 9$ [OIII] emitters</i>	August 2024
EAS 2023 - Krakow, Poland <i>Contributed talks in Symposium 12, Special Session 22 & Poster Presentation in Symposium 8</i>	July 2023
First Light Conference, MIT, Boston <i>A complete census of [OIII]+Hβ emitters at $6.7 < z < 9$ with JWST</i>	June 2023
Exploring the evolving Universe (RSE@70+) - IoP, London <i>A complete census of [OIII]+Hβ emitters at $6.7 < z < 9$ with JWST</i>	June 2023
From Stars to Galaxies II - Gothenburg, Sweden <i>Hyper-resolution observations of $z \sim 6.8$ quasar hosts</i>	June 2022
Learning the high-z Universe - Sazerac Online Conferece <i>Learning from Quasars with VAEs</i>	February 2022
Quasars and Galaxies Through Cosmic Time - Chile / Online	February 2022

<i>Constraining galaxy overdensities around three $z \sim 6.5$ quasars with ALMA and MUSE</i>	
RAS Specialist Day - RAS London / Online	January 2022
<i>Measuring the contribution of $z \sim 6$ galaxies to reionisation with galaxy-IGM cross-correlations</i>	
EAS 2021 - Session 2 - Leiden Observatory / Online	July 2021
<i>High-redshift quasar hosts viewed by ALMA and NOEMA</i>	
EAS 2021 - Session 7 - Leiden Observatory / Online	July 2021
<i>Measuring escape fractions at $z \sim 6$ with quasar spectra</i>	
SAZERAC 2020 - Online	July 2020
<i>Measuring the ionising photon escape fraction of $z \sim 6$ galaxies</i>	
EAS 2020 - Leiden Observatory / Online	June 2020
<i>Discovery of a double-peaked Lyman alpha emission in a galaxy at $z = 6.802$</i>	
KICC 10th Anniversary Symposium - KICC, Cambridge	September 2019
<i>Probing the epoch of reionisation with cross-correlations of high-redshift galaxies and the IGM transmission</i>	
EAS 2019 (Session 2) - Lyon, France	June 2019
<i>Evidence for quasar evolution: rest-frame UV broad lines shifts at $1.5 < z < 7.5$</i>	
EAS 2019 (Session 3) - Lyon, France	June 2019
<i>A new route to the contribution to reionisation of subluminal $z \sim 6$ galaxies</i>	
What matters between galaxies? - Abbazia di Spineto, Firenze, Italy	June 2019
<i>Metal-tracing the sources of reionisation</i>	
IGM2018: Revealing Cosmology and Reionization History with the Intergalactic Medium - Kavli IPMU, Kashiwa, Japan	September 2018
<i>Faint galaxies reionising the IGM at $z \sim 5$: metal-tracing the sources of reionisation</i>	

OUTREACH

Public Talk (French): “La Fin des Âges Sombres”	February 7, 2025
Société d’Astronomie du Nord Vaudois	
Geneva Observatory Visits	2024 - present
University of Geneva - Visits for general public (adults and children)	
Astronomy On Tap London	2020
Co-founder and online host (during Covid-19)	
UCL Diploma Club Seminar Organiser	2019 - 2020
Seminar series for graduates of the UCL evening course open to the general public	
ORBYTS: Researcher in schools program	2017 - 2019
Outreach programs for highschool pupils of 10 weeks of lectures and research on real data	
Mid-Kent Astronomical Society	January 31 2020
Outreach talk: Galaxies in the First billion years	
Bounce Back RAS200 Project (HMP Brixton)	November 4 2019
Outreach to inmates of a London prison - with the RAS and the Bounce Back foundation	
UCL Future Frontiers Event Careers Networking Event	July 2019
Day of networking/career advice to London pupils from underprivileged background	
International Day of Light - UCL	May 2018
Day of outreach shows and demonstrations for secondary school pupils	

PRESS COVERAGE

- November 2022: “Dans les coulisses des données du télescope spatial James Webb”: radio interview and web article with the Swiss public broadcasting organisation RTS on the analysis of early JWST data ([article and radio interview in French](#))

- July 2021: “Cosmic dawn occurred 250 to 350 million years after Big Bang” press release linked to preprint arxiv.org/abs/2104.08168. Covered by the [BBC press](#)/TV/radio, [the Guardian](#), the [Daily Mail](#), the [Evening Standard](#) and other specialised media. Live interview with BBC World News TV (24/06/21).
- July 2020: EAS press release “Discovery of a luminous galaxy reionizing the intergalactic medium 13 billion years ago”, covered by [specialised internet media](#).