

Geneva Observatory
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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, 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

54 (12 first-author) refereed papers published in major astronomical journals (A&A, MNRAS, ApJ, Nature, PASA) since 2018, totaling 2069 citations and an h-index of 25. 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:

JWST NIRSpec IFU Survey ~100h	2025
“THRIFTY: The High-Redshift Frontier survey (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:

JWST - 266h	2024
“COSMOS-3D: A Legacy Spectroscopic/Imaging Survey of the Early Universe” (PI: K. Kakiichi)	
VLT/MUSE - 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 - 61h	2021
“A Spectroscopic survey of biased halos In the Reionization Era (ASPIRE)” (PI: F. Wang)	

Other Co-I Programmes: 505h with JWST, 231h 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	2024
University of Geneva - 3 MSc level Lectures on the Epoch of Reionisation / AGN / Observational Cosmology	
Teaching Assistant	2019
University College London - Classical Mechanics	
Teaching Assistant	2016-2017
Ecole Polytechnique Fédérale de Lausanne - 2nd year Physics Labs	
Teaching Assistant	2013-2016
Ecole Polytechnique Fédérale de Lausanne - General Physics for Engineers	

PROFESSIONAL SERVICE

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 - Present
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, PyPeIt, 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)

TALKS

Invited Talks and Colloquia:

Hamburg Observatory Colloquium	January 2025
<i>The ALMA View of Quasars in the First Billion Years</i>	
Galaxy Evolution Circle - LAM, Marseille	December 2024
<i>Can we solve Reionisation on the scales of individual ionised bubbles?</i>	

Cake Talk - DAWN, Copenhagen	May 2024
<i>Probing early galaxy formation with an unbiased sample of $6.8 < z < 9$ [OIII] emitters</i>	
Galaxies Discussion Group - KICC, Cambridge	October 2022
<i>A resolved view of $z > 6$ quasar host galaxies</i>	
Extragalactic Seminar - UCL, London	October 2022
<i>A 100-300 pc view of $z > 6.5$ quasar host galaxies</i>	
Young Astronomers on AGN 2022 - DIPC, San Sebastian	October 2022
<i>Quasar Host Galaxies at Cosmic Dawn</i>	
Astronomy Seminar - University of Southampton	March 2022
<i>Quasar Host Galaxies at Cosmic Dawn</i>	
Königstuhl Colloquium - MPIA, Heidelberg	April 2021
<i>Finding the sources of reionisation</i>	
Galaxies Discussion Group - KICC, Cambridge	April 2020
<i>IGM-galaxy cross-correlations during Reionization</i>	
MPIA Galaxy Coffee - MPIA, Heidelberg	November 2019
<i>Probing reionisation with cross-correlations of galaxies and the Lyman-α forest at $z \sim 6$</i>	
London Cosmology Discussion Meeting - RAS, London	November 2018
<i>Probing the epoch of reionisation with cross-correlations of high-redshift galaxies and the IGM transmission</i>	

Contributed Talks:

Views on the multi-phase ISM in galaxies, Bologna, Italy	September 2024
<i>Pushing ALMA to the limit: 140-pc resolution [CII] and continuum observations of a $z=6.6$ quasar-galaxy merger</i>	
Observing and Simulating Galaxy Evolution, Ascona, Switzerland	August 2024
<i>Constraining early galaxy formation with an unbiased sample of $6.8 < z < 9$ [OIII] emitters</i>	
EAS 2023 - Krakow, Poland	July 2023
<i>Contributed talks in Symposium 12, Special Session 22 & Poster Presentation in Symposium 8</i>	
First Light Conference- MIT, Boston	June 2023
<i>A complete census of [OIII]+Hβ emitters at $6.7 < z < 9$ with JWST</i>	
Exploring the evolving Universe (RSE@70+) - IoP, London	June 2023
<i>A complete census of [OIII]+Hβ emitters at $6.7 < z < 9$ with JWST</i>	
From Stars to Galaxies II - Gothenburg, Sweden	June 2022
<i>Hyper-resolution observations of $z \sim 6.8$ quasar hosts</i>	
Learning the high-z Universe - Sazerac Online Conferece	February 2022
<i>Learning from Quasars with VAEs</i>	
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

Evidence for quasar evolution: rest-frame UV broad lines shifts at $1.5 < z < 7.5$
EAS 2019 (Session 3) - Lyon, France June 2019
A new route to the contribution to reionisation of subluminal $z \sim 6$ galaxies
What matters between galaxies? - Abbazia di Spineto, Firenze, Italy June 2019
Metal-tracing the sources of reionisation
IGM2018: Revealing Cosmology and Reionization History
with the Intergalactic Medium - Kavli IPMU, Kashiwa, Japan September 2018
Faint galaxies reionising the IGM at $z \sim 5$: metal-tracing the sources of reionisation

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](#).