Mengyuan XIAO

Postdoctoral Researcher

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Research Interests

- Formation and evolution of the first massive galaxies in the early Universe.
- Dusty star-forming galaxies and the obscured side of galaxy evolution.
- Star formation, interstellar medium properties, and gas kinematics in high-redshift galaxies.

Education & Current Position

2023- **Postdoctoral fellow**, *Geneva observatory*, University of Geneva, Advisor: Prof. Pascal Oesch

2018-2022 **Ph.D. in Astrophysics**, Nanjing University, Advisors: Dr. David Elbaz and Prof. Qiu-Sheng Gu
Thesis awarded "Excellent Doctoral Thesis" by both of Nanjing University and Jiangsu Province

2019-2022, *CSC fellowship for Joint PhD*, CEA Saclay, France, Advisor: Dr. David Elbaz

Feb-May 2019, *Visiting student*, NAOJ, Japan, Host: Prof. Daisuke Iono

2014-2018 **M.Sc. in Astrophysics**, *School of Astronomy & Space Science*, Nanjing University, Advisor: Prof. Qiu-Sheng Gu

Aug-Oct 2017, *Visiting student*, NAOJ, Japan, Host: Prof. Daisuke Iono

2009-2013 **B.Sc. of Science**, *Science of Chinese Materia Medica*, School of Pharmacy, Nanjing University of Traditional Chinese Medicine

Selected Honors and Awards

2024 "Excellent Doctoral Thesis" Award – Nanjing University & Jiangsu Province
2023 MERAC Awards by Swiss Society for Astrophysics and Astronomy (SSAA).
2021 Nanjing University Excellent Postgraduate.
2019 2019-2021 China Scholarship Council (CSC) Fellowship for joint Ph.D.
2019 "Excellent Master Thesis" Award – Nanjing University & Jiangsu Province
2017 Excellent Postgraduate in the Jiangsu Province.
2016 Nanjing University Excellent Postgraduate.

Teaching and Supervision

- Teaching: "Galaxies and Cosmology I & II", Master's course at University of Geneva (2024-present)
- Supervising 4 Master's students (3 female) since 2024, including one current student (2025–2026) whose thesis aligns with my JWST/ALMA research.
- Teaching assistant for Extragalactic Astrophysics, Nanjing University (2016-2017)

Community Leadership, Service, and Outreach

- Team leader, Workshop 'ISSI (International Space Science Institute) international Team on Little Red Dots' (2025-2027)
- Reviewer, French National Research Agency (ANR) (2025)
- Referee, Astronomy & Astrophysics journal (since 2023)
- Scientific Organizer, European Astronomical Society (EAS) SS9 session 2024
- Press releases, 2024 Nature and 2025 A&A first-author papers
- Invited outreach talk at high school in Suzhou, China (planned 2025)

- Organizer of multiple invited talks and academic visits at Geneva Observatory (since 2024)
- JWST outreach during Geneva Observatory's 250th Anniversary (2023)
- President, Postgraduate Student Union, Nanjing University (2015)

Technical Skills

- Languages: Chinese (native), English (advanced), French (A1)
- Programming: Python, IDL
- Data Analysis: Interferometric imaging (e.g., CASA), spectral, SED modeling, kinematics analysis
- Tools: LaTeX, Overleaf, Topcat, DS9, Astropy, Jupyter, GitHub

Selected Conferences & Invited Talks

Summary: Over 31 talks at major international conferences and seminars across Europe, Asia, and the US, including 11 invited talks since 2023.

- Invited Talk, Meeting 'Miracles of the Early Universe Meeting', Geneva, Switzerland, June, 2025
- Invited Talk, Workshop 'RUBIES & Friends meeting 2025', Bergen, Netherlands, May, 2025
- Invited Talk, Workshop 'Big Galaxies, Big Problems', Lorentz Center, Netherlands, April, 2025
- Invited, Workshop ' ISSI international Team on dark galaxies', Bern, Switzerland, Feb, 2025
- Talk, EAS Annual Meeting, Symposium 'New light on Galaxies from Cosmic Dawn to Noon', Padova, Italy, July, 2024
- Invited Talk, Conference 'Cosmic Odysseys 2024: The Interstellar Medium of Galaxies and AGN since Cosmic Dawm', Crete, Greece, July, 2024
- Invited Talk, Conference 'The Growth of Galaxies in the Early Universe –IX', Sesto, Italy, Jan, 2024
- Seminar Talk, Title 'A new era of studying extremely dust-obscured massive galaxies in the early Universe with JWST and ALMA', NAOJ, Japan, Nov, 2023
- CakeTalk,Title 'FRESCO: A new era of studying extremely dust-obscured massive galaxies in the early Universe with JWST spectroscopy', DAWN, Denmark, Aug, 2023

Selected Major Telescope Programs as PI

Summary: PI of 6 successful observing programs on JWST, ALMA, NOEMA (100+ hrs); Co-I on 30+ additional proposals across JWST, ALMA, NOEMA, VLA, VLT, and other facilities.

2024 ALMA Cycle 11 (2024.1.01744.S): "ALMA+JWST: studying the efficient formation of massive galaxies at $z_{spec} = 3 - 5$" (38.5 hrs)

2024 NOEMA W24EP: "Studying the efficient formation of three monsters in $z \sim 6.7$ overdensity" (18h)

2023 JWST Cycle 3 GO-5572: "Red Monsters: Kinematics of Two 'Universe Breaking', Ultra- Massive Galaxies in the First Gyr" (16.8 hrs)

2023 ALMA Cycle 10 (2023.1.00837.S): "Hidden in plain sight: dynamical mass estimates for a newly-discovered red monster at $z_{spec} \sim 5.6$" (1.0 hrs)

2023 NOEMA S23CY: "Revealing the interstellar medium of two extremely massive galaxies at $z_{spec} > 7$" (12.0 hrs)

Selected Publications

10 primary author papers (7 first-author papers and 3 additional primary author publications), 343 citations (current as of 16-Jun-2025), h-index 8, ADS library
44 total papers, 1553 citations (current as of 16-Jun-2025), h-index 20, ADS library

Primary Author Papers

2025 *No [CII] or dust detection in two Little Red Dots at zspec > 7*

Xiao, M.-Y., Oesch, P.A., L., Bing, Elbaz, D., et al., submitted to A&A; arXiv:2503.01945

2025 *PANORAMIC: Discovery of an Ultra-Massive Grand-Design Spiral Galaxy at $z \sim 5.2$*

Xiao, M.-Y., Williams, C. C., Oesch, P. A., Elbaz, D., and the JWST PANORAMIC team, A&A, 696, A156

2024 *Accelerated Formation of Ultra-Massive Galaxies in the First Billion Years*

Xiao, M.-Y., Oesch, P.A., Elbaz, D., L., Bing, and the JWST FRESCO team, Nature, 635, 311

2024 *Discovery of a new N-emitter in the epoch of reionization*

Schaerer, D., Marques-Chaves, R., **Xiao, M.-Y.**, et al. 2024, A&A, 687, L11

2023 *The hidden side of cosmic star formation at $z > 3$: Bridging optically-dark and Lyman break galaxies with GOODS-ALMA*

Xiao, M.-Y., Elbaz, D., Gómez-Guijarro, C., Leroy, and the GOODS-ALMA team, A&A, 672, A18

2022 *Starbursts with suppressed velocity dispersion revealed in a forming cluster at $z = 2.51$*

Xiao, M.-Y., Wang, T., Elbaz, D., Iono, D., et al. 2022, A&A, 664, A63

2022 *GOODS-ALMA 2.0: Starbursts in the main sequence reveal compact star formation regulating galaxy evolution prequenching*

Gómez-Guijarro, C., Elbaz, D., **Xiao, M.-Y.**, et al. 2022, A&A, 659, A196

2022 *GOODS-ALMA 2.0: Source catalog, number counts, and prevailing compact sizes in 1.1 mm galaxies*

Gómez-Guijarro, C., Elbaz, D., **Xiao, M.-Y.**, et al. 2022, A&A, 658, A43

2018 *The Physical Characteristics of Interstellar Medium in NGC3665 with Herschel Observation*

Xiao, M.-Y., Zhao, Y.-H., Gu, Q.-S., & Shi, Y. 2018, ApJ, 854, 111

2016 *The Nuclear Activities of Nearby S0 Galaxies*

Xiao, M.-Y., Gu, Q.-S., Chen, Y.-M., & Zhou, L. 2016, ApJ, 831, 63