Qiong Li

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Education

- **Peking University** — Beijing, China
  Ph.D., Astrophysics — *2014 - 2020*
  - Supervisor(s): Ran Wang
  - Thesis: The Multi-Wavelength Studies of the Formation and Evolution of Galaxies at High Redshift
- **The University of California at Santa Cruz** — Santa Cruz, CA, USA
  Visiting student, Astrophysics — *2017 - 2018*
  - Supervisor(s): Jason X. Prochaska, Zheng Cai
  - Thesis: Evolution of Multiphase ISM and CGM of galaxies in the Large Scale Structure at High Redshift
- **Northwest University** — Xi'an, China
  B.Sc. Physics — *2010 - 2014*

Employment

2022 - 2025 **Postdoctoral Fellow**, the University of Manchester, working with: Chris Conselice.
2021 - 2022 **Postdoctoral Fellow**, the University of Michigan, working with: Jiangtao Li, Joel Bregman, enrollment delayed to September 2021 due to COVID-19.

Research

Broad interests in galaxy (proto-)clusters in the large scale structure and the formation and evolution of quasars/galaxies at high redshift ($2.3 < z < 10.0$), especially focus on:

- Multi-wavelength observations of the high redshift galaxies and (proto-)clusters: photometry, spectroscopy, clustering
- Machine learning applications for analyzing high-redshift galaxy properties and clustering patterns.
- Multi-phase circumgalactic medium (CGM) of high-z quasars associated with galaxy overdensities.

I have extensively used (observing, data handling, and analysis) optical, IR, mm and radio telescope and instruments, such as JWST, HST, Keck/LRIS, Magellan/IMACS, JCMT, NOEMA, VLA, ALMA, as well as integral field spectrographs such as Keck/KCWI and Hale/PCWI, as the PI or Co-I of different projects over the past few years.

Selected Successful Telescope Proposals

2023 **ALMA-2023.1.00852.S** Understanding the Excitation of Molecular Gas in the Quasar-Starburst Systems at $z > 6$ (**PI**)

2022 **Magellan:** Mapping the Clustering of Lyman-alpha Emitting Galaxies Around Early Universe Quasars (**PI and observer**, 2 nights)

2021 **Magellan:** Probing the overdensity of Lyman-alpha emitting galaxies around the quasar at z∼6 (**PI and observer**, 2 nights)

2021 **MDM:** Searching for the most massive overdensity through CIV absorption at $z \sim 3.2$ (**PI and observer**, 15 nights)

2021 **VLA-21B-083:** Deep Radio Imaging of the Extremely Massive Overdensities at $z = 2.3$ **(PI)**

2021 **LMT-2021-S1-US-17:** Molecular gas in starburst galaxies around enormous Lyα nebulae

2020 **NOEMA-W20DB:** (Grade B) Molecular gas across the circum-galactic medium of Enormous Lyα Nebulae **(PI)**

2020 **Magellan/IFUM:** Probing the physical properties of CGM/IGM at $z \sim 3$

2020 **NOEMA-S20CW:** (Grade B) Probing the CO spectral line energy distributions (SLEDs) in two luminous quasars at $z \sim 6$ (**PI**)

2020-2019 **IRAM30m-071-19, 063-20:** (Grade A) Molecular gas in an HI-bearing ultra-diffuse galaxy

2019 **UC Keck:** IFU observation of ultra-diffuse galaxy

2019 **NOEMA-S19CX:** (Grade B) Imaging the dust and gas content from the galaxy groups in the Enormous Lyman Alpha Nebula MAMMOTH-1 at z=2.3

2019-2016 **Palomar200 – 2018A23, 2018B20, 2019A19:** Constructing a Sample of Enormous Lyα Nebula Utilizing the Strongest Clustered QSO Groups (**PI and observer)** 15-nights, through the collaboration with Caltech and TAP

2019-2017 **JCMT – M17BP007, M18AP018, M18BP028, M19AP002, M19BP011:** Completing a SCUBA-2 survey of most massive large-scale structures at $z \sim 2$ (**PI and observer)**

2019 **ALMA-2019.1.01003.S:** The environment of the first supermassive black holes in the Universe

2019 **VLA-19B225:** (Grade B) Cold Molecular Gas across Enormous Lyα Nebulae: Evolution of the Multiphase CGM (Col-I and major contributor; PI: Bjorn Emonts)

2019 **Palomar200-2019B02:** PCWI observation of HI-bearing isolated ultra-diffuse galaxies: metallicity and kinematics (**PI and observer)**

2018-2016 **JCMT – M16AP013, M17AP062, M17BP034:** Studying the dust emission and environment of the quasar sample at $5.6 < z < 7.1$ (**PI and observer)**

2018 **NOEMA-S18CW:** (Grade B) Molecular Gas from an Enormous Lyα Nebula in an Extreme Overdense Field at $z = 2.3$

2018 **JCMT-M18BP044:** Molecular gas in HI-bearing ultra-diffuse galaxies

2017 **UC Keck:** KCWI observation of giant Lyα nebula

2017 **SMA-2017BA005:** (Grade B) Environment of The Most Distant Quasars at $z \sim 6$ **(PI)**

2016 **SMA-2016BA022:** (Grade A) Environment of The Most Distant Quasars at $z \sim 6$

2016 **NOEMA-W16EC:** (Grade B) Molecular Gas and Quasar-Galaxy Co-evolution at $z > 5.6$ **(PI)**

2016 **NOEMA-W16ED:** (Grade B) Submillimeter Sources and Environment of The Quasars in the Most Distant Universe **(PI)**

Observing Experience

2022-2020	**Magellan Telescope**, Las Campanas Observatory, Chile	8 nights
2019-2018	**Keck Telescope / KCWI**, remote	6 nights
2019-2016	**Palomar Hale-200inch Telescope,** Palomar Observatory, California, US	∼20 nights
2019-2016	**James Clerk Maxwell Telescope (JCMT)**, Hawaii, US	∼40 nights
2022-2021	**The Hiltner 2.4m Telescope**, MDM observatory, Arizona, US,	14 nights
2017-2016	**Bok 2.3m Telescope,** Steward Observatory, Arizona, US	15 nights
2022-2021	**The McGraw-Hill 1.3m Telescope**, remote	21 nights
2020-2019	**IRAM-30m Millimeter Radio Telescope**, remote	8 nights
2015	**PMO 13.7 m Millimeter Telescope**, Qinghai, China	5 nights

Teaching Experiences, Service & Outreach

2016, 2022-2024	2 years of teaching undergraduate courses and labs at Peking University (PHY-1-04x) and University of Manchester (PHYS31692, PHYS40181&40182) as a teaching assistant.
2023 - 2024	**(Co-)Supervision of Students** Master's student Qiao Duan (the University of Manchester), secured full PhD scholarships at Oxford and Cambridge University.
2022	**(Co-)Supervision of Students** Tiancheng Yang (Nanjing University)
2022 - present	**Member of the James Webb Space Telescope EPOCHS collaboration**, ERC Advanced Investigator Grant
2022 - present	**Member of the James Webb Space Telescope PEARLS collaboration**
2021	**Member of ELT/MOSAIC science working group**
2018	**Referee/judge**, the 12th International Olympiad on Astronomy and Astrophysics, Beijing
2016	**Tutor**, the 2016 National Astronomy Summer School for Undergraduate Students, Beijing + Xinglong Observatory, China

Expertise

- Programming: Python, IDL and C++
- Astrophysical:
  - **Software:** `Starlink`, `GILDAS`, `CASA`, `Bagpipes`, `Specutils`, `LMFIT`, `Galfit`, `EAZY`, `LePhare`
  - **Data reduction:** rich experience in the imaging and spectroscopy (long slit and muti-slit) data reduction; the IFU spectroscopy data; and radio/mm interferometry data reduction
  - **Simulation and model:** CLOUDY model, LENSTOOL, IllustrisTNG, JAGUAR Simulation

Publications

All papers (as of Sept., 2025):
number of papers: **50**, h-index: **17**, average citations: **24.3**

First Author and Corresponding Author Papers: (as of Sept., 2025):
number of papers: **12**, h-index: **8**, average citations: **13.8**

Selected Talks

2024	**Seminar talk**, University of Harvard	Cambridge, US
2024	**Colloquium**, University of Michigan	Ann Arbor, US
2024	**Seminar talk**, Massachusetts Institute of Technology	Cambridge, US
2023	**Colloquium**, Peking University	Beijing, China
2023	**Conference talk**, Conference: Resolving the Universe, Waseda University	Tokyo, Japan
2022	**Colloquium**, University of Manchester	Manchester, UK
2022	**Conference talk**, Conference, Arizona University	Tucson, US
2021	**Colloquium**, University of Michigan	Ann Arbor, US
2020	**Contributed talk**, Conference: 2020 galaxy and cosmos workshop	Zhongshan, China
2019	**Contributed talk**, Conference: TAP workshop, Xiamen University	Xiamen, China
2019	**Contributed talk**, Conference: KIAA Forum on Gas in Galaxies, PKU/KIAA	Beijing, China
2019	**Lunch talk**, Caltech	Pasadena, US
2019	**Contributed talk**, Conference: Dusting the Universe, UA/Steward Observatory	Tucson, US
2018	**Lunch talk**, UCSC	Santa Cruz, US
2017	**IMPS Seminar**, UCO/Lick Observatory,	Santa Cruz, US
2017	**Contributed talk**, Conference: JCMT Users meeting, East Asian Observatory	Nanjing, China
2016	**Contributed talk**, BHOLE workshop	Beijing, China
2016	**Contributed talk**, the TIARA radio astronomy summer school, ASIAA	Taipei