LIANG, "ERIC" FUHENG (梁赋珩)

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Astronomisches Rechen-Institut, Zentrum für Astronomie der Universität Heidelberg

EMPLOYMENT

Postdoctoral researcher, ARI, Heidelberg University Nov. 2024 – est. Oct. 2027
Advised by Kathryn Kreckel, working on galaxy evolution with precise and accurate metal abundances in the interstellar medium as part of PHANGS and SDSS-V/LVM collaborations.

Other fellowships offered: ASIAA Distinguished Fellowship (Taipei), Dunlap Fellowship (Toronto), and Faculty of Arts & Science Postdoctoral Fellowship (Toronto).

EDUCATION

DPhil, Depart. of Physics, University of Oxford Oct. 2020 – Oct. 2024
Thesis supervised by Martin Bureau, *Unravelling giant molecular clouds.*
Studentship at European Southern Observatory (Garching), Aug. 2023 – Aug. 2024, working with Ashley Barnes and Eric Emsellem.

Master, Depart. of Physics, Tsinghua University (Beijing) Sept. 2017 – Aug. 2020
Major in astrophysics, GPA: 3.9/4.0 (38 credits).
Thesis supervised by Cheng Li, *Studying Wolf-Rayet galaxies and the initial mass function with integral-field-unit survey SDSS-IV/MaNGA.*

Bachelor, Depart. of Physics, Tsinghua University (Beijing) Aug. 2013 – Jul. 2017
Primary major in physics, GPA: 3.6/4.0 (201 credits).
Thesis supervised by Cheng Li, *A new catalog of Wolf-Rayet galaxies from SDSS-IV/MaNGA.*
Secondary major in economics (47 credits).

PUBLICATIONS (REFEREED)

First-author papers: 3 published + 1 to be published; co-author papers: 21; h-index: 10; ADS Library; ORCID 0000-0003-2496-1247.

(Submitted) **Liang, Fu-Heng**; Bureau, Martin; Liu, Lijie et al., *WISDOM Project –?. Giant molecular clouds in the lenticular galaxy NGC1387*

Liang, Fu-Heng; Smith, Mark; Bureau, Martin et al., 2024, MNRAS, 527, 9343, *WISDOM project - XVIII. Molecular gas distributions and kinematics of three megamaser galaxies*

Liang, Fu-Heng; Li, Cheng; Li, Niu et al., 2021, ApJ, 923, 120, *Wolf-Rayet galaxies in SDSS-IV MaNGA. II. Metallicity dependence of the high-mass slope of the stellar initial mass function*

Liang, Fu-Heng; Li, Cheng; Li, Niu et al., 2020, ApJ, 896, 121, *Wolf–Rayet galaxies in SDSS-IV MaNGA. I. Catalog construction and sample properties*

den Brok, Jakob; Oakes, Elias K.; Leroy, Adam K., et al., 2025, ApJ, 988, 162, *Constraining Resolved Extragalactic R_{21} Variation with Well-calibrated ALMA Observations*

Liu, Lijie; Shu, Fanglin; Bureau, Martin, et al., 2025, MNRAS, 541, 3081, *WISDOM Project – XXIV. Giant molecular clouds of the spiral galaxy NGC 5064: high fraction of retrograde rotation*

Lu, Anan; Haggard, Daryl; Bureau, Martin, et al., 2025, MNRAS, 540, 71, *WISDOM project – XXIII. Star formation efficiencies of eight early-type galaxies and bulges observed with SITELLE and ALMA*

Williams, Thomas G.; Belfiore, Francesco; Bureau, Martin, et al., 2025, MNRAS, 538, 3219, *The resolved star-formation efficiency of early-type galaxies*

Gao, Yang; Wang, Enci; Tan, Qing-Hua, et al., 2025, ApJ, 979, 105, *The First Exploration of the Correlations Between WISE 12 μm and CO Emission in Early-type Galaxies*

Neumann, Lukas; Jiménez-Donaire, María J.; Leroy, Adam K., et al., 2025, A&A, 693, L13, *Dense gas scaling relations at kiloparsec scales across nearby galaxies with the ALMA ALMOND and IRAM 30 m EMPIRE surveys*

Nonhebel, M.; Barnes, A. T.; Immer, K., et al., 2024, A&A, 691, A70, *Disruption of a massive molecular cloud by a supernova in the Galactic Centre: Initial results from the ACES project*

Verwilghen, Pierrick; Emsellem, Eric; Renaud, Florent, et al., 2024, A&A, 687, A53, *Simulating nearby disc galaxies on the main star formation sequence. I. Bar formation and the building of the central gas reservoir*

Choi, Woorak; Bureau, Martin; Liu, Lijie, et al., 2024, MNRAS, 531, 4045, *WISDOM Project - XXI. Giant molecular clouds in the central region of the barred spiral galaxy NGC 613: a steep size-linewidth relation*

Lu, Anan; Haggard, Daryl; Bureau, Martin, et al., 2024, MNRAS, 531, 3888, *WISDOM project XX. - Strong shear tearing molecular clouds apart in NGC 524*

Zhang, Hengyue; Bureau, Martin; Smith, Mark D., et al., 2024, MNRAS, 530, 3240, *WISDOM Project - XIX. Figures of merit for supermassive black hole mass measurements using molecular gas and/or megamaser kinematics*

Elford, Jacob S.; Davis, Timothy A.; Ruffa, Ilaria, et al., 2024, MNRAS, 528, 319, *WISDOM Project - XVI. The link between circumnuclear molecular gas reservoirs and active galactic nucleus fuelling*

Ruffa, Ilaria; Davis, Timothy A.; Elford, Jacob S. et al., 2024, MNRAS, 528, L76, *A fundamental plane of black hole accretion at millimetre wavelengths*

Williams, Thomas G.; Bureau, Martin; Davis, Timothy A. et al., 2023, MNRAS, 525, 4270, *WISDOM Project - XVII. Beam-by-beam properties of the molecular gas in early-type galaxies*

Ruffa, Ilaria; Davis, Timothy A.; Cappellari, Michele et al., 2023, MNRAS, 522, 6170, *WISDOM project - XIV. SMBH mass in the early-type galaxies NGC 0612, NGC 1574, and NGC 4261 from CO dynamical modelling*

Choi, Woorak; Liu, Lijie; Bureau, Martin et al., 2023, MNRAS, 522, 4078, *WISDOM Project - XV. Giant molecular clouds in the central region of the barred spiral galaxy NGC 5806*

Liu, Lijie; Bureau, Martin; Li, Guang-Xing et al., 2022, MNRAS, 517, 632, *WISDOM Project –XII. Clump properties and turbulence regulated by clump-clump collisions in the dwarf galaxy NGC 404*

Lu, Anan; Boyce, Hope; Haggard, Daryl et al., 2022, MNRAS, 514, 5035, *WISDOM project - XI. Star formation efficiency in the bulge of the AGN-host Galaxy NGC 3169 with SITELLE and ALMA*

Davis, Timothy A.; Gensior, Jindra; Bureau, Martin et al., 2022, MNRAS, 512, 1522, *WISDOM Project –X. The morphology of the molecular ISM in galaxy centres and its dependence on galaxy structure*

Li, Niu; Li, Cheng; Mo, Houjun et al., 2021, ApJ, 917, 72, *Estimating dust attenuation from galactic spectra. II. Stellar and gas attenuation in star-forming and diffuse ionized gas regions in MaNGA*

Xi, Hongwei; Staveley-Smith, Lister; For, Bi-Qing et al., 2021, MNRAS, 501, 4550, *The Arecibo Ultra-Deep Survey*

AWARDS AND GRANTS

2023 – 2024, European Southern Observatory studentship, approx. 26k EUR.

2023 – 2024, Scatcherd European Scholarship, University of Oxford, 6k GBP.

2019, Tsinghua–AMD Space Science and Technology Awards, first prize.

2017, Chi-Sun Yeh Prize (叶企孙奖), the highest honour for undergraduate students at the Department of Physics, Tsinghua University.

2016, Scholarship of National Astronomical Observatories, Chinese Academy of Sciences.

2015, Undergraduate Exchange Programme, China Scholarship Council, approx. 9k CAD.

2014 – 2017, Xuetang Talents Programme, Tsinghua University, approx. 50k RMB.

CONFERENCES AND TALKS

Jul. 2025, ESO Workshop "Galactic ecosystems", ESO (Garching). Contributed talk "Giant molecular clouds in passive lenticular galaxy NGC1387" and poster "Using Wolf-Rayet regions as a unique laboratory to study star formation and stellar feedback".

Apr. 2025, invited talk "Resolving interstellar medium — early results from Local Volume Mapper" at National Astronomical Observatories of the Chinese Academy of Sciences.

Jan. 2025, colloquium "Cold molecular gas (cloud) properties in nearby galaxies" at Academia Sinica Institute of Astronomy and Astrophysics, and The Chinese University of Hong Kong.

Sept. 2024, Wine & Cheese Seminar, ESO (Garching). Invited talk "Interplay of cold molecular gas, dynamic shear, and magnetic field in Milky Way centre".

Feb. 2024, Galaxy Evolution Coffee Seminar, MPA/MPE/ESO (Garching). Invited talk "Giant molecular clouds in passive lenticular galaxy NGC1387 and conundrum of star formation"

Jan. 2024, IR/mm Group Seminar, Max Planck Institute for Extraterrestrial Physics (Garching). Invited talk "cold molecular gas (cloud) properties across different types of galaxies".

Nov. 2023, Galaxy Coffee Seminar, Max Planck Institute for Astronomy (Heidelberg). Invited talk "cold molecular gas (cloud) properties across different types of galaxies".

Jun. 2023, invited talks "Cold molecular gas (cloud) properties across different types of galaxies" at Tsinghua University, Kavli Institute for Astronomy and Astrophysics (PKU), Shanghai Jiao Tong University, Nanjing University, National Astronomical Observatories & Shanghai Astronomical Observatory of the Chinese Academy of Sciences.

Jul. 2023, National Astronomy Meeting, Cardiff University. Co-organiser of parallel session "Gas in and around galaxies".

Sept. 2022, 4$^{\text{th}}$ Philip Wetton Workshop, University of Oxford. SOC/LOC member.

May. 2022, Ringberg Seminar Series. Invited talk "Giant molecular clouds in passive lenticular galaxy NGC 1387".

Jun. 2021, Ringberg Seminar Series. Invited talk "Constraining the initial mass function with Wolf-Rayet galaxies in MaNGA".

Jan. 2021, Galaxy Evolution Seminar, University of Oxford. Invited talk "Metallicity dependence of the stellar initial mass function revealed by Wolf-Rayet galaxies".

Apr. 2019, MaNGA Collaboration Meeting, University of Oxford. Contributed talk "Wolf-Rayet galaxies in MaNGA".

Jun. 2018, SDSS-IV collaboration meeting, Sejong University. Lightning talk and poster "Wolf-Rayet galaxies in MaNGA".

VISITS

Jan. 2025, ASIAA (Taipei); host: Lihwai Lin.

Nov. 2023, Max Planck Institute for Astronomy (Heidelberg); host: Eva Schinnerer.

Aug. 2022, Yonsei University (Seoul); host: Aeree Chung.

Jul. – Aug. 2016, University of Kentucky (Lexington), working on Wolf-Rayet galaxy catalogue from MaNGA; host: Renbin Yan.

Apr. 2016, ESO (Garching), working on Arecibo Ultra Deep Survey; host: Martin Zwaan.

Sept. 2015 – Dec. 2015, UBC (Vancouver), undergraduate exchange programme.

Jul. – Aug. 2015, ICRAR (Perth), Arecibo Ultra-Deep Survey; host: Lister Staveley-Smith.

OBSERVATION RELATED

2022 – present, accepted PI ALMA observing proposals (three): 2022.1.01173.S, 2023.1.01084.S, 2024.1.01104.S.

2021 – present, accepted co-I observing proposals: one with *JWST*, one with VLA-*JWST*, one with VLT/MUSE, two with CFHT/SITELLE, nine with ALMA, one with IRAM, and two with VLA.

2023 – 2024, Panel Meeting Scientific Assistant of ESO Observing Programmes Committee.

3rd Feb. 2016, guest observer, JCMT, East Asian Observatory (Hawaii), host: Iain Coulsin.

SERVICE, TEACHING, AND OUTREACH

2023 – 2024, organising committee, joint Galaxy Evolution Coffee, ESO/MPE/MPA.

2021 – 2024, hosting WISDOM collaboration hybrid weekly GMC/ISM meeting.

2023, mentoring Master's student M. Maksymowicz-Maciata at Oxford on "Comparing circumnuclear regions of (ultra-)luminous infrared galaxies with CO and CI fluxes", first-class.

2021 – 2023, lab demonstrator of 3rd-yr undergraduate physics, Astrophysics Lab, Department of Physics, University of Oxford; promoted "Senior Demonstrator" in 2022.

2020 – 2023, homework marker of 1st-yr undergraduate physics, Wadham College, Oxford.

2021 – 2023, co-host of the "Academic Profile Development" workshop as part of the Oxford Prospects Programmes, Regent's Park College, University of Oxford.

2021, panel discussion member of Stargazing Oxford @ Home, with Dr. Becky et al.

2019, organising committee, Galaxy and Cosmology Seminar, Tsinghua University.

2019, translator (with others) of the Chinese version of outreach book *The Sun* (by Golub and Pasachoff).

2017 – 2018, stipendiary mentor of undergraduates, Department of Physics, Tsinghua University, evaluated "Distinction".