Guang-Xing Li | Curriculum Vitae

South-Western Institute For Astronomy Research 650500, Yunnan University, Kunming, Yunnan, China

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Research facts

Research Fields: Interstellar medium in galaxies, star formation, galaxy centers, protostellar/protoplanetary disks, high-energy astrophysics, astrophysical hydrodynamics.

Expertise: Theoretical astrophysics (expert), numerical analysis (expert), data interpretation (expert), numerical calculations (expert), radio/submillimeter astronomy (expert), numerical simulations (advanced), optical astronomy (good).

Instruments/Data: ALMA, Gaia, Spitzer, Wise, APEX 12m, Effelsberg 100m, Fermi, etc.

Strong social ties: Millimeter/submillimeter Astronomy group at Max-Planck Institute for Radioastronomie led by Prof. Dr. Karl Menten, Bonn, Commputaional AStrophysics Group led by Prof. Andreas Burkert at Ludwig-Maximilian University, Munich. Yunnan University (Optical astronomy).

Publication Facts: 38 peer-reviewed publications, including 1 Nature Astronomy (2nd author), 18/26 first/second -author publications, \sim 600 citations.

Academic Positions

0	South-Western Institute For Astronomy Research, Yunnan University Associate Professor	Kunming, Yunnan, China Sept. 2018–Present
0	Universitäts-Sternwarte München DFG-Fellow	München, Germany Dec. 2014–Aug. 2018
	I was awarded by a grant from the Deutsche Forschungsgemeinschaft (DFG), which alle on advanced methods describing the multi-scale structure of molecular clouds	owed me to work independently
E	ducation	
0	Max-Planck Institute for Radio Astronomy	Bonn, Germany
	<i>Ph.D. of Astrophysics,</i> Title: <i>Mathesis of star formation – from pc to kpc scal</i> Advisors: Prof.Karl Menten, Dr. Friedrich Wyrowski, Prof. Pavel Kroupa	e 2010–2014
	Graduated with honors (magna cum laude).	
~	University of Science and Technology	Hefei, China
0	<i>M.Sc. of Astrophysics, Title: Observational signature of relativistic accretion of</i> Advisor: Prof. Ye-Fei Yuan	lisks 2007–2010
	Prize for outstanding thesis awarded by An-Hui province	

Peking University

 Bachelor of Electronics, Title: Hydrostatic solution of relativistic quark stars Advisor: Prof. Ren-Xin Xu

Grants and Funding

As PI:

- Leader of Max-Planck Partner Group (PI: Guang-Xing Li, supported by Prof. Karl Menten, Director of MPIfR Bonn, 60 kEur) 2020-2024
- $\,$ o Overseas Young Talents Project of China (2019 -2023), Awarded by the State Council of People's Republic of China (3M CNY \sim 400 kEUR)
- ISM-SPP funding for independent postdoc position (PI: Guang-Xing Li, ~220 kEUR, 2014-2018), *Quantifying the structure of the molecular interstellar medium with the G-virial method*, Awarded by the Deutsche Forschungsgemeinschaft as part of Priority Program (SPP) 1573 Physics of the Interstellar Medium

As co-I:

 Physics and Chemistry of High-Mass Star forming Clumps, Priority Program of the National Science Foundation of China, PI: Sheng-Li Qin, co-I: Guang-Xing Li, Yue-Fang Wu, (2020 - 2024, 3M CNY ~ 400 kEUR)

Student Supervision

- Ms. Ji-Xuan Zhou (2019-2022). Projects: (1) Density structure of molecular clumps (Li & Zhou 2021 submitted). (2) Probing molecular cloud turbulence using Gaia (with Prof. B.-Q. Chen, publication: Zhou, Li & Chen 2021 submitted, arXiv: 2110.11595), will be enrolled in a Ph.D. program at the Cardiff University.
- Mr. Zhen-Zhen He (2019-2022). Projects: (1) Astrochemistry (co-supervised with Prof. Sheng-Li Qin, publication: He, Li & Zhang, 2020, RAA, 8, 207) (2) Gravitational accretion mapping (He & Li in prep.) (3) Identifying HI self-absorption features (He & Li in prep.)
- o Dr. Li-Xia Yuan (2019, with Prof. Ming Zhu from NAOC). Project: *Gravitational collapse of a filamentary cloud*. (Yuan, **Li**, Zhu, 2020, A&A, 637, A67)
- o Ms. Xiu-Yu Cai (2020, with Dr. Lei Qian from NAOC). Project: *Probing density anisotropy using correlation functions*, (Cai, **Li** & Qian 2021, RAA, 211, 8)
- Mr. Mengke Zhao (2021, with Prof. Jian-Jun Zhou from XJO). Project: *Magnetic field of filamentary structures*, (Zhao, Li & Zhou 2021 in prep.)

Telescope Time & Observational Experiences

As PI:

- *Probing the HI-H*₂ *transition with the 18 cm OH hyperfine structure lines* (submitted to the Effelsberg 100m radio telescope, 2022).
- Mapping a cometary globule with a conical shape using CO isotopes at the IRAM 30m telescope (2019).

As co-I:

- *Molecular cloud in low-metallicity environment* (ALMA cycle 5-7, PI: Rosie Chen, MPIfR, 2018-2021)
 Fragmentation of high-mass clumps (ALMA cycle 6, 7, PI: Si-Yi Feng, Xiamen University, 2019-2021)
- Fragmentation of protostellar disk (ALMA cycle 7, PI: Xing Lu, NAOJ, 2021)

Observer at Effelsberg 100-m Radio Telescope (2017)

Observer at Atacama Pathfinder Experiment (APEX) telescope (2016)

Professional Services

- o External reviewer for the James Clerk Maxwell Telescope (2021)
- o Reviewer for ALMA Cycle 8 proposals (2021, 2022)
- TAC (Time Allocation Committee) member of Telescope Access Program (TAP) (2019)
- Reviewer for Astronomy & Astrophysics, Astrophysical Journal, Science China and Research for Astronomy and Astrophysics

Teaching, Organization Work and Outreach

- o Guest Lecturer for Graduate Astrophysics, Yunnan University, (2020)
- o Organizer of Faculty Journal Club, Yunnan University, Yunnan, China (2018-2019)
- o Lecturer for Summer School on Observational Astronomy, Yunnan, (2018)
- Author of science population articles (in Chinese), From atomic physics to compact stars and Black holes shadows, what are we looking at.
- Head of observation department, Youth Astronomical Society, Peking University (2004-2005)
- Head of Astronomy Club at No. 2 Middle School, Hohhot, Inner Mongolia (2001-2002)

Recent Presentations

- Anisotropic diffusion and multi-scale image analysis, Guo-Shou Jing Conference of Galaxy Evolution and Cosmology, Hang Zhou, Zhejiang, China, 2021
- Molecular clouds in different environments (Invited), Youth Promotion Society, Chinese academy of Science, National Observatory of China, Beijing, 2020
- Gas dynamics at the Galaxy Center Evidence for shear-enabled pressure equilibrium, Sciences of Atacama Pathfinder EXperiment, Ringberg Castle, Barvaria, Germany, 2020

- o Molecular clouds in different environments (Invited), Annual Meeting of Chinese Astronomical Society, 2020
- *Different paths of molecular cloud evolution*, Cosmology Seminar at the Max-Planck Institute for Astrophysics, Garching, Germany, 2020
- Gas dynamics at the Galactic Center, Astrodynamics Conference, T.D. Lee Institute, Shanghai, China, 2019
- *Molecular cloud evolution in the Galactic disk* (Invited), Annual Meeting of Chinese Submillimeter Astronomers, Altai Region, Xinjiang, China, 2019
- Colloquium Speaker at:

2021: Peking University (Invited), Shanghai Observatory (Invited)

2020: Max-Planck Institute for Radioastronomie (**Invited**), University of Science and Technology, China (**Invited**), Zhejiang University (**Invited**), Nanjing University (**Invited**), Shanghai Jiaotong University (**Invited**)

2019 Purple Mountain Observatory (Invited)

Hobbies

Reading, Piano, Handpan (Music instrument), Go (Board Game), Table tennis, Mountain biking, Skiing, Hiking.