Wen-Juan Liu

Assistant Professor of Astronomy

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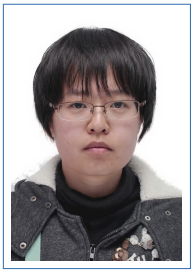

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Research Interests

- Finding massive black holes and observing some SMBH-related phenomena (e.g., absorption and emission lines of quasar outflows)
- Co-evolution (or not) of SMBHs and their host galaxies (e.g., the redshift evolution of AGN feedback power, major/minor mergers, secular evolution)
- Statistical studies of SMBHs and galaxies (e.g., luminosity function, BH mass function, accretion rate distribution function, BH occupation fraction in galaxies, major/minor merger rates)

Research Experience

2015–present **Assistant Professor**, *Yunnan Observatories, Chinese Academy of Sciences*, Kunming, China.

2009–2015 **Graduate research**, *on quasar outflows of metastable Helium I*, with Prof. Hongyan Zhou in University of Science and Technology of China, Hefei, China.

Education

2009–2015 **Ph.D. in Astronomy**, *University of Science and Technology of China*, Hefei, Anhui, China.
Thesis: Absorption and Emission Lines of Outflows in AGNs; Supervisor: Prof. Hongyan Zhou

2005–2009 **B.S. in Statistics**, *North China University of Technology*, Beijing, China.

Awards & Fundings

2015 Excellent Award of the President of Chinese Academy of Sciences

2017-2019 Supported by the "Light of West China" Program of Chinese Academy of Sciences (CAS)

2018-2020 Supported by the Natural Science Foundation of China grant (NSFC 11703079), "Quantitative study of AGN broad-absorption-line outflows"

Observing Experience

Telescope	Instrument	# of nights
Magellan Baade	MagE	3
MMT	Red Channel	1.5
Palomar P200	Triplespec/DBSP	20
Lick Shane	Kast	3
BAO 2.16m	OMR/BFOSC	21
YNAO 2.4m	YFOSC	7
SARA-KP 0.9m		12
SARA-CT 0.6m		15

Refereed Publications

[1] **Wen-Juan Liu**, Paulina Lira, Su Yao, Dawei Xu, Jing Wang, Xiao-Bo Dong, and Jorge Martínez-Palomera. Local Active Galactic Nuclei with Large Broad-Hα Variability Reside in Red Galaxies. *ApJ*, 915(1):63, July 2021.

[2] Xiang Pan, Hongyan Zhou, **Wenjuan Liu**, Bo Liu, Tuo Ji, Xiheng Shi, Shaohua Zhang, Peng Jiang, Huiyuan Wang, and Lei Hao. Discovery of Metastable He I* λ10830 Mini-broad Absorption Lines and Very Narrow Paschen α Emission Lines in the ULIRG Quasar IRAS F11119+3257. *ApJ*, 883(2):173, Oct 2019.

[3] Hongyan Zhou, Xiheng Shi, Weimin Yuan, Lei Hao, Xiangjun Chen, Jian Ge, Tuo Ji, Peng Jiang, Ge Li, Bifang Liu, Guilin Liu, **Wenjuan Liu**, Honglin Lu, Xiang Pan, Juntai Shen, Xinwen Shu, Luming Sun, Qiguo Tian, Huiyuan Wang, Tinggui Wang, Shengmiao Wu, Chenwei Yang, Shaohua Zhang, and Zhihao Zhong. Fast inflows as the adjacent fuel of supermassive black hole accretion disks in quasars. *Nature*, 573(7772):83–86, Sep 2019.

[4] He-Yang Liu, **Wen-Juan Liu**, Xiao-Bo Dong, Hongyan Zhou, Tinggui Wang, Honglin Lu, and Weimin Yuan. A Comprehensive and Uniform Sample of Broad-line Active Galactic Nuclei from the SDSS DR7. *ApJS*, 243(2):21, Aug 2019.

[5] Su Yao, S. Komossa, **Wen-Juan Liu**, Weimin Yi, Weimin Yuan, Hongyan Zhou, and Xue-Bing Wu. SDSS J094635.06+101706.1: a redshift one, very radio-loud, γ-ray emitting narrow-line Seyfert 1 galaxy. *MNRAS*, 487(1):L40–L45, Jul 2019.

[6] G. Chen, X. Wu, X. Kong, **W.-J. Liu**, and H. Zhao. Ring Galaxies Through Off-center Minor Collisions by Tuning Bulge-to-disk Mass Ratio of Progenitors. *ApJ*, 864:72, September 2018.

[7] L. Qian, X.-B. Dong, F.-G. Xie, **W. Liu**, and D. Li. Low-mass Active Galactic Nuclei on the Fundamental Plane of Black Hole Activity. *ApJ*, 860:134, June 2018.

[8] H.-Y. Liu, W. Yuan, X.-B. Dong, H. Zhou, and **W.-J. Liu**. A Uniformly Selected Sample of Low-mass Black Holes in Seyfert 1 Galaxies. II. The SDSS DR7 Sample. *ApJS*, 235:40, April 2018.

[9] S. Zhang, H. Zhou, X. Shi, **W. Liu**, X. Pan, N. Jiang, T. Ji, P. Jiang, and S. Wang. Reddening and He I λ10830 Absorption Lines in Three Narrow-line Seyfert 1 Galaxies. *ApJ*, 845:126, August 2017.

[10] L. Sun, H. Zhou, T. Ji, P. Jiang, B. Liu, **W. Liu**, X. Pan, X. Shi, J. Wang, T. Wang, C. Yang, S. Zhang, and L. P. Miller. Photoionization-driven Absorption-line Variability in Balmer Absorption Line Quasar LBQS 1206+1052. *ApJ*, 838:88, April 2017.

[11] **W.-J. Liu**, L. Qian, X.-B. Dong, N. Jiang, P. Lira, Z. Cai, F. Wang, J. Yang, T. Xiao, and M. Kim. A Ringed Dwarf LINER 1 Galaxy Hosting an Intermediate-mass Black Hole with Large-scale Rotation-like Hα Emission. *ApJ*, 837:109, March 2017.

[12] S. Zhang, H. Zhou, X. Shi, X. Pan, J. Wang, N. Jiang, T. Ji, P. Jiang, **W. Liu**, and H. Wang. Ultraviolet and Optical Emission Line Outflows in the Heavily Obscured Quasar SDSS J000610.67+121501.2: At the Scale of the Dusty Torus and Beyond. *ApJ*, 836:86, February 2017.

[13] X.-H. Shi, P. Jiang, H.-Y. Wang, S.-H. Zhang, T. Ji, **W.-J. Liu**, and H.-Y. Zhou. The Redshifted Hydrogen Balmer and Metastable He 1 Absorption Line System in Mini-FeLoBAL Quasar SDSS J112526.12+002901.3: A Parsec-scale Accretion Inflow? *ApJ*, 829:96, October 2016.

[14] **W.-J. Liu**, H.-Y. Zhou, N. Jiang, X. Wu, J. Lyu, X. Shi, X. Shu, P. Jiang, T. Ji, J.-G. Wang, S.-F. Wang, and L. Sun. SDSS J163459.82+204936.0: A Ringed Infrared-luminous Quasar with Outflows in Both Absorption and Emission Lines. *ApJ*, 822:64, May 2016.

[15] S. Zhang, H. Zhou, X. Shi, X. Shu, **W. Liu**, T. Ji, P. Jiang, L. Sun, J. Zhou, and X. Pan. Discovery of Extremely Broad Balmer Absorption Lines in SDSS J152350.42+391405.2. *ApJ*, 815:113, December 2015.

[16] Z. Li, H. Zhou, L. Hao, H. Wang, T. Ji, X. Shi, B. Liu, S. Zhang, **W.-J. Liu**, X. Pan, and P. Jiang. Detection of the Intermediate-width Emission Line Region in Quasar OI 287 with the Broad Emission Line Region Obscured by the Dusty Torus. *ApJ*, 812:99, October 2015.

[17] S. Zhang, H. Zhou, T. Wang, H. Wang, X. Shi, B. Liu, **W. Liu**, Z. Li, and S. Wang. Strong Variability of Overlapping Iron Broad Absorption Lines in Five Radio-selected Quasars. *ApJ*, 803:58, April 2015.

[18] **W.-J. Liu**, H. Zhou, T. Ji, W. Yuan, T.-G. Wang, G. Jian, X. Shi, S. Zhang, P. Jiang, X. Shu, H. Wang, S.-F. Wang, L. Sun, C. Yang, B. Liu, and W. Zhao. A Comprehensive Study of Broad Absorption Line Quasars. I. Prevalence of HeI* Absorption Line Multiplets in Low-ionization Objects. *ApJS*, 217:11, March 2015.

[19] T. Ji, H. Zhou, P. Jiang, T. Wang, J. Ge, H. Wang, S. Komossa, F. Hamann, J. Zuther, **W. Liu**, H. Lu, W. Zuo, C. Yang, and W. Yuan. Unshifted Metastable He I* Mini-broad Absorption Line System in the Narrow-line Type 1 Quasar SDSS J080248.18+551328.9. *ApJ*, 800:56, February 2015.

[20] Y. Li, W. Yuan, H. Y. Zhou, S. Komossa, Y. L. Ai, **W. J. Liu**, and J. H. Boisvert. An Unobscured Type II Quasar Candidate: SDSS J012032.19-005501.9. *AJ*, 149:75, February 2015.

[21] P. Jiang, H. Zhou, T. Ji, X. Shu, **W. Liu**, J. Wang, X. Dong, J. Bai, H. Wang, and T. Wang. Anomalously Steep Reddening Law in Quasars: An Exceptional Example Observed in IRAS 14026+4341. *AJ*, 145:157, June 2013.

[22] X.-B. Wu, W.-W. Zuo, Q. Yang, W.-M. Yi, C.-W. Yang, **W.-J. Liu**, P. Jiang, X.-W. Shu, and H.-Y. Zhou. Discovery of six high-redshift quasars with the Lijiang 2.4 m telescope and the Multiple Mirror Telescope. *Research in Astronomy and Astrophysics*, 12:1185–1190, September 2012.