Shu Wang

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Education

Ph.D., Department of Astronomy, Peking University, China	2014–2020
–Visiting student, University of Illinois at Urbana-Champaign, U.S.	2017–2018
B.S., Department of Astronomy, Peking University, China	2010–2014

Employment

Post-Doctoral fellowship, Seoul National University, Korea	2020–2022
SNU Science Fellowship, Seoul National University, Korea	2022–present

Honours and Awards

Seoul National University Science Fellowship, Seoul National University	2022
Chinese Scholarship Council Fellowship, Peking University	2017

Research Area

- Extragalactic astronomy: Physics and evolution of Super Massive Black Holes in Active Galactic Nuclei;
- Spectral analysis of large sample and multi-epoch survey High redshift galaxies
- Quasar selection

PI & CO-I Observing Programs

Gemini North/South Telescope Investigation of high luminosity end R–L relation	2022A
Gemini North Telescope Searching for changing look AGNs	2022A
Lick 3m Shane, **MDM 2.4m telescope**,	

Computer Skill

Python, IDL, SQL, LaTex, QSO_FIT, PyQSOFIT, PyCCF, JAVELIN, CREAM, PyCALI, PyIICCF, pPXF, IRAF, TOPCAT

Teaching experience

Teaching Assistant, *Astronomical Spectroscopy*, Peking University	2019–2020
Intern student mentoring, Seoul National University	2023–2024

Observing experience

MDM 1.3m, remote observation, 1 nights	2021
Lick 3m, remote observation, 5 nights	2021
Xinglong 2.16m, 14 nights	2016
Lijiang 2.4m, 6 nights	2016
Palomar 5m, 3 nights	2015
Bok 2.3m, 14 nights	2015

Talks and Conferences

- *Restless Nature of AGN: 10 years later*, Naples, Italy, speaker (2023)
- *241st Meeting of the American Astronomical Society*, Seattle, U.S., speaker (2023)
- *XXXIst General Assembly of International Astronomical Union (IAUGA 2022)*, Busan, Korea, speaker (2022)
- *Korean Astronomical Society Meeting*, Gyeongju, Korea, speaker (2022)
- *Cosmic Evolution of Quasars: From the first light to Local Relics*, Beijing, China, speaker (2019)
- *Chinese Astronomical Society Annual Conference*, Delingha, China, speaker (2019)
- *Jing-Guang-Xia Astrophysics Seminar*, Nanning, China, speaker (2019)
- *Guo Shoujing Academic Seminar & 2019 Galaxy and Cosmology Frontier Colloquium*, Xiamen, China, speaker (2019)
- *Mapping Central Regions of Active Galactic Nuclei*, Guilin, China, poster (2019)

Publications

First and corresponding author (†) paper

[1] **Wang, Shu**, Woo, Jong-Hak, et al. ApJS, 2024, submitted. *Revisiting the Hβ size–luminosity relation using an uniform lag analysis*

[2] **Wang, Shu**, Woo, Jong-Hak, Gallo, Elena, et al. 2024, ApJ, submitted. *Identify changing-look AGNs using optical variability*

[3] Woo, Jong-Hak, **Wang, Shu**†, Rakshit, Suvendu, et al. ApJ, in press. *Seoul National University AGN Monitoring Project. IV. Final Hβ reverberation results and size–luminosity relation*, arXiv:2311.15518

[4] **Wang, Shu**, Guo, Hengxiao, Woo, Jong-Hak, 2023, ApJL, 948, 8, *Estimating AGN Black Hole Masses via Continuum Reverberation Mapping in the Era of LSST*, DOI: 10.3847/2041-8213/accf96

[5] **Wang, Shu**, Jiang, Linhua, Shen, Yue, et al. 2022, ApJ, 925, 121, *Metallicity in Quasar Broad Line Regions at Redshift* ~ 6, DOI: 10.3847/1538-4357/ac3a69

[6] **Wang, Shu**, Shen, Yue, Jiang, Linhua, et al. 2020, ApJ, 903, 51, *The Sloan Digital Sky Survey Reverberation Mapping Project: How Broad Emission Line Widths Change When Luminosity Changes*, DOI: 10.3847/1538-4357/abb36d

[7] **Wang, Shu**, Shen, Yue, Jiang, Linhua, et al. 2019, ApJ, 882, 4, *The Sloan Digital Sky Survey Reverberation Mapping Project: Low-ionization Broad-line Widths and Implications for Virial Black Hole Mass Estimation*, DOI: 10.3847/1538-4357/ab322b

Contributing-author paper

[1] Mandal, Amit Kumar, Woo, Jong-Hak, **Wang, Shu**, et al. 2023, ApJ, submitted. *Mid-infrared Reverberation Mapping: Revisiting the Dust Torus Size–Luminosity Relationship in AGN*.

[2] Cho, Hojin, Woo, Jong-Hak, **Wang, Shu**, et al. 2023, ApJ, 953, 16. *The Seoul National University AGN Monitoring Project IV: Hα reverberation mapping of 6 AGNs and the Hα Size–Luminosity Relation*, DOI: 10.3847/1538-4357/ace1e5

[3] Ayubinia, Ashraf, et al. 2023, ApJ, 951, 16. *Investigation of Stellar Kinematics and Ionized gas Outflows in Local [U]LIRGs*, DOI: 10.3847/1538-4357/accf18

[4] Wu, Jin, et al. 2022, MNRAS, 517, 2659. *Demographics of z∼6 quasars in the black hole mass–luminosity plane*, DOI: 10.1093/mnras/stac2833

[5] Guo, Hengxiao, Aaron, Barth, **Wang, Shu**, ApJ, 940, 22. *Active Galactic Nuclei Continuum Reverberation Mapping Based on Zwicky Transient Facility Light Curves*, DOI: 10.3847/1538-4357/ac96ec

[6] Jiang, Linhua, **Wang, Shu**, et al. 2021, Nature Astronomy, 5, 262. *A possible bright ultraviolet flash from a galaxy at redshift z≈11*, DOI: 10.1038/s41550-020-01266-z

[7] Jiang, Linhua, Kashikawa, Nobunari, **Wang, Shu**, et al. 2021, Nature Astronomy, 5, 256. *Evidence for GN-z11 as a luminous galaxy at redshift 10.957*, DOI: 10.1038/s41550-020-01275-y

[8] Guo, Hengxiao, et al. 2020, ApJ, 905, 19. *High-redshift Extreme Variability Quasars from Sloan Digital Sky Survey Multiepoch Spectroscopy*, DOI: 10.3847/1538-4357/abc2ce

[9] Guo, Hengxiao, et al. 2020, ApJ, 888, 58. *Understanding Broad Mg II Variability in Quasars with Photoionization: Implications for Reverberation Mapping and Changing-look Quasars*, DOI: 10.3847/1538-4357/ab5db0

[10] Zou, Hu, et al. 2019, ApJS, 245, 4, *The Third Data Release of the Beijing-Arizona Sky Survey*, DOI: 10.3847/1538-4365/ab48e8

[11] Guo, Hengxiao, et al. 2019, ApJL, 883, 7. *Discovery of an Mg II Changing-look Active Galactic Nucleus and Its Implications for a Unification Sequence of Changing-look Active Galactic Nuclei*, DOI: 10.3847/1538-4357/ab5db0

[12] Shen, Yue, et al. 2019, ApJS, 241, 34. *The Sloan Digital Sky Survey Reverberation Mapping Project: Sample Characterization*, DOI: 10.3847/1538-4365/ab074f

[13] Zou, Hu, et al, 2017, AJ, 153, 276, *The First Data Release of the Beijing-Arizona Sky Survey*, DOI: 10.3847/1538-3881/aa72d9

[14] Yang, Jinyi, et al. 2017, AJ, 153,184, *Discovery of 16 New $z\sim5.5$ Quasars: Filling in the Redshift Gap of Quasar Color Selection*, DOI: 10.3847/1538-3881/aa6577

[15] Jiang, Linhua, et al. 2016, ApJ, 833, 222. *The Final SDSS High-redshift Quasar Sample of 52 Quasars at $z>5.7$*, DOI: 10.3847/1538-4357/833/2/222

[16] Yang, Jinyi, et al. 2016, ApJ, 829,33, *A Survey of Luminous High-redshift Quasars with SDSS and WISE. II. the Bright End of the Quasar Luminosity Function at $z\approx5$*, DOI: 10.3847/0004-637X/829/1/33

[17] Wang, Feige, et al. 2016, ApJ, 819,24, *A Survey of Luminous High-redshift Quasars with SDSS and WISE. I. Target Selection and Optical Spectroscopy*, DOI: 10.3847/0004-637X/819/1/24

[18] Zou, Hu, et al., 2015, PASP, 127, 948, *Capability of Quasar Selection by Combining SCUSS and SDSS Observations*, DOI: 10.1086/680212

Code

[1] Guo, Hengxiao, Shen, Yue, **Wang, Shu** 2018, ASCL, 1809.008, 58. *PyQSOFit: Python code to fit the spectrum of quasars*