Xin Wang

Personal Information

Current Status:	Associate Professor at University of Chinese Academy of Sciences
Email, Phone, Web:	xwang@ucas.ac.cn | +86-13121987901 | https://people.ucas.ac.cn/~wxn
Mailing Address:	20A Datun Road, Room B447, National Astronomical Observatories Chaoyang District, Beijing 100101, China

Education and Employment

Sept. 2022–Present	School of Astronomy and Space Science, University of Chinese Academy of Sciences **Associate Professor**
Aug. 2019–Aug. 2022	Infrared Processing and Analysis Center, Caltech **Postdoctoral Research Associate**
Sept. 2015–Jun. 2019	Department of Physics and Astronomy, University of California, Los Angeles **Ph.D. in Astronomy & Astrophysics**
Sept. 2013–Jun. 2015	Physics Department, University of California, Santa Barbara **Master of Arts in Physics**
Sept. 2010–Jun. 2013	School of Astronomy and Space Sciences, Nanjing University **Master of Science in Astrophysics**
Sept. 2006–Jun. 2010	Department of Astronomy, Nanjing University **Bachelor of Science in Astronomy**

Awards and Honors

Aug. 2024	ACAMAR visiting fellow, Swinburne University of Technology, Melbourne, Australia
Mar. 2024	Xiaomi Young Scholar, University of Chinese Academy of Sciences
Sept. 2023	Lingyan Gold Medal, University of Chinese Academy of Sciences
Mar. 2020	Kavli Visiting Fellow, Peking University
Jun. 2019	UCLA Physics and Astronomy Commencement Speaker
Jun. 2018	UCLA Dissertation Year Fellowship ($47k: stipend+tuition)
Apr. 2018	IAU grant for participating the XXXth General Assembly (€0.75k)
Apr. 2018	AAS International Travel Grant ($2k)

Talks and Colloquia

Jun. 2024	**Invited colloquium**, @ Zhejiang Lab
Nov. 2024	**Invited talk**, @ 2024 Chinese-American Kavli Frontiers of Science, Beijing
Nov. 2024	**Invited talk**, @ CSST Galaxy and Cosmology Conference @ Suzhou
Oct. 2024	**Invited talk**, @ 2024 Chinese Astronomical Society GA @ Hangzhou
Sep. 2024	**Invited talk**, @ 2024 Lensing Conference @ Jiexiu
Jul. 2024	**Invited lecture**, @ NAOC Galaxy Cluster Summer School
Jul. 2024	**Invited lecture**, @ PKU CSST Summer School
Jun. 2024	**Invited lecture**, @ COSPAR/IAU Workshop on JWST, Chiangmai, Thailand
Jun. 2024	**Invited colloquium**, @ SWIFAR, Yunnan University
May 2024	**Invited colloquium**, @ PKU
May 2024	**Invited talk**, @ 26th Guoshoujing Meeting @ Suzhou
Apr. 2024	**Invited talk**, @ Co-evolution of galactic eco-systems and their large-scale environments, Hangzhou
Dec. 2023	**Invited colloquium**, @ University of Science and Technology of China, Hefei
Jun. 2023	**Invited colloquium**, @ Shanghai Astronomical Observatories, Shanghai
Jun. 2023	**Invited colloquium**, @ Shanghai Jiao Tong University, Shanghai
Apr. 2023	**Invited colloquium**, @ Xiamen University, Xiamen
Jan. 2023	**Invited talk**, @ AAS 241, Seattle

Nov. 2022	**Invited colloquium**, @ Nanjing University, Nanjing
Nov. 2022	**Invited colloquium**, @ Tsinghua University, Beijing
Oct. 2022	**Invited colloquium**, @ NAOC FLAT (FAST and LAMOST Associated Scientific Colloquium), Beijing
Jun. 2022	**Invited talk**, @ AAS 240, Pasadena
Jan. 2021	**Contributed talk**, @ AAS 237, virtual
Dec. 2020	**Invited colloquium**, @ Department of Physics and Astronomy, University of Missouri
Dec. 2019	**Invited talk**, @ Purple Mountain Observatory, Nanjing
Dec. 2019	**Invited talk**, @ 2019 Nanjing University Youth Forum, Nanjing
Dec. 2019	**Invited talk**, @ Shanghai Astronomical Observatory
Dec. 2019	**Invited talk**, @ Shanghai Jiao Tong University, Shanghai
Aug. 2019	**Lunch talk**, @ The Kavli Institute for Astronomy and Astrophysics at Peking University
Aug. 2019	**Invited talk**, @ National Astronomical Observatories of China, Beijing
Aug. 2019	**Invited talk**, @ Key Laboratory of Space Utilization, CAS
Jun. 2019	**Invited talk**, @ CLEAR collaboration meeting, STScI
Feb. 2019	**Contributed talk**, @ Extremely Big Eyes on the Early Universe, UCLA
Jan. 2019	**Dissertation talk**, @ AAS 233, Seattle
Dec. 2018	**Astronomy Seminar** @ Columbia
Dec. 2018	**Galread Extragalactic Discussion Group** @ Princeton
Dec. 2018	**Galaxy Journal Club** @ STScI
Dec. 2018	**Galaxies & Cosmology Seminar** @ CfA Harvard & Smithsonian
Nov. 2018	**IMPS Seminar** @ UC Santa Cruz
Nov. 2018	**Lunch Talk** @ Carnegie Observatories, Pasadena, CA
Oct. 2018	**Astronomy Tea Talk** @ Caltech, Pasadena, CA
Aug. 2018	**Contributed Talk**, @ Focus Meeting 7 at the XXXth IAU General Assembly, Vienna, Austria
Jul. 2018	**Invited Talk**, @ University of Science and Technology of China, Hefei
Jun. 2018	**Contributed Talk with Conference Fellowship**, @ KIAA Forum on Gas in Galaxies, Beijing
May 2018	**Invited Talk**, @ 2018 Nanjing University Youth Forum, Nanjing
Feb. 2018	**Colloquium Talk**, @ IPAC, Caltech, Pasadena, CA
Jan. 2018	**Lunch Talk**, @ Carnegie Observatories, Pasadena, CA
Sept. 2017	**Invited Talk**, @ Tsinghua University, Beijing
Sept. 2017	**Invited Talk**, @ Nanjing University, Nanjing
Sept. 2017	**Invited Talk**, @ Shanghai Jiao Tong University, Shanghai
Jun. 2017	**Contributed talk**, @ Special Session 11 at European Week of Astronomy and Space Science, Prague, Czech Republic
Jan. 2017	**Colloquium talk**, @ Steward Observatory, University of Arizona, Tucson, AZ
Aug. 2016	**Colloquium talk**, @ Department of Astronomy, University of Michigan, Ann Arbor, MI
Jul. 2016	**Invited talk**, @ Tsinghua University, Beijing
Jun. 2016	**Invited talk**, @ Nanjing University, Nanjing
Jun. 2016	**Invited talk**, @ Purple Mountain Observatory, Nanjing
Jun. 2016	**Invited talk**, @ National Astronomical Observatories of China, Beijing
Aug. 2015	**Contributed talk**, @ Focus Meeting 22 at the XXIXth IAU General Assembly, Honolulu, HI
Nov. 2012	**Contributed talk**, @ Tsinghua Transient Workshop 2012, Tsinghua University, Beijing
Jun. 2010	**Contributed talk**, @ A mini-workshop on "Gamma-ray Sky from Fermi: Neutron Stars and their Environment", Hong Kong, China
Apr. 2009	**Contributed talk**, @ Frontiers of Space Astrophysics: Neutron Stars & Gamma Ray Bursts — Recent Developments & Future Directions, Cairo & Alexandria, Egypt

Approved Observing Proposals

16 Keck 2022A_U016, 2023A_U139, 2024A_U245, 2024B_U423, PI Malkan, *8 Full Nights*: The Most Massive Galaxy Protoclusters at Cosmic Noon—Impact on Galaxy Evolution

15 JWST-GO-03050, PI Goldsmith, **Contact Wang**: A hot view of cold gas

14 JWST-GO-03426, PI Jones: Confirming the population of disk galaxies at z>3

13 HST-GO-17159, **PI Wang**, *38 Primary Spacecraft Orbits*: Escaping Lyman Continuum from the Overdensities of Extreme Emission Line Galaxies at z∼2.2

12 HST-GO-16667, PI Bradac: The Final Frontier: HST and JWST Exploration of Galaxies Across Cosmic Epochs

11 HST-AR-16621, PI Koekemoer: SUPERCAL: Unified Reprocessing of the Large HST Cosmology Survey Fields - New Science, Archival Legacy, and Pathfinder for JWST

10 JWST-GO-01571, PI Malkan: PASSAGE–Parallel Application of Slitless Spectroscopy to Analyze Galaxy Evolution

9 JWST-GO-02136, PI Jones: The emergence of the modern Hubble sequence revealed by JWST slit-stepping

8 HST-GO-16276, **PI Wang**, *45 Primary Spacecraft Orbits*: WFC3 Spectroscopy of the Most Massive Galaxy Protoclusters at Cosmic Noon

7 JWST-ERS-01324, PI Treu: Through the Looking GLASS: A JWST Exploration of Galaxy Formation and Evolution from Cosmic Dawn to Present Day

6 HST-GO-15647, PI Teplitz: Ultraviolet Imaging of the Cosmic Assembly Near-infrared Deep Extragalactic Legacy Survey Fields (UVCANDELS)

5 VLT-0101.B-0418(A), PI Sanchez-Janssen: Chemodynamics of lensed dwarf galaxies at $1 \lesssim z \lesssim 2$

4 Keck 2017A_U037, 2017B_U058, 2018A_U158, 2018B_U061, 2019A_U130, 2019B_U057, PI Jones: Dissecting Galaxy Formation and Testing Feedback Models on 100 pc Scales: An OSIRIS Survey of Lensed Galaxies at $z \simeq 2$

3 HST-DDT-14922, PI Kelly: Probing the Nature of Dark Matter with Individual Stars Highly Magnified by a Galaxy Cluster

2 HST-AR-14280, PI Bradac: Breaking Cosmic Dawn: Observing the z>7 Universe Through Cosmic Telescopes

1 HST-GO-13459, PI Treu: The Grism Lens-Amplified Survey from Space (GLASS)

Observing Experience

- Keck OSIRIS, 16 nights
- Keck MOSFIRE, 11 night
- Lick Observatory Shane telescope, 1 night
- Palomar Observatory P200 telescope, 2 nights
- Keck DEIMOS, 3 nights
- Keck ESI, 1 night
- Steward Observatory Bok telescope, 6 nights

Professional Service

- Referee for *ApJ, ApJS, PASJ, A&A*
- External reviewer for Large JWST proposals in Cycle 2
- External reviewer for Large HST proposals in Cycles 29, 30, 31
- External reviewer for Chinese Telescope Access Program Time Allocation Committee
- Selected participant in the inaugural JWST Master Class
- Organizer of the KIAA JWST Proposal Planning Workshop and the UCLA JWST Proposal Planning Workshop
- Organizer of Treu Group Meetings, @ UCSB & UCLA
- Organizer of Graduate Journal Club in School of Astronomy and Space Sciences, NJU

Teaching and Mentoring

2022–Present	Xunda Sun, Hang Zhou, Yiming Yang, Qianqiao Zhou, Shengzhe Wang, Pengfei Ren, graduate students at University of Chinese Academy of Sciences
2020–Present	Zihao Li, graduate student at Tsinghua University, co-advised with Prof. Zheng Cai
2018–2019	Jessie Hirtenstein, graduate student at UC Davis, co-advised with Prof. Tucker Jones
Feb.–Jun. 2024	Sole lecturer of *Introduction to Astronomy*, a core course for astronomy majors at University of Chinese Academy of Sciences

Working Experience and Outreach Activities

2015–2017	Demonstrator of Astronomy experiments to local K12 schools in Los Angeles
2015–2017	Volunteer in the annual Exploring Your Universe! events, UCLA

Publications

Full list available at ADS

1st/2nd Author Papers in Refereed Academic Journals

23 Li, S., **Wang, X.** et al. Early Results from GLASS-JWST. XXV. Electron Density in the Interstellar Medium at 0.7 z 9.3 with NIRSpec High-resolution Spectroscopy. *Astrophys. J. Letters*, accepted (arXiv:2412.08382)

22 Sun, X., **Wang, X.** et al. The physical origin of positive metallicity radial gradients in high-redshift galaxies: insights from the FIRE-2 cosmological hydrodynamic simulations. 2024, *Astrophys. J.*, submitted (arXiv:2409.09290)

21 Ju, M., **Wang, X.** et al. MSA-3D: Metallicity Gradients in Galaxies at $z \sim 1$ with JWST/NIRSpec Slit-stepping Spectroscopy. 2024, *Astrophys. J. Letters*, submitted (arXiv:2409.01616)

20 **Wang, X.** et al. A strong He II λ1640 emitter with extremely blue UV spectral slope at $z = 8.16$: presence of Pop III stars? 2024, *Astrophys. J. Letters*, 967, L42 (arXiv:2212.04476) [31 citations]

19 Jiang, H., **Wang, X.** et al. The Lyα non-detection by JWST NIRSpec of a strong Lyα emitter at z=5.66 confirmed by MUSE. 2024, *Astrophys. J.*, 972, 121 (arXiv:2312.04151)

18 Sun, L., **Wang, X.** et al. The UV luminosity function at $0.6 < z < 1$ from UVCANDELS. 2024, *Astrophys. J.*, 972, 8 (arXiv:2311.15664)

17 He, X., **Wang, X.** et al. Early results from GLASS-JWST. XXVII. The mass-metallicity relation in lensed field galaxies at cosmic noon with NIRISS. 2023, *Astrophys. J. Letters*, 960, L13, (arXiv:2312.01932)

16 Shi, D., **Wang, X.** et al. The Emergence of Brightest Cluster Galaxy in the Most Massive Protocluster Core. 2024, *Astrophys. J.*, 963, 21 (arXiv:2303.09726)

15 **Wang, X.** et al. Ultraviolet and Blue Optical Imaging of UVCANDELS. 2024, *Res. Notes AAS*, 8, 26 (DOI 10.3847/2515-5172/ad1f6f)

14 **Wang, X.** et al. The Lyman Continuum Escape Fraction of Star-forming Galaxies at $z \gtrsim 2.4$ from UVCANDELS. 2023, submitted to *Astrophys. J.* (arXiv:2308.09064) [2 citations]

13 Wang, K., **Wang, X.**, Chen, Y. Environmental Dependence of the Mass-Metallicity Relation in Cosmological Hydrodynamical Simulations. 2023, *Astrophys. J.*, 951, 66 (arXiv:2305.08161) [1 citations]

12 **Wang, X.** et al. Early results from GLASS-JWST. IV. Spatially resolved metallicity in a low-mass $z \sim 3$ galaxy with NIRISS. 2022, *Astrophys. J. Letters*, 938, L16 (arXiv:2207.13113) [15 citations]

11 Li, Z., **Wang, X.** et al. First Census of Gas-phase Metallicity Gradients of Star-forming Galaxies in OverdenseEnvironments at Cosmic Noon. 2022, *Astrophys. J. Letters*, 929, L8 (arXiv:2204.03008) [8 citations]

10 **Wang, X.** et al. The mass-metallicity relation at cosmic noon in overdense environments: first results from the MAMMOTH-Grism HST slitless spectroscopic survey. 2022, *Astrophys. J.*, 926, 70 (arXiv:2108.06373) [16 citations]

9 **Wang, X.** et al. A Census of Sub-kiloparsec Resolution Metallicity Gradients in Star-forming Galaxies at Cosmic Noon from HST Slitless Spectroscopy. 2020, *Astrophys. J.*, 900, 183 (arXiv:1911.09841) [25 citations]

8 **Wang, X.** et al. Discovery of Strongly Inverted Metallicity Gradients in Dwarf Galaxies at $z\sim2$. 2019, *Astrophys. J.*, 882, 94 (arXiv:1808.08800) [39 citations]

7 **Wang, X.** et al. The Grism Lens-Amplified Survey from Space (GLASS) X. Sub-kiloparsec resolution gas-phase metallicity maps at cosmic noon behind the Hubble Frontier Fields cluster MACS1149.6+2223. 2017, *Astrophys. J.*, 837, 89 (arXiv:1610.07558) [53 citations]

6 **Wang, X.** et al. The Grism Lens-Amplified Survey from Space (GLASS) IV. Mass reconstruction of the lensing cluster Abell 2744 from frontier field imaging and GLASS spectroscopy. 2015, *Astrophys. J.*, 811, 29 (arXiv:1504.02405) [57 citations]

5 Jones, T., **Wang, X.** et al. The Grism Lens-Amplified Survey from Space (GLASS) II. Gas-Phase Metallicity and Radial Gradients in an Interacting System At z$\sim$2. 2015, *Astron. J.*, 149, 107 (arXiv:1410.0967) [56 citations]

4 **Wang, X.**, Meng, X.-L., & Huang, Y. F., Testing X-ray Measurements of Galaxy Cluster Gas Mass Fraction Using the Cosmic Distance-Duality Relation and Type Ia Supernovae. 2013, RAA, 13, 1013 (arXiv:1305.2077) [4 citations]

3 **Wang, X.**, Meng, X.-L. et al. Observational Constraints on Cosmic Neutrinos and Dark Energy Revisited. 2012, *J. Cosmol. Astropart. Phys.*, 11, 018 (arXiv:1210.2136) [31 citations]

2 **Wang, X.**, Huang, Y. F., & Kong, S. W. Constraint on the Counter-jet Emission in GRB Afterglows from GRB 980703. 2010, *Sci. China-Phys. Mech. Astron.*, 53 (Suppl.1), 259 [3 citations]

1 **Wang, X.**, Huang, Y. F., & Kong, S. W. On the Afterglow from the Receding Jet of Gamma-Ray Bursts. 2009, *Astron. Astrophys.*, 505, 1213 (arXiv:0903.3119) [8 citations]

Contributing Author Papers in Refereed Academic Journals

22 Prichard, L. J., ..., **Wang, X.** et al. Lyman Continuum Galaxy Candidates in COSMOS. 2021 *Astrophys. J.* in press (arXiv:2110.06945) [3 citations]

21 Abramson, L. E., ..., **Wang, X.** et al. The Grism Lens-Amplified Survey from Space (GLASS). XIII. G800L optical spectra from the parallel fields. 2020, *MNRAS*, 493, 952 (arXiv:1906.00008) [4 citations]

20 Bradac, M., ..., **Wang, X.** Hubble Frontier Field photometric catalogues of Abell 370 and RXC J2248.7-4431: multiwavelength photometry, photometric redshifts, and stellar properties. *MNRAS*, 489, 99 (arXiv:1906.01725) [10 citations]

19 Morishita, T., ..., **Wang, X.**. Massive Dead Galaxies at z∼2 with HST Grism Spectroscopy. I. Star Formation Histories and Metallicity Enrichment. 2019, *Astrophys. J.*, 877, 141 (arXiv:1812.06980) [28 citations]

18 Hirtenstein, J., Jones, T., **Wang, X.** et al. The OSIRIS Lens-Amplified Survey (OLAS) I: Dynamical Effects of Stellar Feedback in Low Mass Galaxies at z∼2. 2018, *Astrophys. J.*, 880, 54 (arXiv:1811.11768) [13 citations]

17 Strait, V., ..., **Wang, X.** et al. Mass and Light of Abell 370: A Strong and Weak Lensing Analysis. 2018, *Astrophys. J.*, 868, 129 (arXiv:1805.08789) [19 citations]

16 Finney, E., ..., **Wang, X.** et al. Mass Modeling of Frontier Fields Cluster MACS J1149.5+2223 Using Strong and Weak Lensing. 2018, *Astrophys. J.*, 859, 1 (arXiv:1806.00698) [9 citations]

15 Morishita, T., Abramson, L. E., Treu, T., **Wang, X.** et al. Metal Deficiency in Two Massive Dead Galaxies at z∼2. 2018, *Astrophys. J. Letters*, 856, L4 (arXiv:1803.01852) [12 citations]

14 Abramson, L. E., ..., **Wang, X.** et al. The Grism Lens-Amplified Survey from Space (GLASS). XII. Spatially Resolved Galaxy Star Formation Histories and True Evolutionary Paths at z>1. 2018, *Astron. J.*, 156, 29 (arXiv: 1710.00843) [10 citations]

13 Kelly, P. L., ..., **Wang, X.** et al. Extreme magnification of an individual star at redshift 1.5 by a galaxy-cluster lens. 2018, *Nature Astronomy*, 2, 334 (arXiv:1706.10279) [75 citations]

12 Williams, P. R., ..., **Wang, X.** Discovery of three strongly lensed quasars in the Sloan Digital Sky Survey. 2018, *MNRAS*, 477L, 70 (arXiv:1706.01506) [16 citations]

11 Schmidt, K. B., ..., **Wang, X.** The Grism Lens-Amplified Survey from Space (GLASS). XI. Detection of CIV in Multiple Images of $z = 6.11$ Lyα Emitter Behind RXCJ2248.7-4431. 2017, *Astrophys. J.*, 839, 17 (arXiv:1702.04731) [39 citations]

10 Morishita, T., Abramson, L. E., Treu, T., Schmidt, K. B., Vulcani, B., **Wang, X.** Characterizing Intracluster Light in the Hubble Frontier Fields. 2017, *Astrophys. J.*, 846, 139 (arXiv:1610.08503) [54 citations]

9 Vulcani, B., ..., **Wang, X.** The Grism lens-amplified survey from space (GLASS). VIII. The influence of the cluster properties on Halpha emitter galaxies at $0.3 < z < 0.7$. 2017, *Astrophys. J.*, 837, 126 (arXiv:1610.04615) [15 citations]

8 Morishita, T., ..., **Wang, X.**, et al. The Grism Lens-Amplified Survey from Space (GLASS). IX. The dual origin of low-mass cluster galaxies as revealed by new structural analyses. 2017, *Astrophys. J.*, 835, 254 (arXiv:1607.00384) [35 citations]

7 Huang, K., ..., **Wang, X.** Detection of Lyman-Alpha Emission From a Triple Imaged z=6.85 Galaxy Behind MACS J2129.4-0741. 2016, *Astrophys. J. Letters*, 823L, 14 (arXiv:1605.05771) [30 citations]

6 Hoag, A., ..., **Wang, X.** et al. The Grism Lens-Amplified Survey from Space (GLASS). VI. Comparing the Mass and Light in MACSJ0416.1-2403 using Frontier Field imaging and GLASS spectroscopy. 2016, *Astrophys. J.*, 831, 182 (arXiv:1603.00505) [34 citations]

5 Schmidt, K. B., ..., **Wang, X.** The Grism Lens-Amplified Survey from Space (GLASS). III. A census of Lyα Emission at $z \gtrsim 7$ from HST Spectroscopy. 2016, *Astrophys. J.*, 818, 38 (arXiv:1511.04205) [56 citations]

4 Rodney, S., ..., **Wang, X.**, et al. Illuminating a Dark Lens : A Type Ia Supernova Magnified by the Frontier Fields Galaxy Cluster Abell 2744. 2015, *Astrophys. J.*, 811, 70 (arXiv:1505.06211) [59 citations]

3 Treu, T., Schmidt, K. B., Brammer, G. B., Vulcani, B., **Wang, X.** et al. The Grism Lens-Amplified Survey from Space (GLASS). I. Survey Overview and First Data Release. 2015, *Astrophys. J.*, 812, 114 (arXiv:1509.00475) [150 citations]

2 Schmidt, K. B., Treu, T., Brammer, G. B., Bradac, M., **Wang, X.** et al. Through the Looking GLASS: HST Spectroscopy of Faint Galaxies Lensed by the Frontier Fields Cluster MACSJ0717.5+3745. 2014, *Astrophys. J. Letters*, 782L, 36 (arXiv:1401.0532) [102 citations]

1 Meng, X.-L., Zhang, T.-J., Zhan, H., & **Wang, X.** Morphology of Galaxy Clusters: A Cosmological Model-Independent Test of the Cosmic Distance-Duality Relation. 2012, *Astrophys. J.*, 745, 98 (arXiv:1104.2833) [62 citations]