

Yuxiang Qin

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Profile Summary

I take pride in my ability to quickly master physics concepts and mathematical techniques. Through carefully directing my studies I possess a broad, yet deep, background in theoretical and numerical approaches required to model and understand galaxy formation and Reionization. I enjoy researching both independently as well as in an international team and have enjoyed supervising other students throughout my earlier research career.

Education

2014.10
2018.04

Ph.D. Astrophysics, *University of Melbourne (UniMelb)*, Australia (Expected Apr. 2018).

Dark-ages Reionization And Galaxy formation Observables from Numerical Simulations.
Abstract: How galaxies form at high redshift remains a puzzle due to our limited observational capability. Yet determining how the first generation of galaxies formed and evolved is critical to our understanding of how the Universe was reionized at around 500 million years after the Big Bang. In this thesis, I model galaxy formation using a variety of cutting-edge numerical techniques, including N-body/hydrodynamic simulations and semi-analytic models. I investigate the properties of high redshift galaxies as well as the interaction between these early galaxies and their environment, propose modifications to modelling and provide guidance to future observations.

Supervisor: Professor J. Stuart B. Wyithe from UniMelb.

2010.09
2014.06

B.S. Astronomy, *University of Science and Technology of China (USTC)*, China (Major GPA: 90.75/100).

UV Radiation from Stars.

Supervisor: Professor Jifeng Liu from The National Astronomical Observatories, Chinese Academy of Sciences (NAOC).

Awards/Computer Grants

2016.10

Jean Laby Ph.D. Travelling Scholarship, AUD 5,000, UniMelb.

2016.08

Science Abroad Travelling Scholarship, AUD 1,500, UniMelb.

2016.05

Supercomputing Time, 500k CPU hours, The Pawsey Supercomputing Centre.

2014.11

Goldsworthy Scholarship, AUD 30,000 p.a., UniMelb.

2018.4

2014.10

2014.11

Melbourne International Research Scholarship, AUD 25,392 p.a., UniMelb.

2014.10 2018.4	Melbourne International Fee Remission Scholarship , AUD 32,224 p.a., UniMelb.
2013.12	Certificate of Scholarship , CNY 3,000, NAOC.
2013.11	Certificate of Honor, Wang Shouguan Talent Program in Astronomy , USTC.
2013.10	National Endeavor Fellowship , CNY 5,000, USTC.
2013.10	Aegon-Industrial Responsibility Scholarship , CNY 4,000, USTC.
2013.8	Certification of Excellence , University of Western Australia (UWA).
2012.10	Outstanding Student Scholarship , CNY 2,000, USTC.
2011.10	Outstanding Student Scholarship , CNY 500, USTC.
2010.10	Outstanding Freshmen Scholarship , CNY 500, USTC.

Published Articles

- Y. Qin, A.R. Duffy, S.J. Mutch, G.B. Poole, P.M. Geil, A. Mesinger and J.S.B. Wyithe.
Dark-ages reionization and galaxy formation simulation-XIV. Gas accretion, cooling and star formation in dwarf galaxies at high redshift.
 Monthly Notices of the Royal Astronomical Society (MNRAS 2018) accepted; arXiv: 1802.03879.
- Y. Qin, S.J. Mutch, A.R. Duffy, P.M. Geil, G.B. Poole, A. Mesinger and J.S.B. Wyithe.
Dark-ages reionization and galaxy formation simulation-XIII. AGN quenching of high-redshift star formation in ZF-COSMOS-20115.
 MNRAS (2017) 471 (4): 4345–4354.
- Y. Qin, S.J. Mutch, G.B. Poole, C. Liu, A.R. Duffy, P.M. Geil, P.W. Angel, A. Mesinger and J.S.B. Wyithe.
Dark-ages reionization and galaxy formation simulation-X. The small contribution of quasars to reionization.
 MNRAS (2017) 472 (2): 2009–2027.
- Y. Qin, A.R. Duffy, S.J. Mutch, G.B. Poole, P.W. Angel, P.M. Geil, A. Mesinger and J.S.B. Wyithe.
Dark-ages reionization and galaxy formation simulation-VIII. Suppressed growth of dark matter haloes during the Epoch of Reionization.
 MNRAS (2017) 467 (2): 1678–1693.
- Y Bai, J. Liu, J. Wicker, S. Wang, J. Guo, Y. Qin, L. He, J. Wang, Y. Wu, Y. Dong, Y. Zhang, Y. Hou, Y. Wang and Z. Cao.
The UV Emission of Stars in LAMOST Survey. I. Catalogs
 The Astrophysical Journal Supplement Series (2018) 235 (1): 16.
- J. Guo, J. Liu, S. Wang, Y. Wu, and Y. Qin.
An active M star with X-ray double flares disguised as an ultra-luminous X-ray source.
 Research in Astronomy and Astrophysics (2016) 16 (2): 034.

In Preparation

- Y. Qin, A.R. Duffy, Han-Seek Kim, S.J. Mutch, G.B. Poole, P.M. Geil, A. Mesinger and J.S.B. Wyithe.
Dark-ages reionization and galaxy formation simulation-XV. Stellar evolution and feedback in dwarf galaxies at high redshift.
- Y. Qiu, S.J. Mutch, Y. Qin, A.R. Duffy, P.M. Geil, P.A. Oesch, A. Mesinger and J.S.B. Wyithe.
Dark-ages reionization and galaxy formation simulation-XVI. Clustering segregation with stellar mass and luminosity at $z \sim 4$.

Presentations

2017.09

AGN quenching of high redshift star formation in ZF-COSMOS-20115, *ACAMAR 3: Australia-China Workshop on Astrophysics*, Hobart, Australia.

2017.08

Quasars and cosmic reionization, *From Black Hole to Environment: Galaxy Evolution across Multiple Wavelengths*, The Australian National University (ANU), Australia.

2017.07

AGN quenching of high redshift star formation in ZF-COSMOS-20115, *The 24th Astronomical Society of Australia (ASA) Annual Scientific Meeting*, ANU, Australia.

2017.02

The small contribution of quasars to reionization, *The 11th Australian National Institute for Theoretical Astrophysics (ANITA) Workshop*, The University of Tasmania, Australia.

2016.10

Dark-ages Reionization And Galaxy Observables from Numerical Simulations, *Cosmology Seminar*, The Max-Planck-Institute for Astrophysics (MPA), Germany.

2016.02

Suppressed Growth of Dark Matter Halos during the Epoch of Reionization, *The 10th ANITA Workshop*, Monash University, Australia.

2015.07

Comparison between Hydrodynamic Simulations and Semi-Analytic Models, *The 22nd ASA Annual Scientific Meeting*, Perth, Australia (poster).

2014.08

UV Radiation from Stars, *Invited Seminar*, Xiamen University, China.

Academic Visits

2016.10

Guest Scientist, MPA.

2016.11

2014.02

Research Visiting Student, NAOC.

2014.08

2013.07

Research Visiting Student, *International Centre for Radio Astronomy Research*, UWA.

2013.08

2012.06

Research Visiting Student, NAOC.

2012.09

Experiences

2018.02	Outreach Volunteer , <i>Antarctica Explorers</i> , UniMelb.
2017.08	Outreach Volunteer , <i>University Open Day</i> , UniMelb.
2017.08	Lab Demonstrator , <i>From the Solar System to the Universe</i> , UniMelb.
2017.10	
2017.03	Lab Demonstrator , <i>1st Year Physics Undergraduate Program - Fundamental</i> , UniMelb.
2017.05	
2016.03	Lab Demonstrator , <i>1st Year Physics Undergraduate Program - Advanced</i> , UniMelb.
2016.05	
2016.02	Coordinator , <i>Astro Group Meeting</i> , UniMelb.
2017.03	
2015.11	Coordinator , <i>Simulation Group Lunch Meeting</i> , UniMelb.
2017.02	
2015.08	Lab Demonstrator , <i>1st Year Physics Undergraduate Program - Biomedicine</i> , UniMelb.
2015.10	
2015.03	Lab Demonstrator , <i>1st Year Physics Undergraduate Program - Standard</i> , UniMelb.
2015.05	
2014.02	Teaching Assistant , <i>Introduction to Astromechanics and Astrometry</i> , USTC, (3 credits).
2014.07	

Skills

- Programming: multi-threaded high-performance computing involving big dataset on large distributed platforms; high-skilled in C, python, git, bash, sql, etc; major contributor to MERAXES, a C code of semi-analytic galaxy formation model.
- Language: Chinese (native), English (fluent).

References

Prof. J. Stuart B. Wyithe

Head

School of Physics

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A/Prof. Alan R. Duffy

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