

Yunchong Wang

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EDUCATION

TSINGHUA UNIVERSITY | BACHELOR OF SCIENCE IN PHYSICS

Sep 2015 - Jul 2019 | Overall GPA: 3.72/4.00

Advanced astrophysical courses: Galactic Dynamics • Physical Cosmology • General Relativity • Applications of General Relativity • Astrophysics • Stellar Physics • Astrophysics graduate student seminar

• Thesis advisors: Professor Shude Mao, Dandan Xu

STANFORD UNIVERSITY | PH.D. PROGRAM IN PHYSICS

Sep 2019 - Present | Research advisors: Professor Risa Wechsler, Steven W. Allen (in rotation)

PUBLICATIONS

EARLY-TYPE GALAXY DENSITY PROFILES FROM ILLUSTRISTNG: I. GALAXY CORRELATIONS AND THE IMPACT OF BARYONS. | ACCEPTED FOR PUBLICATION IN MNRAS

Yunchong Wang, Mark Vogelsberger, Dandan Xu, Shude Mao, Volker Springel, Hui Li, David Barnes, Lars Hernquist, Annalisa Pillepich, Federico Marinacci, Rüediger Pakmor, Rainer Weinberger, Paul Torrey

(<https://doi.org/10.1093/mnras/stz3348>)

EARLY-TYPE GALAXY DENSITY PROFILES FROM ILLUSTRISTNG: II. EVOLUTIONARY TREND OF THE TOTAL DENSITY PROFILE | ACCEPTED FOR PUBLICATION IN MNRAS

Yunchong Wang, Mark Vogelsberger, Dandan Xu, Xuejian Shen, Shude Mao, David Barnes, Hui Li, Federico Marinacci, Paul Torrey, Volker Springel, Lars Hernquist

(<https://doi.org/10.1093/mnras/stz2907>)

SDSS-IV MANGA : THE INNER DENSITY SLOPES OF NEARBY GALAXIES | ACCEPTED FOR PUBLICATION IN MNRAS

Ran Li, Hongyu Li, Shi Shao, Shengdong Lu, Kai Zhu, Chunxiang Wang, Liang Gao, Shude Mao, Aaron A. Dutton, Junqiang Ge, Yunchong Wang, Alexie Leauthaud, Zheng Zheng, Kevin Bundy, Joel R. Brownstein

(<https://doi.org/10.1093/mnras/stz2565>)

REDSHIFT EVOLUTION OF THE FUNDAMENTAL PLANE RELATION IN THE ILLUSTRISTNG SIMULATION | ACCEPTED FOR PUBLICATION IN MNRAS

Shengdong Lu, Dandan Xu, Yunchong Wang, Shude Mao, Junqiang Ge, Volker Springel, Yuan Wang, Mark Vogelsberger, Jill Naiman, Lars Hernquist

(<https://doi.org/10.1093/mnras/staa173>)

RESEARCH EXPERIENCE

TSINGHUA UNDERGRADUATE SEMINAR | SUPERVISED BY PROFESSOR SHUDE MAO

Mar 2017 – Mar 2019 | Beijing, China

- BOSS emission-galaxy strong lensing probability estimation.
- Illustris simulations power-law bias on strong lensing galaxy convergence profiles.

TSINGHUA UNDERGRADUATE THESIS | SUPERVISED BY PROFESSORS SHUDE MAO AND DANDAN XU

Mar 2019 – Jul 2019 | Beijing, China

- Galaxy dynamical structure's link to its density profiles and environment.
- Comparison of Jeans-anisotropic MGE method performance on IllustrisTNG and MaNGA early-type galaxies.

LEIDEN OBSERVATORY LEAPS PROGRAM | SUPERVISED BY PROFESSOR HENK HOEKSTRA

Jul 2017 - Sep 2017 | Leiden, Netherlands

- Quantifying the mis-centering effect of BCGs from cluster halo centers using simulated weak-lensing clusters in the Cluster-EAGLE project.

MIT KAVLI INSTITUTE CSGF GROUP | SUPERVISED BY PROFESSOR MARK VOGELSBERGER

Jul 2018 – Sept 2018 | Cambridge, MA

- The correlation of the density profile with galaxy properties and the impact of baryons on the density slope in early-type galaxies from the IllustrisTNG Simulations. Paper published in MNRAS.
- The evolutionary trends of the density profile and the effects from mergers and AGN feedback in the formation of isothermal density profiles in the IllustrisTNG Simulations. Paper published in MNRAS.

HONORS AND AWARDS

KIPAC CHABOLLA FELLOWSHIP | STANFORD ASTROPHYSICS GRADUATE RESEARCH FELLOWSHIP
Sept 2019 - Aug 2021

LINBRIDGE SCHOLARSHIP | TSINGHUA UNDERGRADUATE HIGHEST HONOR FOR ASTROPHYSICS RESEARCH
Nov 2018

TSINGHUA-CNPC SCHOLARSHIP | AWARD OF ALL-ROUND EXCELLENCE
Nov 2018

NAOC SCHOLARSHIP | AWARD OF ACADEMIC EXCELLENCE IN ASTRONOMY AND ASTROPHYSICS
Nov 2018

TSINGHUA XUETANG TALENTS PROGRAM | ANNUAL FELLOWSHIP IN PHYSICS
Sep 2017 – Present

TSINGHUA UNIVERSITY SCHOLARSHIP | AWARD OF SOCIAL WORK EXCELLENCE
Oct 2016

CONFERENCES

IAU SYMPOSIUM 353 | GALACTIC DYNAMICS IN THE ERA OF LARGE SURVEYS
Poster presentation: Early-type Galaxies Density Profiles in IllustrisTNG | Shanghai, Jul 2019

10TH CHINA-MANGA WORKSHOP | SDSS IV-MANGA COLLABORATION MEETING
Presentation: IllustrisTNG Simulations and the comparison with MaNGA | Tsinghua University, Beijing, Dec 2019

TALKS

HARVARD CFA | LARS HERNQUIST GROUP MEETING PRESENTATION
Early-Type Galaxy Density Profiles from IllustrisTNG | Sep 2018

HITS | VOLKER SPRINGEL GROUP MEETING PRESENTATION
Systematics in Macro-Lens Modeling and its Impact on Cosmology | Sep 2017

FLATIRON INSTITUTE CCA | GALAXY FORMATION GROUP MEETING PRESENTATION
Density Profile Evolution in Early-type Galaxies | Apr 2019

THCA | XUENING BAI PLANET-FORMATION GROUP MEETING PRESENTATION
Imaging Extrasolar Giant Planets | Dec 2017
Tides, Rotation and Shape | May 2018

THCA | GRADUATE STUDENT SEMINAR
The Large Synoptic Survey Telescope | Mar 2018
The European-Extremely Large Telescope | Dec 2018
Galactic Dynamo: Feedback, Scaling Relations, and Observational Prospects | May 2019

LEADERSHIP

CHAIR | TSINGHUA ASTRONOMY SOCIETY
Sep 2017 - Sep 2018

- Founder of the Tsinghua Observatory Public Night, hosting 1000+ visitors per year.
- Co-founder of the Tsinghua Astronomy Night, observing multiple targets including planets, galaxies, nebular and star clusters simultaneously with 8-10 telescopes, hosting 500+ visitors per venue.
- Led observation trips with 80+ people outside Beijing (including to LAMOST)
- Hosted bi-weekly sidewalk stargazing, telescope instruction, and amateur observation saloons.
- Worked in support for organizing the Tsinghua University 'New Worlds, New Horizons' scientific public talk series.

SKILL SET

PROGRAMMING AND TOOLS

Advanced:

Python • C/C++ • Linux • \LaTeX • Vi/Vim • Mathematica

Proficient:

Gadget2 • SAOImage DS9 • Emcee (MCMC) • PyTorch • Splash

Familiar:

Tensorflow • Network X • Geant4 • ROOT Analysis • YT

TEST SCORES

GRE Physics Subject:

990 / 990 (94%)

GRE General:

Verbal: 165 / 170 (96%)

Quantitative: 170 / 170 (96%)

AW: 4.0 / 6.0 (59%)

TOEFL iBT:

119 / 120 (Speaking 30 / 30)

ACTIVITIES

VARIABLE STAR OBSERVATION | AAVSO MEMBER

Nova Delphini 2013 Observation | Aug 2013

METEOR SHOWER STANDARD OBSERVATION | IMO MEMBER

Perseids shower standard observation | Aug 2016

CHINA NATIONAL RADIO SHOW | LECTURE GUEST

Invited for two talks on Hawking's black hole theory | Apr 2018

TENCENT NEWS SCIENCE SHOW | WEB BROADCAST GUEST

Invited for live meteor showers, astrophotography, and super-moon shows | 2016-2017

PHOTOGRAPHY | TSINGHUA ART TROUPE GROUP PHOTOGRAPHY TEAM MEMBER

Lunar eclipse photo published on China National Astronomy Magazine | Mar 2018

FUTURE FORUM | INTERN

Apr 2017

PIANO | GRADE 8 DEGREE AWARDED BY ABRSM

Nov 2009