

YUANYUAN ZHANG

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Schramm Postdoctoral Fellow FNAL

Fermilab, Kirk & Pine Road, Batavia, IL, 60510

EDUCATION

University of Michigan, Ann Arbor, MI 2010 - 2016

PhD in Physics, Degree completed in Jan 2016, Advisor: Timothy McKay

Dissertation Title: *Looking Wider and Further: The Evolution of Galaxies inside Galaxy Clusters*

Zhejiang University, Hangzhou, China 2006 - 2010

B.S., Physics, Outstanding Graduate, Chu Ko Chen Honors College Certificate

“Best 100 Undergraduate Graduation Theses of Zhejiang University in 2010”

Thesis Title: *Isolation, Purification and Magnetic Characterization of Sm@C₈₄*

RESEARCH INTERESTS

Cosmology and Astrophysics, Wide Field Surveys, Data Quality

Galaxy Clusters, Cluster Galaxy Evolution, Galaxy Filaments

POSITIONS

Schramm Postdoctoral Fellow	Fermilab	2016 - present
KICP associate fellow	University of Chicago	2016 - present
Rackham Predoctoral Fellow	University of Michigan	2014 - 2015
Graduate Student Research Assistant	University of Michigan	2011 - 2014
Graduate Student Instructor	University of Michigan	2010 - 2011

AWARDS AND ACKNOWLEDGEMENTS

Dark Energy Survey Builder since 2015

Acknowledgement for infrastructure contribution to the DES project

Permanent DES data access right

Rackham Predoctoral Fellowship 2014 - 2015

University-wide competition, Stipend and tuition

First Class Scholarship for Outstanding Students, Twice Winer 2009, 2008

Zhejiang University, RMB 10,000 in total

Second-Class Scholarship for Outstanding Merit 2007

Zhejiang University, RMB 1,000

LEADERSHIP ROLES

High Redshift Cluster Science Convener, the DES collaboration 2015 - present

Early Career Scientist Committee, the DES collaboration 2013 - 2014

RESEARCH PROGRAM AND GRANT

**Deep Infra-Red Imaging of Medium to High Redshift X-Ray
Selected Galaxy Clusters**

2014B

Magellan Baade Telescope (6.5 m), 3 nights, PI
Fourstar near infra-red imaging of 23 $0.75 < z < 1.3$
and 44 $0.4 < z < 0.75$ X-ray selected galaxy clusters

Galaxy Population Inside Galaxy Clusters

2014

Rackham Graduate Student Research Grant, \$3,000, PI
Study the galaxy population inside X-ray selected clusters and
their connection with cluster central galaxies

OBSERVING EXPERIENCE

Dark Energy Survey Observer

2013, 2015

Blanco Telescope (4m), Cerro Tololo Inter-American Observatory, Chile
On-site monitoring of data taking for Dark Energy Survey
Optical imaging, > 10 nights

Spectra of Standard Stars

Fall 2011

University of Michigan Angel Hall Telescope (0.4m), Ann Arbor
Course project for Modern Astronomical Techniques
Spectroscopic, multiple nights

TEACHING AND OUTREACH

Contributor to the Dark Energy Detectives Chinese and English sites
Maintainer of DES Chinese *Weibo* Account

since 2014

Experienced Graduate Student Instructor Consultant
University of Michigan, MI, English Language Institute

Jul. -Aug. 2011

Graduate Student Instructor
University of Michigan, MI
Physics 128/236, introductory E&M Labs

2010 - 2011

REFERENCES

Prof. Timothy McKay
450 Church Street
Physics Department, Univeristy of Michigan
Ann Arbor, MI, 48109, tamckay@umich.edu

Prof. Gus Evrard
450 Church Street
Physics Department, Univeristy of Michigan
Ann Arbor, MI, 48104, evrard@umich.edu

Prof. Chris Miller
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Astronomy Department, Univeristy of Michigan
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Dr. Kathy Romer
PEVENSEY 3 4C23
Sussex Astronomy Centre, Univeristy of Sussex
Brighton, BN1 9RH, U.K., Romer@sussex.ac.uk

PUBLICATIONS

Major Contributor Publications

1. *Galaxies in X-ray Selected Clusters and Groups in Dark Energy Survey Data I: Stellar Mass Growth of Bright Central Galaxies Since $z \sim 1.2$,*
Y. Zhang, C. Miller, T. A. McKay et al., 2015, accepted to ApJ, arXiv:1504.02983.
2. *Crowded Cluster Cores: Algorithms for Deblending in Dark Energy Survey Images,*
Y. Zhang, T. A. McKay, E. Bertin et al., 2015, PASP, 127, 1183, arXiv:1409.2885.
3. *Orientation Bias of Optically Selected Galaxy Clusters and its Impact on Stacked Weak Lensing Analyses,*
J. P. Dietrich, **Y. Zhang**, J. Song et al., 2014, MNRAS, 443, 1713, arXiv:1405.2923.
4. *Studying Inter-Cluster Galaxy Filaments Through Stacking GMBCG Galaxy Cluster Pairs,*
Y. Zhang, J. P. Dietrich, T. A. McKay, et al., 2013, ApJ, 773, 115, arXiv:1304.6696.

In Preparation

1. *Galaxies in X-ray Selected Clusters and Groups in Dark Energy Survey Data II: Luminosity Function of Cluster Red Sequence galaxies,*
Y. Zhang, C. Miller, et al. in preparation, under DES internal review.

Co-author on the Basis of DES Buildership

1. *Discovery of two gravitationally lensed quasars in the Dark Energy Survey,* Agnello, A., and 79 colleagues including **Y. Zhang**, 2015, Monthly Notices of the Royal Astronomical Society, 454, 1260
2. *Crowdsourcing quality control for Dark Energy Survey images,* Melchior, P., and 49 colleagues including **Y. Zhang**, 2015, ArXiv e-prints, arXiv:1511.03391
3. *Eight Ultra-faint Galaxy Candidates Discovered in Year Two of the Dark Energy Survey,* Drlica-Wagner, A., and 76 colleagues including **Y. Zhang**, 2015, The Astrophysical Journal, 813, 109
4. *Discovery of a Stellar Overdensity in Eridanus-Phoenix in the Dark Energy Survey,* Li, T. S., and 58 colleagues including **Y. Zhang**, 2015, ArXiv e-prints, arXiv:1509.04296
5. *No galaxy left behind: accurate measurements with the faintest objects in the Dark Energy Survey,* Suchyta, E., and 74 colleagues including **Y. Zhang**, 2015, ArXiv e-prints, arXiv:1507.08336
6. *Mapping and simulating systematics due to spatially-varying observing conditions in DES Science Verification data,* Leistedt, B., and 94 colleagues including **Y. Zhang**, 2015, ArXiv e-prints, arXiv:1507.05647
7. *Cosmology from Cosmic Shear with DES Science Verification Data,* The Dark Energy Survey Collaboration, and 128 colleagues including **Y. Zhang**, 2015, ArXiv e-prints, arXiv:1507.05552
8. *redMaGiC: Selecting Luminous Red Galaxies from the DES Science Verification Data,* Rozo, E., and 86 colleagues including **Y. Zhang**, 2015, ArXiv e-prints, arXiv:1507.05460
9. *Observation of Two New L4 Neptune Trojans in the Dark Energy Survey Supernova Fields,* Gerdes, D. W., and 64 colleagues including **Y. Zhang**, 2015, ArXiv e-prints, arXiv:1507.05177
10. *Weak lensing by galaxy troughs in DES Science Verification data,* Gruen, D., and 91 colleagues including **Y. Zhang**, 2015, ArXiv e-prints, arXiv:1507.05090

11. *The Dark Energy Survey and operations: Year 1*, Diehl, H. T., and 92 colleagues including **Y. Zhang**, 2014, Society of Photo-Optical Instrumentation Engineers (SPIE) Conference Series, 9149, 91490V
12. *First SN Discoveries from the Dark Energy Survey*, Abbott, T., and 310 colleagues including **Y. Zhang**, 2012, The Astronomer's Telegram, 4668, 1