Steven Boada, Ph.D

CONTACT INFORMATION

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RESEARCH INTERESTS

Observation Cosmology, Large-area Sky Surveys (e.g., DES, LSST, SDSS, ACT, SPT), Galaxy Clusters, High Performance Computing (HPC), Galaxy Evolution, Interacting Galaxies and Morphology.

EDUCATION

Texas A&M University, College Station, Texas USA

Ph.D., Physics (Astronomy focus), August, 2016

- Dissertation Title: "Measuring the Scatter in the Cluster Optical Richness–Mass Relation with Machine Learning"
- Advisor: Dr. Casey Papovich

The University of Tennessee, Knoxville, Tennessee USA

M.S., Physics (Computational Astrophysics), August, 2009

- Thesis Title: "An Automated Approach to the Study and Classification of Colliding and Interacting Galaxies"
- Advisor: Dr. Michael Guidry

The University of Tennessee, Knoxville, Tennessee USA

B.S., Physics, May, 2007

PROFESSIONAL EXPERIENCE

Rutgers University, Piscataway, New Jersey USA
Postdoctoral Research Associate **September, 2016-Present**

Texas A&M University, College Station, Texas USA
Research Assistant **August, 2010 - 2016**

The University of Tennessee, Knoxville, Tennessee USA
Research Assistant **August, 2007 - 2009**

National Center for Computational Science, Oak Ridge National Laboratory, Oak Ridge, Tennessee USA
Visiting Scientist **May, 2007 - August, 2009**
Carried out the computing projects required to complete Master's, including modeling of interacting galaxy systems, machine learning, and other HPC tasks.

OBSERVING EXPERIENCE

Proposals

- *Measuring the Masses of X-ray-Selected, Low-Mass Galaxy Clusters and Groups with Integral Field Spectroscopy*
  Co-I (PI: N. Mehrtens), McDonald Observatory, 4 nights awarded, 2013
- *Measuring the Masses of Galaxy Clusters with Integral Field Spectroscopy*
  Co-I (PI: C. Papovich), McDonald Observatory, 9 nights awarded, 2012
- *Measuring the Masses of Galaxy Clusters with Integral Field Spectroscopy*
  Co-I (PI: C. Papovich), McDonald Observatory, 5 nights awarded, 2012

Telescopes

- Harlan J. Smith 2.7m Telescope, Mitchell Spectrograph (formerly VIRUS-P), 20+ nights

Data Experience

- Integral Field Spectroscopy
- Hubble Space Telescope Imaging
- Sloan Digital Sky Survey Imaging and Spectroscopy

Computing Experience

Extensive experience in the processing and application of large astronomical data sets, including: the acquisition and reduction of optical integral field unit spectroscopy, querying large astronomical databases such as the Sloan Digital Sky Survey and the Millennium Simulation, analysis of multi-wavelength imaging from the Hubble Space Telescope. Key computing skills include: mastery of the Python language, and the interface with other languages and tools, considerable experience with large multiprocessor applications (e.g. Gadget-2) and high performance computing systems, supervised and unsupervised machine learning and optimization, GPGPU computing, and participation in open source and collaborative development environments, including version control. Contributor to AstroPy. Co-author of astLib python library, see http://astlib.sourceforge.net

Teaching and Outreach

Texas A&M University, College Station, Texas USA

Teaching Assistant **2010 - Spring, 2015**

Supervised undergraduate students for weekly lab sessions, tutoring sessions, grading of homework and quizzes for Basic Astronomy, Overview of Modern Astronomy, and Survey of Astronomy.

Physics Festival **2010 - Present**

Demonstrated physics and astronomy principles for students from elementary through high school and the general public.

Star Parties **2010 - Present**

Discussed astronomical topics and operated telescopes for college students and the general public.

Nashville State Community College, Nashville, Tennessee USA

Adjunct Faculty **Spring, 2010**

Primary instructor for introductory physics course, Conceptual Physics.

The University of Tennessee, Knoxville, Tennessee USA

Teaching Assistant **August, 2007 - 2009**

Supervised laboratory experiences for undergraduate students in Introduction to Modern Physics, and Electricity and Magnetism for Engineering. Designed and taught laboratories for undergraduate Honors Astronomy.

Academic Honors and Awards

The University of Tennessee: graduated Magna Cum Laude, Phi Beta Kappa, Sigma Pi Sigma, President, Society of Physics Students 2006 thru 2007

Grants and Awards

- *The Road to the Virgo Cluster: The DECam/IRAC Galaxy Environment Survey*
  Co-I (PI: C. Papovich), NSF Alliances for Graduate Education and the Professoriate, 2015
- *Graduate Student Presentation Grant*
  PI, Texas A&M University Office of Graduate and Professional Studies, 2015
- *Graduate Student Travel Grant*
  PI, Texas A&M University Department of Physics and Astronomy, 2015

Posters and Presentations

Talk: 227th AAS Meeting, Kissimmee, FL January, 2016
Talk: CANDELS Team Meeting, University of Santa Cruz, Santa Cruz, CA July, 2015
Talk: CANDELS Team Meeting, STScI, Baltimore, MD July, 2014
Poster: Bashfest Symposium, University of Texas, Austin, TX October, 2013
Talk: CANDELS Team Meeting, University of Kentucky, Lexington, KY August, 2013
Poster: GMT Science Meeting, University of Chicago, Chicago, IL June, 2013
Talk: CANDELS Team Meeting, University of Santa Cruz, Santa Cruz, CA September, 2012
Poster: 219th AAS Meeting, Austin, TX January, 2012
Poster: Bashfest Symposium, University of Texas, Austin, TX October, 2011
Talk: Texas A&M Astronomy Symposium, Texas A&M University, College Station, TX August, 2011–15

References

References available upon request.