Kara A. Ponder

Curriculum Vitae

Department of Physics and Astronomy
University of Pittsburgh
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Research Interests

Dark Energy, Supernova Cosmology, Statistical Methods.

Education

2012–2017 (expected) **Ph.D. Candidate, Physics**, *Department of Physics and Astronomy*, University of Pittsburgh, Pittsburgh, PA, USA.
Advisors: Professors Michael Wood-Vasey and Andrew Zentner

2012–2014 **M.S. Physics**, *Department of Physics and Astronomy*, University of Pittsburgh, Pittsburgh, PA, USA.

2009–2012 **B.S. Physics and Astronomy**, *Department of Physics and Astronomy*, University of Georgia, Athens, GA, USA.

Awards and Fellowships

2016 **University of Pittsburgh School of Arts & Sciences Fellowship**, *For Fall 2016 and Summer 2017.*
Pitt PACC, Department of Physics and Astronomy - University of Pittsburgh

2016 **LSST Dark Energy Science Collaboration (DESC) Travel grant**.
DESC Collaboration Meeting in Oxford, England, UK

2016 **Supernova Through the Ages: Understanding the Past to Prepare for the Future (SN2016) Conference Student Travel grant**.
SN2016 Conference, Easter Island, Chile

2016 **Pittsburgh Particle physics, Astrophysics, Cosmology Center Travel Grant**, SN2016 Conference, Easter Island, Chile.
Pitt PACC, Department of Physics and Astronomy - University of Pittsburgh

2016 **LSST DESC Travel grant**.
DESC Collaboration Meeting at SLAC National Accelerator Laboratory, Menlo Park, CA

2015 **Zaccheus Daniels Fellowship**, *For Summer 2016.*
Department of Physics and Astronomy - University of Pittsburgh

2014 **Department of Energy (DOE) Office of Science Graduate Student Research (SCGSR) Awardee**.
Department of Energy, Office of Science

2014 **Physics and Astronomy Departmental Fellowship**, *For Spring and partial Summer 2015.*
Department of Physics and Astronomy - University of Pittsburgh

2012 **Kenneth P. Dietrich School of Arts & Sciences Fellowship**, *For Spring and Summer 2013.*
Kenneth P. Dietrich School of Arts & Sciences - University of Pittsburgh

2012 **Physics and Astronomy Award**.
Department of Physics and Astronomy - University of Georgia

2011 **Linville L. Hendren Memorial Scholarship for Outstanding Proficiency in Physics**.
Department of Physics and Astronomy - University of Georgia

Collaborations

March 2014 - Present **Large Synoptic Survey Telescope Dark Energy Science Collaboration (LSST DESC)**.
Member of Supernova Working Group
Member of Collaboration Council: November 2015-2017

Feb 2014 - Present **Sloan Digital Sky Survey (SDSS) III and IV**.
SDSS III replaced by SDSS IV in June 2014
Officially Joined SDSS IV in March 2016

Experience

Aug 2016-Aug 2017 **Co-President of the Association of Physics and Astronomy Graduate Students**.
Graduate Student Organization for the Department of Physics and Astronomy at the University of Pittsburgh

Observing

Nov 2013 - May 2016 **WIYN 3.5 m**, 58 telescope nights, WHIRC: NIR imaging camera.
SweetSpot survey (PI: W. Michael Wood-Vasey, CoI: KAP)

Nov 2015 **WIYN 3.5 m**, 2 telescope nights, HexPak: integral field unit mounted on bench spectrograph.
SweetSpot survey follow up (PI: W. Michael Wood-Vasey, CoI: KAP)

May 2014 **Bok 2.3 m**, 4.5 telescope nights, 90prime: optical imaging camera.
Reverberation Mapping project in SDSS III

Additional Research

Jan - June 2015 **Visiting student at the SLAC National Accelerator Laboratory**.
Funded through DOE SCGSR

June - Aug 2011 **Research Experience for Undergraduates (REU)**, Purdue University.
Simulated different alignments to optimize the Very Energetic Radiation Imaging Telescope Array System (VERITAS)
Advisors: Professor John Finley and Dr. Glenn Sembroski

Jan - May 2011 **Undergraduate Researcher**, University of Georgia.
Simulations of High Velocity Cloud Mixing with the Milky Way Halo
Advisor: Professor Robin Shelton
Publication from work: 'Mixing between High Velocity Clouds and the Galactic Halo'
Gritton, Jeffrey A., Shelton, Robin L., Kwak, Kyujin, The Astrophysical Journal, Volume 795, Issue 1, article id. 99, 9 pp. (2014)

Teaching

Aug - Dec 2012 **Teaching Assistant**, *Department of Physics and Astronomy*, University of Pittsburgh.
Course: Astronomy 0089

Conferences and Talks

November 2016 **"Utilizing SweetSpot Host Galaxies for LSST"**, Contributed Plenary Talk.
Preparing for SN science in the LSST era: A kick-off workshop, University of Pittsburgh, Pittsburgh, PA

August 2016 **"SweetSpot: A Near Infrared Survey of Type Ia Supernovae in the Nearby Hubble Flow"**, Contributed Plenary Talk.
Supernova Through the Ages: Understanding the Past to Prepare for the Future, Easter Island, Chile

June 2015 **"SweetSpot: Data Release 1 and IFU Spectroscopy of 32 Host Galaxies"**, *K. A. Ponder, W. M. Wood-Vasey, A. Weyant, L. Allen, P. M. Garnavich, S. W. Jha, R. R. Joyce, T. Matheson, A. Rest*, Poster.
American Astronomical Society Meeting 228, San Diego, CA

May 2016 **"SweetSpot: NOAO Near-Infrared Survey of Type Ia Supernovae in the Nearby Hubble Flow"**.
NOAO FLASH talk, National Optical Astronomy Observatory, Tucson, AZ

August 2015 **"SweetSpot Data Release 1: 70 Type Ia Supernovae in the Near Infrared in the Nearby Hubble Flow"**, *K. A. Ponder, W. M. Wood-Vasey, A. Weyant, L. Allen, N. T. Barton, P. M. Garnavich, N. Jahan, S. W. Jha, R. R. Joyce, T. Matheson, A. Rest*, Poster.
The iPTF Summer School, California Institute of Technology, Pasadena, CA

July 2015 **"Accounting for Multiple Populations of Type Ia Supernovae"**, Contributed Talk.
Santa Fe Cosmology Workshops, St. John's College, Santa Fe, NM

May 2015 **"Incorporating Astrophysical Systematics into a Generalized Likelihood"**, Invited Talk.
KIPAC Tea Talk, SLAC National Accelerator Lab, Menlo Park, CA

March 2015 **"Incorporating Astrophysical Systematics into a Generalized Likelihood"**, Invited Talk.
Supernova at SLAC Meeting - SLAC National Accelerator Lab,Menlo Park, CA

Feb 2015 **"Incorporating Astrophysical Systematics into a Generalized Likelihood"**, Contributed Talk.
LSST DESC Collaboration Meeting, SLAC National Accelerator Lab,Menlo Park, CA

Jan 2015 **"SweetSpot Data Release 1: 70 Type Ia Supernovae in the Near Infrared in the Nearby Hubble Flow"**, *Wood-Vasey, W. Michael; Weyant, Anja; Allen, Lori; Trevino Barton, Nathan; Garnavich, Peter M.; Farhin Jahan, Nabila; Jha, Saurabh; Kroboth, Jessica Rose; Ponder, Kara Ann; Joyce, Richard R.; Matheson, Thomas; Rest, Armin*, Poster, Presented by W. Michael Wood-Vasey.
American Astronomical Society Meeting 225, Seattle, WA

Oct 2014 **"Incorporating Astrophysical Systematics into a Generalized Likelihood"**, Invited Talk.
CMU Astrostatistics meeting, Carnegie Mellon University, Pittsburgh, PA

June 2014 **"SweetSpot Data Release 1: 70 Type Ia Supernovae in the Near Infrared in the Nearby Hubble Flow"**, *Wood-Vasey, W. Michael; Weyant, Anja; Allen, Lori; Garnavich, Peter M.; Jahan, Nabila; Jha, Saurabh; Ponder, Kara A; Joyce, Richard R.; Matheson, Thomas; Rest, Armin*, Poster, Presented by W. Michael Wood-Vasey.
American Astronomical Society Meeting 224, Boston, MA

April 2014 **"Incorporating Astrophysical Systematics into a Generalized Likelihood"**, Contributed Talk.
Neighborhood Workshop on Astrophysics and Cosmology. Pennsylvania State University, State College, PA

Aug 2011 **"VERITAS Simulations"**, Contributed Talk.
REU Final Project Presentations - Purdue University, West Lafayette, IN

May 2011 **"The Mixing of High Velocity Clouds"**, Invited Talk.
Undergraduate Award's Day Colloquium - University of Georgia, Athens, GA

Publications

Fall 2016 (expected) **Weyant, A., Wood-Vasey, W.M., Ponder, K., et al.**, *"The First Data Release from SweetSpot: 74 Supernovae in 29 Nights on WIYN+WHIRC"*, To be submitted to the Astrophysical Journal.

June 2016 **Ponder, K., Wood-Vasey, W.M., Zentner, A.**, *"Incorporating Astrophysical Systematics into a Generalized Likelihood for Cosmology with Type Ia Supernova"*, Astrophysical Journal, Volume 825, p. 35.

Jan 2015 **Sloan Digital Sky Survey III- Reverberation Mapping Project (39 authors including Kara Ponder)**, *"The Sloan Digital Sky Survey Reverberation Mapping Project: Technical Overview"*, Astrophysical Journal Supplement, Volume 216, Issue 1, article id. 4.

References

Prof. Michael Wood-Vasey, email: wmwv@pitt.edu.

Prof. Andrew Zentner, email: zentner@pitt.edu.

Prof. Saurabh Jha, email: saurabh@physics.rutgers.edu.