

W. Michael Wood-Vasey

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Research Interests: Dark Energy, Supernova Cosmology, Local Galaxy Flows, Extra-Solar Planets.

Positions

2014 – present Associate Professor of Physics and Astronomy. University of Pittsburgh.
2008 – 2014 Assistant Professor of Physics and Astronomy. University of Pittsburgh.
2007 – 2008 Research Associate, ESSENCE project. Harvard University.
2004 – 2007 Postdoctoral Fellow, ESSENCE project. Harvard University.
1999 – 2004 Graduate Student Researcher and Teaching Assistant. UC Berkeley/LBNL.
1995 – 1998 Student Researcher in Hydrodynamic and Astrophysics. LLNL.

Education

Ph.D. in Physics UC Berkeley, 2004. “Rates and Progenitors of Type Ia Supernovae.”
Dissertation Advisors: Saul Perlmutter and George Smoot
M.A. in Physics University of California at Berkeley, May 2000.
B.S. in Physics; Math Harvey Mudd College (Honors), May 1998.

Major Roles in International Scientific Collaborations

2012 – 2016 LSST Dark Energy Science Collaboration Supernova Cosmology Co-Convener
2011 – 2015 SDSS-III Scientific Spokesperson
2007 – 2013 LSST Supernova Science Collaboration Co-Chair

Publications

93 refereed papers with a total of **13,418 citations**. **h-index: 48**. Full list on page 4.
9 papers with >500 citations, including one **first-author** and one **second-author** publication.

External Research Support

2014 – 2019: National Institutes of Mental Health R01 – **CoI** \$110,000 to MWV
“Melanopsin photosensitivity and psychopathology”
2014 – 2016: DOE High Energy Physics – **PI** \$160,000 to MWV
“Dark Energy Measurements Using Type Ia Supernovae in the Era
of the Large Synoptic Survey Telescope”
2013 – 2016: NSF Astronomy Research Grant – **PI** \$500,608 to MWV
“Type Ia Supernovae in the Near Infrared – Clearing a Path through the Dust”
2012 – 2014: Sloan Digital Sky Survey III – **Elected** \$ 65,000 to MWV
Scientific Spokesperson for the SDSS-III Collaboration
2012 – 2014: National Institutes of Mental Health R03 – **CoI** \$ 7,750 to MWV
“Light Sensitivity as an Endophenotype in Seasonal Depression”
2012 – 2013: NSF Statistics Research Grant – **CoI** \$ 7,884 to MWV
“Targeted Nonparametric Methods for Dark Energy Inference”
2010 – 2014: NSF Cyber-Enabled Discovery and Innovation – **CoI** \$317,250 to MWV
“Understanding the Universe through Scalable Navigation of a Galaxy of Annotations”

Selected Allocations of Telescope Time

WIYN, 3.5-m telescope – PI	98 nights from 2011B – 2016A
“Type Ia Supernovae in the Near-Infrared: A Three-Year Survey toward a One Percent Distance Measurement with WIYN+WHIRC”	
Hubble Space Telescope – CoI	100 orbits in Cycle 20
“RAISIN: Tracers of cosmic expansion with SN Ia in the IR”	
Hubble Space Telescope – CoI	45 orbits in Cycle 18
“A Strong Lensing Measurement of the Evolution of Mass Structure in Giant Elliptical Galaxies”	
Magellan, 6.5-m telescope – PI	5 nights in 2008
“SNeIa in the NIR”	
Magellan, 6.5-m telescope – CoI	10 nights in 2007 – 2008
"Cluster Cosmology: SZ Comes of Age through Photo-z"	

Honors and Awards

2009	“Students' Choice Award for Teaching.” Pitt College of General Studies.
2007, 2008	Harvard University Derek C. Bok Award for Excellence in Teaching
1998 – 2001	National Science Foundation Graduate Research Fellowship
1998	Harvey Mudd College Outstanding Thesis in Mathematics

Scientific Workshops Organized

LSST Dark Energy Science Collaboration Meeting, Fall 2013.
PITT PACC Workshop, March 2012: “Type Ia Supernovae in the Near Infrared”
Aspen Summer Workshop 2010: “Taking Supernova Cosmology into the Next Decade”

Professional Service while Faculty

National Committees and International Collaboration Service:

2014 – present	AAS Working Group on Time Domain Astronomy
2014 – 2017	LSST Scientific Advisory Committee
2012 – 2013	APS Division of Particles and Fields Long-Term Planning Committee: “Snowmass” Cosmic Frontiers: Dark Energy and the CMB
2012 – 2013	Committee on the Participation of Women in SDSS
2012	Space Telescope Science Institute Hubble Deep Fields Initiative
2011	SDSS-III Collaboration Council Representative for Associate Members

Physics and Astronomy Committees at the University of Pittsburgh:

2012	PITT PACC Executive Committee
2008 – present	Undergraduate Recruitment; Graduate Computing; Allegheny Observatory
2008 – 2011	Colloquium

Reviewer for: Astronomy & Astrophysics, The Astrophysical Journal, Physical Review Letters, Journal of Astronomy and Astrophysics, Research in Astronomy and Astrophysics, Monthly Notices of the Royal Astronomical Society, PhysMath Central

Panelist for: DOE, NASA, and NSF research grant programs.

Teaching and Mentoring

Graduate Students

- Kara Ponder, 2013 – present. Type Ia supernova cosmology with future surveys
Anja Weyant, 2009 – 2014. Probing local structure with SNeIa. **Graduated w/ Ph.D.** Aug '13.
Shailendra Vikas, 2009 – 2013. Quasar-metal correlation. **Graduated w/ Ph.D.** Apr '13.
Melanie Good, 2009 – 2011. Extrasolar planets. **Graduated w/ MA** in '11.

Teaching

- 2015 Fall “Physics 1321: Computational Methods in Physics”
2013 Fall “Astro 89: Stars, Galaxies and the Cosmos”
2013 Spring “Astro 1263: Observational Techniques in Astronomy”
2012 Fall “Astro 1122: The Solar System and Extrasolar Planets” (**New Course**)
2012 Spring “Astro 89: Stars, Galaxies and the Cosmos”
2011 Fall “Astro 3580: Galactic and Extragalactic Astronomy”
2011 Spring “Astro 1263: Observational Techniques in Astronomy”
2010 Fall “Astro 89: Stars, Galaxies and the Cosmos”
2010 Spring “Astro 89: Stars, Galaxies and the Cosmos”
2009 Fall “Astro 2580: Galactic & Extragalactic Astronomy”
2009 Spring “Astro 1263: Observational Techniques in Astronomy”

Public Outreach and Press

Outreach

- 2014 May Allegheny Observatory public lecture:
"Stars, Galaxies, and the Accelerated Expansion of the Universe"
2013 Nov Allegheny Observatory public lecture:
"How the Sloan Digital Sky Survey is Changing Our View of the Universe"
2012 Jun Planetarium and Museum of the Universe. Rio de Janeiro, Brazil.
"How the Sloan Digital Sky Survey is Changing Our View of the Universe"
2012 Mar Allegheny Observatory public lecture on SDSS-III.
2011 Dec “365 Days of Astronomy” podcast on the SDSS-III survey.
2011 Sep The Sloan Symposium in the Carnegie Mellon School of Drama
2010 Oct “The Transient Universe.” Unitarium Forum.
2009 Oct Pitt Science Days Lecture on Allegheny Observatory.
2009 Oct Amateur Astronomy Association of Pittsburgh invited lecture
2009 May Allegheny Observatory public lecture: “The Transient Sky”
2009 Jun Carnegie Science Center, Cafe Scientifique:
“The Dynamic Universe: Observing the Changing Sky Throughout the Cosmos”
2007 Massachusetts State Science Fair judge.
2006 – 2013 LSST Education and Public Outreach team member
Developing plan for engaging high-school students with supernovae.
2006 – 2008 Educational outreach with the CfA Science Education Department
2006 Podcast on string theory for high school students.

Press from 2010 – 2012

- 2013 Jul *Pitt News* article on SDSS-III Data Release 10.
- 2012 Aug *Pitt News* article on SDSS-III Data Release 9.
- 2012 Mar Pitt press release on joint ACT+SDSS-III kinetic SZ detection.
- 2012 Jan *Pitt Chronicle* note on election as SDSS-III Spokesperson.
- 2011 Jul Pitt A&S press, *Pittsburgh Tribune-Review* articles on CDI grant.
- 2011 Jan Pitt A&S press item on SDSS-III data release.
- 2010 Sep Pitt press release on exoplanet research
- 2010 Sep Exoplanet research featured in *Pittsburgh Tribune-Review*
- 2010 Aug Pan-STARRS1 survey work featured in *Pittsburgh Post-Gazette*
- 2010 Jul Pan-STARRS1 transient survey in *Pittsburgh Tribune-Review*
- 2010 Jul Pan-STARRS1 work featured in Pitt Chronicle
- 2009 Sep Interviewed by *SEED* magazine on dark energy and cosmology.
- 2009 Mar Interviewed by "Overnight America", KMOX, on LSST telescope
- 2009 Apr Appeared on WQED special on Allegheny Observatory, April 2, 2009.
- 2008 Aug: Interviewed by *Science Watch* about highly-cited paper

Publication Record for W. Michael Wood-Vasey

93 refereed papers with 13,418 citations total. 20 papers with >150 citations
9 papers with >500 citations: one first-author, one second-author, and two corresponding-author
h-index: 48

(As of 2017 Mar 15 as compiled by the Astrophysical Data Service (ADS): <http://adsabs.harvard.edu> plus articles in Psychology and IEEE publications which are not tracked by ADS.)

Notable and Research Group Refereed Publications

1. Ponder, K.; **Wood-Vasey, W. M.**; Zentner A. R. **2016** "Incorporating Astrophysical Systematics into a Generalized Likelihood for Cosmology with Type Ia Supernovae"
The Astrophysical Journal, Vol 825, 35. [**1 citation**]
2. Narayan, G. et al. **2016** "Light Curves of 213 Type Ia Supernovae from the ESSENCE Survey"
The Astrophysical Journal Supplements, Vol 224, 3. [**2 citations**]
3. Aubourg, Éric *et al.* **2015** "Cosmological implications of baryon acoustic oscillation measurements". *Physical Review D*, 92, 123516. [**133 citations**]
4. Alam, S. *et al.* (The SDSS-III Collaboration). **2015**
"The Eleventh and Twelfth Data Releases of the Sloan Digital Sky Survey: Final Data from SDSS-III" *The Astrophysical Journal Supplements*, Vol 219, 12. [**497 citations**]
[Corresponding Authors: **W. M. Wood-Vasey** and M. A. Strauss]
5. Friedman, A. S.; **Wood-Vasey, W. M.** *et al.* **2014**
"CfAIR2: Near Infrared Light Curves of 94 Type Ia Supernovae."
The Astrophysical Journal Supplements, Vol 220, 9. [**16 citations**]
6. Weyant, A., **Wood-Vasey, W. M.**, Allen, L., Garnavich, P. M., Jha, S. W., Joyce, R., Matheson, T. **2014** "SweetSpot: Near-Infrared Observations of Thirteen Type Ia Supernovae from a New NOAO Survey Probing the Nearby Smooth Hubble Flow".
The Astrophysical Journal, Vol 784, 105. [**7 citations**]
7. Ahn, C. P. *et al.* (The SDSS-III Collaboration). **2014**
"The Tenth Data Release of the Sloan Digital Sky Survey: First Spectroscopic Data from the SDSS-III Apache Point Observatory Galactic Evolution Experiment".
The Astrophysical Journal Supplements, Vol 211, 17. [**540 citations**]
[Corresponding Authors: **W. M. Wood-Vasey** and M. A. Strauss]
8. Vikas, S.; **Wood-Vasey, W. M.** *et al.* **2013** "Moderate CIV Absorber Systems Require $10^{12} M_{\text{Sun}}$ Dark Matter Halos at $z \sim 2.3$: A cross-correlation study of C IV absorber systems and quasars in SDSS-III BOSS DR9." *Astrophysical Journal*, Vol 768, 38. [**7 citations**]
9. Weyant, A.; Schafer, C.; **Wood-Vasey, W. M.** **2013** "Likelihood-Free Cosmological Inference with Type Ia Supernovae: Approximate Bayesian Computation for a Complete Treatment of Uncertainty." *Astrophysical Journal*, Vol 764, 116. [**9 citations**]

10. Ahn, C. *et al.* (The SDSS-III Collaboration). **2012** "The Ninth Data Release of the Sloan Digital Sky Survey: First Spectroscopic Data from the SDSS-III Baryon Oscillation Spectroscopic Survey." *Astrophysical Journal Supplements*, Vol 203, 21. [**708 citations**]
[Corresponding Authors: **W. M. Wood-Vasey** and M. A. Strauss]
11. Gezari, S.; Chornock, R.; Rest, A.; Huber, M. E.; Forster, K.; Berger, E.; Challis, P. J.; Neill, J. D.; Martin, D. C.; Heckman, T.; Lawrence, A.; Norman, C.; Narayan, G.; Foley, R. J.; Marion, G. H.; Scolnic, D.; Chomiuk, L.; Soderberg, A.; Smith, K.; Kirshner, R. P.; Riess, A. G.; Smartt, S. J.; Stubbs, C. W.; Tonry, J. L.; **Wood-Vasey, W. M.**; Burgett, W. S.; Chambers, K. C.; Grav, T.; Heasley, J. N.; Kaiser, N.; Kudritzki, R.-P.; Magnier, E. A.; Morgan, J. S.; Price, P. A. **2012** "An Ultraviolet-Optical Flare from the Tidal Disruption of a Helium-Rich Stellar Core." *Nature*, Vol 485, pp. 217–220. [**159 citations**]
12. Weyant, A.; **Wood-Vasey, W. M.**; Wasserman, L.; Freeman, P. **2011** "An Unbiased Method of Modeling the Local Peculiar Velocity Field with Type-Ia supernovae." *Astrophysical Journal*, Vol 732, p. 65. [**15 citations**]
13. Mandel, K. S.; **Wood-Vasey, W. M.** *et al.* **2009** "Type Ia Supernova Light-Curve Inference: Hierarchical Bayesian Analysis in the Near-Infrared." *Astrophysical Journal*, Vol 704, p. 629. [**60 citations**]
14. Hicken, M.; **Wood-Vasey, W. M.** *et al.* **2009** "Improved Dark Energy Constraints from ~100 New CfA Supernova Type Ia Light Curves." *Astrophysical Journal*, Vol 702, p. 1097. [**611 citations**]
15. **Wood-Vasey, W. M.** *et al.* **2008** "Type Ia Supernovae are Good Standard Candles in the Near Infrared: Evidence from PAIRITEL." *Astrophysical Journal*, Vol 689, p. 377. [**103 citations**]
16. **Wood-Vasey, W. M.** *et al.* **2007** "Observational Constraints on the Nature of the Dark Energy: First Cosmological Results from the ESSENCE Supernova Survey." *Astrophysical Journal*, Vol 666, Issue 2, pp. 694 – 715. [**752 citations**]
17. **Wood-Vasey, W. M.**; Sokoloski, J. L. **2006** "Novae as a Mechanism for Producing Cavities around the Progenitors of SN 2002ic and Other SNe Ia." *Astrophysical Journal Letters*, Vol 645L, p. 53. [**37 citations**]
18. **Wood-Vasey, W. M.**; Wang, L.; Aldering, G. **2004** "Photometry of SN 2002ic and Implications for the Progenitor Mass-Loss History." *Astrophysical Journal*, Vol 616, pp. 339 – 345. [**43 citations**]
19. **Wood-Vasey, W. M.** *et al.* "The Nearby Supernova Factory." **2004**, *New Astronomy Reviews*, Vol 48, Issue 7 – 8, pp. 637 – 640. [**42 citations**]

20. **Wood-Vasey, W. M. et al. 2000**
"Computational modeling of classical and ablative Rayleigh-Taylor instabilities"
Lasers and Particle Beams, Vol 18, pp. 583 – 593. **[2 citations]**

First-Author Book Chapters

"Supernovae", Chapter 11 of the LSST Science Book, **2009**, arXiv:0912.0201
[247 citations] for entire LSST Science Book

"The Future of Supernova Cosmology", Chp 7 of
"Dark Energy: Observational and Theoretical Approaches",
ed. Pilar Ruiz-Lapuente, **2010**, Cambridge University Press.

Dissertation

Wood-Vasey, W. M. **2004**. "Rates and Progenitors of Type Ia Supernovae."
Dept. of Physics, UC Berkeley. Dissertation Co-chairs: Saul Perlmutter and George Smoot.

First-Author Non-Refereed Publications

61 *International Astronomical Union Circulars* reporting the discovery of 83 supernovae.
8 *GRB Coordinates Network Circulars* reporting detection or upper limits for 8 GRBs.

Additional Refereed Journal Articles

1. Shen, Y.; *et al.* "The Sloan Digital Sky Survey Reverberation Mapping Project: First Broad-line Hbeta and MgII Lags at $z \sim 0.3$ from six-Month Spectroscopy"
The Astrophysical Journal, Vol 818, 30. **[15 citations]**
2. Dawson, Kyle S. *et al.* **2016**. "The SDSS-IV Extended Baryon Oscillation Spectroscopic Survey: Overview and Early Data". *The Astronomical Journal*. Vol 151, 44. **[87 citations]**
3. Holtzman, Jon A. *et al.* **2015**. "Abundances, Stellar Parameters and Spectra from the SDSS-III/APOGEE Survey". *The Astronomical Journal*. Vol 150, 148. **[99 citations]**
4. Grier, C. J. *et al.* **2015** "The Sloan Digital Sky Survey Reverberation Mapping Project: Rapid CIV Broad Absorption Line Variability" *The Astrophysical Journal*. Vol 806, 111. **[18 citations]**
5. Gezari, S. *et al.* **2015** "GALEX Detection of Shock Breakout in Type IIP Supernova PS1-13arp: Implications for the Progenitor Star Wind"

- The Astrophysical Journal*, Vol 804, 28. **[8 citations]**
6. Newman, Jeffrey A. **2015** *et al.* “Spectroscopic needs for imaging dark energy experiments” *Astroparticle Physics*, Vol 63, 81. **[27 citations]**
 7. Kumar, S. *et al.* **2015** “Selection of Burst-like Transients and Stochastic Variables Using Multi-band Image Differencing in the PAN-STARRS1 Medium-deep Survey” *The Astrophysical Journal*, Vol 802, 27. **[2 citations]**
 8. Kim, A. G. *et al.* **2015** “Distance probes of dark energy” *Astroparticle Physics*, Vol 63, 2 **[12 citations]**
 9. Shen, Yue. *et al.* **2015** “The Sloan Digital Sky Survey Reverberation Mapping Project: Technical Overview”. *The Astrophysical Journal Supplements*, Vol 216, 4 **[41 citations]**
 10. Astier, P. *et al.* **2014**. “Extending the supernova Hubble diagram to $z \sim 1.5$ with the Euclid space mission”. *Astronomy & Astrophysics*. Vol 572, 80. **[11 citations]**
 11. Rest, A. *et al.* **2013**. “Cosmological Constraints from Measurements of Type Ia Supernovae discovered during the first 1.5 years of the Pan-STARRS1 Survey”. *The Astrophysical Journal*. Vol 795, 44. **[128 citations]**
 12. Scolnic, D. *et al.* **2013**. “Systematic Uncertainties Associated with the Cosmological Analysis of the First Pan-STARRS1 Type Ia Supernova Sample”. *The Astrophysical Journal*. Vol 795, 45. **[74 citations]**
 13. Bianco, F. B. *et al.* **2014**, “Multi-color Optical and Near-infrared Light Curves of 64 Stripped-envelope Core-Collapse Supernovae”. *Astrophysical Journal Supplement*, Vol 213, id. 19. **[39 citations]**
 14. Luciani, T. *et al.* **2014**, “Large-Scale Overlays and Trends: Visually Mining, Panning and Zooming the Observable Universe”. *Transactions on Visualization and Computer Graphics. IEEE Transactions*. Vol 20, 1048. **[1 citations]**
 15. McCrum, M. *et al.* **2014**, “The superluminous supernova PS1-11ap: bridging the gap between low and high redshift”. *Monthly Notices of the Royal Astronomical Society*, Vol 437, p. 656. **[31 citations]**
 16. Pâris, I. *et al.* **2014**, “The Sloan Digital Sky Survey quasar catalog: tenth data release”. *Astronomy and Astrophysics*, Vol 563, p. 45. **[131 citations]**
 17. Nicholl, M. *et al.* **2013**, “Slowly fading super-luminous supernovae that are not pair-instability explosions”. *Nature*, Vol 502, p. 346. **[99 citations]**

18. Roecklein, K. A., Wong, P. M., Ernecoff, N. C., Miller, M. A., Donofry, S. D., Kamarck, M. L., **Wood-Vasey, W. M.**, Franzen, P. L. **2013**, “The post illumination pupil response is reduced in seasonal affective disorder”. *Psychiatry Research*, Vol 210, p. 150. **[28 citations]**
19. De Lee, N. *et al.* **2013**, “Very Low Mass Stellar and Substellar Companions to Solar-like Stars from MARVELS. V. A Low Eccentricity Brown Dwarf from the Driest Part of the Desert, MARVELS-6b”. *Astronomical Journal*, Vol 145, p. 155. **[8 citations]**
20. Dawson, K. S. *et al.* **2013**, “The Baryon Oscillation Spectroscopic Survey of SDSS-III”. *Astronomical Journal*, Vol 145, p. 10. **[648 citations]**
21. Pâris, I. *et al.* **2012** “The Sloan Digital Sky Survey quasar catalog: ninth data release”. *Astronomy & Astrophysics*, Vol 548, p. 66. **[166 citations]**
22. Roecklein, K. A., Wong, P. M., Franzen, P. L., Hasler, B. P., **Wood-Vasey, W. M.**, Nimgaonkar, V. L., Miller, M. A., Kepreos, K. M., Ferrell, R. E., Manuck, S. B. **2012** “Melanopsin Gene Variations Interact With Season to Predict Sleep Onset and Chronotype.” *Chronobiology International*. Doi: 10.3109/07420528.2012.706766 **[20 citation]**
23. Bolton, A. *et al.* **2012** “Spectral Classification and Redshift Measurement for the SDSS-III Baryon Oscillation Spectroscopic Survey.” *Astronomical Journal*, Vol 144, p. 144. **[259 citations]**
24. Fleming, S. *et al.* **2012** “Very Low Mass Stellar and Substellar Companions to Solar-like Stars from MARVELS. II. A Short-period Companion Orbiting an F Star with Evidence of a Stellar Tertiary and Significant Mutual Inclination.” *Astronomical Journal*, Vol 144, p. 72. **[14 citations]**
25. T. Luciani, S. Myers, B. Sun, B. Cherinka, **W.M. Wood-Vasey**, A. Labrinidis, G.E. Marai. “Panning and Zooming the Observable Universe with Prefix-Matching Indices and Pixel-Based Overlays”, 2012, IEEE Large-scale Data Analysis and Visualization Symposium, pp. 1–8. **Best Paper Runner-Up Award.**
26. Matheson, T. *et al.* **2012**. “The Infrared Light Curve of SN 2011fe in M101 and Implications for the Hubble Constant.” *Astrophysical Journal*, Vol 754, p. 10. **[37 citations]**
27. Hicken, M. *et al.* **2012**. “CfA4: Light Curves for 94 Type Ia Supernovae.” 2012, *Astrophysical Journal Supplements*, Vol 200, id 12. **[52 citations]**
28. Wang, Xiaofeng *et al.* **2012**. “Evidence for Type Ia Supernova Diversity from Ultraviolet Observations with the Hubble Space Telescope.” *Astrophysical Journal*, Vol 749, p. 126. **[31 citations]**
29. Ross, N. P. *et al.* **2012**. “The SDSS-III Baryon Oscillation Spectroscopic Survey: Quasar Target

- Selection for Data Release Nine.” *Astrophysical Journal Supplements*, Vol 199, 3.
[154 citations]
30. Brownstein, J. R. *et al.* **2012**. “The BOSS Emission-Line Lens Survey (BELLS). I. A Large Spectroscopically Selected Sample of Lens Galaxies at Redshift ~ 0.5 .” *Astrophysical Journal*, Vol 744, p. 41. **[55 citations]**
31. Chomiuk, L. *et al.* **2011**. “Pan-STARRS1 Discovery of Two Ultraluminous Supernovae at $z \approx 0.9$.” *Astrophysical Journal*, Vol 743, p. 114. **[94 citations]**
32. Eisenstein, D. J. *et al.* **2011**. “SDSS-III: Massive Spectroscopic Surveys of the Distant Universe, the Milky Way Galaxy, and Extra-Solar Planetary Systems.” *Astrophysical Journal*, Vol 142, p. 72. **[877 citations]**
33. Narayan, G. *et al.* **2011**. “Displaying the Heterogeneity of the SN 2002cx-like Subclass of Type Ia Supernovae with Observations of the Pan-STARRS-1 Discovered SN 2009ku.” *Astrophysical Journal*, Vol 731, p. 11. **[28 citations]**
34. Rest, A. *et al.* **2011**. “Pushing the Boundaries of Conventional Core-collapse Supernovae: The Extremely Energetic Supernova SN 2003ma.” *Astrophysical Journal*, Vol 729, p. 88. **[55 citations]**
35. High, F. W. *et al.* **2010**. “Optical Redshift and Richness Estimates for Galaxy Clusters Selected with the Sunyaev-Zel'dovich Effect from 2008 South Pole Telescope Observations.” *Astrophysical Journal*, Vol 723, Issue 2, pp. 1736 – 1747. **[60 citations]**
36. Shporer, A. *et al.* **2010**. “Ground-based Multisite Observations of Two Transits of HD 80606b.” *Astrophysical Journal*, Vol 772, Issue 1, pp. 880 – 887. **[8 citations]**
37. Garg, A. *et al.* **2010**. “High-amplitude δ -Scuti in the Large Magellanic Cloud ” *Astronomical Journal*, Vol 140, Issue 2, pp. 328 – 338. **[10 citations]**
38. Botticella, M. T. *et al.* **2010**. “Supernova 2009kf: An Ultraviolet Bright Type IIP Supernova Discovered with Pan-STARRS 1 and GALEX ” *Astrophysical Journal*, Vol 717, Issue 1, pp. 52 – 56. **[38 citations]**
39. Amanullah, R. *et al.* **2010**. “Spectra and Hubble Space Telescope Light Curves of Six Type Ia Supernovae at $0.511 < z < 1.12$ and the Union2 Compilation ” *Astrophysical Journal*, Vol 716, Issue 1, pp. 712 – 738. **[912 citations]**
40. Foley, R. *et al.* **2010**. “Early- and Late-Time Observations of SN 2008ha: Additional Constraints for the Progenitor and Explosion ” *Astrophysical Journal Letters*, Vol 708, Issue 1, pp. 61 – 65. **[56 citations]**

41. Freedman, W. L. *et al.* **2009**. “The Carnegie Supernova Project: First Near-Infrared Hubble Diagram to $z \sim 0.7$ ” *Astrophysical Journal*, Vol 704, Issue 2, pp. 1036 – 1058. **[73 citations]**
42. Modjaz, M. *et al.* **2009**. “From Shock Breakout to Peak and Beyond: Extensive Panchromatic Observations of the Type Ib Supernova 2008D Associated with Swift X-ray Transient 080109” *Astrophysical Journal*, Vol 702, Issue 1, pp. 226 – 248. **[153 citations]**
43. Hicken, M. *et al.* **2009**. “CfA3: 185 Type Ia Supernova Light Curves from the CfA ” *Astrophysical Journal*, Vol 700, Issue 1, pp. 331– 357. **[250 citations]**
44. Foley, R. *et al.* **2009**. “SN 2008ha: An Extremely Low Luminosity and Exceptionally Low Energy Supernova” *Astronomical Journal*, Vol 138, Issue 2, pp. 376 – 391. **[136 citations]**
45. Wang, X. *et al.* **2009**. “The Golden Standard Type Ia Supernova 2005cf: Observations from the Ultraviolet to the Near-Infrared Wavebands ” *Astrophysical Journal*, Vol 697, Issue 1, pp. 380 – 408. **[100 citations]**
46. Foley, R. *et al.* **2009**. “Spectroscopy of High-Redshift Supernovae from the Essence Project: The First Four Years” *Astronomical Journal*, Vol 137, Issue 4, pp. 3731 – 3742. **[31 citations]**
47. Kowalski, M. *et al.* **2008**. “Improved Cosmological Constraints from New, Old, and Combined Supernova Data Sets” *Astrophysical Journal*, Vol 686, Issue 2, pp. 749 – 778. **[1052 citations]**
48. Foley, R. *et al.* **2008**. “Constraining Cosmic Evolution of Type Ia Supernovae” *Astrophysical Journal*, Vol 684, Issue 1, p. 68-87. **[48 citations]**
49. Blondin, S. *et al.* **2008**. “Time Dilation in Type Ia Supernova Spectra at High Redshift” *Astrophysical Journal*, Vol 682, Issue 2, pp. 724 – 736. **[21 citations]**
50. Becker, A. C. *et al.* **2008**. “Exploring the Outer Solar System with the ESSENCE Supernova Survey” *Astrophysical Journal Letters*, Vol 682, Issue 1, pp. 53 – 56. **[8 citations]**
51. Rest, A. *et al.* **2008**. “Scattered-Light Echoes from the Historical Galactic Supernovae Cassiopeia A and Tycho(SN 1572).” *Astrophysical Journal Letters*, Vol 681, Issue 2, pp. 81 – 84. **[52 citations]**
52. Rest, A. *et al.* **2008**. “Spectral Identification of an Ancient Supernova Using Light Echoes in the LMC” *Astrophysical Journal*. Vol 680, Issue 2, pp. 1137 – 1148. **[64 citations]**
53. Wang, Y.; Narayan, G.; Wood-Vasey, W. M. **2007**. “Survey Requirements for Accurate and Precise Photometric Redshifts for Type Ia Supernovae.” *MNRAS*, Vol 382, Issue 1, pp. 377 – 381. **[9 citations]**

54. Davis, T. *et al.* **2007**. "Scrutinizing Exotic Cosmological Models Using ESSENCE Supernova Data Combined with Other Cosmological Probes"
Astrophysical Journal, Vol 666, Issue 2, pp. 716 – 725. **[481 citations]**
55. Miknaitis, G. *et al.* **2007**. "The ESSENCE Supernova Survey: Survey Optimization, Observations, and Supernova Photometry"
Astrophysical Journal, Vol 666, Issue 2, pp. 674 – 193. **[229 citations]**
56. Garavini, G. *et al.* **2007**. "Search for Spectral Evolution in High-Redshift Supernovae"
A&A, Vol 470, Issue 2, pp. 411 – 424. **[35 citations]**
57. Garg, A. *et al.* **2006**. "Light Curves of Type Ia Supernovae from Near the Time of Explosion"
Astronomical Journal, Vol 133, p. 403. **[42 citations]**
58. Conley, A. *et al.* **2006**. "Measurement of Ω_M , Ω_Λ , from a Blind Analysis of Type Ia Supernovae with CMAGIC: Using Color Information to Verify the Acceleration of the Universe"
Astrophysical Journal, Vol 644, pp.1 – 20. **[48 citations]**
59. Blondin, S. *et al.* **2006**. "Using Line Profiles to Test the Fraternity of Type Ia Supernovae at High and Low Redshifts" *Astronomical Journal*, Vol 131, pp. 1648 – 1666. **[69 citations]**
60. Bloom, J. S. *et al.* **2006**. "Closing in on a Short-Hard Burst Progenitor: Constraints from Early-Time Optical Imaging and Spectroscopy of a Possible Host Galaxy of GRB 050509b"
Astrophysical Journal, Vol 638, pp. 354 – 368. **[254 citations]**
61. Hook, I. M. *et al.* **2005**. "Spectra of High-Redshift Type Ia Supernovae and a Comparison with their Low-Redshift Counterparts"
Astronomical Journal, Vol 130, pp. 2788 – 2803. **[43 citations]**
62. Krisciunas, K. *et al.* **2005**. "Hubble Space Telescope Observations of Nine High-Redshift ESSENCE Supernovae" *Astronomical Journal*, Vol 130, pp. 2453 – 2472. **[42 citations]**
63. Tominaga, N. *et al.* **2005**. "The Unique Type Ib Supernova 2005bf: A WN Star Explosion Model for Peculiar Light Curves and Spectra"
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64. Garavini, G. *et al.* **2005**. "Spectroscopic Observations and Analysis of the Unusual Type Ia SN 1999ac" *Astronomical Journal*, Vol 130, pp. 2278 – 2292. **[34 citations]**
65. Barris, B. *et al.* **2005**. "The NN2 Flux Difference Method for Constructing Variable Object Light Curves" *Astronomical Journal*, 2005, Vol 130, pp. 2272 – 2277. **[21 citations]**
66. Levan, A. *et al.* **2005**. "A Deep Search with HST for Late Time Supernova Signatures in the Hosts of XRF 011030 and XRF 020427"

Astrophysical Journal, Vol 622, pp. 977 – 985. **[16 citations]**

67. Lidman, C. *et al.* **2005**, "Spectroscopic Confirmation of High-Redshift Supernovae with the ESO VLT" *A&A*, Vol 430, p. 843L. **[35 citations]**
68. Garavini, G. *et al.* **2004**. "Spectroscopic Observations and Analysis of the Peculiar SN 1999aa" *Astronomical Journal*, Vol 128, pp. 387 – 404. **[80 citations]**
69. Knop, R. A. *et al.* **2003**. "New Constraints on Ω_M , Ω_Λ , and w from an Independent Set of 11 High-Redshift Supernovae Observed with the Hubble Space Telescope" *Astrophysical Journal*, Vol 598, pp. 102 – 137. **[1274 citations]**
70. Sullivan, M. *et al.* **2003**. "The Hubble Diagram of Type Ia Supernovae as a Function of Host Galaxy Morphology" *MNRAS*, Vol 340, pp. 1057 – 1075. **[88 citations]**
71. Strolger, L.-G. *et al.* **2002**. "The Type Ia Supernova 1999aw: A Probable 1999aa-like Event in a Low-Luminosity Host Galaxy" *Astronomical Journal*, Vol 124, pp. 2905 – 2919. **[70 citations]**
72. Ryutov, D. *et al.* **1999**. "Similarity Criteria for the Laboratory Simulation of Supernova Hydrodynamics" *Astrophysical Journal*, Vol 518, pp. 821 – 832. **[228 citations]**
73. Budil, K. S. *et al.* **1996**. "Experimental Comparison of Classical versus Ablative Rayleigh-Taylor Instability" *PRL*, Vol 76, pp. 4536 – 4539. **[57 citations]**

Published Proceedings

1. Donofry, S. *et al.* **2015** "Melanopsin-specific Retinal Sub-sensitivity in Seasonal Affective Disorder" *Biological Psychiatry*, Vol 77, 9. Nominated for top presentation award.
2. Pécontal, E. *et al.* 2003. "The Nearby Supernova Factory." Proceedings of the ESO/MPA/MPE Workshop held in Garching, Germany, 29 – 31 July **2002**, p. 404.
3. Aldering, G. *et al.* "Overview of the Nearby Supernova Factory". Proceedings of the SPIE, **2002**, Vol 4836, pp. 61 – 72.

Whitepapers (Citations below are not included in total refereed citations)

1. "Spectroscopy in the Era of LSST"
Matheson, T., Fan, X, Green, R., McConnachie, A., Newman, J., Olsen, K., Szkody, P., Wood-Vasey W. M. Nov 2013. e-Print: arXiv:1311.2496 **[3 citations]**
2. "Large Synoptic Survey Telescope: Dark Energy Science Collaboration"
LSST Dark Energy Science Collaboration (Alexandra Abate et al.).
Nov 2012. 133 pp. FERMILAB-FN-0952-A-T. e-Print: arXiv:1211.0310 **[125 citations]**

3. “Addressing Decadal Survey Science through Community Access to Highly Multiplexed Spectroscopy with BigBOSS on the KPNO Mayall Telescope”
Pilachowski, C. et al. Nov 2012. 5 pp. e-Print: arXiv:1211.0285. **[1 citations]**
4. “LSST: from Science Drivers to Reference Design and Anticipated Data Products”
Ivezic, Z. et al. e-Print arXiv:0805.2366. **[594 citations]**

Invited Talks and Lectures

1. University of Pittsburgh. “Photo-z Workshop”, April 2016.
“Supernovae”
2. Lawrence Berkeley National Laboratory, June 2015
“SweetSpot: Near-Infrared Observations of Type Ia Supernovae in the Nearby Hubble Flow”
3. Stanford University/SLAC, January 2015.
“Supernovae, Surveys, and Statistics.”
4. University of California, Davis, October 2014.
“Supernovae, Surveys, and Statistics.”
5. National Optical Astronomy Observatories, September 2014
“Supernovae, Surveys, Software, and Statistics.”
6. École de Physique des Houches. “Summer School: Post-Planck Cosmology.” July 2013
Two lectures on “Observational Constraints on Cosmology from Type Ia Supernovae”
7. National Optical Astronomy Observatory. “Spectroscopy in the Era of LSST.” April 2013
Invited facilitator for “Dark Energy/Cosmology” subgroup.
8. Stanford Linear Accelerator Center. Snowmass Cosmic Frontier. March 2013
“Distances with Supernovae”
9. Ohio State University, Dept. of Astronomy Colloquium. November 2012
“Taking Supernova Cosmology into the Next Decade”
10. Case Western Reserve University, Dept. of Astronomy Colloquium. October 2011
“Taking Supernova Cosmology into the Next Decade”
11. Space Telescope Science Institute, “Very Wide Field Surveys in Light of Astro 2010.”
May 2011. “Type Ia Supernovae”
12. University of Michigan, Dept. of Astronomy Colloquium. October 2010.
“Taking Supernova Cosmology into the New Decade”
13. Greater Lakes Cosmology Workshop. June 2010.
“Pan-STARRS1: Supernovae and other Transients”
14. Lyon meeting on Dark Matter and Dark Energy 2008. July 2008.
“ESSENCE: Latest Results”

15. Greater Lakes Cosmology Workshop. June 2008.
“Supernova Cosmology Past and Present”
16. UCLA, Dark Matter and Dark Energy 2008. February 2008.
“ESSENCE: Six-Year Cosmological Results”.
17. Colloquium. Department of Physics and Astronomy. University of Pittsburgh. January 2008.
“Determining the Nature of Dark Energy:
The Latest Results from ESSENCE and the Future of Observational Cosmology”
18. Colloquium. Department of Astronomy. Wesleyan University. February 2008.
“Determining the Nature of Dark Energy: The Latest Results from ESSENCE”
19. Colloquium. Kavli Institute for Theoretical Physics. University of Santa Barbara. February 2008. “Determining the Nature of Dark Energy: The Future of Observational Cosmology”
20. Yale University, Yale Center for Astronomy & Astrophysics. November 2007.
“Determining the Nature of Dark Energy with Current and Future Surveys”.
21. Brookhaven National Laboratory, Particle Physics Seminar Series. July 2007.
“Determining the Nature of Dark Energy: Cosmology with ESSENCE, Pan-STARRS, SPT, LSST, and Other Acronyms”.
22. Kavli Institute for Theoretical Physics conference on
Paths to Exploding Stars: Accretion and Eruption. March 2007.
"Results from ESSENCE: The Similarity of Nearby and Distant SNeIa".
23. IPM Cosmology School and Workshop, Tehran, Iran. June 2007
Invited lecturer on Observational Probes of Dark Energy.
24. IAU General Assembly XXVI, Prague, The Czech Republic. August 2006.
"Thoughts on Dark Energy with Supernovae".
25. Key Approaches to Dark Energy, Barcelona, Spain. August 2006.
"Systematics and Lightcurve Fitting for Type Ia Supernova Cosmology".
26. AAS Meeting #208 Special Session, Calgary, Canada. June 2006.
"The ESSENCE of Dark Energy".

Declined

1. “Supernovae Through the Ages”, Easter Island, Chile. August 2016.