

# Blakesley K. Burkhart

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## Education

M.A. Astronomy, University of Wisconsin-Madison, 2010

M.S. Physics, University of Wisconsin-Madison, 2010

B.S. Physics & Mathematics (minor: Latin), University of Louisville, 2008, *Magna Cum Laude*

## Publications

### Refereed Publications

1. **Burkhart** B., Goncalves D., Kowal G., Lazarian A., “Density Studies in MHD Interstellar Turbulence: Statistical Moments, Correlations and Bispectrum,” *ApJ*, 2009, Vol 692, p250
2. **Burkhart** B., Stanimirovic S., Lazarian A., Kowal G., “Characterizing Magnetohydrodynamic Turbulence in the Small Magellanic Cloud,” *ApJ*, 2010, Vol. 708, p1204
3. Tofflemire, B., **Burkhart**, B., Lazarian, A., “Interstellar Sonic and Alfvénic Mach Numbers and the Tsallis Distribution” 2011, *ApJ*, 736, 60
4. Gaensler B., Haverkorn M., **Burkhart** B., et al. “Low Mach Number Turbulence in Interstellar Gas Revealed by Radio Polarization Gradients,” 2011, *Nature*, 478, 214
5. **Burkhart** B., Lazarian A., Goodman A., Rosolowsky E., “Hierarchical Structure of Magnetohydrodynamic Turbulence in PPV Space,” 2011, *ApJ*, in prep.
6. Saul ,D., Peek, J., Grcevich, J., Putman, M., Douglas, E., Korpela, E., Stanimirovic, S., Heiles, C., Gibson, S., Lee, M., Begum, A., Brown, A., **Burkhart**, B. et al., “The GALFA-HI Ultra-Compact Cloud Catalog,” *ApJ*, Submitted
7. **Burkhart** B., Lazarian A., Gaensler B., “Properties of Interstellar Turbulence from Gradients of Linear Polarization Maps,” 2011, *ApJ*, accepted.
8. **Burkhart** B., Ossenkopf V., Lazarian, A., Stutzki J., “Seeing Through the Fog: Obtaining the Mach Numbers in Turbulent Optically Thick Environments,” *ApJ*, in prep.

### Conference Proceedings

1. **Burkhart** B. & Lazarian A., “Connecting Numerics and Observations of Turbulence in the ISM,” *AstroNum 2010*, ASP conference series (2011) Vol.444
2. **Burkhart** B. & Lazarian A., “Characterizing Turbulence in the ISM”, 2011, *IAUS*, 274, 365
3. **Burkhart** B., Lazarian, A., Ossenkopf, V., Stutzki, J., “Gauging the Turbulent Mach Numbers in Optically Thick Clouds”, *AstroNum 2011*, ASP conference series (2012)
4. **Burkhart** B., Lazarian, A., Gaensler B. M., 2011, *Proc. of MFU III*

## Graduate Honors and Awards

2009 National Science Foundation Graduate Research Fellowship in Astrophysics  
2009 Wisconsin Space Grant  
2009 AAS Travel Grant to IAU meeting  
2009 Terragrid Ranger Supercomputer 200,000 CPU hours  
2010 AAS Travel Grant to CAP2010/SciFest meeting  
2010 Wisconsin Space Grant

2010 Terragrid Ranger Supercomputer 200,000 CPU hours  
2011 NASA Space Science Student Ambassador  
2011 Wisconsin Space Grant  
2011 Villas Travel Grant  
2011 Jansky Fellowship

### Teaching Experience

Teaching Assistant, Physics 224, University of Louisville, Spring 2008  
Supplemental Instructor of Physics, University of Louisville, Fall 2006-Spring 2008  
Supervised REU student 2010, work resulted in 1 ApJ paper.  
Supervised undergraduate student 2011-?

### Posters

1. Poster Presentation, July 2009, 5th Single Dish Summer School at Arecibo, Arecibo, PR
2. Poster Presentation, August 2009, XXVII International Astronomical Union Conference, Rio de Janeiro, Brazil
3. Poster Presentation, March 2010, Communicating Astronomy with the Public, Cape Town, South Africa

### Select Conference Talks

1. "New Ways of Studying MHD Turbulence" *Ecole Normale Supérieure*, Paris, France, January 5, 2009. *Institute of Astrophysics of Paris*, Paris, France, January 6, 2009.
2. "Universe in the Park: A Gateway to Astronomy" Communicating Astronomy with the Public (CAP) 2010, Cape Town, South Africa, March 15, 2010
3. "Turbulence and Magnetic Fields in Astronomy" 19th Annual Wisconsin Space Conference, Sheboygan, Wisconsin, August 19th, 2010
4. "Topology and Clumps of High Galactic Latitude HI" 2010 GALFA Consortium Meeting, Columbia University, New York, NY, August 11th, 2010
5. "Statistical Techniques for Characterizing Astrophysical Plasmas" IAU Plasma Astrophysics Conference, Gardini-Naxos, Italy, September 9, 2010
6. "Connecting Numerics and Observations of the Interstellar Medium" Compressible Turbulence at the Intersection of Astrophysics and Engineering, Santa Fe, New Mexico April 24, 2011
7. "The Intersection of Numerics and Observations for MHD Turbulence" AstroNum 2011, Valencia, Spain, June 17, 2011
8. "Snakes on the Plane: Probing the Origin of Synchrotron Filaments" Midwest Magnetic Fields Workshop, Madison, Wisconsin May 6, 2011 & Cologne Workshop on Turbulence and Magnetic Fields, August 3, 2011
9. "Progress in understanding the Turbulent Magnetized ISM," University of Bonn Colloquium, August, 2011
10. "Measuring MHD Turbulence in Polarization Maps," Magnetic Fields in the Universe III, Zakopane, Poland, August, 2011

### Service: Graduate

Universe in the Park Outreach, Summer 2008, 2009, 2010  
Space Place Outreach volunteer, 2008, 2010, 2011  
Assistant Editor of the Nucleus (National Society of Physics Students website) 2008-2009  
Writer for American Physical Society's *Physics Frontline* 2009-2010  
Expanding Your Horizons 2008, 2009, 2011  
SciFest Africa 2010 Exhibitioner  
Elementary-High School Science Speaker 2009, 2010, 2011  
Madison Middle School Science Symposium Mentor 2011

UW Madison Science Expeditions 2011

MadTownAstro [www.madtownastro.com](http://www.madtownastro.com)

Conference Organizer for the Midwest Magnetic Fields Workshop, May 6th 2011

Astronomy Outreach Coordinator for UW Madison 2011-?

Workshop Co-Organizer for ISM and Magnetic Fields Workshop in Natal, Brazil, Nov. 17, 2011

Host of weekly radio show "In Our Backyard: Radio Astronomy," 6:30-7pm Tuesday, 2012

**Service: Undergraduate (8/2004-5/2008)**

Treasurer, Eta Sigma Phi (Classical Languages Honors Society), 2005-2008, University of Louisville, 2005-2008

Treasurer, Society of Physics Students, University of Louisville, 2005-2006

Volunteer Tutor for Astronomy 107, University of Louisville, Fall 2006

Vice President, Society of Physics Students, University of Louisville, 2006-2007

Secretary, Math Club, University of Louisville, 2006-2007

President, Society of Physics Students, University of Louisville, 2007-2008

Society of Physics Students National Associate Zone Councilor for Zone 8, 2007-2008

REACH Tutor, University of Louisville, 2005-2006

**Undergraduate Honors and Awards**

University of Louisville Presidential Scholarship (Full tuition)

2006 Bullitt Award in Astrophysics

Eta Sigma Phi Classical Honor Society

UofL Honors Program Graduate

UofL Honors Scholar

Dean's List, University of Louisville, 2004-2008

Dean's Scholar, University of Louisville, Fall 2007

Sigma Pi Sigma Physics Honor Society

Sigma Pi Sigma Chapter Research Award 2007

Donald M. Bennett Award in Physics, University of Louisville, 2008

Woodcock Honor Society 2008

2008 American Astronomical Society Chambliss Astronomy Achievement Award, Honorable Mention

**Other**

RYA Yoga Instructor at the 200 hour level

PADI Open Water diver