

AMANDA ANN KEPLEY

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RESEARCH FOCUS

Physics of the interstellar medium in low-mass, low-metallicity, and/or starburst galaxies

EDUCATION

University of Wisconsin—Madison	Astronomy	Ph.D., December 2008
University of Wisconsin—Madison	Astronomy	M.S., August 2004
Case Western Reserve University	Astronomy	B.S., summa cum laude, 2002

GRANTS, AWARDS, AND HONORS

Over 20 successful PI telescope time proposals including:	2004 – present
• ALMA cycle 1 proposal (top 10%, highest priority, oversubscription 6:1)	
• 2 EVLA Resident Shared Risk Proposals (oversubscription 4:1)	
American Astronomical Society International Travel Grant	2012
National Radio Astronomy Observatory Foreign Telescope Fund Grant	2009, 2010
Green Bank Telescope (GBT) Student Support Award	2005 – 2008
National Science Foundation Graduate Research Fellowship	2003 – 2007
Wisconsin Space Grant Consortium Graduate Fellowship	2003, 2007
Karl Guthe Jansky and Alice Knapp Jansky Award	2006

RESEARCH EMPLOYMENT

National Radio Astronomy Observatory	Postdoctoral Fellow	9/2012 – present
• <i>Location:</i> Green Bank, West Virginia		
• <i>Supervisor:</i> Dr. Karen O'Neil		
• <i>Science Mentor:</i> Dr. Jay Lockman		
University of Virginia	Research Associate	10/2008 – 8/2012
• <i>Supervisor:</i> Dr. Kelsey E. Johnson		
• Visiting appointment at the National Radio Astronomy Observatory, Charlottesville, VA		
• Resident Shared Risk Observer at the Very Large Array from 2/2012 to 4/2012		
University of Wisconsin—Madison	Research Assistant	8/2002 – 9/2008
• <i>Advisor:</i> Dr. Eric M. Wilcots		
Case Western Reserve University	Undergraduate Research	6/2001 – 8/2002
• <i>Advisor:</i> Dr. Heather L. Morrison		

OBSERVING EXPERIENCE

- Experienced Very Large Array and Green Bank Telescope User
- Additional experience with WIYN (Sparsepak and WHIRC), KPNO 2.1m, Australian Telescope Compact Array, Arizona Radio Observatory 12-m and Submillimeter Telescopes, and Mopra

COMPUTING EXPERIENCE

- Primary reduction packages: CASA, AIPS, GBTIDL
- Fluent in IDL and Perl. Familiar with Python, Fortran, and C.

TEACHING EXPERIENCE

- Instructor, Observational Astronomy for Majors, University of Virginia Fall 2011
- Redesigned course integrating best learning practices using technology where appropriate
 - Guided students in original research projects, which they presented in a poster session
- Course Design Institute, University of Virginia 5/2011
- Participated in a week-long workshop to design a learner-centered syllabus for a future course.
- Guest Lecturer, University of Virginia 2009 - 2010
- Graduate ISM (1 lecture), Observational Astronomy for Majors (2 lectures)
- Introductory Teaching Excellence Workshop 1/2009
- Participated in a two-day course to introduce effective teaching and learning strategies for introductory astronomy courses and to gain practical experience with these techniques
- Introductory Astronomy Tutor, University of Wisconsin–Madison 2005 – 2008
- Teaching Assistant, University of Wisconsin–Madison Fall 2003

OUTREACH

- Mentoring Graduate Students 2009 – present
- L. M. Walker (U. of Virginia), B. Mullan (Penn State U.), and K. Rabidoux (West Virginia U.).
- Public Talks 2006 – present
- Expanding Your Horizons (EYH) 2003, 2005 – 2007
- Developed and led astronomy activities to increase the interest of middle-school girls in science.
- Informal Science Education for Scientists, University of Wisconsin Fall 2003
- Participated in seminar on developing and evaluating outreach activities.

SERVICE

- Reviewer for *Nature*, *Astronomical Journal*, and
Monthly Notices of the Royal Astronomical Society 4/2011 – present
- NRAO Green Bank Colloquium Committee 3/2013 – present
- Local Organizing Committee, 2013 NRAO Postdoctoral Symposium 1/2013 - 4/2013
- Star Formation Journal Club Organizer 10/2008 – 1/2012
- "Galaxies Lunch" Coordinator 6/2006 – 6/2008

SELECTED TALKS

- "The low-metallicity ISM: Chemistry, turbulence and magnetic fields" 10/2012
 invited talk; Göttingen, Germany
- Max Planck Institute for Radio Astronomy 10/2012
 colloquium; Bonn, Germany
- New Mexico Institute for Mining and Technology 3/2012
 colloquium; Socorro, NM, USA
- "Star Formation in Dwarf Galaxies" 6/2012
 contributed talk; Flagstaff, AZ, USA
- "Cosmic Magnetism: From stellar to intergalactic scales" 6/2010
 invited talk; Kiama, NSW, Australia
- "Assembly, Gas Content, and Star Formation History of Galaxies" 9/2009
 contributed talk; Charlottesville, VA, USA
- Australia Telescope National Facility 5/2009
 colloquium; Epping, NSW, Australia

PUBLICATIONS

REFEREED PUBLICATIONS

Mullan, B.; **Kepley, A.A.**; Maybhate, A.; English, J.; Knierman, K.; Hibbard, J.E.; Bastian, N.; Charlton, J.C.; Durrell, P.R.; Gronwall, C.; Elmegreen, D.; Konstantopoulos. (2013). "Under Pressure: Star Clusters and the Neutral Hydrogen Medium of Tidal Tails", *Astrophysical Journal*, accepted.

Hunter, Deidre A.; Fakhri, Zahedy; Bowsher, Emily C.; Wilcots, Eric M.; **Kepley, Amanda A.**; and Gaal, Veronika. (2011). "Mapping the Extended HI Distribution of Three Dwarf Galaxies", *Astronomical Journal*, 142, 173

Kepley, Amanda A.; Chomiuk, Laura; Johnson, Kelsey E.; Goss, W.M.; Balser, Dana S.; and Pisano, D.J. (2011). "Unveiling Extragalactic Star Formation Using Radio Recombination Lines: An EVLA Pilot Study with NGC 253", *Astrophysical Journal Letters*, 739, L24

Kepley, Amanda A.; Zweibel, Ellen G.; Wilcots, Eric M.; Johnson, Kelsey E.; and Robishaw, Timothy. (2011). "The Magnetic Field of the Irregular Galaxy NGC 4214", *Astrophysical Journal*, 736, 139

Mullan, B.; Konstantopoulos, I.S.; **Kepley, A.**; Lee, K.H.; Charlton, J.C.; Knierman, K.; Bastian, N.; Chandar, R.; Durrell, P.R.; Elmegreen, D.; English, J.; Gallagher, S.C.; Gronwall, C.; Hibbard, J.E.; Hunsberger, S.; Johnson, K.E.; Maybhate, A.; Palma, C.; Trancho, G.; and Vacca, W.D. (2011). "Star Clusters in the Tidal Tails of Interacting Galaxies: Photometric Properties and the Tail Environment", *Astrophysical Journal*, 731, 93

Kepley, Amanda A.; Mühle, Stefanie; Wilcots, Eric M.; Zweibel, Ellen G.; and Klein, Uli. (2010). "The Role of the Magnetic Field in the Interstellar Medium of the Post-Starburst Dwarf Irregular Galaxy NGC 1569", *Astrophysical Journal*, 712, 536-557

Morrison, H.L.; Helmi, A.; Sun, J.; Gu, R.; Norris, J.E.; Harding, P.; Kinman, T.D.; **Kepley, A. A.**; Freeman, K.C.; Williams, M.; van Duyne, J. (2009). "Fashionably Late? Building up the Milky Way's Inner Halo", *Astrophysical Journal*, 694, 130-143

Kepley, Amanda A.; Morrison, Heather L.; Helmi, Amina; Kinman, T.D.; van Duyne, Jeffrey; Martin, John C.; Harding, Paul; Norris, John E.; and Freeman, Kenneth C. (2007). "Halo Star Streams in the Solar Neighborhood", *Astronomical Journal*, 134, 1579-1595

Kepley, Amanda A.; Wilcots, Eric M.; Hunter, Deidre A.; Nordgren, Tyler. (2007). "A High-Resolution Study of the HI Content of Local Group Dwarf Irregular Galaxy WLM", *Astronomical Journal*, 133, 2242-2257

SUBMITTED PUBLICATIONS

Kepley, Amanda A.; Reines, Amy E.; Johnson, Kelsey E.; and Walker, Lisa May. (2013). "High Resolution Radio and Optical Observations of the Central Starburst in the Low Metallicity Dwarf Galaxy Merger II Zw 40", *Astronomical Journal*, submitted

DOCUMENTATION AND TECHNICAL MEMOS

Heiles, Carl; Robishaw, Tim; **Kepley, Amanda**; and Furea Kiuchi. (2012). "All-Stokes Single Dish Data with the RHSTK (Robishaw/Heiles SToKes) Software Package." (Green Bank, WV: NRAO)

Kepley, Amanda A. (2012). "OPT Quickstart Guide" (Socorro, NM: NRAO).
<http://evlaguides.nrao.edu/index.php?title=Category:OPT-QuickStart>

CONFERENCE PROCEEDINGS

Kepley, A.; Reines, A.; Johnson, K.; Leroy, A.; and Walker, L.M. (2011). "A Radio View of Star Formation in II Zw 40" in *A Universe of Dwarf Galaxies*, eds. M. Koleva, Ph. Prugniel, and I. Vauglin, EAS Publications Series, 48, 155-156.

Mullan, B.; Charlton, J. C.; Konstantopoulos, I. S.; Bastian, N.; Chandar, R.; Durrell, P. R.; Elmegreen, D.; English, J.; Gallagher, S. C.; Gronwall, C.; Hibbard, J. E.; Hunsberger, S.; Johnson, K. E.; **Kepley, A.**; Knierman, K.; Koribalski, B.; Lee, K. H.; Maybhate, A.; Palma, C.; Vacca, W. D. (2010). "Tidal Tails in Interacting Galaxies: Formation of Compact Stellar Structures", in the *Proceedings of the Galaxy Wars: Stellar Populations and Star Formation in Interacting Galaxies Conference*, eds., B. Smith, N. Bastian, James Higdon, and Sarah Higdon, ASP Conference Series, 423, 129.

Kepley, A.; Wilcots, E.; Zweibel, E.; Mühle, S.; Everett, J.; Robishaw, T.; Heiles, C.; & Klein, U. 2009, "Magnetic fields in irregular galaxies", in *Cosmic Magnetic Fields: From Planets, to Stars and Galaxies*, eds. K.G. Strassmeier, A.G. Kosovichev, and J.E. Beckman, IAU Symposium, 259, 555-556

Kepley, Amanda A.; Mühle, Stefanie; Wilcots, Eric M.; Everett, John; Zweibel, Ellen; Robishaw, Timothy; and Heiles, Carl. (2008). "Magnetic Fields in Irregular Galaxies", in *Galaxies in the Local Volume*, eds., B. Koribalski and H. Jerjen, Astrophysics and Space Science Proceedings, 1, 73-76

Kepley, Amanda A.; Wilcots, E.M.; & Hunter, D. (2003). "The Extended HI Distribution of Local Group Dwarf Galaxy WLM" in *The Local Group as an Astrophysical Laboratory; poster papers from the Space Telescope Science Institute Symposium*, 50

RECENT AMERICAN ASTRONOMICAL SOCIETY CONFERENCE ABSTRACTS

Kepley, A.A., Balser, D., Chomiuk, L., et al. (2012). "Massive Star Formation in Extreme Galaxies Using Radio Recombination Lines", *Bulletin of the American Astronomical Society*, #427.09 (poster)

Bernstein-Cooper, E., Cannon, J.M., Chomiuk, L., **Kepley, A.**, and Wilcots, E. 2012, "EVLA Radio Continuum Imaging of Nearby Dwarf Galaxies", *Bulletin of the American Astronomical Society*, #244.02 (poster)

Rabidoux, K., Johnson, K., **Kepley, A.**, Pisano, D.J., & Balser, D. (2011). "Enhancing the Picture of Star Formation in Local Galaxies with the Green Bank Telescope", *Bulletin of the American Astronomical Society*, #329.06 (poster)

Kepley, A.A., Chomiuk, L., Balser, D., et al. (2011). "Probing Thermal Gas Conditions in Extragalactic Star-forming Regions Using Radio Recombination Lines", *Bulletin of the American Astronomical Society*, 43, #258.29 (poster)

Kepley, A.A., Johnson, K., Indebetouw, R., & Brogan, C. (2010). "Star Formation in Nearby Galaxies with ALMA", *Bulletin of the American Astronomical Society*, 42, #479.06 (poster)