

CONTACT INFORMATION	CSIRO Astronomy & Space Science PO Box 76 Epping, NSW 1710 Australia	phone: +61 2 9372 4360 email: alex.hill@csiro.au web: www.astro.wisc.edu/~hill/
RESEARCH INTERESTS	Observational and numerical studies of the interstellar medium, particularly the warm ionised component. The disk-halo connection and vertical structure of the Milky Way. Turbulence in the warm ionised medium. Pulsar scintillation.	
EDUCATION	University of Wisconsin-Madison  Ph.D., Astronomy, June 2011 – Thesis title: “Warm ionized gas in the disk and halo of the Milky Way” – Advisor: Dr. L. Matthew Haffner  M.S., Astronomy, August 2007 – Graduate minor in physics  Oberlin College	Madison, WI USA         Oberlin, OH USA
	B.A., with High Honors in Physics, May 2004 – Thesis title: “Probing the interstellar medium on AU size scales using pulsar scintillation” – Advisor: Prof. Daniel R. Stinebring – Minor: Mathematics	
RESEARCH EXPERIENCE	CSIRO Astronomy & Space Science OCE Postdoctoral Fellow  University of Wisconsin-Madison Postdoctoral Research Associate Research Assistant  Sydney Institute for Astronomy, University of Sydney NSF EAPSI Fellow  American Museum of Natural History Visiting Scientist  Oberlin College Research Assistant  University of California, Berkeley Research Assistant  Harvard-Smithsonian Center for Astrophysics NSF REU Intern	Marsfield, NSW Australia October 2011 – present  Madison, WI USA June 2011 – September 2011 August 2005 – June 2011  Sydney, NSW, Australia June 2010 – August 2010  New York, NY USA March 2010  Oberlin, OH USA May 2001 – August 2004  Berkeley, CA USA Summer 2003  Cambridge, MA USA Summer 2002
TEACHING EXPERIENCE	University of Wisconsin-Madison Lectuer, Astronomy 103 – Instructor for introductory astronomy survey course with 40 students. – Supervised a grader. Teaching Assistant, Astronomy 103 – Taught six weekly sections, each with approximately 20 students, in an introductory astronomy survey course. Grader, Astronomy 103 – Graded weekly homework assignments and class projects.	Madison, WI USA Summer 2011         Fall 2006  2007 – 2009

OBSERVING EXPERIENCE	Wisconsin H-Alpha Mapper Hundreds of hours of Fabry-Perot spectroscopy.	Kitt Peak, AZ USA and Cerro Tololo, Chile
	Keck Telescope One night with the HIRES spectrograph.	Mauna Kea, HI USA
	WIYN 0.9 m Telescope Eight nights of narrowband optical imaging.	Kitt Peak, AZ USA
	Arecibo Observatory Over 100 hours of pulsar scintillation observations.	Arecibo, Puerto Rico
PUBLIC OUTREACH	Universe in the Park Gave public astronomy talks and run observing sessions with 8- and 10-inch telescopes in Wisconsin state parks. Over 40 sessions.	2005 – 2011
	Washburn Observatory (Madison, WI USA) Led public and UW-Madison class observing nights with the Washburn Observatory 16-inch refracting telescope.	2005 – 2011
	University of Wisconsin Space Place (Madison, WI USA) Public talk: “Seeing the Galaxy with WHAM”	2009 July
SERVICE	<ul style="list-style-type: none"> <li>– Referee for <i>Astronomy &amp; Astrophysics</i></li> <li>– ISM Lunch organiser (weekly lunch at UW-Madison), 2009 – 2010.</li> <li>– Graduate student medical &amp; family leave committee (UW-Madison), 2009 – 2010.</li> <li>– Prospective graduate student visit committee (UW-Madison), 2007 – 2009.</li> </ul>	
HONOURS & GRANTS AWARDED	<ul style="list-style-type: none"> <li>– National Science Foundation and Australian Academy of Science East Asia and Pacific Summer Institutes fellow. Project title: The magnetized multi-phase interstellar medium. Approximately \$10,000 for fellowship at the University of Sydney, Australia. Principal investigator. 2010.</li> <li>– Wisconsin Space Grant Consortium Special Initiatives (\$1728) for Astronomy in a box UW Outreach. Co-investigator. 2009.</li> <li>– American Astronomical International Travel Grant (\$1500) for travel to Disk-Halo 2009 conference, Espinho, Portugal. Principal investigator. 2008.</li> <li>– Carl E. Howe Prize for outstanding achievement in physics coursework and research, Oberlin College Department of Physics and Astronomy. 2004.</li> </ul>	
LANGUAGES SPOKEN	English (native), Spanish (conversational)	
REFEREED PUBLICATIONS	<p><b>A. S. Hill</b>, M. R. Joung, M.-M. Mac Low, R. A. Benjamin, L. M. Haffner, C. Klingenberg, &amp; K. Waagan, “Vertical structure of a supernova-driven turbulent, magnetized ISM”, <i>The Astrophysical Journal</i>, submitted</p> <p>V. A. Moss, N. M. McClure-Griffiths, R. Braun, <b>A. S. Hill</b>, &amp; G. J. Madsen, “GSH 006-15+7: A local Galactic supershell featuring transition from HI emission to absorption”, <i>Monthly Notices of the Royal Astronomical Society</i>, submitted</p> <p>K. A. Barger, L. M. Haffner, B. P. Wakker, <b>A. S. Hill</b>, &amp; G. J. Madsen, “Present-day Galactic Evolution: Low-metallicity, Warm, Ionized Gas Inflow Associated with High-velocity Complex A”, <i>The Astrophysical Journal</i>, submitted</p> <p>M.-M. Mac Low, <b>A. S. Hill</b>, M. R. Joung, K. Waagan, C. Klingenberg, K. Wood, R. A. Benjamin, C. Federrath, &amp; L. M. Haffner, “MHD simulations of a supernova-driven ISM and the warm ionized medium using a positivity preserving ideal MHD scheme”, 2011, in <i>Astronomum 2011</i>, Astron. Soc. Pac., in press, arXiv:1110.6527</p> <p>K. Wood, <b>A. S. Hill</b>, M. R. Joung, M.-M. Mac Low, R. A. Benjamin, L. M. Haffner, R. J. Reynolds, &amp; G. J. Madsen, “Photoionization of high-altitude gas in a supernovae driven turbulent interstellar medium,” 2010, <i>The Astrophysical Journal</i>, 721, 1397, doi:10.1088/0004-637X/721/2/1397</p>	

SELECTED  
UNREFEREED  
PUBLICATIONS

- A. S. Hill**, L. M. Haffner, & R. J. Reynolds, “Ionized gas in the Smith Cloud,” 2009, *The Astrophysical Journal*, 703, 1832, doi:10.1088/0004-637X/703/2/1832
- A. S. Hill**, R. A. Benjamin, G. Kowal, R. J. Reynolds, L. M. Haffner, & A. Lazarian, “The turbulent warm ionized medium: Emission measure distribution and MHD simulations,” 2008, *The Astrophysical Journal*, 686, 363, doi:10.1086/590543
- A. S. Hill**, D. R. Stinebring, C. T. Asplund, D. E. Berwick, W. E. Everett, & N. R. Hinkel. “Deflection of pulsar signal reveals compact structures in the Galaxy,” 2005, *The Astrophysical Journal*, 619, L171, doi:10.1086/428347
- A. S. Hill**, D. R. Stinebring, H. A. Barnor, D. E. Berwick, & A. W. Webber, “Pulsar scintillation arcs. I. Frequency dependence,” 2003, *The Astrophysical Journal*, 599, 457, doi:10.1086/428347
- A. S. Hill**, K. Wood, & L. M. Haffner, “The role of turbulence in the warm ionized medium,” 2010, in ASP Conference Series Vol. 438, *The Dynamic ISM: A Celebration of the Canadian Galactic Plane Survey*, ed. R. Kothes, T. L. Landecker, and A. G. Willis, ASP Conference Series, 190, arXiv:1007.2767
- L. M. Haffner, R. J. Reynolds, G. J. Madsen, **A. S. Hill**, K. A. Barger, K. P. Jaehnig, E. J. Mierkiewicz, J. W. Percival, & N. Chopra. “Early results from the Wisconsin H-Alpha Mapper Southern Sky Survey,” 2010, in ASP Conference Series, Vol. 438, *The Dynamic ISM: A Celebration of the Canadian Galactic Plane Survey*, ed. R. Kothes, T. L. Landecker, & A. G. Willis, ASP Conference Series, 388, arXiv:1008.0612
- L. M. Haffner, A. K. Duncan, S. M. Hoffman, G. J. Madsen, **A. S. Hill**, & R. J. Reynolds, “Ionization of infalling gas,” 2009, in *The Role of Disk-Halo Interaction in Galaxy Evolution: Outflow vs Infall?*, ed. M. A. Avillez & D. Breitschwerdt, EAS Publication Series, in press, arXiv:0901.0940
- R. J. Reynolds, L. M. Haffner, G. J. Madsen, K. Wood, & **A. S. Hill**, “Diffuse ionized gas in spiral galaxies and the disk-halo interaction,” 2009, in *The Role of Disk-Halo Interaction in Galaxy Evolution: Outflow vs Infall?*, ed. M. A. Avillez & D. Breitschwerdt, EAS Publication Series, in press, arXiv:0812.4303
- A. S. Hill**, R. J. Reynolds, R. A. Benjamin, & L. M. Haffner, “Density distribution of the warm ionized medium,” 2006, in *Small Ionized and Neutral Structures in the Diffuse Interstellar Medium*, ed. M. Haverkorn & W. M. Goss, ASP Conference Series, 365, 250, astro-ph/0701477
- D. R. Stinebring, **A. S. Hill**, & S. M. Ransom. “Scintillation arcs and binary pulsars with an application to PSR J07373039,” 2005, in *Binary Radio Pulsars*, ed. F. A. Rasio & I. H. Stairs, Vol. 328, ASP Conference Series (San Francisco: Astronomical Society of the Pacific), 349
- D. R. Stinebring, **A. S. Hill**, M. A. McLaughlin, K. M. Becker, J. M. Cordes, & M. Kramer, “An observational overview of scintillation arcs,” 2003, in *Radio Pulsars*, ed. M. Bailes, D. J. Nice, & S. E. Thorsett, Vol. 302, ASP Conference Proceedings (San Francisco: Astronomical Society of the Pacific), 263