

BARBARA ANNE WHITNEY

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Education

- 1989 Ph. D., Astronomy, University of Wisconsin–Madison
1983 B. A., Physics, Rice University

Research Activities: Development of Monte Carlo multi-dimensional radiative transfer codes; using these to test theories and interpret observations of forming stars, and the Martian atmosphere; observations of star formation in our Galaxy and the LMC.

Professional Experience

- 2004– Senior Research Scientist, Space Science Institute
2000– Associated Researcher, New York Center for Studies on the Origins of Life
2000– Co-Founder, Women Entrepreneurs in Science & Technology
1999–04 Research Scientist, Space Science Institute
1998–99 Vice-President and Co-Founder, Prism Computational Sciences, Inc.
1997–98 Assistant Scientist, Fusion Technology Institute, University of Wisconsin
1997 Information Processing Consultant, Wisconsin Small Business Development Center
1995–97 Assistant Researcher, Space Science and Engineering Center, University of Wisconsin
1989–95 Physicist, Harvard-Smithsonian Center for Astrophysics
1984–89 Research Assistant, Wisconsin Ultraviolet Photo-Polarimetry Experiment (WUPPE), University of Wisconsin
1983–84 Teaching Assistant, University of Wisconsin
1981–84 Summer Student, Los Alamos National Laboratory

Recent Service and Outreach Activities

- 2006 Protostars website containing grid of 20,000 star formation models, a tool to fit data, and radiation transfer codes
1991–07 Referee for several scientific articles per year.
2005–07 AAS Employment Committee
2007 Hubble Space Telescope review panel
2004, 06 NSF review panel
2005, 06 Spitzer Space Telescope review panel
2005 Thesis examiner for Nigel Aylward, Queensland University of Technology, Brisbane, Australia,
2004– Radiative transfer codes publicly available, including instruction files, sample models and plotting tools.
2005–08 Awarded NASA EPO project to put GLIMPSE survey mosaics on a navigable website, using software that can zoom images efficiently over the web. The website will include scientific annotations and explanations of various sources.

- 2005 Radio interview on “The Best of our Knowledge”, WAMC public radio, Troy, NY
- 2004 Radio interview, WORT radio, Madison, WI
- 2004 Public talk, “A new view of the Galaxy with GLIMPSE,” UW Space Place
- 2000-03 Co-founder of Women Entrepreneurs in Science & Technology.

Recent Talks (2005-07)

- University of Florida, “Interpreting Large Datasets on Star Formation Regions with Radiative Transfer Models,” colloquium, January 18, 2007.
- Massive Stars: From Pop III and GRBs to the Milky Way, “Massive Star Formation in the Galaxy with GLIMPSE,” invited review, Space Telescope Science Institute, May 8, 2006
- National Radio Astronomy Observatory “A Radiation Transfer Tool To Analyze Star Formation Regions,” colloquium, Socorro, NM, Feb. 24, 2006
- American Astronomical Society , “Results from the GLIMPSE Survey,” invited talk, Washington DC, January 10, 2006.
- ASIAA Star Formation Workshop, “Recent Results from the Spitzer GLIMPSE Survey,” invited talk, Dec. 11, Taipei, Taiwan.
- National Central University, “Star Formation in the GLIMPSE Survey...and a Radiation Transfer Tool to Analyze the Data,” colloquium, Chung-Li, Taiwan, Dec. 9, 2005.
- TIARA Star Formation Program, “A Large Grid of YSO Models and a Model Fitter”, invited talk, Hsinchu, Taiwan, Dec. 5, 2005
- Northwestern University, “Star Formation in the GLIMPSE Survey...and a Radiation Transfer Tool to Analyze the Data,” colloquium, November 29, 2005.
- Rensselaer Polytechnic Institute, “Star Formation in the GLIMPSE Survey...and a Radiation Transfer Tool to Analyze the Data,” colloquium, November 14, 2005.
- Arizona State University, “2-D and 3-D Radiation Transfer models of Young Stellar Objects,” September 21, 2005.
- University of Illinois , “2-D and 3-D Radiation Transfer models of Massive YSO SEDs”, colloquium, June 20, 2005.
- St. Andrews University, “A New View of the Galaxy with GLIMPSE”, May 24, 2005
- IAU Colloquium 227 on Massive Star Formation, “2-D and 3-D Radiation Transfer models of Massive YSO SEDs”, invited review, May 13-17, 2005, Sicily.
- University of Minnesota. “Radiative Transfer of Young Stellar Objects”, colloquium, Feb. 25, 2005

Students

I am currently working with the following students:

- Thomas Robitaille, St. Andrews University graduate student
- Katharine Johnston, St. Andrews graduate student
- Luciana Gramajo, graduate student, Universidad Nacional de Cordoba, Argentina
- Douglas Watson, UW undergrad (special student)
- Matthew Povich, UW graduate student
- Claudia Cyganowski, UW graduate student

Current Awarded Research Grants

- 2007-2010 A.G.G.M. Tielens et al., “SAGE-Spec: The Life Cycle of Dust in the LMC,” *Spitzer Space Telescope*
- 2007-2010 K. D. Gordon et al., “SAGE-SMC: Surveying the Agents of Galaxy Evolution in the Tidally-Disrupted, Low-Metallicity Small Magellanic Cloud,” *Spitzer Space Telescope*
- 2007-2009 **B. A. Whitney**, T. P. Robitaille, R. Indebetouw, M. Povich, & M. Wolff, “An Improved Grid of YSO Radiative Transfer Models, and Further Analysis of SEDs and Images from Spitzer,” *Spitzer Space Telescope*, \$70,247
- 2007-2009 T. H. Jarrett et al. “Unveiling the Hidden Heart of the Great Attractor,” *Spitzer Space Telescope*
- 2007-2009 E. B. Churchwell et al. “The Structure and Evolution of Stellar Wind-Blown Dust Bubbles,” *Spitzer Space Telescope*
- 2006-2008 **B. A. Whitney**, T. P. Robitaille, & K. Wood, “A Tool to Analyze Spitzer Data on Stellar and Young Stellar Objects,” *Spitzer Space Telescope*, \$45,913
- 2005-2008 **B. A. Whitney**, F. Heitsch, A. L. Lazarian, M. J. Wolff, “Radiative Transfer in Aligned Grains: Probing Magnetic Fields in Molecular Clouds, Protostars, and Disks”, NSF, \$354,707
- 2005-2008 **B. A. Whitney**, M. Wolfire, M. J. Wolff, “Modeling Emission Properties in Massive Star Formation Regions,” NASA Theory Program, \$330,000.
- 2005-2008 **B. A. Whitney** & J. Harold, “The Glimpse Image Explorer: Voyages Through our Infrared Galaxy,” NASA EPO, \$45,000
- 2006-2009 R. Benjamin et al., “GLIMPSE 3D: The Vertical Stellar and Interstellar Structure of the Inner Galaxy,” *Spitzer Space Telescope*
- 2005-2007 M. Meixner et al., “Surveying the Agents of Galactic Evolution” (a *Spitzer* LMC Survey), *Spitzer Space Telescope*, \$2.6 million
- 2005-2007 E. Churchwell et al. “GLIMPSE II,” *Spitzer Space Telescope*, \$320,000
- 2005-2007 M. Wolfire, R. Indebetouw, **B. Whitney**, J. S. Mathis, “PAH Emission in the Giant H II Region RCW 49”, *Spitzer Space Telescope*, \$51,675
- 2005-2007 M. Sitko, **B. Whitney**, M. Wolff, ”Infrared Spectroscopy of Comet 73P/Schwassmann-Wachmann 3,” *Spitzer Space Telescope*, \$113,835
- 2005-2007 J. Simpson, M. G. Burton, S. Colgan, A. S. Cotera, E. F. Erickson, D. C. Hines, & **B. A. Whitney**, “Testing the Stellar Coalescence and Accretion Disk Theories of Massive Star Formation with NICMOS,” Hubble Space Telescope
- 2005-2007 Leisa Townsley et al., “Winds, OB Populations, and Young Stars: New Science from M17”, Chandra X-Ray Observatory
- 2004-07 R. T. Clancy, M. J. Wolff, **B. Whitney**, “Dust & Ice Vertical Profiles,” NASA, \$350,091 i