

Dawn E. Peterson

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Current Position

Postdoctoral Fellow, Harvard-Smithsonian Center for Astrophysics

Education

- **Ph.D.**, 2005, Department of Physics & Astronomy, University of Rochester.
Title: *The Pre-Main Sequence & Brown Dwarf Populations of OMC 2/3: A Multiwavelength Study*
Advisers: Judith L. Pipher & S. Thomas Megeath
- **M.A.**, 2000, *Physics*, Department of Physics & Astronomy, University of Rochester.
- **B.A.**, 1998, *Astronomy & Physics with distinction*, College of Arts and Sciences, Boston University.

Refereed Publications

1. *Spitzer Survey of Interstellar Clouds in the Gould Belt. II. The Cepheus Flare Observed with IRAC and MIPS*, Kirk, Jason M., Ward-Thompson, D., Di Francesco, J., Bourke, T. L.,..., **Peterson, Dawn**, Ray, T. P., & Rebull, L. M., 2009, *Astrophysical Journal Supplements*, 185, 198.
2. *Spectroscopic Study of Young Stellar Objects in the Serpens Cloud Core and NGC 1333*, Winston, E., Megeath, S. T., Wolk, S. J., Hernandez, J., Gutermuth, R., Muzerolle, J., Hora, J. L., Covey, K., Allen, L. E., Spitzbart, B., **Peterson, D.**, Myers, P., & Fazio, G. G., 2009, *Astronomical Journal*, 137, 4777-4794.
3. *Primordial Circumstellar Disks in Binary Systems: Evidence for Reduced Lifetimes*, Cieza, Lucas A., Padgett, D. L., Allen, L. E., McCabe, Caer E., Brooke, Timothy Y., Carey, Sean J., Chapman, Nicholas L., Fukagawa, Misato, Huard, Tracy L., Noriga-Crespo, Alberto, **Peterson, Dawn E.**, & Rebull, L. M., 2009, *Astrophysical Journal Letters*, 696, L84-L88.
4. *The Orion Molecular Cloud 2/3 and NGC 1977 Regions*, **Peterson, Dawn E.** & Megeath, S. Thomas, chapter in *Handbook of Star Forming Regions*, Bo Reipurth, editor, Astronomical Society of the Pacific Conference Series, San Francisco, 2008.
5. *New Young Brown Dwarfs in the Orion Molecular Cloud 2/3 Region*, **Peterson, Dawn E.**, Megeath, S. T., Luhman, K. L., Pipher, J. L., Stauffer, J. R., Barrado y Navascués, D., Wilson, J. C., Skrutskie, M. F., Nelson, M. J., & Smith, J. D., 2008, *Astrophysical Journal*, 685, 313-332.
6. *Physical Conditions of Accreting Gas in T Tauri Star Systems*, Bary, J. S., Matt, S. P., Skrutskie, M. F., Wilson, J. C., **Peterson, D. E.**, & Nelson, M. J. 2008, *Astrophysical Journal*, 687, 376-388.
7. *Searching for hidden Wolf-Rayet stars in the Galactic Plane – 15 new Wolf-Rayet stars*, Hadfield, L. J., VanDyk, S. D., Morris, P. W., Smith, J. D., Marston, A. P., & **Peterson, D. E.** 2007, *Monthly Notices of the Royal Astronomical Society*, 376, 248-262.
8. *Characterizing Young Brown Dwarfs using Low Resolution Near-IR Spectra*, Allers, K. N., Jaffe, D. T., Luhman, K. L., Liu, M. C., Wilson, J. C., Skrutskie, M. F., Nelson, M., **Peterson, D. E.**, Smith, J. D., & Cushing, M. C. 2007, *Astrophysical Journal*, 657, 511-520.
9. *Discovery of a Young Substellar Companion in Chamaeleon*, Luhman, K. L., Wilson, J. C., Brandner, W., Skrutskie, M. F., Nelson, M. J., Smith, J. D., **Peterson, D. E.**, Cushing, M. C., & Young, E., 2006, *Astrophysical Journal*, 649, 894-899.
10. *Near-infrared spectra of the leading and trailing hemispheres of Enceladus*, Verbiscer, A. J., **Peterson, Dawn E.**, Skrutskie, M. F., Cushing, M. C., Helfenstein, P., Nelson, M. J., Smith, J. D., & Wilson, J. C., 2006, *Icarus*, 182, 211-223.
11. *Spectroscopic Confirmation of the Least Massive Known Brown Dwarf in Chamaeleon*, Luhman, K. L., **Peterson, Dawn E.**, and Megeath, S. T., 2004, *Astrophysical Journal*, 617, 565-568.
12. *Photometric Distances to Small Dark Clouds: CB 24*, **Peterson, Dawn E.**, and Clemens, Dan P., 1998, *Astronomical Journal*, 116, 881-889.

Poster Presentations

1. *Young Stellar Objects Identified with Spitzer in Corona Australis*, Peterson, D., and the Spitzer IRAC GTO and Gould Belt Legacy teams, 2010 (January), *American Astronomical Society Meeting 215*, 429.35.
2. *Spitzer + SMA Observations of an Embedded, Class I Disk in Corona Australis*, Peterson, D., Bourke, T., Jørgensen, J., Allen, L., Gutermuth, R. A., Forbrich, J., & Covey, K., 2008 (October), *New Light on Young Stars: Spitzer's View of Circumstellar Disks*, Poster #42.
3. *Spitzer's View of the Corona Australis Molecular Cloud*, Peterson, D. E., Allen, L. E., Gutermuth, R. A., and the Spitzer IRAC GTO and Gould Belt Legacy teams, 2008 (January), *American Astronomical Society Meeting 211*, 089.17.
4. *Cluster Formation in Isolation: Spitzer's View of Bok Globule CB 34*, Peterson, D. E., Gutermuth, R. A., Skrutskie, M. F., Megeath, S. T., Pipher, J. L., Allen, L. E., Myers, P. C., 2007 (January), *American Astronomical Society Meeting 209*, 105.20.
5. *Triggered Star Formation in the Isolated Cluster CB 34?*, Peterson, D. E., Gutermuth, R. A., Skrutskie, M. F., Megeath, S. T., Pipher, J. L., Allen, L. E., Myers, P. C., 2006 (August), *IAUXXVI Session 237: Triggered Star Formation in a Turbulent Interstellar Medium*.
6. *Disks Around Young Brown Dwarfs in the Orion Molecular Clouds 2 and 3 Region*, Peterson, D. E., Megeath, S. T., Luhman, K. L., Pipher, J. L., Barrado y Navascués, D., Stauffer, J. R., 2005 (October), *Protostars & Planets V*.
7. *Optical/Near-Infrared Selected Brown Dwarf Candidates in OMC 2/3*, Peterson, D. E., Megeath, S. T., Luhman, K. L., Pipher, J. L., Barrado y Navascués, D., Stauffer, J. R., Allen, L. E., Myers, P. C., 2004 (January), *American Astronomical Society Meeting 203*, 6.01.
8. *Optical/Near-Infrared Selected Brown Dwarf Candidates in OMC 2/3*, Peterson, D. E., Megeath, S. T., Luhman, K. L., Pipher, J. L., Barrado y Navascués, D., Stauffer, J. R., Allen, L. E., Myers, P. C., 2003 (July), *IAUXXV Session 221: Star Formation at High Angular Resolution*.
9. *Optical/Near-Infrared Selected Brown Dwarf Candidates in the OMC 2/3 Protostellar Cluster*, Peterson, D. E., Megeath, S. T., Luhman, K. L., Pipher, J. L., Barrado y Navascués, D., Stauffer, J. R., Allen, L. E., Myers, P. C., 2003 (January), *American Astronomical Society Meeting 201*, 93.17.
10. *Mapping the Initial Configuration of Young Stellar Clusters: Deep Near-Infrared Observations of OMC 2/3*, Peterson, D. E., Megeath, S. T., Pipher, J. L., Myers, P. C., Allen, L. E., 2002 (January), *American Astronomical Society Meeting 199*, 4.06.
11. *Photometric Distances to Dark Clouds and Small Bok Globules: Reddening Law Sensitivities*, Peterson, D. E., and Clemens, D. P., 1998 (Jan.), *American Astronomical Society Meeting 191*, 7.08.
12. *Photometric Distances to Dark Clouds and Small Bok Globules: CB 24*, Peterson, D. E., and Clemens, D. P., 1997 (June), *American Astronomical Society Meeting 190*, 41.10.

Invited Talks

1. *Star Formation in the Milky Way Galaxy*, Colloquium for the Department of Physics and Space Sciences, Florida Institute of Technology, August 28, 2009.
2. *Star Formation in the Milky Way Galaxy*, Colloquium for the Department of Physics and Astronomy, James Madison University, February 17, 2009.
3. *The Pre-Main Sequence and Brown Dwarf Populations of OMC 2/3: A Multiwavelength Study*, Colloquium for the Institute for Astrophysical Research, Boston University, November 16, 2004.

Contributed Talks

1. *Disks Around Brown Dwarfs and Low Mass Stars in the Orion Molecular Clouds 2 and 3*, Star Formation in the Era of Three Great Observatories Workshop, 2005.
2. *Brown Dwarf Candidates in OMC 2/3*, Astronomical Society of New York, 2002.
3. *New Near-Infrared Observations of OMC 2/3*, Astronomical Society of New York, 2001.

Grants Awarded

1. Peterson, D. E., Allen, L. E., & Gutermuth, R. A., *Assessing the Role of Environment in Star Formation: Isolated Bok Globules Versus Bright-Rimmed Clouds*, NASA Astrophysics Data Analysis grant awarded September 2009 (\$67K)

Observing Awards and Experience

1. Megeath, S. T., Pipher, J. L., Allen, L. E., Luhman, K. L., Peterson, D. E., 2003, *How do Brown Dwarfs Form?*, Hubble Space Telescope time with NICMOS, 6 orbits allocated during Cycle 12.
2. Peterson, D. E., Megeath, S. T., Luhman, K. L., Pipher, J. L., Allen, L. E., Rayner, J., Cushing, M. C., 2005, *Near-Infrared Selected Brown Dwarf Candidates in the Orion Molecular Clouds 2 and 3 Region*, using the SpeX spectrograph at the NASA Infrared Telescope Facility, Mauna Kea, 3 nights allocated, January 2-4, 2006 (time allocated for the same project in 2003 and 2004 as well).
3. Megeath, S. T., Pipher, J. L., Peterson, D. E., Myers, P. C., Li. D., Allen, L., 2005, *Mapping the Structure of Dark Filaments in OMC 3 with the IRS*, Spitzer Space Telescope GO time with IRS, 12 hours allocated during Cycle 2.
4. Bary, J. S., Skrutskie, M. F., Peterson, D. E., 2006 (and 2005) *A Multi-Epoch IRS Accretion Variability Study of Actively Accreting T Tauri Stars*, Spitzer Space Telescope GO time with IRS, 7.7 hours allocated during Cycle 3 (8.4 hours allocated during Cycle 2).
5. Peterson, D. E., Megeath, S. T., Cushing, M. C., & Pipher, J. L., 2007 & 2008, *Probing the Initial Mass Function in the Orion Molecular Cloud 2/3 Region*, using the SpeX spectrograph at NASA IRTF, 3 nights allocated, 2007; 5 half-nights allocated, 2008.
6. Peterson, D. E. (Technical Contact), Allen, L. E., Gutermuth, R. A., & Bourke, T., 2008, *A Survey for Isolated Clusters in Bok Globules*, using the Spitzer Space Telescope GTO time with IRAC and MIPS; 14 hours allocated during Cycle 5 (PID: 50452).
7. Peterson, D. E., Bourke, T., Jørgenson, J., Allen, L., Gutermuth, R., & Covey, K., 2008, *Deconstructing YSO Disks in Corona Australis with SMA*, 1 “A” track, 1 “B” track allocated, June 2008.
8. Peterson, D. E., Bourke, T., Jørgenson, J., Allen, L., Matthews, B., & Kirk, J. 2008, *Deconstructing YSO Disks in Auriga with SMA*, 2 “B” tracks allocated, November 2008.
9. Peterson, D. E., Allen, L. E., Gutermuth, R. A., & Bourke, T., 2009, *Small Clusters Forming in Isolation? CB 34 and CB 58*, Spitzer Space Telescope GO time with IRAC (Warm Mission), 1.8 hours allocated during the Cycle 6 (PID: 60181).
10. Peterson, D. E., Bourke, T., Jørgenson, J., Allen, L., Matthews, B., & Caratti o Garatti, A. 2009, *First Census of Star Formation in Auriga*, 2 “B” tracks allocated, November 2009.

I have extensive near-infrared and optical imaging and spectroscopic experience at various telescopes using several instruments. This includes the CorMASS spectrograph at the Vatican Advanced Technology Telescope, Apache Point Observatory 3.5-m, and the Magellan (Clay) telescopes as well as SpeX at the IRTF. For imaging, I have used the Stelircam and 4-Shooter cameras on the 1.2-m telescope at Fred Lawrence Whipple Observatory, the Simultaneous Quad Infrared Imaging Device (SQIID) on the Kitt Peak 2-m telescope, and most recently, NEWFIRM at the Kitt Peak 4-m telescope. In addition, I have several nights experience using the Red Channel Spectrograph, Hectospec and FLAMINGOS (imaging) at the MMT Observatory.

Research Experience

- Levinson Research Associate: Dept. of Astronomy, University of Virginia, October 2004 - July 2007.
- Graduate Research Assistant: Near-Infrared Astrophysics Lab, Department of Physics & Astronomy, University of Rochester, July 1998 - September 2004.
- Undergraduate Research Assistant: Department of Astronomy with Professor Dan Clemens, Boston University, September 1995 - May 1998.

Teaching Experience

- Teaching Assistant: AST 105 *Introduction to the Milky Way Galaxy* with Professor Adam Frank, January 1999 - May 1999.

- Teaching Assistant: AST 102 *Black Holes, Time Warps and the Large Scale Structure of the Universe* with Professor Dan Watson, September 1998 - December 1998.

Computer Experience

- Operating Systems: UNIX-like systems, particularly Linux and Mac OS X; Windows.
- Astronomical Image Reduction Software: IDL, IRAF.
- Programming Languages: Fortran.
- Document preparation systems: LaTeX, TeX.

Honors and Awards

- Department of Education Graduate GAANN Fellowship in Physics and Astronomy at the University of Rochester, September 1998 - May 2001.
- Graduated with distinction from the Department of Astronomy: Boston University, May 1998.
- University Merit Scholarship: Boston University, September 1994 - May 1998.

Professional Associations

- Member of the American Astronomical Society since 1997.

References

- **Lori Allen**, NOAO, 950 N. Cherry Avenue, Tucson, AZ 85719, USA, phone: (520) 318-8486, email: lallen@noao.edu.
- **Mike Skrutskie**, Department of Astronomy, University of Virginia, Charlottesville, VA 22903, USA, phone: (434) 924-4328, email: mfs4n@virginia.edu.
- **Judy Pipher**, Department of Physics and Astronomy, University of Rochester, Rochester, NY 14627-0171, USA, phone: (585) 275-4402, email: jlipher@astro.pas.rochester.edu.
- **Tom Megeath**, Department of Physics and Astronomy, University of Toledo, Toledo, OH 43606, USA, phone: (419) 530-7812 email: megeath@physics.utoledo.edu.