

Jennifer L. Hoffman

Dept. of Physics and Astronomy, 2112 E. Wesley Ave., Denver, CO 80210; (303) 871-2268; jennifer.hoffman@du.edu

Education

- 2002 Ph.D., University of Wisconsin-Madison, Astronomy
Adviser: Kenneth H. Nordsieck
Locating Mass Loss: Numerical Modeling of Circumstellar Material in Binary Systems
- 1997 M.S., University of Wisconsin-Madison, Astronomy
- 1994 A.B., University of California at Berkeley, Physics and Astrophysics
Undergraduate studies included a year at Georg-August Universität in Göttingen, Germany.

Professional Appointments

- 2013–present Associate Professor with Tenure, University of Denver, Dept. of Physics and Astronomy
- 2007–2013 Assistant Professor, University of Denver, Dept. of Physics and Astronomy
Spectropolarimetry of massive stars and supernovae with circumstellar material; radiative transfer modeling of line polarization in massive stars and supernovae; supernova classification and progenitor identification
- 2003–2007 NSF Astronomy & Astrophysics Postdoctoral Fellow and Postdoctoral Scholar, UC Berkeley, Dept. of Astronomy
Sponsors: Alexei V. Filippenko (Astronomy), Peter Nugent (LBL Scientific Computing Group)
Radiative transfer modeling of line polarization effects in supernovae; spectropolarimetric observations of Seyfert 1 galaxies and Type II_n supernovae
- 2002–2003 Postdoctoral Research Associate, Rice University, Dept. of Physics and Astronomy
Adviser: Christopher M. Johns-Krull (Physics & Astronomy)
Spectropolarimetric observations of LL Ori stars; radiative transfer modeling of T Tauri disk winds
- 1996–2002 NASA/Goddard Graduate Student Research Fellow and Research Assistant, UW-Madison, Dept. of Astronomy
Adviser: Kenneth H. Nordsieck (Astronomy); collaborator: Barbara A. Whitney (Space Science Institute); GSFC technical adviser: Theodore R. Gull (GSFC)
Spectropolarimetric observations of Algol and Herbig Ae/Be binary stars; Monte Carlo radiative transfer modeling of the polarization signatures of Algol binaries, luminous blue variables, and the η Car homunculus
- 1995 Junior Specialist, UC Berkeley, Dept. of Astronomy
Adviser: Ivan R. King (Astronomy)
Open-cluster photometry; reduction and analysis of HST WFPC2 data; faint-object astrometry
- 1994 REU Research Intern, Maria Mitchell Observatory
Adviser: Eileen D. Friel
Open-cluster photometry
- 1993–1994 Engineering Aide, UC Berkeley, Center for EUV Astrophysics
Supervisor: Nahide Craig
Reduction and analysis of EUVE data

Publications (asterisks indicate student or former student first authors)

Refereed Publications

- 2017 *The Complex Circumstellar and Circumbinary Environment of V356 Sgr*
*Lomax, J.R., Fullard, A.G., Malatesta, M.A., Babler, B., Bednarski, D., Berdis, J.R., Bjorkman, K.S., Bjorkman, J.E., Carciofi, A.C., Davidson, J.W., Keil, M., Meade, M.R., Nordsieck, K., Scheffler, M., **Hoffman, J.L.**, & Wisniewski, J.P. 2017, MNRAS, 464, 1936
- 2016 *Asymmetries in SN 2014J Near Maximum Light Revealed through Spectropolarimetry*
Porter, A.L., Leising, M.D., Williams, G.G., Milne, P., Smith, P., Smith, N., Bilinski, C., **Hoffman, J.L.**, Huk, L., & Leonard, D.C. 2016, ApJ, 828, 84
- 2015 *Spectropolarimetry of SN 2011dh in M51: Geometric Insights on a Type IIb Supernova Progenitor and Explosion*
Mauerhan, J., Williams, G.G., Leonard, D.C., Smith, P.S., Smith, N., Filippenko, A.V., **Hoffman, J.L.**, Huk, L.N., Clubb, K.I., Silverman, J.M., Cenko, S.B., Milne, P., Gal-Yam, A., Ben-Ami, S., & Dessart, L. 2015, MNRAS, 453, 4467
- 2015 *A Coordinated X-Ray and Optical Campaign on the Nearest Massive Eclipsing Binary, δ Ori Aa: IV. A Multiwavelength, Non-LTE Spectroscopic Analysis*
Shenar, T., Oskinova, L., Hamann, W.-R., Corcoran, M.F., Moffat, A.F.J., Waldron, W.L., Huenemoerder, D.P., Maíz Apellániz, J., Nichols, J.S., Todt, H., Nazé, Y., **Hoffman, J.L.**, & Negueruela, I. 2015, ApJ, 809, 135
- 2015 *A Coordinated X-Ray and Optical Campaign on the Nearest Massive Eclipsing Binary, δ Ori Aa: III. Analysis of Optical Photometric (MOST) and Spectroscopic (Ground Based) Variations*
Pablo, H., Richardson, N.D., Moffat, A.F.J., Corcoran, M., Shenar, T., Benvenuto, O., Fuller, J., Nazé, Y., **Hoffman, J.L.**, Miroshnichenko, A., Maíz Apellániz, J., Evans, N., Eversberg, T., Gayley, T., Gull, T., Hamaguchi, K., Hamann, W.-R., Henrichs, H., Hole, K.T., Ignace, R., Iping, R., Lauer, J., Leutenegger, M., Lomax, J.R., Nichols, J., Oskinova, L., Owocki, S., Pollock, A.M.T., Russell, C., Waldron, W., Buil, C., Garrel, T., Graham, K., Heathcote, B., Lemoult, T., Li, D., Mauclaire, B., Potter, M., Ribeiro, J., Matthews, J., Cameron, C., Guenther, D., Kuschnig, R., Rowe, J., Rucinski, S., Sasselov, D., & Weiss, W. 2015, ApJ, 809, 134
- 2015 *A Coordinated X-Ray and Optical Campaign on the Nearest Massive Eclipsing Binary, δ Ori Aa: II. X-Ray Variability*
Nichols, J.S., Huenemoerder, D.P., Waldron, W.L., Nazé, Y., Pollock, A.M.T., Moffat, A.F.J., Lauer, J., Shenar, T., Russell, C.M.P., Richardson, N.D., Pablo, H., Evans, N.R., Hamaguchi, K., Gull, T.R., Hamann, W.-R., Oskinova, L., Ignace, R., **Hoffman, J.L.**, Hole, K.T., & Lomax, J.R. 2015, ApJ, 809, 133
- 2015 *A Coordinated X-Ray and Optical Campaign on the Nearest Massive Eclipsing Binary, δ Ori Aa: I. Overview of the X-Ray Spectrum*
Corcoran, M.F., Pablo, H., Shenar, T., Pollock, A.M.T., Waldron, W.L., Moffat, A.F.J., Richardson, N.D., Russell, C.M.P., Hamaguchi, K., Huenemoerder, D.P., Oskinova, L., Hamann, W.-R., Nazé, Y., Ignace, R., Evans, N.R., Lomax, J.R., **Hoffman, J.L.**, Gayley, K., Owocki, S.P., Leutenegger, M., Gull, T.R., Hole, K.T., Lauer, J., & Iping, R.C. 2015, ApJ, 809, 132
- 2015 *V444 Cyg X-ray and Polarimetric Variability: Radiative and Coriolis Forces Shape the Wind Collision Region*
*Lomax, J.R., Nazé, Y., **Hoffman, J.L.**, Russell, C.M.P., de Becker, M., Corcoran, M.F., Davidson, J.W., Neilson, H.R., Owocki, S., Pittard, J.M., & Pollock, A.M.T. 2014, A&A, 573, A43
- 2014 *The HPOL Spectropolarimeter at Ritter Observatory*
Davidson, J.W., Bjorkman, K.S., **Hoffman, J.L.**, Bjorkman, J.E., Nordsieck, K.H., Babler, B.L., Meade, M.R., Wisniewski, J.P., & Lomax, J.R. 2014, Journal of Astronomical Instrumentation, 03, 1450009
- 2014 *Multi-Epoch Spectropolarimetry of SN 2009ip: Direct Evidence for Aspherical Circumstellar Material*
Mauerhan, J., Williams, G.G., Smith, N., Smith, P.S., Filippenko, A.V., **Hoffman, J.L.**, Milne, P., Leonard, D.C., Clubb, K.I., Fox, O., & Kelly, P.L., MNRAS, 442, 1166
- 2012 *Geometrical Constraints on the Hot Spot in β Lyrae*
*Lomax, J. R., **Hoffman, J.L.**, Elias, N.M., Bastien, F., & Holenstein, B.D. 2012, ApJ, 750, 59

- 2011 *Massive Stars in Polarized Light*
Hoffman, J.L. 2011, Bulletin de la Société Royale des Sciences de Liège, 80, 81
- 2011 *Spectropolarimetry of beta Lyrae: Constraining the Location of the Hot Spot and Jets*
 *Lomax, J.R. & **Hoffman, J.L.** 2011, Bulletin de la Société Royale des Sciences de Liège, 80, 689
- 2008 *The Dual-Axis Circumstellar Environment of the Type II In Supernova SN 1997eg*
Hoffman, J.L., Leonard, D.C., Chornock, R., Filippenko, A.V., Barth, A.J., & Matheson, T. 2008, ApJ, 688, 1186
- 2008 *Phase-dependent X-ray observations of the beta Lyrae system: No eclipse in the soft band*
 Ignace, R., Oskinova, L.M., Waldron, W.L., **Hoffman, J.L.**, & Hamann, W.-R. 2008, A&A, 477, L37
- 2006 *The Orbit and Occultations of KH 15D*
 Winn, J.N., Hamilton, C.M., Herbst, W.J., **Hoffman, J.L.**, Holman, M.J., Johnson, J.A., & Kuchner, M.J. 2006, ApJ, 644, 510
- 2006 *A Non-Spherical Core in the Explosion of SN 2004dj*
 Leonard, D.C., Filippenko, A.V., Ganeshalingam, M., Serduke, F.J.D., Li, W., Swift, B.J., Gal-Yam, A., Foley, R.J., Fox, D.B., Park, S., **Hoffman, J.L.**, & Wong, D.S. 2006, Nature, 440, 505
- 2005 *Interstellar Polarization and the Position Angle Orientations of Seyfert 1 Galaxies*
Hoffman, J.L., Chornock, R., Leonard, D.C., & Filippenko, A.V. 2005, MNRAS, 363, 1241
- 2003 *The Effect of Multiple Scattering on the Polarization from Binary Star Envelopes. I. Self- and Externally-Illuminated Disks*
Hoffman, J.L., Whitney, B.A., & Nordsieck, K.H. 2003, ApJ, 598, 572
- 2003 *Spectroscopic and Spectropolarimetric Observations of V838 Monocerotis*
 Wisniewski, J.P., Morrison, N.D., Bjorkman, K.S., Miroshnichenko, A., Gault, A.C., **Hoffman, J.L.**, Meade, M.R., & Nett, J.M. 2003, ApJ, 588, 486
- 2002 *Spectropolarimetric Clues to the Structure and Evolutionary Status of MWC 349A*
 *Meyer, J. M., Nordsieck, K.H., & **Hoffman, J.L.** 2002, AJ, 123, 1639
- 1998 *Spectropolarimetric Evidence for a Bipolar Flow in beta Lyrae*
Hoffman, J.L., Nordsieck, K.H., & Fox, G.K. 1998, AJ, 115, 1576

Edited Volume

- 2012 *Stellar Polarimetry: From Birth to Death*
 proceedings of the conference of the same name held in Madison, WI, June 27–30, 2011
 Editors: **J.L. Hoffman**, J.E. Bjorkman, & B.A. Whitney
 AIP Conference Proceedings, 2012, vol. 1429 (New York: AIP; ISBN 978-0-7354-1012-1)

Other Publications

- 2017 *Reconstructing the Scene: New Views of Supernovae and Progenitors from the SNSPOL Project*
Hoffman, J.L., Williams, G.G., Leonard, D.C., Bilinski, C., Dessart, L., Huk, L.N., Mauerhan, J.C., Milne, P., Porter, A.L., Smith, N., & Smith, P.S. 2017, in IAUS 329, The Lives and Death-Throes of Massive Stars, eds. J.J. Eldridge, J.C. Bray, L.A.S. McClelland, & L. Xiao, 54 (<https://goo.gl/d2N33z>)
- 2016 *Characterizing the Transient Sky*
 Foley, R., Fong, W., **Hoffman, J.L.**, Matheson, T., Sand, D.J., & Street, R., 2016, in Maximizing Science in the Era of LSST: A Community-Based Study of Needed US Capabilities (community study sponsored by NOAO and LSST), 29 (<https://arxiv.org/abs/1610.01661>; <https://www.noao.edu/meetings/lsst-oir-study/>)
- 2015 *Structure and Fate of Binary WR Stars: Clues from Spectropolarimetry*
Hoffman, J.L. & Lomax, J.R. 2015, in Wolf-Rayet Stars: Proceedings of an International Workshop Held in Potsdam, Germany, 1.–5. June 2015, eds. W.-R. Hamann, A. Sander, and H. Todt (Universitätsverlag Potsdam), 85 (<https://publishup.uni-potsdam.de/frontdoor/index/index/docId/8773>)

- 2015 *On the Explosion Geometry of Red Supergiant Stars*
Leonard, D.C., Dessart, L., Pignata, G., Hillier, D.J., Williams, G.G., Smith, Paul S., Khandrika, H., Bilinski, C., Duong, N., Flatland, K., Gonzalez, L., **Hoffman, J.L.**, Horst, C., Huk, L., Milne, P., Rachubo, A.A., & Smith, N. 2015, in Proc. IAU GA, *Astronomy in Focus Volume 1*, eds. P. Benvenuti et al., 2255774
- 2015 *Mass Flows in Massive Binaries: Clues from Spectropolarimetry*
Hoffman, J.L. 2015, in EAS Publications Series 71, *Physics of Evolved Stars: A Conference Dedicated to the Memory of Olivier Chesneau*, eds. E. Lagadec, F. Millour and T. Lanz (EDP Sciences), 163
- 2015 *Polarization Signatures of Bow Shocks in Stellar Winds*
*Shrestha, M., & **Hoffman, J.L.** 2015, in EAS Publications Series 71, *Physics of Evolved Stars: A Conference Dedicated to the Memory of Olivier Chesneau*, eds. E. Lagadec, F. Millour and T. Lanz (EDP Sciences), 293
- 2015 *Polarimetry as a Window into Supernova Explosions and Progenitors*
Hoffman, J.L. 2015, in Proc. IAUS 305 (*Polarimetry: From the Sun to Stars and Stellar Environments*), eds. K.N. Nagendra, S. Bagnula, R. Centeno, & M. Martínez González, 269
- 2014 *The Need for General-Use Polarimeters in the Era of LSST* [white paper]
Andersson, B.G., Adamson, A., Bjorkman, K.S., Chiar, J.E., Clemens, D.P., Hines, D.C., **Hoffman, J.L.**, et al., submitted to the Committee on a Strategy to Optimize the U.S. OIR System in the Era of the LSST (part of the National Academy of Science's Board of Physics and Astronomy), October 2014
- 2014 *Maximizing LSST's Scientific Return: Ensuring Participation from Smaller Institutions* [white paper]
Liu, C.T., Willman, B., Pepper, J., Rutkowski, M., Norman, D., Cruz, K., Bochanski, J., Lee, H., Isler, J., Gizis, J., Smith, J.A., Moustakas, J., Wehner, E., Alfred, M., McGruder, C., **Hoffman, J.L.**, et al., submitted to the Committee on a Strategy to Optimize the U.S. OIR System in the Era of the LSST (part of the National Academy of Science's Board of Physics and Astronomy), October 2014 (<http://arxiv.org/abs/1410.2526>)
- 2013 *An Unexpected Result for the V444 Cyg Binary*
Nazé, Y., Lomax, J., & **Hoffman, J.**, in EAS Publications Series vol. 64 (*Setting a New Standard in the Analysis of Binary Stars*), eds. K. Pavlovski, A. Tkachenko, & G. Torres (Cambridge University Press), p. 415
- 2012 *Stellar Polarimetry: Where Are We and Where Are We Going?*
Hoffman, J.L., Brown, J.C., Nordsieck, K., St.-Louis, N., and Wade, G. 2012, in AIP Conference Series vol. 1429 (*Stellar Polarimetry: From Birth to Death*), eds. J.L. Hoffman, J.E. Bjorkman, & B.A. Whitney (New York: AIP), p. 289
- 2012 *Polarized Lines in Supernovae: Observations and Modeling*
Hoffman, J. L. 2012, in ASP Conference Series vol. 449 (*Astronomical Polarimetry 2008: Science from Small to Large Telescopes*), eds. P. Bastien, N. Manset, D.P. Clemens, & N. St-Louis (Orem, UT: ASP), p. 416
- 2010 *Transitional States: Addressing the Gender Imbalance among Postdoctoral Researchers at UC Berkeley*
Hoffman, J.L., Modjaz, M., West, A. A., & Graham, J.R. 2010, in *Women in Astronomy and Space Science: Meeting the Challenges of an Increasingly Diverse Workforce*, eds. A.L. Kinney, D. Khachadourian, P. S. Millar, & C. N. Hartman, p. 213
- 2009 *O/IR Polarimetry for the 2010 Decade (SSE): Science at the Edge, Sharp Tools for All* [white paper]
Hoffman, J.L., Hines, D., et al. 2009, submitted to the Stars and Stellar Evolution Science Frontiers Panel of the Astro2010 Decadal Survey Committee, February 2009 (<http://xxx.lanl.gov/abs/0902.4222>)
- 2009 *Women and Minorities in STEM: Upping the Numbers* [book review]
Hoffman, J.L. 2009, *STATUS*, January issue, p. 14
- 2008 *Optical Polarimetry with the LSST* [white paper]
Magalhães, A.M., and 28 others including **Hoffman, J.L.** (alphabetically listed) 2008, submitted to the Science Council of the Large Synoptic Survey Telescope, October 2008
- 2007 *Supernova Polarization and the Type II_n Classification*
Hoffman, J.L. 2007, in AIP Conference Series vol. 937 (*Supernova 1987A: 20 Years After; Supernovae and Gamma-Ray Bursters*), eds. S. Immler, K.W. Weiler, & R. McCray (New York: AIP), p. 365

- 2007 *Polarized Line Profiles as Diagnostics of Circumstellar Geometry in Type II Supernovae*
Hoffman, J.L. 2007, in *Revista Mexicana de Astronomía y Astrofísica Conference Series* vol. 30
 (Circumstellar Media and Late Stages of Massive Stellar Evolution), eds. G. García-Segura & E. Ramirez-Ruiz
 (Ensenada: UNAM), p. 57
- 2005 *Supernovae in 3-D: Bridging the Gap Between Observations and Theory*
Hoffman, J.L., Nugent, P., Kasen, D., Thomas, R.C., Filippenko, A.V., and Leonard, D.C. 2005, in *ASP
 Conference Series* vol. 343 (Astronomical Polarimetry: Current Status and Future Directions), eds. A.
 Adamson, C. Aspin, C.J. Davis, & T. Fujiyoshi (San Francisco: ASP), p. 277
- 2004 *Portrait of a Decade: Results from the 2003 CSWA Survey of Women in Astronomy*
Hoffman, J.L. & Urry, C.M. 2004, *STATUS*, June issue, p. 1
- 2000 *Reflections on Scattered Light: Monte Carlo Simulations of the Flux and Polarization Curves of beta Lyrae*
Hoffman, J.L., Whitney, B.A., and Nordsieck, K.H. 2000, in *ASP Conference Series*, vol. 214 (IAU Colloq.
 175: The Be Phenomenon in Early-Type Stars), eds. M.A. Smith, H.F. Heinrichs, & J.A. Fabregat (San
 Francisco: ASP), p. 464

Recent Posters and Presentations

- 2017 *The Distorted Winds of V444 Cygni: New Insights from Spectropolarimetry*
Hoffman, J.L., Ashley, S., Ornelas, J.L., Fullard, A., Lomax, J.R., Shrestha, M., Babler, B.L., Bjorkman, J.E.,
 Bjorkman, K.S., Davidson, J.W., Meade, M.R., Nordsieck, K.H., & Richardson, N. 2017, poster presented at
 American Astronomical Society Meeting #229, 229.34402, Grapevine, TX, January 2017
- 2017 *The Complex Circumstellar and Circumbinary Environment of V356 Sgr*
 *Fullard, A., Lomax, J. R., Malatesta, M. A., Babler, B.L., Bednarski, D., Berdis, J., Bjorkman, K.S.,
 Bjorkman, J.E., Carciofi, A.C., Davidson, J.W., Keil, M., Meade, M., Nordsieck, K.H., Scheffler, M.,
 Hoffman, J.L., & Wisniewski, J.P. 2017, poster presented at American Astronomical Society Meeting #229,
 229.34421, Grapevine, TX, January 2017
- 2017 *Polarization Signatures of Bow Shocks: A Diagnostic Tool to Constrain the Properties of Stellar Winds
 and ISM*
 *Shrestha, M., **Hoffman, J.L.**, Nielson, H.R., & Ignace, R. 2017, poster presented at American Astronomical
 Society Meeting #229, 229.15111, Grapevine, TX, January 2017
- 2016 *Reconstructing the Scene: New Views of Supernovae and Progenitors from the SNSPOL Project*
Hoffman, J.L., Williams, G.G., Leonard, D.C., Bilinski, C., Dessart, L., Huk, L.N., Mauerhan, J.C., Milne, P.,
 Porter, A.L., Smith, N., & Smith, P.S. 2017, contributed talk presented at IAU Symposium 329, The Lives and
 Death-Throes of Massive Stars, Auckland, NZ, November 2016
- 2016 *A Study of the Type II-Plateau Supernova SN 2014cx*
 Flatland, K., Leonard, D. C., Williams, G. G., Smith, P. S., Bilinski, C., Dessart, L., Gonzalez, L.,
Hoffman, J.L., Huk, L.N., Milne, P. Smith, N., poster presented at American Astronomical Society Meeting
 #228, 228.21913, San Diego, CA, June 2016
- 2016 *The Supernova Spectropolarimetry Project*
 Williams, G.G., Bilinski, C., Dessart, L., **Hoffman, J.L.**, Huk, L.N., Leonard, D.C., Milne, P.A., Mauerhan,
 J.C., Porter, A., Smith, N., & Smith, P.S., poster presented at The Transient Sky, Cambridge, MA, May 2016
- 2015 *Mass Flows in Massive Binaries and their Evolutionary Implications*
Hoffman, J.L., contributed talk presented at Physics of Evolved Stars, Nice, France, June 2015
- 2015 *Structure and Fate of Binary WR Stars: Clues from Spectropolarimetry*
Hoffman, J.L. & Lomax, J.R., contributed talk presented at International Workshop on Wolf-Rayet Stars,
 Potsdam, Germany, June 2015
- 2015 *Polarization Signatures of Bow Shocks in Stellar Winds*
 *Shrestha, M., **Hoffman, J.L.**, Neilson, H.R., & Ignace, R. 2015, poster presented at Physics of Evolved Stars,
 Nice, France, June 2015

Recent Invited Talks

“Polarimetry as a Window into Supernova Explosions and Progenitors”

IAUS 305, Polarimetry: From the Sun to Stars and Stellar Environments, Punta Leona, Costa Rica, 2014
University of Wisconsin-Madison, 2014

“New Views of Stellar Explosions: The Supernova Spectropolarimetry Project”

TMT Science Forum 2014, Tucson, AZ, 2014
APS Four Corners Section Meeting, Denver, CO, 2013

“Stellar Archeology: Probing Stellar Mass Loss with Interacting Supernovae”

University of Oklahoma, 2013
National Optical Astronomy Observatory, Tucson, 2012
SOFIA Science Center, NASA Ames, 2010

“Hot and Scattered: Combining X-Ray and Spectropolarimetric Studies of Eclipsing Binary Stars”

East Tennessee State University, 2013

“The Aspherical Universe: Probing Circumstellar Geometry with Polarimetry and Numerical Modeling”

Ball Aerospace, 2010
Denver Astronomical Society General Meeting, 2010
Colorado State University, 2009
University of Denver, 2007
Institute for Computational Astrophysics, St. Mary’s University (Nova Scotia), 2006

“Beyond the Spherical Cow: Polarization and Supernova Classification”

East Tennessee State University, 2009

“Polarization of Circumstellar Material Across the H–R Diagram”

University of Wyoming, 2008
Western Washington University, 2007
Central Michigan University, 2007
James Madison University, 2007
San Diego State University, 2006
Wesleyan University, 2006

“Polarized Line Profiles as Diagnostics of Circumstellar Geometry in Type II_n Supernovae”

Circumstellar Media and Late Stages of Massive Stellar Evolution, Ensenada, Mexico, 2006
Institute for Theory and Computation, Harvard-Smithsonian Center for Astrophysics, 2006
Canadian Institute for Theoretical Astrophysics (CITA), 2006
University of Illinois at Urbana-Champaign, 2006
University of Wisconsin-Madison, 2006
Northwestern University, 2006
University of Minnesota, 2006

“Shadows in Space: What We Learn from Eclipses, Occultations, and Transits”

Denver Astronomical Society General Meeting, 2017

“Real-Life Death Stars: Why Supernova Explosions Are Even Weirder Than You Think”

Astronomy on Tap Colorado, 2015
University of Wisconsin-Madison Space Place, 2014
Chamberlin Observatory 120th Anniversary Celebration, 2014
Sherlin Lecture, Community College of Aurora, 2013

“The Crowded Universe”

All-Campus Lecture, University of Denver, 2009

“Women in Physics: Progress and Pitfalls”

Colorado School of Mines, 2014

“Holding Up Half the Sky: Women in the Physical Sciences at Berkeley and Beyond”
University of Wisconsin-Madison, 2006

“Galileoscope Moon Observations”
Colorado Science Conference, Denver, CO, 2009

“A Supernova on Your Desktop”
City College of San Francisco, 2007
University of Wisconsin-La Crosse, 2006
University of Portland (Oregon), 2006
University of San Francisco, 2006

Grant and Award History

- 2017 DU Public Good Fund (co-PI with Shannon Murphy, Robin Tinghitella)
\$15,000 — *DU SciTech 2017: Pathways to STEM Careers for Girls of Color and Low-Income Girls in Denver*
- 2016 NSF Stellar Astronomy & Astrophysics Program (sole author of supplemental proposal)
\$52,988 — Supplement to *Collaborative Research: The Aspherical Nature and Evolution of Supernovae*
- 2016 Funded participant, High-Impact STEM Education conference, Campus Compact of the Mountain West and DU Center for Community Engagement and Student Learning (CCESL)
\$750 — implementing new practices into STEM courses at DU
- 2016 DU Professional Opportunities for Faculty (PROF) Award (sole author)
\$20,000 — *Asymmetry is Destiny: Binary Systems as Explosive Progenitors*
- 2016 DU Public Good Fund (co-PI with Shannon Murphy, Robin Tinghitella)
\$19,000 — *DUSciTech: A STEM Summer Camp for Girls from Underrepresented Backgrounds at the University of Denver*
- 2016 Invited Participant, HERS Denver Summer Institute for women’s leadership in higher education
- 2015 DU Olin Faculty Development Award (sole author)
\$3700 — *Ultraviolet Eyes for the Southern African Large Telescope*
- 2015 Invited Participant, 2015 Kavli Scientist-Writer Workshop, Kavli Royal Society International Centre at Chicheley Hall, United Kingdom
- 2015 American Philosophical Society Franklin Research Grant (sole author)
\$6000 — *The 3-D View of Potential Gamma-Ray Burst Progenitors*
- 2014 DU Faculty Internationalization Grant (sole author)
\$1100 — *Meeting in the Middle: Publicizing Research Results and Establishing a US-Brazil Collaboration at an International Astronomical Symposium*
- 2014 DU Faculty Research Fund (FRF) Award (sole author)
\$2968 — *New Tools for Identifying Explosive Progenitors*
- 2012 Invited Participant, Radiation Driven Outflows in Stars and Quasars workshop, Aspen Center for Physics
- 2012 NASA Astrophysics Data Analysis Program (PI with Co-I’s Jamie Lomax, Karen Bjorkman, Michael Corcoran, Yael Nazé, Stanley Owocki, Andrew Pollock, and Christopher Russell)
\$65,000 — *The Geometry of the Stellar Winds and Shock Structure in V444 Cyg*
- 2012 NSF Stellar Astronomy & Astrophysics Program (co-PI with G. Grant Williams and Douglas Leonard)
\$514,899 — *Collaborative Research: The Aspherical Nature and Evolution of Supernovae*
- 2012 Invited Participant, The Evolution of Massive Stars and Progenitors of GRBs workshop, Aspen Center for Physics
- 2011 DU Faculty Research Fund (FRF) Award (sole author)
\$1960 — *SPPIN: Supernova Progenitors with Polarimetry and Interferometry*

- 2010 NSF Stellar Astronomy & Astrophysics Program (Co-PI with Richard Ignace)
\$22,190 — *A Workshop on Stellar Polarimetry: From Birth to Death*
- 2009 DU Professional Research Opportunities for Faculty (PROF) Award (co-PI with Frédéric Latrémolière and Mario Lopez)
\$23,768 — *Parallel Random Walks with Application to Astrophysics*
- 2008 NSF Stellar Astronomy & Astrophysics Program (co-PI with Richard Ignace)
\$997,703 — *Tracing the Spectropolarimetric History of Circumstellar Structures from High-Mass Stars through Supernovae*
- 2008 DU Professional Research Opportunities for Faculty (PROF) Award (sole author)
\$14,182 — *Clusters, Collaboration, and Non-Spherical Cows*
- 2008 NASA Astrophysics Data Analysis Program (co-I with Wayne Waldron)
\$108,915 — *A Study of the Variable Hard X-Ray Emission from the Massive Interacting Binary Beta Lyrae*
- 2007 Fund for Astrophysical Research Theodore Dunham, Jr. Grant (sole author)
\$3000 — *Transportation for the HPOL Spectropolarimeter*
- 2007 Mount Cuba Astronomical Foundation (sole author)
\$4000 — *Awakenings: Reviving the HPOL Spectropolarimeter*
- 2006 NASA Suzaku GO Program (co-I with Richard Ignace)
\$24,992 — *An X-Ray Study of Hot Plasma in the Interacting Binary β Lyr*
- 2003 NSF Astronomy & Astrophysics Postdoctoral Fellowship Program (sole author)
\$194,000 — *Supernovae in 3-D: Bridging the Gap Between Observations and Theory*
- 2001 NASA-GSFC Graduate Student Researchers Program (sole author)
\$22,000 — *Three-Dimensional Multiwavelength Modeling Techniques for Analysis of Aspherical Stellar and Galactic Systems*
- 2000 STScI HST GO Program (co-I with Kenneth H. Nordsieck)
\$45,000 — *Orientation and Extent of the Bipolar Outflow in β Lyrae*
- 2000 First prize, Ruth and Helen Dickie Research Seminar Competition, UW-Madison
- 2000 Invited Participant, XII Canary Islands Winter School of Astrophysics in Astrophysical Spectropolarimetry
- 2000 Invited Participant, NASA Summer School for High-Performance Computational Earth and Space Sciences
- 1999 Women in Science and Engineering (WISE) Initiative, Committee on Institutional Cooperation (sole author)
\$250 — *Travel grant to attend IAU Colloquium 175: The Be Phenomenon in Early-Type Stars, Alicante, Spain*
- 1999 Wisconsin Space Grant Consortium Graduate Fellowship Program (sole author)
\$4000 — *Curing Color-Blindness in Binary Star Numerical Models*
- 1998 Wisconsin Space Grant Consortium Graduate Fellowship Program (sole author)
\$4000 — *A Phased Spectropolarimetric Investigation of Herbig Ae/Be Binary Stars*
- 1998 Sigma Xi Grants-in-Aid of Research Program (sole author)
\$2400 — *Spectropolarimetric Observations and Models of Herbig Ae/Be Binary Stars*
- 1990 Chancellor's Scholarship, UC Berkeley, 1990–1994

Teaching and Mentoring

- 2015–present Organizer and mentor, Practical Physics Pedagogy project
Recruit, train, and supervise DU physics majors to act as undergraduate teaching assistants in lab sections and in-class problem-solving sessions in University Physics II and III.
- 2008–present Graduate Instructor, University of Denver
PHYS 3251: Astrophysics: Radiative Processes, 2014, 2016, 2018 (undergraduate/graduate)
PHYS 4001: Introduction to Research I, 2015
PHYS 4002: Introduction to Research II, 2012
PHYS 4611: Advanced Electrodynamics I, 2008, 2009, 2010, 2012
PHYS 4612: Advanced Electrodynamics II, 2008, 2009, 2010, 2012, 2014
- 2008–present Undergraduate Instructor, University of Denver
PHYS 1200: Physics Preparatory, 2016, 2017
PHYS 1212: University Physics II, 2015
PHYS 1213/1214: University Physics III, 2010, 2011, 2016
PHYS 3100: Senior Seminar, 2017
PHYS 3251: Astrophysics: Radiative Processes, 2014, 2016 (undergraduate/graduate)
PHYS 3611: Electromagnetism I, 2011, 2013
PHYS 3612: Electromagnetism II, 2011, 2013, 2015
FSEM 1111: First-Year Seminar: The Universe as Our Living Environment, 2008
FSEM 1111: First-Year Seminar: At Home in the Milky Way Galaxy, 2009
FSEM 1111: First-Year Seminar: Measuring the Milky Way, 2012, 2013
- 2008–present Graduate Advisor, University of Denver
Jamie Lomax, NASA Jenkins Predoctoral Fellow, Ph.D. 2013, now a postdoctoral scientist at U. Oklahoma: *The X-ray and Spectropolarimetric View of Mass Loss and Transfer in Massive Binary Stars*
Leah Huk, Ph.D. 2017: *Time-Lapse Spectropolarimetry: A New Tool for Constraining Progenitors of Core-Collapse Supernovae*
Manisha Shrestha, Ph.D. x2018: *Polarized Bow Shocks Reveal Features of the Winds and Environments of Massive Stars*
Andrew Fullard, Ph.S. x2019: *The Complex Circumstellar and Circumbinary Environment of V356 Sgr*
Cheridan Harris: *Supernova Polarization from Expanding Scattering Regions*
Aaron Worley: *Effects of a Slowly Expanding Shell on the Local Disk in a Classical T Tauri Star System*
- 2007–present Undergraduate Advisor, University of Denver
Michael Malatesta, B.S. 2012, M.S. 2012 (U. OK): *Circumstellar Material in the Massive Eclipsing Binary Star V356 Sgr*
Charee Peters, B.S. 2011, now a Ph.D. student at UW-Madison: *Celestial Explosions: Evidence for a Circumstellar Disk around the Type II In SN 1997eg*
Kathleen M. Geise, B.S. 2008, Ph.D. 2015 (DU): *Stellar Atmospheres: A Computational Approach*
Zyed Ansary: *Spectropolarimetry of Wolf-Rayet Binary Stars*
Sierra Ashley: *Spectropolarimetry, Data Reduction, and Binary Stars*
Colton Casados-Medve: *Spectropolarimetric Analysis of Supernovae*
Andrew Cromer and Michael Malatesta: *Stellar Archeology of Supernova Progenitors*
Sophia DeKlotz: *Twinkle Twinkle Little Supernova, How I Wonder About Your Early Geometry and Hydrogen Clumps*
Gina Eldridge, Stasia Erickson, Thienbao Nguyen, Charee Peters, and Jessica Starr: *Reconstructing Supernova CSM with Polarized Line Profiles*
Jaclyn Jensen: *Modeling Polarization Angle Variations in Asymmetric Supernovae*
Alisha Karatsoupa, Naomi Pequette, and Charee Peters: *Celestial Fireworks: When Stars Explode*
Anterra Kennedy: *Polarization Modeling of Clumpy Supernova Ejecta*
Shem Kikamaze: *Polarization of Light from Massive Stars*

Austin Lin: *Studying the Polarization of Astrophysical Bow Shocks*
 Martin Luepker: *Spectropolarimetry of Wolf-Rayet Binary Stars*
 Joseph Rauch: *Spectropolarimetry of V367 Cygni*
 Hannah Slay: *Snakes in Space: An Investigation into Late 1b Supernova Geometry Using Python Data Analysis*
 Adriana Vega Covelo: *Measuring the Interstellar Polarization of Faraway Supernovae*

- 2009 Faculty Adviser of the Year, DU Office of Student Life
- 2006 Organizer, teaching issues discussion group, UC Berkeley
 Initiated weekly discussion group for graduate students and postdocs interested in teaching. Discussions covered topics such as pedagogical research, course design for non-science majors, and classroom innovations.
- 2004–2006 Organizer, Launch Day undergraduate major orientation, UC Berkeley
 Conceived, planned, and organized orientation activities for incoming first-year and transfer students interested in physical science majors. Activities each year included research lab tours, a “professor scavenger hunt,” and an interdepartmental barbecue dinner.
- 2000 Teaching Fellow, UW-Madison College of Letters and Science
 Won College-wide teaching award; conducted TA training workshops for the College
- 1995–1999 Teaching Assistant, UW-Madison
 Taught two semesters each of discussion and laboratory sections for introductory astronomy courses; wrote assignments and quizzes; implemented interactive teaching and learning methods
- 1998–2002 Undergraduate Mentor, UW-Madison
 Collaborated with astronomy majors on projects related to polarimetric observations and data reduction; students mentored include UW graduates John P. Wisniewski (now an assistant professor at U. Oklahoma) and Jill M. Meyer (now a postdoctoral researcher at U. Michigan).
- 1997 Instructor, Academic Skills Development Workshop, UW-Madison
 Co-organized and co-taught a two-week astronomy course for at-risk high-school students

Outreach and Other Professional Activities

- 2015–present Co-organizer, DU SciTech and guest presenter, RU SciTech
 With DU colleagues, organized and carried out a weeklong summer STEM workshop aimed at middle-school girls from underrepresented groups. Led workshops on Galileoscopes at the Regis University version of the same program.
- 2013–present Local agent, American Astronomical Society
 Act as liaison between Denver-area astronomers and the professional society.
- 2010–present Guest expert for local media reports
 Interviewed live on Fox 31 morning news about Lyrid meteor shower, May 2014
 Interviewed live on local Internet radio show “Good Living by Design” about Perseid meteor shower, August 2013
 Interviewed for Fox 31 online article about Venus, May 2010
- 2008–present Presenter at multiple public events at DU’s Chamberlin Observatory
 Participation included speaking about women in astronomy as part of a special event marking the beginning of the International Year of Astronomy, December 2008
- 2016 Member, Transients Study Group, “Maximizing Science in the Era of LSST” community study

- 2012, 2014 Workshop organizer, DU CARE conference, 2012 and DU Day of Action, 2014
Organized STEM workshops for a math/science-focused college workshop aimed at female African-American students and a college access day aimed at underprivileged elementary students in Denver.
- 2013–2014 Member, Polarimetry and Time-Resolved Working Group of the Thirty-Meter Telescope collaboration
Advised the PTRWG about issues related to TMT instrument design, focusing on the spectropolarimetric capabilities necessary to carry out cutting-edge research in the study of massive stars and supernovae.
- 2009–2013 Judge and organizer of DU student judges, Merrill Middle School Science Fair, Denver
- 2010–2012 Scientific Organizing Committee member and lead proceedings editor
Helped organize and secure funding for the international topical conference “Stellar Polarimetry: From Birth to Death”, held in Madison, WI, June 27–30, 2011. Arranged for publication of proceedings with AIP; solicited and edited proceedings submissions along with co-editors Barbara Whitney and Jon Bjorkman.
- 2007, 2009 Panelist, AAS NSF Postdoctoral Fellows’ Symposium
Served as a panel member in sessions entitled “Transitioning from Postdoctoral to Faculty Positions,” organized by NSF Astronomy & Astrophysics Postdoctoral Fellows at the January 2007 and January 2009 American Astronomical Society meetings.
- 2003–2006 Liaison for women in astronomy, UC Berkeley, 2003–2006
For NSF fellowship E/PO project, organized networking activities for women in astronomy at Berkeley; linked Berkeley students with outreach opportunities encouraging K–12 girls in the physical sciences; continue to maintain a web page of statistics and resources relating to women in astronomy
- 2003 Data analyst, AAS Committee on the Status of Women
Compiled and analyzed data on the gender distribution of astronomers at US astronomical research institutions; authored Women in Astronomy II conference poster and authored *STATUS* article presenting results; continue to maintain a web page publicizing data and conclusions
- 1997–2002 Observing coordinator and resident astronomer, Pine Bluff Observatory
Trained and supervised team of undergraduate observers using the HPOL spectropolarimeter and 0.9m telescope at UW-Madison’s local research observatory; compiled target lists; provided on-site building and instrument maintenance and observing assistance
- 1996–2006 Presenter, Expanding Your Horizons and Explorathon for Girls in Science
Designed and led astronomy career workshops for middle-school girls; in 2004–2006, organized teams of Berkeley graduate and undergraduate students to conduct the workshops
- 1996–2002 Presenter, Washburn Observatory and Universe in the Park
Conducted public observing nights at UW-Madison’s historic 15-inch refractor; presented public talks and led “star parties” at Wisconsin state parks
- 2010–present Proposal reviewer, NASA (Kepler GO Program, ATP, ADAP)
- 2005–present Manuscript referee, *Astronomical Journal*, *Astrophysical Journal*, *Astrophysical Journal Letters*, *Monthly Notices of the Royal Astronomical Society*, *Philosophical Transactions A*
- 2005–present Proposal reviewer, National Science Foundation (AAPF, AST, ESP, OIA)
- 2000–present Member, Sigma Xi, the Scientific Research Society
- 1994–present Member, American Astronomical Society