

Jamie Renae Lomax

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Education

- 2013 Ph. D. Physics, University of Denver
The X-ray and Spectropolarimetric View of Mass Loss and Transfer in Massive Binary Stars
- 2007 B.S. Physics and Mathematics, St. Lawrence University
Magna Cum Laude, Sigma Pi Sigma, Pi Mu Epsilon

Research Experience

- 2013- Postdoctoral Research Associate, **University of Oklahoma**
Advisor: John P. Wisniewski
- 2008-13 Graduate Research Assistant, **University of Denver**
Advisor: Jennifer L. Hoffman
- 2012 JPDF Center Based Research Experience (CBRE), **NASA/GSFC**
The Colliding Winds of WR140
Advisors: Michael F. Corcoran, George Sonneborn
- 2011 JPDF CBRE, **NASA/Goddard Space Flight Center (GSFC)**
Massive Binaries in X-ray Light: Constraining the Geometry of Mass Loss in WR140
Advisor: Michael F. Corcoran
- 2006 Donald K. Rose University Fellow, **St. Lawrence University**
ALFALFA: The Arecibo Legacy Fast ALFA Survey, An Extragalactic Survey for HI
Advisor: Aileen O'Donoghue
- 2005 NSF Research Experience for Undergraduates, **Montana State University**
Oxygen-18 Uptake and Nuclear Reaction Analysis on Zirconium and Yttria Stabilized Zirconia
Advisor: Richard Smith

Honors and Awards

- 2014 **Rodger Doxsey Travel Prize**, AAS
- 2010-13 **NASA Harriett G. Jenkins Pre-Doctoral Fellowship (JPDF)**
\$114,400 *Examining Beta Lyrae's Mass Transfer and Loss through Spectropolarimetry*
- 2012-13 **NASA Student Ambassador**, Cohort IV
- 2007-08 Graduate Studies Doctoral Fellowship, University of Denver
\$1000
- 2007 Howard C. Fay Memorial Award, St. Lawrence University
- 2003-07 Augsburg/North Country Scholarship, St. Lawrence University
- 2003 Bradley R. Evers '94 Outstanding First Year Student Award, St. Lawrence University

Refereed Publications (*under review, † in press, § student led):

2015

***Constraining the Envelope Properties of the AB Aur System and Locations of Planetary Bodies**

Lomax, J.R., Wisniewski, J.P., Grady, C.A., McElwain, M.W., Hashimoto, J., and the SEEDS Team, ApJ

7) **V444 Cyg X-ray and Polarimetric Variability: Radiative and Coriolis Forces Shape the Wind Collision Region**

Lomax, J.R., Naze, 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. 2015, A&A, 573, 43

6) **Characterizing the Rigidly Rotating Magnetosphere Stars HD 345439 and HD 23478**

Wisniewski, J.P., Chojnowski, S.D., Davenport, R.A., Bartz, J., Pepper, J., Whelan, D.G., Eikenberry, S.S., Lomax, J.R., Majewski, S.R., and Skrutskie, M. 2015, ApJL, 811, L26

5) **A Coordinated X-ray and Optical Campaign on the Nearest Massive Eclipsing Binary δ Ori: II. X-ray Variability**

Nichols, J.S., Huenemoerder, D.P., Corcoran, M.F., Waldron, W., Naze, 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., Hamann, W.R., Oskinova, L., Ignace, R., Hoffman, J.L., Hole, K.T., and Lomax, J.R. 2015, ApJ, 809, 133

4) **A Coordinated X-ray and Optical Campaign on the Nearest Massive Eclipsing Binary δ Ori: I. Overview of the X-ray Spectrum**

Corcoran, M.F., Nichols, J., Pablo, H., Shenar, T., Pollock, A.M.T., Waldron, W., Moffat, A., Richardson, N., Russell, C.M.P., Hamaguchi, K., Huenemoerder, D., Oskinova, L., Hamann, W.R., Naze, Y., Ignace, R., Evans, N., Lomax, J.R., Hoffman, J.L., Gayley, K., Owocki, S., Leutenegger, M., Gull, T., Hole, T., Lauer, J., and Iping, R. 2015, ApJ, 809, 132

3) **A Coordinated X-ray and Optical Campaign on the Nearest Massive Eclipsing Binary δ Orionis Aa: III. Analysis of Optical Photometric (MOST) and Spectroscopic (Ground Based) Variations**

Pablo, H., Richardson, N.D., Anthony A.F.J., Corcoran, M., Shenar, T., Benvenuto, O., Fuller, J., Naze, Y., Hoffman, J.L., Miroshnichenko, A., Apellaniz, J.M., Evands, N., Eversberg, T., Gayley, K., Gull, T., Hamaguchi, K., Hamann, W.R., Henrichs, H., Hole, T., Ignace, R., Iping, R., Lauer, J., Leutenegger, M., Lomax, J.R., Nichols, J., Oskinova, L., Owocki, S., Pollock, A.M.T., Russell, C.M.P., Waldron, W., Buil, C., Garrell, T., Graham, K., Heathcote, G., Lemoult, T., Li, D., Mauclaire, B., Potter, M., Riberio, J., Rowe, J., Rucinski, S., Sasselov, D., and Weiss, W. 2015, ApJ, 809, 134

2014

2) **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., and Lomax, J.R. 2014, J. Astron. Instrum., 3, 1450009

2012

1) **Geometrical Constraints on the Hot Spot in β Lyrae**

Lomax, J.R., Hoffman, J.L., Elias, N.M. II, Bastien, F.A., and Holenstien, B.D. 2012, ApJ, 750, 59

Other Publications

6) **†Structure and fate of binary WR stars: Clues from spectropolarimetry**

Hoffman, J.L., and Lomax, J.R. 2015, Universitätsverlag Potsdam, International Workshop on Wolf-Rayet Stars

5) **†Revealing the Mass Loss Structures of Four Key Massive Binaries Using Optical Spectropolarimetry**

Lomax, J.R. 2014, IAU S307 Conference Proceedings

4) **Constraining the Mass Loss Geometry of β Lyrae**

Lomax, J.R. 2012, Journal of Astronomy and Space Sciences, 29, 47

3) **Constraining the Mass Loss Geometry of β Lyrae**

Lomax, J.R. 2012, AIP Conference Proceedings, 1429, 159

2) **Spectropolarimetry of β Lyrae: Constraining the Location of the Hot Spot and Jets**

Lomax, J.R. and Hoffman, J.L. 2011, Bulletin de la Société Royale des Sciences de Liège, 80, 689

1) **Tough Talk: Women Giving Colloquia**

Norman, D.J., Lotz, J., Holbrook, J., Cortes, S., Juneau, S., Brulag, K., Desai, V., Knezek, P., Olsen, K., West, A.A., Agueros, M., Allen, L., Chu, Y., Coil, A., Covey, K., Cuhna, K., Dalcanton, J., Garmany, K., Kannappan, S., **Lomax, J.R.**, Perrin, M., Pilachowski, C., Sheth, K., Weinberger, A., Prato, L., Rodgers, B. 2009, Women in Astronomy and Space Science Conference Proceedings, 222

In Preparation

AU Mic's Debris Disk Color Revealed Through Coronagraphic Spectroscopy

Lomax, J.R., Wisniewski, J.P., Roberge, A., Weinberger, A.J., Malumuth, E.M., Donaldson, J., Debes, J.

[§]**The Complex Circumstellar and Circumbinary Environment of V356 Sgr**

Malatesta, M.A., **Lomax, J.R.**, Berdis, J.R., Keil, M., Scheffler, M., Meade, M.R., Hoffman, J.L., Bjorkman, K.S., Davidson, J.W., Wisniewski, J.P.

Grant and Award History

- 2015 **Hubble**, Program ID # 13857
 \$31,033 *Emission Line Stars in M31*, PI: Julianne Dalcanton
- 2014 **AAS International Travel Grants**
 \$670 for attendance at IAU S305, \$1800 for attendance at IAU S307
- 2014 **IAU Travel Grants**
 \$1300 for attendance at IAU S305, €600 for attendance at IAU S307
- 2013 **Graduate Student Professional Development Grant**, University of Denver
- 2013 **AAS International Travel Grant**
 \$1800 for attendance at the *Massive Stars: From Alpha to Omega* Conference
- 2012 **NASA Astrophysical Data Analysis Program**, award # NNH12ZDA001N
 \$65,000 *The Geometry of the Stellar Winds and Shock Structure in V444 Cyg*
 Science PI, PI: Jennifer L. Hoffman
- 2009 **Grants-in-Aid of Research**, Sigma Xi
 \$3000 *Mass Transfer and the Structure of Beta Lyrae's Accretion Disk*

Awarded Observing Time

- 2016 **IRTF**, Co-I, 7 hours (PI Evan Rich)
 Monitoring of HD 163296
 Gemini South, PI, 5 hours with GPI (Proposal ID # GS-2016A-FT-7)
 Illuminating New Circumstellar Parameter Space Around Eta Car with GPI
- 2015 **Gemini South, PI**, 0.48 nights with GPI (Proposal ID # 2015A-0126; observations
 not obtained due to instrumental problems)
 Illuminating New Circumstellar Parameter Space Around Eta Car with GPI
- 2014 **Hubble**, Co-I, 12 orbits (Proposal ID # 13857, PI Julianne Dalcanton)
 Emission Line Stars in Andromeda
- 2012 **XMM-Newton, PI**, 100 ks Total Observing Time (Proposal ID # 069281)

The Wind-Wind Interaction Region and Stellar Wind Geometry of V444 Cyg
2012 *Swift*, Co-I, One observation per month (Proposal ID # 8110061, PI Michael F. Corcoran) *Continued X-ray Monitoring of Two Key Massive, Colliding Wind Binaries: WR140 and Eta Carinae*

Other Observing Experience

2015 Lowell Observatory, 7 nights on the Perkins 72 inch with PRISM
Apache Point Observatory, 3 remote nights on the ARCSAT 0.5 m, 2 remote half nights on the 3.5 m with ARCES (Echelle)
2014 Apache Point Observatory, 4 half nights on the 3.5 m (1 on remotely with AGILE, 3 various instruments on site), 4 nights on the ARCSAT 0.5 m (1 remotely, 3 on site)
2012 Ritter Observatory, 8 nights on HPOL
2011 Wyoming Infrared Observatory, 4 nights
2008 Mt. Evans Womble Observatory, 20 nights
2006 Arecibo Observatory, approximately 24 hours

Selected Presentations (*future presentation, †talk, ††invited talk)

2016^{††} *A Detailed View of Mass Loss in Massive Stars*, University of Washington
2016* *Protoplanetary and Debris Disk Morphologies*, AAS#227
2015[†] *AU Mic's Debris Disk Chemistry Revealed Using Coronagraphic Spectroscopy*, In the Spirit of Lyot: Direct Detection of Exoplanets and Circumstellar Disks
2015^{††} *Planet Signatures in Protoplanetary and Debris Disks*, University of Denver
2015 *AU Mic's Debris Disk Chemistry Revealed Using Spatially Resolved Spectroscopy*, AAS #225
2014[†] *Constraining the Envelope Properties and the Location of Planets in the AB Aur System*, Polarimetry: From the Sun to Stars and Stellar Environments
2014 *Modeling AB Aur's Envelope*, Sagan Summer School
2014[†] *Modeling AB Aur's Envelope*, National Capitol Area Disks 5
2014[†] *Revealing the Mass Loss Structures of Four Key Massive Binaries Using Optical Spectropolarimetry*, New Windows on Massive Stars: Asteroseismology, Interferometry, and Spectropolarimetry
2014[†] *The X-ray and Spectropolarimetric View of Mass Loss and Transfer in Massive Binary Stars (Rodger Doxsey Travel Prize winner)*, AAS #223
2013^{††} *The X-ray and Spectropolarimetric View of Mass Loss and Transfer in Massive Binary Stars*, High Altitude Observatory
2013^{††} *The Multiwavelength View of Mass Loss and Transfer in Massive Binary Stars*, University of Wyoming
2013^{††} *Polarization of Massive Binary Stars*, Université de Liège
2013 *X-ray Parameters of WR 140 from the RXTE Monitoring Campaign*, AAS #221
2011[†] *Constraining the Mass Loss Geometry of Beta Lyrae*, Stellar Polarimetry

2011^{††} *Constraining the Mass Loss Geometry of Beta Lyrae*, Stars, Companions and their Interactions

2009^{††} *Exploring Beta Lyrae with Polarization*, East Tennessee State University

Teaching Experience

2008 Graduate Teaching Assistant, University of Denver

2004-07 Teaching Assistant and Tutor, St. Lawrence University

Current and Former Students

Libby Dabrowski 2015 REU student from the U. of Puget Sound

Michael Malatesta Senior thesis at the U. of Denver and Master's Thesis at the U. of Oklahoma (Main advisors: Jennifer L Hoffman and John P Wisniewski)

Jodi Berdis Senior thesis at the U. of Oklahoma (Main advisor: John P Wisniewski)
Currently a graduate student at New Mexico State University

Marcus Kiel U. of Oklahoma undergrad (Main advisor: John P Wisniewski)

Matt Scheffler U. of Oklahoma undergrad (Main advisor: John P Wisniewski)

Press Releases and Other Articles

2015 Women in Science, University of Denver: Then and Now

<http://www.examiner.com/article/women-science-university-of-denver-then-and-now>

2015 Astronomers Breathe New Life into an Old Instrument, EurekAlert!

<http://phys.org/news/2015-02-astronomers-life-venerable-instrument.html>

2015 Harvesting ALFALFA

<http://www.astrosociety.org/institution/2015pdfs/Sum15.pdf>

Outreach, Service and Other Professional Activities

Referee ApJ

Panels NSF, Gemini Fast Turnaround

2016 AAS Early Career Advisory Board

2016 OU Mobile Planetarium Shows

2013-16 OU APO Time Allocation Committee

2013 Adopt a Physicist, Physicist

2012 NASA Student Ambassador Application Reviewer

2012 College Aspirations Readiness & Empowerment Workshop Leader

2009-12 University of Denver Graduate Students of the Four Faculties Physics and Astronomy Department Representative

2009, 12 Merrill Middle School Science Fair Judge

2009 Rangeview High School Career Day Participant

2009- Sigma Xi Member

2008- AAS Member