

Amanda L. Heiderman

CURRICULUM VITAE

Contact Information

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Research Interests

Comparison of Galactic and Extragalactic Star Formation, Galaxy Morphology, Galaxy Environments, Galaxy Formation and Evolution, Multi-wavelength Studies of Galaxies

Education

The University of Texas at Austin, Austin, Texas USA

Ph.D. Candidate, Astronomy, January 2009 (expected graduation date: August 2012)

- Dissertation: “Exploring the Limits of Star Formation from the Extreme Environment of Galaxy Interactions to the Milky Way”
- Supervisors: Neal J. Evans II and Karl Gebhardt

M.A., Astronomy, August 2008

The University of California at Berkeley, Berkeley, California USA

A.B., Astrophysics, May, 2005

Grants and Awards

Professional Development Awards, University of Texas: \$4400, *2006-11*

AAS International Travel Grant: \$1600, *2011*

Graduate Travel Grant, National Optical Astronomy Observatory: \$1000, *2010*

NRAO Graduate Research Assistantship Program, *2005*

Leadership Excellence Award, UCLEADs Research Program, *2004*

George Ju T.C. Scholar, *2004*

First Place Poster, UCLEADs symposium, UC Berkeley, *2003*

UCLEADs Research Grant: \$10,000, *2003-2005*

Physics Scholars Program Participant, UC Berkeley, *2002-05*

Elected to Sigma Xi scientific research society, *2003*

Cal Bears Scholar, UC Berkeley, *2003*

The Planetary Society, National Scholar, *2002*

USA Funds Scholar, *2002*

Phi Theta Kappa, International Honor Society, *2001-02*

Western Nevada College Representative, State of the State Address, *2001*

NASA Nevada Space Grant, \$4000 *2000-2002*

Deans Honors List, Western Nevada College, *2001-02*

Honorable mention from Secretary of the State of Nevada, Dean Heller, *2000*

Nevada Millenium Scholar, *2000-02*

Astronomical Expertise

Extragalactic and Galactic Panchromatic Astronomy

- Imaging: Radio, Submillimeter, Infrared, Optical, Ultraviolet, & X-ray
- Spectroscopy: Radio, Submillimeter, & Optical

Research Experience

Graduate Research Assistant, University of Texas, Austin, Supervisors: Neal J. Evans II & Karl Gebhardt, *2009- present*

Graduate Research Assistant, University of Texas, Austin, Supervisor: Shardha Jogee, *2006-08*

Graduate Research Assistant, National Radio Astronomy Observatory & University of Virginia, Supervisors: Kelsey Johnson, John Hibbard, & Remy Indebetouw, *2005- 06*

Undergraduate Research Assistant, UC Santa Barbara, Supervisor: Crystal Martin, *2004*

Undergraduate Research Assistant, UC Berkeley, Supervisors: Marc Davis & Michael Cooper, *2003*

Undergraduate Research Assistant, Lawrence Berkeley Lab, Supervisors: Gerson Goldhaber & Michael Wood-Vasey, *2002- 03*

- My Research in the Press** “Fireworks from Colliding Galaxies”, *hetdex.org* updates, 2010
 “The Violent Lives of Galaxies: Caught in the Cosmic Dark Matter Web”, Hubble News Release, January 10, 2008
- Observing Experience** McDonald Observatory, 2.7m, VIRUS-P optical integral field unit spectrograph (33 nights)
 Institut de Radioastronomie Millimétrique (IRAM), 30m (34 hours)
 Combined Array for Research in Millimeter-wave Astronomy (CARMA) (4 nights)
 Caltech Submillimeter Observatory (CSO), 10m, heterodyne and SHARC II receivers (39 nights)
 Fan Mountain Observatory, 1m, infrared imaging (1 night)
 Green Bank Telescope, 100m, single dish radio spectroscopy (1 night)
 Lick Observatory, Nickel 1m, optical imaging (3 nights)
 Berkeley RadioLab, L-band Horn & X-band Interferometer, (> 50 hours)
 Leuschner Observatory, 1m, optical imaging (30 hours)
- Teaching Experience** Teaching assistant, “Galaxies, Quasars, and the Universe”, University of Texas, Austin, TX, 2009
 Teaching assistant, “Introduction to Astronomy”, University of Texas, Austin, TX, 2007-08
 Teaching assistant, “Physics for Scientists and Engineers I & II”, Western Nevada College, Carson City, NV, 2001-02
- Refereed Publications**
6. “The Star Formation Rate and Gas Surface Density Relation in the Milky Way: Implications for Extragalactic Studies”, **Heiderman, A.L.**, Evans, N.J., II, Allen, L.E., Huard, T., Heyer, M., 2010, *ApJ*, 723, 1019
 5. “Galaxy Evolution in a Complex Environment: a Multi-wavelength Study of HCG 7”, Konstantopoulos, I. S., Gallagher, S. C., Fedotov, K., Durrell, P. R., **Heiderman, A.L.**, Elmegreen, D. M., Charlton, J. C., Hibbard, J. E., Tzanavaris, P., Chandar, R., Johnson, K. E., Maybhate, A., Zabludoff, A. E., Gronwall, C., Szathmary, D., Hornschemeier, A. E., English, J., Whitmore, B., Mendes de Oliveira, C., and Mulchaey, J.S., 2010, *ApJ*, 723, 197
 4. “Relating basic properties of bright early-type dwarf galaxies to their location in Abell 901/902”, Barazza, F. D., Wolf, C., Gray, M. E., Jogee, S., Balogh, M., McIntosh, D. H., Bacon, D., Barden, M., Bell, E. F., Böhm, A., Caldwell, J. A. R., Häußler, B., **Heiderman, A.L.**, Heymans, C., Jahnke, K., van Kampen, E., Lane, K., Marinova, I., Meisenheimer, K., Peng, C. Y., Sanchez, S. F., Taylor, A., Wisotzki, L., and Zheng, X., 2009, *A&A*, 508, 665
 3. “Interacting Galaxies in the A901/902 Supercluster with Stages”, **Heiderman, A.L.**, Jogee, S., Marinova, I., van Kampen, E., Barden, M., Peng, C. Y., Heymans, C., Gray, M.E., Bell, E.F., Bacon, D., Balogh, M., Barazza, F.D., Böhm, A., Caldwell, J.A.R., Häußler, B., Jahnke, K., Lane, K., McIntosh, D.H., Meisenheimer, K., Sanchez, S.F., Somerville, R.S., Taylor, A.; Wisotzki, L.; Wolf, C., and Zheng, X., 2009, *ApJ*, 705, 1433
 2. “The Spatially Resolved Star Formation Law From Integral Field Spectroscopy: VIRUS-P Observations of NGC 5194”, Blanc, G.A., **Heiderman, A.L.**, Gebhardt, K., Evans, Neal J. II, Adams, J., 2009, *ApJ*, 704, 842
 1. “Barred Galaxies in the Abell 901/2 supercluster with STAGES”, Marinova, I., Jogee, S., **Heiderman, A.L.**, Barazza, F. D., Gray, M. E., Barden, M., Wolf, C., Peng, C. Y., Bacon, D., Balogh, M., Bell, E. F., Böhm A., Caldwell, J. A. R., Häußler, B., Heymans, C., Jahnke, K., van Kampen, E., Koposov, S., Lane, K., McIntosh, D. H., Meisenheimer, K., Rix, H. -W., Sanchez, S. F., Taylor, A., Wisotzki, L., and Zheng, X., 2009, *ApJ*, 698, 1639
- Conference Publications**
14. “The VIRUS-P Investigation of the eXtreme ENvironments of Starbursts (VIXENS): Survey Design and First Results”, **Heiderman, A.L.**, Blanc, G.A., Davis, T.A., Evans, N.J., II, Gebhardt, K., Iono, D., Papovich, C., Yun, M., in Proceedings of the Fourth Biennial Frank N. Bash Symposium, New Horizons in Astronomy held in Austin, TX, Oct. 2011. To be published by Proceedings of Science: SISSA, Trieste (Italy), 2012
 13. “The Star Formation Rate and Gas Surface Density Relation in the Milky Way: Implications for Extragalactic Studies”, **Heiderman, A.L.**, Evans, N.J., II, Allen, L.E., Huard, T., Heyer, M., 2011, *BAAS*, 217, 43443

12. “*Barred disks in dense environments*”, Marinova, I., Jogee, S., **Heiderman, A.L.**, Barazza, F. D., Gray, M. E., Barden, M., Wolf, C., Peng, C. Y., Bacon, D., Balogh, M., Bell, E. F., Böhm, A., Caldwell, J. A. R., Häußler, B., Heymans, C., Jahnke, K., van Kampen, E., Kuposov, S., Lane, K., McIntosh, D. H., Meisenheimer, K., Rix, H. -W., Sanchez, S. F., Taylor, A., Wisotzki, L., and Zheng, X., in “*Tumbling, twisting, and winding galaxies: Pattern speeds along the Hubble sequence*”, E. M. Corsini and V. P. Debattista (eds.), *Memorie della Societa Astronomica Italiana*, 2011, MSAIS, 18, 61
11. “*The VIRUS-P Exploration of Nearby Galaxies (VENGA): Survey Design and First Results*”, Blanc, G.A., Gebhardt, K., **Heiderman, A.L.**, Evans, N.J., II, Jogee, S., van den Bosch, R., Marinova, I., Weinzirl, T., Yoachim, P., Drory, N., Fabricius, M., Fisher, D., Hao, L., MacQueen, P.J., Shen, J., Hill, G.J., Kormendy, J., in *Proceedings of the Third Biennial Frank N. Bash Symposium, New Horizons in Astronomy held in Austin, TX, Oct. 2009* (San Francisco, CA: ASP), 2010, ASPC, 432, 180
10. “*The Star Formation Rate & Gas Surface Density Relation in the Milky Way: Implications for Extragalactic Studies*”, **Heiderman, A.L.**, Evans, N.J., II, Allen, L.E., Huard, T., Heyer, M., in *Proceedings of the From Stars to Galaxies: Connecting our Understanding of Star and Galaxy Formation, University of Florida, Gainesville, Florida, USA, 7-10 April 2010*. Online at <http://conference.astro.ufl.edu/STARSTOGALAXIES>, id.116
9. “*Galaxy Mergers in the A901/902 Supercluster with STAGES*”, **Heiderman, A.L.**, Jogee, S., Marinova, I., van Kampen, E., Barden, M., Peng, C. Y., Heymans, C., Gray, M. E., Bell, E. F., Bacon, D., Balogh, M., Barazza, F. D., Böhm, A., Caldwell, J. A. R., Häußler, B., Jahnke, K., Lane, K., McIntosh, D. H., Meisenheimer, K., Sanchez, S. F., Somerville, R. S., Taylor, A., Wisotzki, L., Wolf, C., Zheng, X, in “*Galaxy Evolution: Emerging Insights and Future Challenges*”, Editors S. Jogee, I. Marinova, L. Hao, and G. Blanc (San Francisco, CA: ASP), 2009, 419, 257
8. “*The Properties of Local Barred Disks in the Field and Dense Environments: Implications for Galaxy Evolution*”, Marinova, I., Jogee, S., Barazza, F. D., **Heiderman, A.L.**, Gray, M. E., Barden, M., Wolf, C., Peng, C. Y., Bacon, D., Balogh, M., Bell, E. F., Böhm, A., Caldwell, J. A. R., Häußler, B., Heymans, C., Jahnke, K., van Kampen, E., Lane, K., McIntosh, D. H., Meisenheimer, K., Sanchez, S. F., Somerville, R. S., Taylor, A., Wisotzki, L., and Zheng, X, in “*Galaxy Evolution: Emerging Insights and Future Challenges*”, Editors S. Jogee, I. Marinova, L. Hao, and G. Blanc (San Francisco, CA: ASP), 2009, 419, 138
7. “*Galaxy Evolution in Dense Environments: Properties of Interacting Galaxies in the Abell 901/902 Supercluster*”, **Heiderman, A.L.**, Jogee, S., Bacon, D., Balogh, M., Barden, M., Barazza, F. D., Bell, E. F., Bohm, A., Caldwell, J. A. R., Gray, M. E., Häußler, B., Heymans, C., Jahnke, K., van Kampen, E., Kuposov, S., Lane, K., Marinova, I., McIntosh, D., Meisenheimer, K., Peng, C. Y., Rix, H.-W., Sanchez, S. F., Somerville, R., Taylor, A., Wisotzki, L., Wolf, C., Zheng, X.1, in *Formation and Evolution of Galaxy Disks ASP Conference Series, Vol. 396, Proceedings of the conference held 1-5 October, 2007 at the Centro Convegno Matteo Ricci, Rome, Italy*. Edited by Jos G. Funes, S.J., and Enrico Maria Corsini. (San Francisco, CA: ASP), 2008, 396, 269
6. “*Morphological Transformations of Galaxies in the A901/02 Supercluster from STAGES*”, **Heiderman, A.L.**, Jogee, S., Bacon, D., Balogh, M., Barden, M., Barazza, F. D., Bell, E. F., Bhm, A., Caldwell, J. A. R., Gray, M. E., Häußler, B., Heymans, C., Jahnke, K., van Kampen, E., Kuposov, S., Lane, K., Marinova, I., McIntosh, D., Meisenheimer, K., Peng, C. Y., Rix, H.-W., Sanchez, S. F., Somerville, R., Taylor, A., Wisotzki, L., Wolf, C., Zheng, X.1, in *New Horizons in Astronomy: Frank N. Bash Symposium 2007*, Editors A. Frebel, J. Maund, J. Shen, M. Siegel (San Francisco, CA: ASP), ASPC, 393, 235
5. “*Transformation Of Galaxies By Interactions And Mergers In The A901/02 Supercluster: Environmental Constraints From The Stages Survey*”, **Heiderman, A.L.**, Jogee, S., Bacon, D. J., Balogh, M.L., Barden, M., Barazza, F.D., Bell, E.F., Böhm, A., Caldwell, J.A.R., Gray, M.E., Häußler B., Heymans, C., Jahnke, K., van Kampen, E., Kuposov, S., Lane, K., McIntosh, D.H., Meisenheimer, K., Peng, C.Y., Rix, H.W., Sanchez, S.F., Somerville, R., Taylor, A. N., Wisotzki, L., Wolf, C., Zheng, X., STAGES Collaboration, 2007, BAAS, 211, 9613

4. “STAGES: Space Telescope A901/902 Galaxy Evolution Survey”, Gray, M., Aragon-Salamanca, A., Bacon, D., Balogh, M., Barazza, F.D., Barden, M., Bell, E., Beswick, R., Böhm, A., Caldwell, J. A. R., Gallazzi, A., Gilmour, R., Green, D. A., Häußler, B., **Heiderman, A.L.**, Heymans, C., Jahnke, K., Jogee, S., van Kampen, E., Kuposov, S., Lane, K.P., Marinova, I., Meisenheimer, K., McIntosh, D. H., Papovich, C., Peng, C.Y., Rix, H., Saikia, D.J., Sanchez, S.F., Somerville, R.S., Taylor, A.N., Van Waerbeke, L., Wisotzki, L., Wolf, C., and Zheng, X., 2007, BAAS, 211, 13220
3. “Modes of Star Formation in an Early Universe Laboratory: HST/ACS Imaging of Hickson Compact Group 7”, Durrell, P., Gallagher, S.C., Gronwall, C., English, J., Chandar, R., Johnson, K.E., Hibbard, J.E., **Heiderman, A.L.**, Whitmore, B. C., Charlton, J. C., 2006, BAAS, 209,21110
2. “VLA HI and Spitzer Study of HCG 07 and HCG 19”, **Heiderman, A.L.**, Hibbard, J. E., Johnson, K. E., Gallagher, S. C., Charlton, J. C., and Hornschemeier, A. E., 2005, BAAS, 207, 17916
1. “Analysis of DEEP2 Redshift Survey Spectra: Measurement of [O II] Equivalent Widths”, **Heiderman, A.L.**, 2003, BAAS, 203, 11904

Poster Presentations

- Heiderman, A.L.**, Evans N.J., Gebhardt, K., Blanc, G., Papovich, C. Iono, D., Yun, M, & Davis, T., “Fourth Biennial Frank N. Bash Symposium, New Horizons in Astronomy”, Austin, TX, October 2011
- Heiderman, A.L.**, Evans N.J., Gebhardt, K., Blanc, G., Papovich, C. Iono, D., Yun, M, & Davis, T., “Star Formation in Galaxies: The Herschel Era”, Ringberg Castle, Tegernsee, Germany, June 2011
- Heiderman, A.L.**, Evans N.J., Allen L., Huard, T., Heyer, M., 2011, BAAS, 217, 43443
- Heiderman, A.L.**, Evans N.J., Allen L., Huard, T., “From Stars to Galaxies”, Gainesville, FL, April 2010
- Heiderman, A.L.**, Evans N.J., Allen L., Huard, T., “From First Light to Newborn Stars”, Tucson, AZ, March 2010
- Heiderman, A.L.**, Evans N.J., Gebhardt K., Blanc, G.A., “SFR@50: Filling the Cosmos with Stars”, Sarteano, Italy, July 2009
- Blanc, G.A., **Heiderman, A.L.**, Gebhardt K., Evans N.J., Adams, J., “SFR@50: Filling the Cosmos with Stars”, Sarteano, Italy, July 2009
- Heiderman, A.L.**, Jogee, S., and STAGES team, “Galaxy Evolution: Emerging Insights and Future Challenges”, Austin, TX, November 2008
- Heiderman, A.L.**, Jogee, S., and STAGES team, “Second Biennial Frank N. Bash Symposium New Horizons in Astronomy”, Austin, TX, October 2007
- Heiderman, A.L.**, Jogee, S., and STAGES team, “Formation and Evolution of Galaxy Disks”, Rome, Italy, October 2007
- Heiderman, A.L.**, Jogee, S., and STAGES team, 2007, BAAS, 211, 9613
- Heiderman, A.L.**, Hibbard, J. E., Johnson, K. E., et al., 2005, BAAS, 207, 17916
- Heiderman, A.L.**, “Physics for the Third Millennium: II”, Huntsville, AL, 2005
- Heiderman, A.L.**, UC LEADS Research and Leadership Symposium, UCSF, CA, 2005
- Heiderman, A.L.**, UC Santa Barbara Undergraduate Colloquium, Santa Barbara, CA, 2004
- Heiderman, A.L.**, UC LEADS Research and Leadership Symposium, UCLA, CA, 2004
- Heiderman, A.L.**, Sigma Xi Student Research Conference, Los Angeles, CA, 2003
- Heiderman, A.L.**, 2003, BAAS, 203, 11904

Proposal Activities

- PI, on top 10% overall ALMA Cycle 0 “filler project” proposal, 2011
- Co-I, on successful NRO 45m proposal, 2011
- Co-I, on successful IRAM proposal, 2011
- Co-I on successful APEX proposal, 2011
- PI, on pending Herschel Space Telescope OT2 proposal, 2011
- Co-I, on successful CARMA proposal, 2010
- PI, on successful CARMA proposal, 2009

PI, on successful VIRUS-P large survey proposal: “*The VIRUS-P Investigation of the eXtreme ENvironments of Starbursts/ interacting galaxies (VIXENS)*” 2009-10
 Co-I, on successful VIRUS-P large survey proposal: “*VIRUS-P Exploration of Nearby Galaxies (VENGA)*”, 2009-11

Talks and Seminars

Invited talk, Particle, Astrophysics and Cosmology Seminar, Texas A&M University, College Station, TX, *May 2, 2012*
 Invited talk, Galaxy Coffee, MPIA, Heidelberg, Germany, *February 16, 2012*
 Invited talk, Institute for Theoretical Astrophysics, Heidelberg, Germany, *February 10, 2012*
 Contributed talk, *The Milky Way in the Herschel Era: Towards a Galaxy-scale view of the Star Formation Life-cycle*, Rome, Italy, *September 19, 2011*
 Contributed talk, *Spectroscopy 2011: Extending the Limits of Astrophysical Spectroscopy*, Victoria, British Columbia, *January 15, 2011*
 Extragalactic Seminar, University of Texas, Austin, TX, *September 30, 2010*
 Contributed talk, *Spitzer* Gould Belt Legacy Survey Team meeting, Dublin, Ireland, *August 24, 2010*
 Invited talk, *From First Light to Newborn Stars*, Star Formation Law breakout session, Tucson, AZ, *March 14, 2010*
 Report on “*Women in Astronomy and Space Science 2009: Meeting the Challenges of an Increasingly Diverse Workforce meeting*”, University of Texas, Austin, TX, *March 5, 2010*
 Extragalactic Seminar, University of Texas, Austin, TX, *May 8, 2008*
 Invited talk, STAGES collaboration meeting, Nottingham, UK, *June 17, 2007*
 Extragalactic Seminar, University of Texas, Austin, TX, *October 19, 2006*
 Tuesday University of Virginia / NRAO Astronomy (TUNA) Lunch Talk, Charlottesville, VA, *August 23, 2005*
 Report on “*Women in Astronomy II: 10 Years Later*” meeting, UC Berkeley, 2003

Computer Skills

Operating systems: Unix (Linux & Mac OS X)
 Programming: IDL, Python, C++, Unix, Emacs
 Graphics: IDL, SAOImage (DS9), Karma, Gimp
 Astronomical software packages: AIPS, MIRIAD, IRAF, CLASS
 Text processing: LaTeX

Service

Gender/Family/Diversity Host, Astronomy Department, University of Texas, Austin *2007-present*
 Vice President, Women in Science and Engineering (WiSE), UC Berkeley, *2003*
 Course Software tester, Chemistry Department, Western Nevada College, *2001*

Public Outreach and Mentoring

Served as graduate student mentor, University of Texas, *2009-present*
 Mentored undergraduate students, University of Texas, *2009-present*
 Public Science Lecturer, Western Nevada Astronomical Society, Carson City, NV, *2007-present*
 Workshop assistant, National Radio Astronomy Observatory Public Open House, NRAO, VA, *2005*
 Workshop Leader, Expanding Your Horizons Conference, a conference to engage middle school girls into math and science careers, Mills College, CA, *2004-05*
 Gave presentation about undergraduate research at Launch Day, an orientation program for incoming freshman physics majors, UC Berkeley, CA *2004*

References

Prof. Neal J. Evans II	Prof. Karl Gebhardt	Prof. Casey Papovich
University of Texas	University of Texas	Texas A&M University
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