

Jason P. Aufdenberg

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Date of Birth: February 1, 1970

Place of Birth: New Brunswick, New Jersey, USA

Ph.D. Physics 2000 Arizona State University

M.S. Physics 1994 University of Toledo

B.S. Physics 1992 New Mexico Tech

Education Background

1994-2000 Arizona State University (Tempe, AZ)

Department of Physics and Astronomy

Ph.D., Physics, May 2000

“Line-blanketed Spherically Extended Model Atmospheres of Hot Luminous Stars with and without Winds.”

Advisors: Prof. Peter H. Hauschildt, Prof. Steven N. Shore, Prof. Sumner G. Starrfield

1992-1994 University of Toledo (Toledo, OH)

Department of Physics and Astronomy

Master of Science, Physics, December 1994

Thesis: “A Model for the Peculiar Interacting Binary Star V644 Mon”

Advisor: Prof. Bernard W. Bopp

1988-1992 New Mexico Institute of Mining and Technology (Socorro, NM)

Bachelor of Science, Physics, High Honors, May 1992

Research Experiences

Associate Professor of Physics, ERAU

2012 –
present

Assistant Professor of Physics, ERAU

2006 –
2012

Modeling stellar atmospheres of single rotationally distorted stars, rotationally and tidally distorted stars in close binary systems. Computation of synthetic photometric,

spectroscopic, and interferometric observables for comparison with data from long-baseline interferometric arrays/instruments such as CHARA/FLUOR, CHARA/MIRC, and SUSI.

- Visiting Scientist** High Altitude Observatory, National Center for Atmospheric Research. 2008
The modeling of stellar atmospheres of single rotationally distorted stars in collaboration with Keith MacGregor and Travis Metcalfe who provided the underlying self-consistent stellar structure computations. Computation of synthetic spectrophotometric, spectroscopic, and interferometric observables for comparison with data from long-baseline interferometric arrays.
- Michelson Postdoctoral Fellow** National Optical Astronomy Observatory in Tucson, Arizona. Interferometric observations with the CHARA array and FLUOR beam combiner on Mount Wilson in California. Development, testing, and application of computational stellar atmosphere models for the analysis of interferometric observations of bright stars. Advisor: Dr. Stephen Ridgway 2003–2006
- CfA Postdoctoral Fellow** Harvard-Smithsonian Center for Astrophysics. Development, testing, and application of computational stellar atmosphere models for the analysis of multi-wavelength spectroscopic, spectrophotometric, and interferometric observations. Formal Advisor: Dr. Eugene Avrett. 2000–2003
- Postdoctoral Researcher** Department of Physics and Astronomy, Arizona State University. Computational stellar atmosphere models for the interpretation of classical novae spectra. Advisor: Prof. Sumner Starrfield 2000
- NASA Space Grant Doctoral Fellow** Department of Physics and Astronomy, Arizona State University. Line-blanketed Spherically Extended Model Atmospheres of Hot Luminous Stars With and Without Winds. Advisors: Prof. Peter Hauschildt, Prof. Steven Shore, Prof. Sumner Starrfield. 1994–2000
- Ritter Graduate Research Assistant** Ritter Astrophysical Observatory, Department of Physics and Astronomy University of Toledo. Spectroscopic Observations and modeling of the peculiar interacting binary star V644 Moncerotis. Spectroscopic observations and analyses of active flare stars and emission-line B-type stars. Advisor: Prof. Bernard Bopp. 1993–1994
- Summer Undergraduate Research Assistant** Computer Sciences Corporation, Goddard Space Flight Center. Interpretation and analysis of the ultraviolet spectra of symbiotic binary stars and emission-line galaxies. Advisors: Dr. Steven Shore, Dr. D. Michael Crenshaw, Dr. Nancy Oliverson. 1989–1992
- Undergraduate Research Assistant** Joint Observatory for Cometary Research, New Mexico Tech. Image processing of narrow-band comet movies. Image processing of Very Large Array spectral-line observations of spiral galaxies. Array Operations Center, National Radio Astronomy Observatory. Advisor: Prof. David Westpfahl. 1988–1992

Summer Intern Goddard Space Flight Center 36" Telescope Facility. Astronomical CCD testing, Fabry-Perot observations of Io's Plasma Torus. Advisor: Dr. Ronald J. Oliverson. 1987-1988

Teaching Experience

Associate Professor, Embry-Riddle Aeronautical University 2012-present
Assistant Professor, Embry-Riddle Aeronautical University 2006-2012

Astrophysics I (PS 401/EP 595E)

Students: 10-15 senior space physics majors and astronomy minors and 1 graduate student in engineering physics

Topics: stellar atmospheres, stellar structure, stellar evolution

Text: *Modern Astrophysics* by Carroll and Ostlie

Taught: Fall 2009, 2011

Astrophysics II (PS 408/EP 595F)

Students: 6-8 senior space physics majors and 1 graduate student in engineering physics

Topics: The Galaxy, galaxies, active galactic nuclei, cosmology.

Text: *Modern Astrophysics* by Carroll and Ostlie.

Taught: Fall 2008; Spring 2010, 2011

Planetary Science (EP 420/EP 595A)

Students: 5-7 space physics majors and 1 graduate student in engineering physics

Topics: planetary dynamics; radiative transfer; atmospheric, surface, and interior planetary processes

Text: *Planetary Sciences* by de Pater and Lissauer

Taught: Fall 2011, 2012

Astronomy (PS 301)

Students: Up to 35 students from all majors

Topics: introduction to the sky, history of astronomy, basic physics, telescopes, planetary geology and atmospheres, stars, stellar graveyard, galaxies, cosmology

Text: *Cosmic Perspective* by Bennett et al.

Taught: Fall 2006, 2007, 2008, 2009, 2010, 2012; Spring 2007, 2008, 2009, 2010

Observational Astronomy (EP 425/EP 595D)

Students: Up to 14 astronomy minors and graduate students in engineering physics

Topics: coordinate systems, time, light, telescopes, CCD calibrations, spectroscopy, photometric and spectroscopic observing projects with a 20-inch telescope

Text: *Observational Astronomy* by Birney, Gonzalez and Oesper

Taught: Spring 2007, 2008, 2009, 2010, 2011

Physics I for Engineers (PS 150)

Students: Up to 45 freshman engineering and physics students per section.

Topics: vectors, kinematics, forces, energy, momentum, rotational motion, all with calculus

Texts: *Principles of Physics* by Serway and *University Physics* by Young and Freedman

Taught: Fall 2006, 2007, 2010, 2012; Spring 2008, 2009

Graduate Teaching Associate, Arizona State University

1996-
1999

Introductory Astronomy Laboratory II (AST 114) Students: 25-30 undergraduate students, all majors, per section

Topics: telescopic stellar observations, nearest and brightest stars, binary stars, and galaxies

Taught: Spring 1999

Introductory Astronomy Laboratory I (AST 113)

Students: 25-30 undergraduate students, all majors, per section

Topics: celestial motions, coordinate systems, telescopic lunar and planetary observations, solar rotation, and the constellations

Taught: Fall 1997

Adjunct Instructor, Indiana University South Bend

1995

The Solar System (A 100)

Students: 65 undergraduates, all majors.

Topics: celestial motions, comparative planetology (emphasizing lunar geology) and an outside sun-shadow experiment project

Text: *Realm of the Universe* by Abell, Morrison, and Wolff

Taught: Summer 1995

Graduate Teaching Assistant, Arizona State University

1994-
1996

Introductory Astronomy Laboratory II (AST 126, identical to AST 114 above)

Taught: Spring 1995, 1996

Introductory Astronomy Laboratory I (AST 125, identical to AST 113 above)

Taught: Fall 1994, 1995

Graduate Teaching Assistant, University of Toledo

1992

Elementary Astronomy Laboratory (ASTR 2050)

Students: 25 undergraduate students, all majors

Topics: celestial motions (using 25 large, transparent celestial globes), outdoor celestial

observations and measurements, stellar spectral types.

Taught: Fall 1992

Mentoring and Advisement

- Academic Advisor** ERAU Space Physics undergraduate majors. 2007-present
- Faculty Advisor** ERAU Amateur Astronomy Club, six astronomy public outreach nights per year, plus school visits. 2007-present
- Research Mentor** ERAU Space Physics major Mark Newpower on computation of spectral energy distributions and synthetic images of rapidly rotating stars. Summer 2010. 2010
- Research Mentor** ERAU Engineering Physics major and McNair Scholar Michel Sola on computational projects including the addition of the reflection effect to a binary light curve code and the MPI parallization of a stellar radiation field interpolation code. October 2009 to present. 2009-present
- Research Mentor** ERAU Space Physics major Bunty Shah on projects “Modeling Vega from the Inside Out” and “Modeling the Double Star Spica”, both Embry-Riddle Internal Grant Programs. October 2007 to June 2009. 2007-2009
- Research Mentor** REU Student Emily Alicea-Muñoz (together with advisor Dr. Andrea Dupree) at the Harvard-Smithsonian Center for Astrophysics on the project “Search for Pulsations in Metal-Deficient Stars.” Introduction to IRAF, measurement and analysis of spectral lines. Summer 2002. 2002

Academic Service

- Assistant Professor, Embry-Riddle Aeronautical University** 2006-present
- Coordinator** ERAU Space Physics Degree Program (2011-present)
- Member** PhD defense committee for Joshua D. Thomas, University of Toledo (May 2012)
- Member** MS thesis committee for Takahiro Kuhara (Fall 2011)
- Member** Physical Science Creekside Observatory Committee (2006-present)
- Member** Physical Sciences Outreach and Recruitment Committee (2009-present)
- Member** Physical Sciences Faculty Search Committee (2010-2011).
- Member** Physical Sciences Curriculum Committee (2007-2010).
- Member** COAS Building Telescope Committee (2011-present)

Member University Dining Services Advisory Group (2010-present)

Member General Education Committee (2009-present)

Member Senate/Campus Curriculum Committee (2007-2010)

Member MS thesis committee for Pavan Donepudi (Spring 2007)

Public Outreach

- Director** Creekside Observatory Astronomy Open House Events: 2006: October 6; 2007: March 9, March 10, April 21, October 16; 2008: February 20, November 7; 2009: February 6, March 11, April 17, September 18, October 23, November 18; 2010: February 19, March 26, April 16, September 17, October 29, November 19; 2011: February 11, March 11, April 15, September 16, October 28, November 18; 2012: February 10, March 9, April 13, September 14, October 26, November 16 2006-present
- Presenter** Volusia County Public Schools: Lunar phases at *Horizon Elementary*, all 5th grade classes, October 2007, November 2008, October 2009, January 2011, October 2011, October 2012; Lunar phases at *Tomoka Elementary*, all 5th grade classes, May 2008, January 2009, January 2010, February 2011; Lunar Phases at *South Daytona Elementary*, all 5th grade classes, February 2010, February 2011; Lunar Phases at *Pine Trail Elementary*, three 5th grade classes, October 2011, five 5th grade classes October 2012; Career Day at *Silver Sands Middle*: December 2007, December 2008, December 2009 2006-present
- Co-Organizer** with Dr. Katariina Nykiri of the Physical Sciences booth at Women in Aviation Day, Embry-Riddle Aeronautical University : April 2008, March 2009, March 2010, April 2011, March 2012 2008-present
- Special Awards Judge** Volusia/Flagler Regional Science Fair: February 2008, January 2009, January 2010, January 2011 2008-2011
- Designer** Fair Share Urban Garden sundial project, Daytona Beach Lion's Club, July 2009
- Astronomer** Tucson *Project Astro* program. 2003-2006
Partnerships with: 6th grade teacher Jennifer Gould of St. Michael's School; 5th grade teacher Juan Jimenez of Reynolds Elementary; 6th grade teacher Dana Brentt of Academy of Math & Science Charter School. Classroom visits include general astronomy Q&A, orbit and phases of the moon, solar storms, constellations, asteroids, comets, meteor showers, star parties. October 2003 – May 2006.
- Astronomer** Boston *Project Astro* program. 2001-2002
Partnership with 8th grade teacher Andrew Bowersox of the Neighborhood House Charter School, Dorchester, MA. Five classroom visits (trip to planetarium, slide show, spectroscope activity, recreating Herchel's discovery of infrared light). July 2001 – May 2002.

- Director** Arizona State University Department of Physics and Astronomy's *Astronomy Open House*: Six events per year for the general public (a few hundred per event) including telescopic viewing, hallway displays, slide shows, and constellation tours. Fall 1999, Spring 2000 1999–2000
- Guest Speaker** Arizona State University, Center for Academic Precocity. Astronomy workshop on the scale of the universe with 3rd & 4th graders. June 1999 1999
- Co-Director** Arizona State University Department of Physics and Astronomy's *Astronomy Open House*. Fall 1996, 1997, 1998; Spring 1997, 1998, 1999 1996–1999
- Volunteer** Arizona State University Science Engineering and Environment Fair (SEE ASU) for K-12 students. Astronomy questions and activities booth. March 1999, 2000. 1999–2000
- Invited Speaker** Saguario Astronomy Club, Phoenix, Arizona “Winds from Hot Stars.” August 1998 1998
- Volunteer** Highland High School, Gilbert, Arizona, Mathematics Competition, *Sundial Mathematics* session. February 1998
- Telescope Operator** Arizona State University, West Campus. Public telescopic viewing of Comet Hale-Bopp. April 1997 1997
- Volunteer** Arizona State University, Department of Physics and Astronomy. *Physics Olympics* March 1997 1997
- Invited Speaker** Saguario Astronomy Club, Phoenix, Arizona, “Extreme Ultraviolet Stars.” August 1996 1996

Grants and Grant Applications

Proposals Funded

4. Principal Investigator, Florida Space Grant Consortium, Project title: ERAU Astronomy Open House Public Outreach Program, September 2011 - May 2012.
3. Principal Investigator, ERAU Internal Research Grant, July 2008 - June 2009. Project title: Modeling Stars Inside Out
2. Co-investigator, JPL Space Interferometry Mission Science Study, June 2008- June 2009. Project Title: Stellar Astrophysics with SIM and Optical Long Baseline Interferometry (PI: Stephen Ridgway, National Optical Astronomy Observatory)
1. Principal Investigator, ERAU Internal Research Grant, July 2007 - June 2008. Project title: Modeling High Resolution Data of the Spica Double Star System

Proposals Submitted and Declined

4. Principal Investigator, National Science Foundation (submitted November 2011, declined). Project title: State-of-the-Art Model Atmospheres for Differentially Rotating A-type Stars
3. Principal Investigator, National Science Foundation (submitted November 2010, declined). Project title: 1-D and 3-D Model Atmospheres for Differentially Rotating A-type Stars
2. Principal Investigator, National Science Foundation (submitted July 2010, declined). Project title: CAREER: State-of-the-Art Model Atmospheres for Rapidly Rotating Stars
1. Principal Investigator, National Science Foundation (submitted July 2009, declined). Project title: CAREER: State-of-the-Art Model Atmospheres for Rapidly Rotating Stars

Selected Awards, Fellowships, Honors

NASA Michelson Postdoctoral Fellowship September 2003 – August 2006

Harvard-Smithsonian Center for Astrophysics Postdoctoral Fellowship
September 2000 – September 2003

NASA Arizona Space Grant Graduate Fellowship Fall 1996, 1998; Spring 1997, 1998

Top HP-Convex User National Center for Supercomputing Applications. Project: Non-standard Stellar Atmospheres. May 1998

Outstanding Graduate Teaching Assistant Arizona State University, Department Physics and Astronomy (awarded to one graduate student TA in the Department each year). May 1996

Marvin H. Wilkening Award New Mexico Institute of Mining and Technology (awarded to one physics graduate each year). May 1992

Abraham and Esther Brook Award New Mexico Institute of Mining and Technology (awarded to two physics majors in their third year). May 1991

Scholar New Mexico Institute of Mining and Technology. 1991-1992

Regents Scholarship New Mexico Institute of Mining and Technology. 1988-1992

Astronomical Community Service

Manuscript Peer Review Astrophysical Journal (4), Astronomy & Astrophysics (4), Publications of the Astronomical Society of the Pacific (2), Nature (1)

Proposal Review Panels National Science Foundation (2), NASA (1)

Professional Memberships

American Astronomical Society Full Member (Member, Historical Astronomy Division)

Sigma Xi Full Member

Interantional Astronomical Union Member of Division G Commission 29 Stellar Spectra, Division G Commission 36 Theory of Stellar Atmospheres, and Division B Commission 54 Optical & Infrared Interferometry

Publications

Refereed Publications

33. “Gas Distribution, Kinematics, and Excitation Structure in the Disks around the Classical Be Stars β Canis Minoris and ζ Tauri” by Kraus, S., Monnier, J. D., Che, X, Schaefer, G., Touhami, Y., Gies, D. R., **Aufdenberg**, J. P., Baron, F., Thureau, N., ten Brummelaar, T. A., and McAlister, H. A., Turner, N. H., Strumann, J. and Sturmman, L. in *The Astrophysical Journal*, 2012, Volume 744, Article 19.
32. “The nature of the Na I D-lines in the Red Rectangle” by Thomas, Joshua D., Witt, Adolf N., **Aufdenberg**, Jason P., Bjorkman, J. E., Dahlstrom, Julie A., Federman, S. R., Hobbes, L. M., Vijh, Uma P., and York, Donald G. in *The Monthly Notices of the Royal Astronomical Society*, 2011, Volume 371, pages 2860 - 2873.
31. “The Mass of the Black Hole in Cygnus X-1” by Orosz, Jerome A., McClintock, Jeffrey E., **Aufdenberg**, Jason P., Remillard, Ronald A., Reid, Mark J., Narayan, Ramesh, and Gou, Lijun in *The Astrophysical Journal*, 2011, Volume 742, Article 84.
30. “The Red Rectangle: Its Shaping Mechanism and Its Source of Ultraviolet Photons” by Witt, Adolf N., Vijh, Uma P., Hobbs, L. M., **Aufdenberg**, Jason P., Thorburn, Julie A., York, Donald G. in *The Astrophysical Journal*, 2009, Volume 693, pages 1946-1958.
29. “Dust in the inner regions of debris disks around a stars” by Akeson, R. L., Ciardi, D. R., Millan-Gabet, R., Mérand, A., Folco, E. Di, Monnier, J. D., Beichman, C. A., Absil, O., **Aufdenberg**, J., McAlister, H., Brummelaar, T. ten, Sturmman, J., Sturmman, L., Turner, N. in *The Astrophysical Journal*, 2009, Volume 691, pages 1896-1908.

28. “A near-infrared interferometric survey of debris discstars. II. CHARA/FLUOR observations of six early-type dwarfs” by Absil, O., di Folco, E., Mérand, A., Augereau, J.-C., Coudi Du Foresto, V., Defrère, D., Kervella, P., **Aufdenberg**, J. P., Desort, M., Ehrenreich, D., Lagrange, A.-M., Montagnier, G., Olofsson, J., Ten Brummelaar, T. A., McAlister, H. A., Sturmann, J., Sturmann, L., Turner, N. H. in *Astronomy & Astrophysics*, 2008, volume 487, pages 1041-1054.
27. “Extended Envelopes around Galactic Cepheids. III. Y Ophiuchi and α Persei from Near-Infrared Interferometry with CHARA/FLUOR” by Mérand, Antoine, **Aufdenberg**, Jason P., Kervella, Pierre, Foresto, Vincent Coudé du, ten Brummelaar, Theo A., McAlister, Harold A., Sturmann, Laszlo, Sturmann, Judit, Turner, Nils H. in *The Astrophysical Journal*, 2007, Volume 664, pages 1093-1101.
26. “CHARA Array K -Band Measurements of the Angular Dimensions of Be Star Disks” by Gies, D. R., Bagnuolo, W. G., Baines, E. K., Farrington, C. D., Goldfinger, P. J., Grundstrom, E. D., Huang, W., McAlister, H. A., Mérand, A., Sturmann, J., Sturmann, L., ten Brummelaar, T. A., Touhami, Y., Turner, N. H., Wingert, D. W., D. H. Berger, McSwain, M. V., **Aufdenberg**, J. P., Ridgway, S. T., Cochran, L., Lester, D. F., Sterling, N. C., Bjorkman, J. E., Bjorkman, K. S., and P. Koubsky in *The Astrophysical Journal*, 2007, 654, 527.
25. “Tests of Stellar Model Atmospheres by Optical Interferometry IV: VINCI interferometry and UVES spectroscopy of Menkar” by Wittkowski, M., **Aufdenberg**, J. P., Driebe, T., Roccatagliata, V., Szeifert, T. and Wolff, B. in *Astronomy & Astrophysics*, 2006, 460, 855.
24. “Tests of Stellar Model Atmospheres by Optical Interferometry III: NPOI and VINCI interferometry of the M0 giant γ Sge covering 0.5 - 2.2 microns” by Wittkowski, M., Hummel, C. A., **Aufdenberg**, J. P. and Roccatagliata, V., in *Astronomy & Astrophysics*, 2006, 460, 843.
23. “Dense Spot Coverage and Polar Caps on SV Cam” by Jeffers, S. V., Cameron, A. C., Barnes, J. R., **Aufdenberg**, J. P. in *Astrophysics and Space Science*, 2006 304, 371.
22. “First Results from the CHARA Array. VII. Long- Baseline Interferometric Measurements of Vega Consistent with a Pole- On, Rapidly Rotating Star” by **Aufdenberg**, J. P., Mrand, A., Coud du Foresto, V., Absil, O., Di Folco, E., Kervella, P., Ridgway, S. T., Berger, D. H., Brummelaar, T. A., McAlister, H. A., Sturmann, J., Sturmann, L., and Turner, N. H. in *The Astrophysical Journal*, 2006, 645, 664.
21. “Extended envelopes around Galactic Cepheids. II. Polaris and delta Cephei from near-infrared interferometry with CHARA/FLUOR” by Mérand, A., Kervella, P., Coudé Du Foresto, V., Perrin, G., Ridgway, S. T., **Aufdenberg**, J. P., Ten Brummelaar, T. A., McAlister, H. A., Sturmann, L., Sturmann, J., Turner, N. H. and Berger, D. H. in *Astronomy & Astrophysics*, 2006, 453, 155.
20. “First Results from the CHARA Array. IV. The Interferometric Radii of Low-Mass Stars” by Berger, D. H., Gies, D. R., McAlister, H. A., Brummelaar, T. A., Henry, T.

- J., Sturmman, J., Sturmman, L., Turner, N. H., Ridgway, S. T., **Aufdenberg**, J. P. and Mérand, A. in *The Astrophysical Journal*, 2006, 644, 475.
19. “Circumstellar material in the Vega inner system revealed by CHARA/FLUOR” by Absil, O., di Folco, E., Mérand, A., Augereau, J.-C., Coudé Du Foresto, V., **Aufdenberg**, J. P., Kervella, P., Ridgway, S. T., Berger, D. H., Ten Brummelaar, T. A., Sturmman, J., Sturmman, L., Turner, N. H. and McAlister, H. A. in *Astronomy & Astrophysics*, 2006, 452, 237.
 18. “Hubble Space Telescope observations of SV Cam - II. First derivative lightcurve modelling using PHOENIX and ATLAS model atmospheres” by Jeffers, S. V., **Aufdenberg**, J. P., Hussain, G. A. J., Cameron, A. C. and Holzwarth, V. R. in *Monthly Notices of the Royal Astronomical Society*, 2006, 367, 1308.
 17. “A ‘Combination Nova’ Outburst in Z Andromedae: Nuclear Shell Burning Triggered by a Disk Instability” by Sokoloski, J. L., Kenyon, S. J., Espey, B. R., Keyes, C. D., McCandliss, S. R., Kong, A. K. H., **Aufdenberg**, J. P., Filippenko, A. V., Li, W., Brocksopp, C., Kaiser, C. R., Charles, P. A., Rupen, M. P., and Stone, R. P. S. in *The Astrophysical Journal*, 2006, 636, 1002.
 16. “On the Limb Darkening, Spectral Energy Distribution, and Temperature Structure of Procyon” by **Aufdenberg**, J. P., Ludwig, H.-G, and Kervella, P. in *The Astrophysical Journal*, 2005, 633, 424.
 15. “The Projection Factor of Delta Cephei. A Calibration of the Baade-Wesselink Method Using the CHARA Array” by Mérand, A., Kervella, P., Coudé Du Foresto, V., Ridgway, S. T., **Aufdenberg**, J. P., Ten Brummelaar, T. A., Berger, D. H., Sturmman, J., Sturmman, L., Turner, N. H., and McAlister, H. A. in *Astronomy & Astrophysics*, 2005, 438 , L9.
 14. “Direct Evidence for a Polar Spot on SV Camelopardalis.” by Jeffers, S. V., Cameron, A. Collier, Barnes, J. R., **Aufdenberg**, J. P., and Hussain, G. A. J. in *The Astrophysical Journal*, 2005, 621, 425.
 13. “Tests of Stellar Model Atmospheres by Optical Interferometry: VLTI/VINCI limb-darkening measurements of the M4 Giant Psi Phe.” by Wittkowski, M., **Aufdenberg**, J. P., and Kervella, P. in *Astronomy & Astrophysics*, 2004, 13, 711.
 12. “The Spectral Energy Distribution and Mass-loss Rate of the A-type Supergiant Deneb.” by **Aufdenberg**, J. P., Hauschildt, P. H., and Baron, E., Nordgren, T., Howarth, I. D., Burnley, A. W., Gordon, K. D., and Stansberry, J. A. in *The Astrophysical Journal*, 2002, 570, 344.
 11. “Line-blanketed Spherically Extended Model Atmospheres of Hot Luminous Stars with and without Winds.” by **Aufdenberg**, J. P. in *Publications of the Astronomical Society of the Pacific*, 2001, 113, 119. (Dissertation Summary)

10. "A Non-LTE Line-Blanketed Atmosphere Model of Early B Giant β CMa." by **Aufdenberg**, J. P., Hauschildt, P. H., and Baron, E. in *Monthly Notices of the Royal Astronomical Society*, 1999, 302, 599.
9. "The Spectroscopic Orbit of the Evolved Binary HD 197770." by Gordon, K. D., Clayton, G. C., Smith, T. L., **Aufdenberg**, J. P., Drilling, J. S., Hanson, M. M., Anderson, C. M., and Mulliss, C. L. in the *Astronomical Journal*, 1998, 115, 2561.
8. "A Non-LTE Line-Blanketed Atmosphere Model of Early B Giant ϵ Canis Majoris." by **Aufdenberg**, J. P., Hauschildt, P. H., Shore, S. N., and Baron, E. in *The Astrophysical Journal*, 1998, 498, 837.
7. "New Perspectives on AX Monocerotis." by Elias, N. M., Wilson, R. E., Olson, E. C., **Aufdenberg**, J. P., Guinan, E. F., Guedel, M., van Hamme, W. V. and Stevens, H. L. in *The Astrophysical Journal*, 1997, 483, 394.
6. "Dynamic Processes in Be Star Atmospheres. IV. Common Attributes of Line Profile 'Dimples'." by Smith, M. A., Plett, K., Johns, C. M., Basri, G. S., Thompson, J., and **Aufdenberg**, J. P. in *The Astrophysical Journal*, 1996, 469, 336.
5. "A Model for the Spectroscopic Variations of the Peculiar Symbiotic Star MWC 560." by Shore, S. N., **Aufdenberg**, J. P., and Michalitisanos, A. G. in the *Astronomical Journal*, 1994, 108, 671.
4. "The Extremely Active Long-Period RS CVn Binary HD 12545" by Bopp, B. W., Fekel, F., **Aufdenberg**, J., Dempsey, R. and Dadonas, V. in the *Astronomical Journal*, 1993, 106, 2502.
3. "On the Interpretation of the Ultraviolet Spectra of Symbiotic Stars and Recurrent Novae. I." by Shore, S. N. and **Aufdenberg**, J. P. in *The Astrophysical Journal*, 1993, 416, 355.
2. "IUE Short-Wavelength High-Dispersion Line List for the Symbiotic Nova RR Telescopii" by **Aufdenberg**, J. P. in *The Astrophysical Journal Supplements*, 1993, 87, 337.
1. "Ultraviolet and Optical Spectra of High-Ionization Seyfert Galaxies with Narrow Lines." by Crenshaw, D. M., Peterson, B. M., Korista, K. T., Wagner, R. M., and **Aufdenberg**, J. P. in the *Astronomical Journal*, 1991, 101, 1202.

Invited Reviews and Articles

2. "Resolving the Faces of Stars" by D.H. Berger, J. P. **Aufdenberg**, N.H. Turner, in *Sky & Telescope*, Volume 114 (February 2007 issue), pages 40-45.
1. "Stellar Spectroscopy" by **Aufdenberg**, J. P. *Encyclopedia of Physical Science and Technology, Third Edition* (San Diego: Academic Press) 2002, volume 16, pages 15-44.

Non-refereed Publications

15. “Probing Stellar Photospheres with Long-Baseline Interferometry” by **Aufdenberg**, J. in *Resolving the Future of Astronomy with Long-Baseline Interferometry*, Astronomical Society of the Pacific Conference Series, in press.
14. “Fundamental Stellar Astrophysics Revealed at Very High Angular Resolution” by **Aufdenberg**, J. et al. in *Astro2010: The Astronomy and Astrophysics Decadal Survey* The National Academies Board on Physics and Astronomy, Science White Papers, no. 2 (2009)
13. “Quantifying Stellar Mass Loss with High Angular Resolution Imaging” by S. Ridgway, J. **Aufdenberg**, M. Creech-Eakman, N. Elias, S. Howell, D. Hutter, M. Karovska, S. Ragland, E. Wishnow, M. Zhao in *Astro2010: The Astronomy and Astrophysics Decadal Survey*, The National Academies Board on Physics and Astronomy, Science White Papers, no. 75 (2009)
12. “Ground-based Optical/Infrared Interferometry: High Resolution, High Precision Imaging” by Armstrong, J.T., Mozurkewich, D., Creech-Eakman, M.C., Akeson, R.L., Buscher, D.F., Ragland, S., Ridgway, S.T., ten Brummelaar, T., Townes, C.H., Wishnow, E., **Aufdenberg**, J.P., Baines, E.K., Bakker, E.J., Hinz, P., Hummel, C.A., Jorgensen, A.M., Leisawitz, D.T., Muterspaugh, M.W., Schmitt, H.R., Restaino, S.R., Tycner, C., Yoon, J. in *Astro2010: The Astronomy and Astrophysics Decadal Survey*, The National Academies Board on Physics and Astronomy, Technology Development Papers, no. 27 (2009)
11. “Limb Darkening: Getting Warmer” by **Aufdenberg**, J. P et al. in *The Power of Optical/IR Interferometry: Recent Scientific Results and 2nd Generation Instrumentation* at the ESO Workshop held in Garching bei München, Germany 4-8 April 2005. Berlin: Springer, 2008, pp. 71-82.
10. “Interferometric Constraints on Gravity Darkening with Application to the Modeling of Spica A & B” by **Aufdenberg**, J. P., Ireland, M. J., Mérand, A., Coudé Du Foresto, V., Absil, O., Folco, E. Di, Kervella, P., Bagnuolo, W. G., Gies, D. R., Ridgway, S. T., Berger, D. H., Ten Brummelaar, T. A., McAlister, H. A., Sturmman, J., Sturmman, L., Turner, N. H., Jacob, A., in *Binary Stars as Critical Tools & Tests in Contemporary Astrophysics*, Proceedings of IAU Symposium #240, held August 22-25, 2006 in Prague, Czech Republic. Edited by W.I. Hartkopf, E.F. Guinan and P. Harmanec. Cambridge: Cambridge University Press, 2007, pages 271-280
9. “Procyon A: Convection Signatures” by **Aufdenberg**, J. P., Kervella, P., Mozurkewich, D., Merand, A., Ridgway, S. T., Coudé Du Foresto, V., Ten Brummelaar, T. A., Berger, D. H., Sturmman, J., and Turner, N. H. in *13th Cambridge Workshop on Cool Stars, Stellar Systems and the Sun*, ESA SP-560, 2005, 415.
8. “CHARA Recent Technology and Science” by McAlister, H. A., Ten Brummelaar, T. A., **Aufdenberg**, J. P., Bagnuolo, W. G., Berger, D. H., Coudé Du Foresto, V.,

- Merand, A., Ogden, C., Ridgway, S. T., Sturmman, J., Sturmman, L., Taylor, S., and Turner, N. H. in *New Frontiers in Stellar Interferometry* Proceedings of SPIE, 2004, 5491, 472.
7. **Aufdenberg**, J. P. and Hauschildt, P. H. “Testing Spherical, Expanding, Line-Blanketed Model Atmospheres of Giant Stars with Interferometry” in *Interferometry in Optical Astronomy II*. Proceedings of the SPIE, 2003, 4838, 193.
 6. “Spherical and Expanding Model Atmosphere Predictions for Interferometry” by **Aufdenberg**, J. P., Hauschildt, P. H., Baron, E. in *Stellar Atmosphere Modeling*, Astronomical Society of the Pacific Conference Series, 2002, 288, 239.
 5. “Optically Thick Winds of Novae” by **Aufdenberg**, J. P., Hauschildt, P. H., Short, C. I., and Starrfield, S. G. in *Tetons 4: Galactic Structure, Stars and the Interstellar Medium* Astronomical Society of the Pacific Conference Series 2001, 231, 539-540.
 4. “Model Atmospheres for White Dwarfs in Cataclysmic Variables.” by Hauschildt, P. H., **Aufdenberg**, Starrfield, S., and Baron, E. in *Wild Stars in the Old West*, Astronomical Society of the Pacific Conference Series, 1998, 137 96-103.
 3. “Spherical Non-LTE Line-Blanketed Stellar-Atmosphere Models of the Early-B Giants ϵ CMa, β CMa, and α Vir”. by **Aufdenberg**, J. P., Hauschildt, P. H., and Baron, E. in *Boulder-Munich Workshop II: Properties of Hot Luminous Stars*, Astronomical Society of the Pacific Conference Series, 1998, 131 127-136.
 2. “Preliminary Results of the ASU/UGA O Star Project” by Scowen, P. A., Hauschildt, P. H., **Aufdenberg**, J. P. and Sankrit, R. in *Star Formation Near and Far*, American Institute of Physics Conference Proceedings, 1997 393, 291-294.
 1. “Anisotropic Outflow in the Symbiotic/Be Star V644 Mon” by **Aufdenberg**, J. P. and Bopp, B. W. in *Interacting Binary Stars*, Astronomical Society of the Pacific Conference Series 1993, 56, 364-367.

Professional Presentations

Invited Colloquia, Lectures, & Talks

19. “Modeling Stellar Photospheres at High Spatial Resolution” at the *Department of Astronomy & Physics*, Saint Mary’s University in Halifax, Nova Scotia, Canada on October 19, 2012.
18. “Models of Stellar Photospheres from Long-Baseline Interferometric Data” at the *Los Alamos National Laboratory Stellar Hydrodynamics Workshop* in Santa Fe, New Mexico on April 13, 2012.

17. “Fundamental parameters of stellar physics” at *Ten Years of VLTI: From First Fringes to Core Science* at the European Southern Observatory Headquarters in Garching bei München, Germany on October 25, 2011.
16. “Probing Stellar Photospheres with Long-Baseline Interferometry” at *Resolving the Future of Astronomy with Long-Baseline Interferometry* at New Mexico Tech in Socorro, New Mexico on March 28, 2011.
15. “Stellar Atmosphere Models Versus Interferometric Observations” at *Cool Stars, Stellar Systems and the Sun 16, in Splinter Session: The Fundamental Stellar Properties from Optical Interferometry* at the University of Washington in Seattle, Washington on August 30, 2010.
14. “What’s the Matter with Vega?: The Next Generation of Model Atmospheres for Rapidly Rotating Stars” at the *Sagan Fellow Symposium*, NASA Exoplanet Science Institute, California Institute of Technology, Pasadena, California on November 13, 2009.
13. “Getting to Know Stars at Very High Angular Resolution” at the *Stratospheric Observatory for Infrared Astronomy (SOFIA) Science Center*, NASA Ames Research Center in Mountain View, California on March 18, 2009.
12. “Reweighting Alpha Virginis: Analyzing The Interferometric Orbit for Spica from CHARA And SUSI” in the session *Probing Stars and Their Environs by Interferometry* at the 211th Meeting of the American Astronomical Society in Austin, Texas on January 9, 2008.
11. “Spinning and Limb Darkening” at the *Center for High Resolution Astronomy (CHARA) Year Three Science Review* at the American Museum of Natural History in New York, New York on March 16, 2007.
10. “Interferometric Constraints on Gravity Darkening with Application to the Modelling of Spica A & B” in *Symposium 240: ‘Binary Stars As Critical Tools And Tests In Contemporary Astrophysics*, International Astronomical Union (IAU) General Assembly in Prague, Czech Republic on August 24, 2006.
9. “Optical Aperture Synthesis and Interferometric Stellar Imaging” in the session *Stellar Astrophysics in the 2010’s: Extrapolating scientific challenges a decade into the future* at the International Astronomy Union (IAU) General Assembly in Prague, Czech Republic on August 21, 2006.
8. “Stellar Atmospheres and Surfaces”, Lecture at the *Michelson Summer Workshop*, California Institute of Technology, Pasadena, California on July 25, 2006.
7. “The Gravity Darkening of Vega as Measured by the CHARA Interferometric Array”, Colloquium, NCAR/High Altitude Observatory, Boulder, Colorado on April 26, 2006.
6. “Stellar Limb Darkening: Getting Warmer”, Colloquium at the United States Naval Observatory, Flagstaff Station, Flagstaff, Arizona. on May 6, 2005.

5. “Stellar Limb Darkening: Getting Warmer” at the ESO workshop entitled *The power of optical/IR interferometry*, Garching bei München, Germany. on April 4, 2005.
4. “Testing stellar atmosphere models with high-precision interferometric limb-darkening observations”, Colloquium the the Department of Astronomy and Astrophysics, University of Toronto, Ontario, Canada on March 18, 2005.
3. “Limb Darkening: Getting Warmer”, at the *Cepheids Pulsation Workshop* at l’Observatoire de Paris, Paris, France on February 3, 2005
2. “Stellar Atmospheric Structure” Lecture at the *Michelson Summer School*, California Institute of Technology, Pasadena, California on July 10, 2003.
1. “Interferometry and Stellar Atmospheres”, Colloquium at the Department of Astronomy and Physics, St. Mary’s University, Halifax, Nova Scotia, Canada on October 18, 2002.

Other Talks/Colloquia

7. “Stellar Astrophysics Revealed by the Very Large Telescope Interferometer” at the *ERAU Physical Sciences Colloquium* on October 13, 2011.
6. “Interferometry of K and M Giants: Theory vs. Observations” at the Department of Physics, University of Pisa in Pisa, Italy on July 22, 2010.
5. “What’s the Matter with Vega? Stellar Atmospheres for Self- Consistent Field Rotating Star Models” at the *ERAU Physical Sciences Colloquium* on November 5, 2009.
4. “Stellar Spectral Type Depends on Your Point of View: Optical Interferometry and Rapidly Spinning Stars” at the High Altitude Observatory, National Center for Atmospheric Research, Boulder, Colorado on July 18, 2008.
3. “Weighting Binary Stars” at the *ERAU Physical Sciences Colloquium* on October 25, 2007.
2. “Interferometric Observations and Modeling of the Close Binary Star Spica (Alpha Virginis)” at the *ERAU Physical Sciences Colloquium* on October 26, 2006.
1. “Spherically Extended Model Atmospheres of Hot Luminous Stars”. Dissertation talk (No. 60.04) at the *197th Meeting of the American Astronomical Society* in San Diego, California on January 9, 2001.

Posters

22. “Self-Consistent Field Model Spectra and Images for the Rapid Rotator α Cephei” J. P. **Aufdenberg**, K. B. MacGregor, and M. Sola (No. 130.04) at the *220nd Meeting of the American Astronomical Society* in Anchorage, Alaska, June 2012.

21. “Atmospheres for Self-Consistent Field (SCF) Rotating Star Models” J. P. **Aufdenberg** and K. B. MacGregor (No. 427.08), *215th Meeting of the American Astronomical Society* in Washington, D.C. on January 5, 2010.
20. “Prospects for Fundamental Stellar Parameters of the Brightest Stars from SIM and Ground-Based Interferometry” by J. **Aufdenberg** et al. (No. 411.11) at the *214th Meeting of the American Astronomical Society* in Pasadena, California, June 2009.
19. “Angular Diameters, Temperatures, And Luminosities Of Massive Stars: Prospects For Sim-lite” by Richardson, Noel, Gies, D., Ridgway, S., Boyajian, T., **Aufdenberg**, J. P., Ireland, M., Schaefer, G. (No. 411.10) at the *214th Meeting of the American Astronomical Society* in Pasadena, California, June 2009.
18. “The Interferometric Orbit and Fundamental Parameters for Spica from the CHARA and SUSI Arrays” by **Aufdenberg** et al. (No. 410.19) at the *213th Meeting of the American Astronomical Society* in Long Beach, California, January 2009.
17. “Stellar Astrophysics with SIM and Optical Long Baseline Interferometry” by Ridgway, Stephen T., **Aufdenberg**, J. P., Boyajian, T., Gies, D., Howell, S. B., Kervella, P., Mérand, A., Richardson, N. (No. 455.07) at the *213th Meeting of the American Astronomical Society* in Long Beach, California, January 2009.
16. “Interstellar Material towards the Nearby High Latitude Star η UMa” by Priscilla C. Frisch, E. B. Jenkins, J. **Aufdenberg**, U. J. Sofia, D. G. York, J. D. Slavin, C. M. Johns-Krull (No. 17.21) at the *209th Meeting of the American Astronomical Society* in Seattle, Washington, January 2007.
15. “Interferometric Measurements Of The A-type Supergiant Deneb With The CHARA Array” by **Aufdenberg**, J. P., Mérand, A., Ridgway, S. T., Coudé du Foresto, V., Kervella, P., Berger, D., Sturmann, J., Sturmann, L., ten Brummelaar, T. A., Turner, N. H., McAlister, H. A. (No. 6.01) at the *208th Meeting of the American Astronomical Society* in Calgary, Alberta, Canada in June 2006.
14. “Interferometric Gravity Darkening Observations of Vega with the CHARA Array” **Aufdenberg**, J. P., Merand, A., Coude Foresto, V., Absil, O., Di Folco, E., Kervella, P., Ridgway, S. T., Sturmann, J., Sturmann, L., ten Brummelaar, T. A., Turner, N. H., Berger, D. H., McAlister, H. A. (No. 82.03) at the *207th Meeting of the American Astronomical Society* in Washington, D.C., January 2006.
13. “Procyon: Constraining Its Temperature Structure with High-Precision Interferometry and 3-D Model Atmospheres” by **Aufdenberg**, J. P., Ludwig, H.-G., and Kervella, P. (No. 12.03) at the *205th Meeting of the American Astronomical Society* in San Diego, California, January 2005.
12. “The Far-Ultraviolet Spectrum of BD+60 2522” by Moore, B. D., Dufour, R. J., **Aufdenberg**, J. P., and Sankrit, R. (No. 53.07) at the *205th Meeting of the American Astronomical Society* in San Diego, California, January 2005.

11. “Radiative Transfer Modeling of Warm Transition Region Winds in F- and G-type Supergiants” by Lobel, A., Avrett, E. H., **Aufdenberg**, J. P. (No. 52.07) at the *205th Meeting of the American Astronomical Society* in San Diego, California, January 2005.
10. “Model Atmospheres for Irradiated Red Giant Stars with Winds” by **Aufdenberg**, J. P. and Barman, T. S. (No. 115.01) at the *201st Meeting of the American Astronomical Society* in Seattle, Washington, January 2003.
9. “Diameters of Cool Giant Stars at 712 nm & 754 nm: Theory vs. Observations” by **Aufdenberg**, J. P., Quirrenbach, A., Hauschildt, P. H., and Baron, E. (No. 92.07) at the *199th Meeting of the American Astronomical Society* in Washington, D.C., January 2002.
8. “Non-LTE Line-blanketed Stellar Wind Atmosphere Models for the A-supergiant Deneb” by **Aufdenberg**, J. P., Hauschildt, P. H., and Baron, E. (No. 50.01) at the *195th Meeting of the American Astronomical Society* in Atlanta, Georgia, January 2000.
7. “Model Atmospheres of Hot Luminous Stars with Winds” by **Aufdenberg**, J. P., Hauschildt, P. H., and Baron, E. at the *194th Meeting of the American Astronomical Society* in Chicago, Illinois, May 1999.
6. “The Lyman Continuum of O stars From Hydrostatic Spherical Non-LTE Line-Blanketed Model Atmospheres” by **Aufdenberg**, J. P., Hauschildt, P. H., and Baron, E. (No. 44.08) at the *193rd Meeting of the American Astronomical Society* in Austin, Texas, January 1999.
5. “Spherical Non-LTE Line-Blanketed Stellar Atmosphere Models of ϵ CMa, β CMa, and α Vir and the Lyman Continuum in the Early B Giant Stars” by **Aufdenberg**, J. P., Sankrit, R., Hauschildt, P. H., and Baron, E. (No. 12.01) at the *191st Meeting of the American Astronomical Society* in Washington, D.C., January 1998.
4. “The Peculiar Interacting Binary V644 Monocerotis” by **Aufdenberg**, J. P. (No. 21.10) at the *185th Meeting of the American Astronomical Society* in Tucson, Arizona, January 1995.
3. “Recent Optical and UV Emission Line Variability in the Symbiotic Star CH Cyg” by **Aufdenberg**, J. P., Gordon, K. D., and Bopp B. W. at the *184th Meeting of the American Astronomical Society* in Minneapolis, Minnesota, May 1994.
2. “O I Fluorescence in Symbiotic Stars and Novae” by Shore, S. N. and **Aufdenberg**, J. P. (No. 47.01) at the *178th Meeting of the American Astronomical Society* in Seattle, Washington, May 1991.
1. “The 1985-86 outburst of Z Andromedae” by Oliverson, N., **Aufdenberg**, J. and Garhart, M. (No. 26.15) at the *175th Meeting of the American Astronomical Society* in Washington, D.C., January 1990.