

Dr. Kurtis A. Williams

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Employment

2009– Postdoctoral Researcher, Univ. of Texas, Austin, TX
2006–2009 NSF Postdoctoral Fellow, Univ. of Texas, Austin, TX
2003–2006 Research Associate, Steward Observatory, Tucson, AZ
Supervisor: Prof. Ann Zabludoff

Education

University of California Santa Cruz, Santa Cruz, CA
Ph.D., 2002, Astronomy & Astrophysics
M.S., 1999, Astronomy & Astrophysics

The Pennsylvania State University, University Park, PA
B.S., 1996, with highest distinction and Honors, Astronomy & Astrophysics
B.S., 1996, with highest distinction, Physics

Awards & Fellowships

2006–2009	NSF Astronomy & Astrophysics Postdoctoral Fellowship	3-year fellowship
2005	Steward Observatory Lucas Award	\$5000 research grant
2000–2001	ARCS Foundation Scholarship	\$10,000 graduate fellowship
1999	Albert P. Whitford Prize	2nd-year graduate student award
1997–2000	NSF Graduate Research Fellowship	
1996–1997	Fulbright Fellowship	Ludwig-Maximilians-Universität Munich, Germany

Grants

2010	GALEX Cycle 6 GI Program (PI) <i>Time Series Observations of the Mysterious Carbon Atmosphere White Dwarfs</i>	\$65k
2008–2010	HST Cycle 16 E/PO HST16-456 (PI) <i>White Dwarfs in the Open Star Cluster NGC 188: A Professional Development Experience for Teachers</i>	\$20k
2007–2010	HST Cycle 16 Program GO-11141 (PI) <i>White Dwarfs in the Open Star Cluster NGC 188</i>	\$133k
2006–2009	NSF Postdoctoral Fellowship AST-0602288 (PI) <i>A Large, Homogeneous Open Cluster White Dwarf Sample</i>	\$201k
2003–2008	NSF 3-Year Award AST-0307492 (CoI) <i>White dwarfs in open clusters</i>	\$195k

Research Experience

- 2009– **Postdoctoral Researcher**, University of Texas at Austin
Mentors: Ted von Hippel & D. E. Winget
- White dwarf populations of the old open clusters M67 and NGC 188
 - Asteroseismology of carbon-atmosphere white dwarfs
 - Spectroscopy of thick disk white dwarfs
- 2006–2009 **NSF Postdoctoral Fellow**, University of Texas at Austin
Mentors: Ted von Hippel & D. E. Winget
- Exploration of line between supernova and white dwarf fates of stars
 - Luminosity function of field disk and halo white dwarfs from the SDSS
 - Photometric and morphological studies of the environments of strong gravitational lenses
- 2003–2006 **Research Associate**, Steward Observatory
Supervisor: Ann I. Zabludoff
- Characterization of the environments of strong gravitational lenses
 - Observational constrains of white dwarf cooling physics in open clusters
- 1997–2002 **Graduate Research Assistant**, UCSC, Advisor: Michael Bolte
Thesis Research:
- Determination of the white dwarf initial-final mass relation
 - Derivation of the upper mass limit of WD progenitors
- 1996–1997 **Graduate Research Assistant**, UCSC, Advisor: William Mathews
Fulbright Fellow, MPE, Garching, Germany, Advisor: Wolfgang Brinkmann

Related Activities

- 2009 Invited Speaker, KITP Conference, *Stellar Death and Supernovae*
- 2008 Invited Keynote Speaker, Royal Astronomical Society Specialist Discussion, *Super-AGB Stars and the Fine Line Between White Dwarf or Supernova*
- 2007 Co-chair, 2008 NSF Astronomy & Astrophysics Postdoctoral Fellows Symposium
- 2007 Co-chair, SOC, *New Horizons in Astronomy: Frank N. Bash Symposium 2007*
- 2007 Invited Speaker, KITP Conference, “Paths to Exploding Stars”

Teaching and Public Outreach Experience

- 2009 Co-coordinator, UT Library International Year of Astronomy Celebration
 2009 Invited Speaker, McDonald Observatory Board of Visitors Meeting
 2007 Instructor, Univ. of Texas, AST w392G: “Observing Techniques in Astronomy”
 2006–2009 Co-coordinator/Facilitator, “White Dwarfs and the Age of the Galaxy Teacher Development Workshop” at McDonald Observatory
 2006 Lecturer, Steward Observatory Public Evening Lecture Series
 2004– Creator and manager, “Professor Astronomy” website
<http://blog.professorastronomy.com>
 2004–2006 Contributor, “Ask Astro” column, Astronomy magazine
 1998–2002 Manager, Lick Observatory “Ask-An-Astronomer” website
 1997–2000 Teaching Assistant, UCSC (4 semesters), Supervisors: Prof. Jean Brodie, Prof. Steven Vogt, Dr. Stephen Murray

References

1. Prof. Don Winget

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2. Prof. Ann Zabludoff

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3. Prof. Michael Bolte

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4. Dr. Mary Kay Hemenway

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Refereed Publications

1. “Discovery of a Nova-Like Variable Star in the Kepler Mission Field”, **Williams, Kurtis A.**, et al. 2010, AJ, submitted
2. “The Effect of Environment on Shear in Strong Gravitational Lenses”, Wong, K. C., Keeton, C. R., **Williams, Kurtis A.**, Momcheva, I. G., and Zabludoff, A. I. 2010, ApJ, submitted
3. “Discovery of a GeV blazar shining through the Galactic plane”, Vandenbroucke, J., et al. (**Williams, Kurtis A.** as 22nd author), 2010, ApJL, submitted (arXiv:1004.1413)
4. “Visitors from the Halo: 11 Gyr old White Dwarfs in the Solar Neighborhood”, Kilic, M., Munn, J. A., **Williams, Kurtis A.**, et al. 2010, ApJL, in press (arXiv:1004.0958)
5. “The Mean Mass of White Dwarfs From Gravitational Redshift”, Falcon, R. E., Winget, D. E., Montgomery, M. H., & **Williams, Kurtis A.** 2010, ApJ, 712, 585
6. “Probing the Lower Mass Limit for Supernova Progenitors and the High-Mass End of the Initial-Final Mass Relation from White Dwarfs in the Open Cluster M35 (NGC 2168)”, **Williams, Kurtis A.**, Bolte, M., & Koester, D. 2009, ApJ, 693, 355

7. “A new detailed examination of white dwarfs in NGC 3532 and NGC 2287”, Dobbie, P. D., et al. (**Williams, K. A.** as 4th author) 2009, MNRAS, 395, 2248
8. “The Physics of Crystallization From Globular Cluster White Dwarf Stars in NGC 6397”, Winget, D. E., et al. (**Williams, Kurtis A.** as 7th author) 2009, ApJL, 693, L6
9. “SDSS J142625.71+575218.3: The First Pulsating White Dwarf with a Large Detectable Magnetic Field,” Dufour, P., Fontaine, G., Liebert, James, **Williams, Kurtis**, and Lai, David K. 2008, ApJL, 683, 167
10. “The White Dwarf Population in NGC 1039 (M34),” Rubin, Kate H. R., **Williams, Kurtis A.**, Bolte, M., & Koester, Detlev 2008, AJ, 135, 2163
11. “SDSS J142625.71+575218.3, a Prototype for a New Class of Variable White Dwarf,” Montgomery, M. H., **Williams, Kurtis A.**, Winget, D. E., Dufour, P., DeGennaro, S., & Liebert, J. 2008, ApJL, 678, 51
12. “A Photometric and Spectroscopic Search for White Dwarfs in the Open Clusters NGC 6633 and NGC 7063,” **Williams, Kurtis A.**, & Bolte, Michael 2007, AJ, 133, 1490
13. “Oph 1622–2405: Not a Planetary-Mass Binary,” Luhman, K. L., et al. (**Williams, K. A.** as 5th author) 2007, ApJ, 659, 1629
14. “The Pre-Cataclysmic Binary HS 1136+6646 May Have a Companion,” Liebert, James, **Williams, Kurtis A.**, Holberg, J. B., & Sing, D. K. 2006, PASP, 118, 1528
15. “First Results From a Photometric Survey of Strong Gravitational Lens Environments,” **Williams, Kurtis A.**, Momcheva, Ivelina, Keeton, Charles R., Zabludoff, Ann I., & Lehár, J. 2006, ApJ, 646, 85 (Erratum: 2008, ApJ, 672, 733)
16. “A Hot DQ White Dwarf in the Open Star Cluster M35,” **Williams, Kurtis A.**, Liebert, James, Bolte, Michael, & Hanson, Robert B. 2006, ApJL, 643, L127
17. “A Spectroscopic Study of the Environments of Gravitational Lens Galaxies,” Momcheva, Ivelina, **Williams, Kurtis A.**, Keeton, Charles R., & Zabludoff, Ann I. 2006, ApJ, 641, 169
18. “The White Dwarf Luminosity Function from SDSS Imaging Data,” Harris, Hugh C., et al. (**Williams, Kurtis A.** as 5th author) 2006, AJ, 131, 571
19. “Cool White Dwarfs in the Sloan Digital Sky Survey,” Kilic, Mukremin, et al. (**Williams, Kurtis A.** as 6th author) 2006, AJ, 131, 582
20. “The Age and Progenitor Mass of Sirius B,” Liebert, James, Young, Patrick A., Arnett, David, Holberg, J. B., & **Williams, Kurtis A.** 2005, ApJ, 630, L69
21. “The Open-Cluster Initial-Final Mass Relationship and the High-Mass Tail of the White Dwarf Distribution,” Ferrario, Lilia, Wickramasinghe, Dayal, Liebert, James, & **Williams, Kurtis A.** 2005, MNRAS, 361, 1131
22. “An Empirical Initial-Final Mass Relation From Hot, Massive White Dwarfs in NGC 2168,” **Williams, Kurtis A.**, Bolte, M., & Koester, Detlev 2004, ApJ, 615, L49
23. “Spectroscopic Identification of Faint White Dwarf Candidates in the Praesepe Open Star Cluster,” **Williams, Kurtis A.**, Liebert, James W., & Bolte, Michael 2004, AJ, 128, 1784

24. "The Impact of Unresolved Binaries on Searches for White Dwarfs in Open Clusters," **Williams, Kurtis A.** 2004, ApJ, 601, 1067
25. "The White Dwarf Deficit in Open Clusters: Dynamical Processes," Fellhauer, M., Lin, D. N. C., Bolte, M., Aarseth, S. J., & **Williams, K. A.** 2003, ApJ, 595, 53
26. "Determination of the Dark Matter Profile of A2199 From Integrated Starlight," Kelson, D., Zabludoff, A., **Williams, K. A.**, Trager, S. C., Mulchaey, J. S., & Bolte, M. 2002, ApJ, 576, 720
27. "Serendipitous Discovery of a Cluster of Galaxies with a Peculiar Central Galaxy," **Williams, K. A.** 2001, AJ, 122, 55
28. "The Velocity Function of Galaxies," Gonzalez, A. H., **Williams, K. A.**, Bullock, J. S., Kolatt, T. S., & Primack, J. R. 2000, ApJ, 528, 145
29. "The Large-Scale Diffuse X-ray Emission Surrounding Quasars: An Investigation Using the Scaling-Index Method," **Williams, K. A.**, Brinkmann, W., & Wiedenmann, G. 1998, A&A, 340, 343

Selected Non-Refereed Publications

1. "A New Look at the Empirical Initial-Final Mass Relation," **Williams, K. A.** 2007, ASP Conf. Ser. 372: 15th European Workshop on White Dwarfs, 372, 85
2. "Galaxy Evolution in Poor Groups Discovered Around Strong Gravitational Lenses," Momcheva, I. G., **Williams, K. A.**, Zabludoff, A. I., & Keeton, C. R. 2006, IAU Symposium, S235
3. "A Spectroscopic Study of the Environments of Gravitational Lens Galaxies," Momcheva, I., **Williams, K.**, Keeton, C., & Zabludoff, A. 2006, EAS Publications Series: Mass Profiles and Shapes of Cosmological Structures, 20, 289
4. "Minor Planet Observations [696 Whipple Observatory, Mt. Hopkins]," Hergenrother, C. W., Spahr, T. B., **Williams, K. A.**, Berlind, P., & Calkins, M. 2005, MPC, 54975, 8
5. "Initial Results from the Lick-Arizona White Dwarf Survey," **Williams, K. A.** & Bolte, M. 2005, ASP Conf. Ser. 334: 14th European Workshop on White Dwarfs, 334, 8
6. "Detecting Poor Groups Using Strong Lensing," **Williams, K. A.**, Momcheva, I., Keeton, C. K., & Zabludoff, A. I. 2003, Star and Structure Formation: From First Light to the Milky Way, ETH Zurich
7. "The Initial-Final Mass Relation and Supernova Mass Limit," **Williams, K. A.**, & Bolte, M. 2003, White Dwarfs: Galactic and Cosmologic Probes, IAU Joint Discussion 5, 28
8. "White dwarfs in open clusters: The initial-final mass limit, the supernova mass limit, and the white dwarf deficit," **Williams, K. A.** 2002, Ph.D. Thesis