



TEXAS A&M UNIVERSITY  
**COMMERCE**

## **Kurtis A. Williams**

### **Curriculum Vita**

August 2023

**Academic Position:** Associate Professor & Interim Department Head

**Academic Department:** Department of Physics & Astronomy

**University Address:** Department of Physics & Astronomy  
McFarland Science Building 106A  
Texas A&M University-Commerce  
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#### **EDUCATION**

Doctor of Philosophy in Astronomy & Astrophysics  
2002, University of California, Santa Cruz

Master of Science in Astronomy & Astrophysics  
1999, University of California, Santa Cruz

Bachelor of Science in Physics  
Bachelor of Science in Astronomy & Astrophysics  
1996, Pennsylvania State University

#### **PROFESSIONAL EXPERIENCE**

2023-present: Interim Department Head, Dept. of Physics & Astronomy, Texas A&M University-Commerce, Commerce, TX

2016-present: Associate Professor, Texas A&M University-Commerce, Commerce, TX

2010-2016: Assistant Professor, Texas A&M University-Commerce, Commerce, TX

2009-2010: Postdoctoral Researcher, University of Texas, Austin, TX

2006-2009: NSF Postdoctoral Fellow, University of Texas, Austin, TX

2003-2006: Research Associate, Steward Observatory, Tucson, AZ

## RESEARCH GRANTS AND AWARDS

### *Awarded:*

2019-2024, PI, NSF Astronomy and Astrophysics Research Grant AST-1910551, "RUI: Ensemble Evolutionary Studies of White Dwarfs", \$273,000

2017-2018, Co-PI (Dr. Matt Wood PI), NSF MRI Grant AST-1726357, "Acquisition of a 0.7-m Research Grade Telescope for Texas A&M University-Commerce", \$338,000

2014-2017, PI, Research Corporation Cottrell College Science Award, "Direct Determination of the Masses of DQ White Dwarfs via Parallax", \$45,000

2012-2014, PI, Texas Space Grant Consortium, "Development of an On-line Introductory Astronomy Course," \$13,000.

2011-2013, PI, GALEX Cycle 6 GI Program, "Time Series Observations of the Mysterious Carbon Atmosphere White Dwarfs," \$65,000.

2008-2010, PI, HST Cycle 16 E/PO HST16-456, "White Dwarfs in the Open Star Cluster NGC 188: A Professional Development Experience for Teachers," \$20,000

2007-2010, PI, HST Cycle 16 Program GO-11141, "White Dwarfs in the Open Star Cluster NGC 188", \$133,000

2006-2009, PI, NSF Postdoctoral Fellowship AST-0602288, \$201,000

## AWARDS AND FELLOWSHIPS

2016, Texas A&M University-Commerce Excellence in Faculty Research, Annual Research Symposium

2016, Texas A&M University-Commerce Faculty Senate Award for Professional Excellence, "Ceaseless Industry"

2006-2009, NSF Astronomy & Astrophysics Postdoctoral Fellowship, University of Texas at Austin

2001, ARCS Foundation Graduate Fellowship, University of California Santa Cruz

1997-2000, NSF Graduate Research Fellowship, University of California Santa Cruz

1996, Fulbright Fellowship, Ludwig-Maximilians-Universität, Munich, Germany

## STUDENT ADVISING

### ***Masters Students***

Current: Fangyi Zhu, Texas A&M University-Commerce  
2023, Eric Burns, Texas A&M University-Commerce  
2021, Michaela Allen, Texas A&M University-Commerce  
2020, Joseph Barnett, Texas A&M University-Commerce  
2018, Christopher Dupuis, Texas A&M University-Commerce  
2017, Valeria Guadalupe, Texas A&M University-Commerce  
2015, Katie Hesterly, Texas A&M University-Commerce  
2015, Stephanie Gibson, Texas A&M University-Commerce  
2015, Wesley Adams, Texas A&M University-Commerce  
2013, Subho Chakraborty, Texas A&M University-Commerce  
2012, Rick Navarro, Texas A&M University-Commerce

### ***Honors Students***

2023, Sarah Phillips and Zorayda Martinez  
2015, Patrick Dreiling  
2013, Andrew Dahir

### ***Research Experience for Undergraduates***

2023, S. Johns & Lena Dietrich  
2022, Melissa Ornelas  
2021, Mabel Clausen  
2016, Molly Warner & Demetré Goodmen  
2015, Tiffany Schoolfield & Jason Meyer  
2014, Donald Serna-Grey  
2013, Isaiah Santistevan  
2012, Misa Fioretto & Kevin Schultes  
2011, Michael Bierwagon & Joshua Crittenden

## SELECTED PROFESSIONAL SERVICE

2018-present, A&M-Commerce Board Member, Southeast Association for Research in Astronomy Board of Directors

2023, Peer Reviewer, NASA

2014, 2016, 2018, 2022, Peer Reviewer, National Science Foundation

2016, Member, Local Organizing Committee, 4<sup>th</sup> International Workshop on AM CVn Stars, Dallas, TX

2015-2016, Member, Scientific Organizing Committee, 20<sup>th</sup> European Workshop on White Dwarfs, Warwick, UK

2014-2019, Senator, Texas A&M University-Commerce Faculty Senate

2013-2014 Member, Scientific Organizing Committee, 19<sup>th</sup> European Workshop on White Dwarfs, Montreal, Canada

2007-2008 Co-Chair, 2008 NSF Astronomy & Astrophysics Postdoctoral Fellows Symposium, Austin, TX

2007, Co-Chair, Scientific Organizing Committee, New Horizons In Astronomy: Frank N. Bash Symposium, Austin, TX

## SELECTED EDUCATIONAL ACTIVITIES

### ***Courses Developed***

Astr 120: Life in the Universe

Astr 1303W: Stars and the Universe Online

Astr 1304W: Astronomy of the Solar System Online

Astr 337: Frontiers in Modern Astronomy

Astr 410: Stellar Structure and Evolution

Astr 420: Galaxies and Cosmology

Astr 503: Galactic Astronomy

### ***Public Outreach***

Current: Co-chair, 2024 Eclipse Planning Committee

2013-2014, Faculty Keynote Speaker, Uplift Education campus visit, Texas A&M University-Commerce

2009, Invited Speaker, McDonald Observatory Board of Visitors Meeting, Fort Davis, TX

2006-2009, Co-coordinator and Facilitator, "White Dwarfs and the Age of the Universe Professional Development Workshop", Fort Davis, TX

2004-2013, Creator and manager, "Professor Astronomy Blog,"  
[blog.professorastronomy.com](http://blog.professorastronomy.com)

2004-2012, Contributor, "Ask Astro," Astronomy Magazine

## PUBLICATIONS

*Statistics from Google Scholar:*

*Total citations: 2797*

*h-index: 30*

## ***Refereed Publications***

1. "The merger fraction of ultramassive white dwarfs," Kilic, M. et al. (**Williams, K.A.** as 8<sup>th</sup> author) 2023, Monthly Notices of the Royal Astronomical Society, 518, 2341, <https://doi.org/10.1093/mnras/stac3182>
2. "The Rapid Rotation of the Strongly Magnetic Ultramassive White Dwarf EGGR 156," **Williams, K.A.**, Hermes, J.J. and Vanderbosch, Z.P. 2022, The Astronomical Journal, 164, 131, <https://doi.org/10.3847/1538-3881/ac8543>
3. "The Initial-Final Mass Relation for Hydrogen-deficient White Dwarfs," Barnett, J.W., **Williams, K.A.** (as corresponding author), Bedard, A., & Bolte, M. 2021, The Astronomical Journal, 162, 162, <https://doi.org/10.3847/1538-3881/ac1423>
4. "The White Dwarfs of the Old, Solar-Metallicity Open Star Cluster Messier 67: Properties and Progenitors," Canton, P.A., **Williams, K.A.** (as corresponding author), Kilic, M. and Bolte, M. 2021, The Astronomical Journal, 161, 169, <https://doi.org/10.3847/1538-3881/abe1ad>
5. "The Pulsating White Dwarf G117-B15A: Still the Most Stable Optical Clock Known," Kepler, S.O., et al. (**Williams, K.A.** as 15<sup>th</sup> author) 2021, The Astrophysical Journal, 906, 7, <https://doi.org/10.3847/1538-4357/abc626>
6. "Ensemble Properties of the White Dwarf Population of the Old, Solar Metallicity Open Cluster Messier 67," **Williams, K. A.**, et al. 2018, The Astrophysical Journal, 867, 62, <https://doi.org/10.3847/1538-4357/aad90b>
7. "A Spectroscopic Survey of the Fields of 28 Strong Gravitational Lenses: Implications for  $H_0$ ," Wilson, M. L. et al. (**Williams, K.A.** as 5<sup>th</sup> author) 2017, The Astrophysical Journal, 850, 94, <http://dx.doi.org/10.3847/1538-4357/aa9653>
8. "The Ages of the Thin Disk, Thick Disk, and the Halo from Nearby White Dwarfs," Kilic, M., et al. (**Williams, K. A.** as 6<sup>th</sup> author) 2017, The Astrophysical Journal, 837, 162, <http://doi.org/10.3847/1538-4357/aa62a5>
9. "A Deep Proper Motion Catalog Within the Sloan Digital Sky Survey Footprint. II. The White Dwarf Luminosity Function," Munn, J. A., et al. (**Williams, K. A.** as 6<sup>th</sup> author) 2017, The Astronomical Journal, 153, 10, <http://doi.org/10.3847/1538-3881/153/1/10>
10. "New halo white dwarf candidates in the Sloan Digital Sky Survey," Dame, K., et al. (**Williams, K. A.** as 6<sup>th</sup> author) 2016, Monthly Notices of the Royal Astronomical Society, 463, 2453, <http://doi.org/10.1093/mnras/stw2146>
11. "A Spectroscopic Survey of the Fields of 28 Strong Gravitational Lenses: the Group Catalog," Wilson, M. L., et al. (**Williams, K. A.** as 5<sup>th</sup> author) 2016, The Astrophysical Journal, 833, 194, <http://doi.org/10.3847/1538-4357/833/2/194>
12. "Variability in Hot Carbon-dominated Atmosphere (Hot DQ) White Dwarfs: Rapid Rotation?," **Williams, K. A.**, et al. 2016, The Astrophysical Journal, 817, 27, <http://doi.org/10.3847/0004-637X/817/1/27>
13. "Time-series Spectroscopy of Two Candidate Double Degenerates in the Open Cluster NGC 6633," **Williams, K. A.**, et al. 2015, The Astronomical Journal, 150, 194, <http://doi.org/10.1088/0004-6256/150/6/194>
14. "A Spectroscopic Survey of the Fields of 28 Strong Gravitational Lenses," Momcheva, I. G., et al. (**Williams, K. A.** as 2<sup>nd</sup> author) 2015, The Astrophysical Journal Supplement Series, 219, 29, <http://doi.org/10.1088/0067-0049/219/2/29>

15. "A Deep Proper Motion Catalog Within the Sloan Digital Sky Survey Footprint," Munn, J. A., et al. (**Williams, K. A.** as 6<sup>th</sup> author) 2014, The Astronomical Journal, 148, 132, <http://doi.org/10.1088/0004-6256/148/6/132>
16. "Photometric Variability in a Warm, Strongly Magnetic DQ White Dwarf, SDSS J103655.39+652252.2," **Williams, K. A.**, et al. 2013, The Astrophysical Journal, 769, 123, <http://doi.org/10.1088/0004-637X/769/2/123>
17. "The Age and Stellar Parameters of the Procyon Binary System," Liebert, J., et al. (**Williams, K. A.** as 4<sup>th</sup> author) 2013, The Astrophysical Journal, 769, 7, <http://doi.org/10.1088/0004-637X/769/1/7>
18. "Time-resolved Spectroscopy of the Polar EU Cancri in the Open Cluster Messier 67," **Williams, K. A.**, et al. 2013, The Astronomical Journal, 145, 129, <http://doi.org/10.1088/0004-6256/145/5/129>
19. "A Gravitational Redshift Determination of the Mean Mass of White Dwarfs: DBA and DB Stars," Falcon, R. E., et al. (**Williams, K. A.** as 4<sup>th</sup> author) 2012, The Astrophysical Journal, 757, 116, <http://doi.org/10.1088/0004-637X/757/2/116>
20. "Further Investigation of White Dwarfs in the Open Clusters NGC 2287 and NGC 3532," Dobbie, P. D., et al. (**Williams, K. A.** as 3<sup>rd</sup> author) 2-12, Monthly Notices of the Royal Astronomical Society, 432, 2815, <http://dx.doi.org/10.1111/j.1365-2966.2012.21090.x>
21. "Discovery of a ZZ Ceti in the Kepler Mission Field," Hermes, J. J., et al. (**Williams, K. A.** as 4<sup>th</sup> author) 2011, The Astrophysical Journal, 741, L16, <http://doi.org/10.1088/2041-8205/741/1/L16>
22. "The Effect of Environment on Shear in Strong Gravitational Lenses," Wong, K. C., et al. (**Williams, K. A.** as 3<sup>rd</sup> author) 2011, The Astrophysical Journal, 726, 84, <http://doi.org/10.1088/0004-637X/726/2/84>
23. "A Detailed Model Atmosphere Analysis of Cool White Dwarfs in the Sloan Digital Sky Survey," Kilic, M., et al. (**Williams, K. A.** as 8<sup>th</sup> author) 2010, The Astrophysical Journal Supplement Series, 190, 77, <http://doi.org/10.1088/0067-0049/190/1/77>
24. "Discovery of a Nova-like Cataclysmic Variable in the Kepler Mission Field," **Williams, K. A.**, et al. 2010, The Astronomical Journal, 139, 2587, <http://doi.org/10.1088/0004-6256/139/6/2587>
25. "Discovery of a GeV Blazar Shining Through the Galactic Plane," Vandenbroucke, J. et al. (**Williams, K. A.** as 22<sup>nd</sup> author) 2010, The Astrophysical Journal Letters, 718, 166, <http://dx.doi.org/10.1088/2041-8205/718/2/L166>
26. "Visitors from the Halo: 11 Gyr Old White Dwarfs in the Solar Neighborhood," Kilic, M., et al. (**Williams, K. A.** as 3<sup>rd</sup> author) 2010, The Astrophysical Journal, 715, L21, <http://doi.org/10.1088/2041-8205/715/1/L21>
27. "A Gravitational Redshift Determination of the Mean Mass of White Dwarfs. DA Stars," Falcon, R. E., et al. (**Williams, K. A.** as 4<sup>th</sup> author) 2010, The Astrophysical Journal, 712, 585, <http://doi.org/10.1088/0004-637X/712/1/585>
28. "A New Detailed Examination of White Dwarfs in NGC 3532 and NGC 2287," Dobbie, P. D., et al. (**Williams, K. A.** as 4<sup>th</sup> author) 2009, Monthly Notices of the Royal Astronomical Society, 395, 2248, <http://dx.doi.org/10.1111/j.1365-2966.2009.14688.x>

29. "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, K. A.**, Bolte, M., Koester, D. 2009, The Astrophysical Journal, 693, 355, <http://doi.org/10.1088/0004-637X/693/1/355>
30. "The Physics of Crystallization from Globular Cluster White Dwarf Stars in NGC 6397," Winget, D. E. et al. (**Williams, K. A.** as 7<sup>th</sup> author) 2009, The Astrophysical Journal Letters, 693, 6, <http://dx.doi.org/10.1088/0004-637X/693/1/L6>
31. "SDSS J142625.71+575218.3: The First Pulsating White Dwarf with a Large Detectable Magnetic Field," Dufour, P. et al. (**Williams, K. A.** as 4<sup>th</sup> author) 2008, The Astrophysical Journal, 683, 167, <http://dx.doi.org/10.1086/591672>
32. "The White Dwarf Population in NGC 1039 (M34) and the White Dwarf Initial-Final Mass Relation," Rubin, K. H. R., et al. (**Williams, K. A.** as 2<sup>nd</sup> author) 2008, The Astronomical Journal, 135, 2163, <http://doi.org/10.1088/0004-6256/135/6/2163>
33. "SDSS J142625.71+575218.3: A Prototype for a New Class of Variable White Dwarf," Montgomery, M. H., et al. (**Williams, K. A.** as 2<sup>nd</sup> author) 2008, The Astrophysical Journal, 678, L51, <http://doi.org/10.1086/588286>
34. "Erratum: "First Results from a Photometric Survey of Strong Gravitational Lens Environments" (ApJ, 646, 85 [2006])," **Williams, K. A.**, et al. 2008, The Astrophysical Journal, 672, 733, <http://doi.org/10.1086/523939>
35. "A Photometric and Spectroscopic Search for White Dwarfs in the Open Clusters NGC 6633 and NGC 7063," **Williams, K. A.**, Bolte, M. 2007, The Astronomical Journal, 133, 1490, <http://doi.org/10.1086/511675>
36. "Ophiuchus 1622-2405: Not a Planetary Mass Binary," Luhman, K. L., et al. (**Williams, K. A.** as 5<sup>th</sup> author) 2007, The Astrophysical Journal, 659, 1629, <http://dx.doi.org/10.1086/512539>
37. "The Precataclysmic Binary HS 1136+6646 May Have a Companion," Liebert, J., et al. (**Williams, K. A.** as 2<sup>nd</sup> author) 2006, Publications of the Astronomical Society of the Pacific, 118, 1528, <http://doi.org/10.1086/509664>
38. "First Results from a Photometric Survey of Strong Gravitational Lens Environments," **Williams, K. A.**, et al. 2006, The Astrophysical Journal, 646, 85, <http://doi.org/10.1086/504788>
39. "A Hot DQ White Dwarf in the Open Star Cluster M35," **Williams, K. A.**, et al. 2006, The Astrophysical Journal, 643, L127, <http://doi.org/10.1086/505211>
40. "A Spectroscopic Study of the Environments of Gravitational Lens Galaxies," Momcheva, I. G., **Williams, K. A.**, Keeton, C. R., Zabludoff, A. I. 2006, The Astrophysical Journal, 641, 169, <http://dx.doi.org/10.1086/500382>
41. "Cool White Dwarfs in the Sloan Digital Sky Survey," Kilic, M., et al. (**Williams, K. A.** as 6<sup>th</sup> author) 2006, The Astronomical Journal, 131, 582, <http://doi.org/10.1086/497962>
42. "The White Dwarf Luminosity Function from Sloan Digital Sky Survey Imaging Data," Harris, H. C., et al. (**Williams, K. A.** as 5<sup>th</sup> author) 2006, The Astronomical Journal, 131, 571, <http://doi.org/10.1086/497966>

43. "The Age and Progenitor Mass of Sirius B," Liebert, J., et al. (**Williams, K. A.** as 5<sup>th</sup> author) 2005, *The Astrophysical Journal*, 630, L69, <http://doi.org/10.1086/462419>
44. "The open-cluster initial-final mass relationship and the high-mass tail of the white dwarf distribution," Ferrario, L., et al. (**Williams, K. A.** as 4<sup>th</sup> author) 2005, *Monthly Notices of the Royal Astronomical Society*, 361, 1131, <http://doi.org/10.1111/j.1365-2966.2005.09244.x>
45. "An Empirical Initial-Final Mass Relation from Hot, Massive White Dwarfs in NGC 2168 (M35)," **Williams, K. A.**, Bolte, M., Koester, D. 2004, *The Astrophysical Journal*, 615, L49, <http://doi.org/10.1086/425995>
46. "Spectroscopic Identification of Faint White Dwarf Candidates in the Praesepe Open Star Cluster," **Williams, K. A.**, Bolte, M., Liebert, J. W. 2004, *The Astronomical Journal*, 128, 1784, <http://doi.org/10.1086/423907>
47. "The Impact of Unresolved Binaries on Searches for White Dwarfs in Open Clusters," **Williams, K. A.** 2004, *The Astrophysical Journal*, 601, 1067, <http://doi.org/10.1086/380754>
48. "The White Dwarf Deficit in Open Clusters: Dynamical Processes," Fellhauer, M., et al. (**Williams, K. A.** as 5<sup>th</sup> author) 2003, *The Astrophysical Journal*, 595, 53, <http://dx.doi.org/10.1086/379005>
49. "Determination of the Dark Matter Profile of A2199 from Integrated Starlight," Kelson, D. D., et al. (**Williams, K. A.** as 3<sup>rd</sup> author) 2002, *The Astrophysical Journal*, 576, 720, <http://dx.doi.org/10.1086/341891>
50. "Serendipitous Discovery of a Cluster of Galaxies with a Peculiar Central Galaxy," **Williams, K. A.** 2001, *The Astronomical Journal*, 122, 55, <http://doi.org/10.1086/321134>
51. "The Velocity Function of Galaxies," Gonzalez, A. H., et al. (**Williams, K. A.** as 2<sup>nd</sup> author) 2000, *The Astrophysical Journal*, 528, 145, <http://doi.org/10.1086/308159>
52. "The Large-Scale Diffuse X-ray Emission Surrounding Quasars: An Investigation Using the Scaling Index Method," **Williams, K. A.**, Brinkmann, W., Wiedenmann, G. 1998, *Astronomy & Astrophysics*, 340, 343, <http://adsabs.harvard.edu/abs/1998A%26A...340..343W>

### ***Selected Non-Refereed Publications***

1. "Photometric Monitoring of the ZZ Ceti Star PG 1541+651," Clausen, M.E. & **Williams, K.A.** 2023, *Research Notes of the American Astronomical Society*, 7, 122, <https://doi.org/10.3847/2515-5172/acdc93>
2. "Ensemble evolutionary studies of white dwarfs in open star clusters," **Williams, K.A.** 2020, in "IAU Symposium 357, White Dwarfs as Probes of Fundamental Physics," ed. M.A. Barstow et al. (Cambridge: Cambridge University Press), 179, <https://doi.org/10.1017/S1743921320000848>
3. "Defining the DS Spectral Type for Oxygen-atmosphere White Dwarfs," **Williams, K.A.**, Kepler, S.O., and Sion, E.M. 2019, *Research Notes of the American Astronomical Society*, 3, 109, <https://iopscience.iop.org/article/10.3847/2515-5172/ab3469>



4. "Lessons Learned from the 'Age of the Milky Way' Teacher Professional Development Workshop Evaluation," Hemenway, M. K., et al. (**Williams, K. A.** as 6<sup>th</sup> author) 2010, Science Education and Outreach: Forging a Path to the Future. Edited by Jonathan Barnes, Denise A. Smith, Michael G. Gibbs, and James G. Manning., p.160, <http://adsabs.harvard.edu/abs/2010ASPC..431..160H>
5. "White Dwarfs in the HET Dark Energy Experiment," Castanheira, B. G. et al., (**Williams, K. A.** as 3<sup>rd</sup> author) 2010, AIP Conf. Proc.: 17th European White Dwarf Workshop, 1273, 160 <http://dx.doi.org/10.1063/1.3527795>
6. "Reports on New Discoveries," Degennaro, S., **Williams, K.**, Montgomery, M. 2008, International Bulletin on Variable Stars, 5800, 8
7. "A New Look at the Empirical Initial-Final Mass Relation," **Williams, K. A.** 2007, 15<sup>th</sup> European Workshop on White Dwarfs ASP Conference Series, Vol. 372, Edited by Ralf Napiwotzki and Matthew R. Burleigh. San Francisco: Astronomical Society of the Pacific, p. 85 <http://adsabs.harvard.edu/abs/2007ASPC..372...85W>
8. "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, <http://dx.doi.org/10.1051/eas:2006094>
9. "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
10. "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, <http://adsabs.harvard.edu/abs/2002PhDT.....17W>