

David J. Wilson

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EDUCATION

University of Warwick Coventry, UK
Ph.D. in Physics, Advisor: Boris Gänsicke 2013–2017

– Thesis: “Observations of Remnant Planetary Systems at White Dwarfs”

Lancaster University/Michigan State University Lancaster, UK/East Lansing, USA
MPhys (Hons) in Physics/Year Abroad 2009–2013

– Thesis: “The Ever-Changing Sun: Multi-wavelength Solar Observations”

PROFESSIONAL APPOINTMENTS

**Laboratory for Atmospheric and Space Physics,
University of Colorado at Boulder** Boulder, USA
Research Associate 2022–present

McDonald Observatory, University of Texas at Austin Austin, USA
Postdoctoral Research Fellow 2018–2022

Department of Physics, University of Warwick Coventry, UK
Postdoctoral Research Fellow 2017–2018

SELECTED TELESCOPE TIME AWARDED AS PI

- *HST*/STIS (Cycle 28), Program ID 16449, 4 orbits: “Testing the Lyman Alpha reconstructions vital for stellar and exoplanet astronomy.”
- Multiple *Swift* TOO awards for simultaneous observations with *HST*/*Chandra* visits, totaling ≈ 40 ksec.
- *Chandra* (Cycle 20), Program ID 20200610, 110 ksec: “Characterising the soft X-ray activity of the metal-rich white dwarf GD 394.”
- *HST*/COS/STIS+*XMM Newton* (Cycle 25), Program ID 15189, 12 *HST* orbits + 43 ksec *XMM* time: “Post Common Envelope Binaries as probes of M dwarf stellar wind and habitable zone radiation environments.”
- William Herschel Telescope/ISIS (Period 2017a), Proposal ID SW2017a07, 1.5 hours: “The return of a gaseous debris disc around a white dwarf.”
- VLT/X-shooter (Period 99), Run ID 099.C-0811(A), 2 hours: “Confirmation of gaseous emission from a planetary debris disc at a white dwarf.”
- *HST*/STIS (Cycle 22), Program ID 13719, eight orbits: “Accretion of planetary debris onto the unique white dwarf GD394.”

GRANTS AND AWARDS

- February 2021: \$ 42,189 research funding associated with *HST* proposal 16449.
- December 2018: \$ 65,020 research funding associated with *Chandra* proposal 20200610.
- August 2016: £ 900.00 RAS grant to attend the MESA summer school at UC Santa Barbara.
- August 2012: EPSRC Vacation bursary for undergraduate research at Lancaster University.

SELECTED CONFERENCE TALKS

- May 2021: “The Stellar Winds of M dwarfs”, Stars & Planets in the Ultraviolet Symposium, Online.
- October 2019: “Discovery of an Irradiated Brown Dwarf Companion to a White Dwarf”, IAU Symposium 357, Hilo, Hawaii.
- July 2018: “White dwarfs as tracers of M dwarf stellar winds”, EuroWD21, Austin, Texas.
- December 2017: “Measuring planetary chemistry via observations of remnant planetary systems at white dwarfs”, 51st ESLAB Symposium, ESTEC.
- March 2017: “The chemical composition of extrasolar planetesimals”, Planetary Systems Beyond the Main Sequence II, Haifa, Israel.
- July 2016: “FUV observations of the mysterious metal-polluted white dwarf GD 394”, 20th European White Dwarf Workshop, Warwick.
- Four confirmed presentations cancelled due to COVID-19 pandemic.

TEACHING

- Summer 2019, 2021: Research Mentor for TAURUS (Texas Astronomy Undergraduate Research experience for Under-represented Students).
- 2018–present: Regular cover for undergraduate introductory astronomy lectures at UT Austin.
- 2013–2016: Electronics Labs Demonstrator, University of Warwick.

PROFESSIONAL SERVICE

- March 2021: Panelist for the *TESS* Cycle 4 review.
- October 2020: Panelist for the ADAP 2020 review.
- October 2020 onwards: ExoPAG SAG 22 working group member.
- December 2018: Panelist for the *Swift* Cycle 15 review.
- Ongoing: Regular reviewer for *Hubble Space Telescope* Mid-cycle proposals.
- July 2016: Member of LOC for the European White Dwarf Workshop, Warwick University.

SELECTED OUTREACH ACTIVITIES

- 2018–2020: Regular speaker at Astronomy on Tap ATX.
- Regular social media outreach, particularly through Twitter (@astrodave2).
- 2014–2016: Writer for the Astrobites Collaboration.
- 2013–2018: Presenter for Warwick Astronomy Group planetarium visits to local schools.

REFEREED PUBLICATIONS

First Author

1. Wilson, D. J., Toloza, O., Landstreet, J. D., et al. (2021), *MNRAS*: “Discovery of a young pre-intermediate polar.”
2. Wilson, D. J., Froning, C. S., Duvvuri, G. M., et al. (2021), *ApJ*, 911, 18W: “The Mega-MUSCLES Spectral Energy Distribution Of TRAPPIST-1.”
3. Wilson, D.J., Hermes, J.J., and Gänsicke, B.T. (2020), *ApJL*, 897, L31: “Optical Detection of the 1.1 day Variability at the White Dwarf GD 394 with TESS.”
4. Wilson, D. J., Gänsicke, B. T., Koester, D., et al. (2019), *MNRAS*, 483, 2941: “Multiwavelength observations of the EUV variable metal-rich white dwarf GD 394.”
5. Wilson, D.J., Gänsicke, B.T., Farihi, J., & Koester, D. (2016), *MNRAS*, 459, 3282: “Carbon to oxygen ratios in extrasolar planetesimals.”
6. Wilson, D.J., Gänsicke, B.T., Koester, D., et al. (2015), *MNRAS*, 451, 3237: “The composition of a disrupted extrasolar planetesimal at SDSS J0845+2257 (Ton 345).”
7. Wilson, D.J., Gänsicke, B.T., Koester, D., et al. (2014), *MNRAS*, 445, 1878: “Variable emission from a gaseous disc around a metal-polluted white dwarf.”

Contributing Author

1. Manser et al. (2021)], *MNRAS*, 508, 5657. “Velocity-imaging the rapidly precessing planetary disc around the white dwarf HE 1349-2305 using Doppler tomography.”
2. Lin et al. (2021), *MNRAS*, 505, 3562: “Differentiating modern and prebiotic Earth scenarios for TRAPPIST-1e: high-resolution transmission spectra and predictions for JWST.”
3. Gentile Fusillo et al. (2021), *MRNAS*, 504, 2707: “White dwarfs with planetary remnants in the era of Gaia - I. Six emission line systems.”
4. Hermes et al. (2021), *ApJL*, 914, L3: “8.9 hr Rotation in the Partly Burnt Runaway Stellar Remnant LP 40-365 (GD 492).”
5. Duvvuri et al. (2021), *ApJ*, 913, 40: “Reconstructing the Extreme Ultraviolet Emission of Cool Dwarfs Using Differential Emission Measure Polynomials.”
6. France et al. (2020), *AJ*, “The High-Energy Radiation Environment Around a 10 Gyr M Dwarf: Habitable at Last?”
7. Linsky et al. (2020), *ApJ*, 902, 3, “The Relative Emission from Chromospheres and Coronae: Dependence on Spectral Type and Age”

8. Melbourne et al. (2020), *ApJ*, “Estimating the Ultraviolet Emission of M dwarfs with Exoplanets from Ca II and H α ”
9. Gaidos et al. (2020), *MNRASL*, 148, “Zodiacal Exoplanets in Time. XI. The Orbit and Radiation Environment of the Young M Dwarf-Hosted Planet K2-25b”
10. Wunderlich et al. (2020), *APJ*, “Distinguishing between wet and dry atmospheres of TRAPPIST-1 e and f”
11. Ashley et al. (2019), *MNRAS*, 484, 5362: “Evidence for bimodal orbital separations of white dwarf-red dwarf binary stars.”
12. Manser et al.(2019) *Science*, 364, 66: “A planetesimal orbiting within the debris disc around a white dwarf star.”
13. Froning et al.(2019) *ApJl*, 871, L26: “A Hot Ultraviolet Flare on the M Dwarf Star GJ 674.”
14. Xu et al.(2018) *ApJ*, 866, 108: “Infrared Variability of Two Dusty White Dwarfs.”
15. Davenport et al. (2017), *ApJ*, 853, 130: “The GALEX view of “Boyajian’s Star” (KIC 8462852).”