

# David J. Wilson

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## EDUCATION

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**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

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

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

## TELESCOPE TIME AWARDED AS PI

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- *HST* (Cycle 28), Program ID 16449, 4 orbits: “Testing the Lyman Alpha reconstructions vital for stellar and exoplanet astronomy.”
- LCO (Semester 2021A), Proposal ID UTX2021A-003, 14 hours: “LCO Photometry of a newly-identified white dwarf-M dwarf binary.”
- Multiple *Swift* TOO awards for simultaneous observations with *HST/Chandra* visits, totaling  $\approx 36$  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

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- February 2021: \$ 42,189 research funding associated with *HST* proposal 16449.
- December 2018: \$ 65,020.00 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

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- 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

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- Summer 2019: 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

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- 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

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- Ongoing: 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

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### *First Author*

1. Wilson, D. J., Froning, C. S., Duvvuri, G. M., et al. (2021), arXiv:2102.11415: “The Mega-MUSCLES Spectral Energy Distribution Of TRAPPIST-1”
2. 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”
3. 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.”
4. Wilson, D.J., Gänsicke, B.T., Farihi, J., & Koester, D. (2016), *MNRAS*, 459, 3282: “Carbon to oxygen ratios in extrasolar planetesimals.”
5. 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).”
6. 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. France et al. (2020), *AJ*, “The High-Energy Radiation Environment Around a 10 Gyr M Dwarf: Habitable at Last?”
2. Linsky et al. (2020), *ApJ*, 902, 3, “The Relative Emission from Chromospheres and Coronae: Dependence on Spectral Type and Age”
3. Melbourne et al. (2020), *ApJ*, “Estimating the Ultraviolet Emission of M dwarfs with Exoplanets from Ca II and H $\alpha$ ”
4. 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”
5. Wunderlich et al. (2020), *APJ*, “Distinguishing between wet and dry atmospheres of TRAPPIST-1 e and f”
6. Ashley et al. (2019), *MNRAS*, 484, 5362: “Evidence for bimodal orbital separations of white dwarf-red dwarf binary stars.”
7. Manser et al.(2019) *Science*, 364, 66: “A planetesimal orbiting within the debris disc around a white dwarf star.”
8. Froning et al.(2019) *ApJL*, 871, L26: “A Hot Ultraviolet Flare on the M Dwarf Star GJ 674.”
9. Xu et al.(2018) *ApJ*, 866, 108: “Infrared Variability of Two Dusty White Dwarfs.”
10. Davenport et al. (2017), *ApJ*, 853, 130: “The GALEX view of “Boyajian’s Star” (KIC 8462852).”