Philip J. Carter — Curriculum Vitæ

Department of Physics
University of Warwick
Coventry, CV4 7AL

Phone: +44 (0)24765 74753

Website: `www2.warwick.ac.uk/fac/sci/physics/research/astro/people/carter/`

Expertise

Astronomy research:

Long-slit spectroscopy reduction, radial velocity measurement, data mining, binary orbital period measurement, simulation of line emission from discs, emission line diagnostics, Doppler tomography.

Computing:

Python, C, C-shell scripting, LaTeX, Linux/UNIX, HTML, PHP, SQL, JavaScript, LabVIEW.

Employment

2014–Present **Early Career Fellow**, Institute of Advanced Study, University of Warwick, UK.

Education

2010–Present **PhD** in Physics, University of Warwick, UK.
Thesis title: *Estimating the space density of ultracompact binary stars*
Supervisors: Prof. Tom Marsh, Dr. Danny Steeghs

2006–2010 **MPhys** in Physics, University of Warwick, UK. *1st Class Hons*
Research project: *Self-occultation effects in accretion disc spectra*
Supervisor: Prof. Tom Marsh

Observing experience

Spectroscopy:

- 3 nights on the 4.2 m William Herschel Telescope, La Palma, *ISIS*
- 4 nights on the 2.5 m Nordic Optical Telescope, La Palma, *ALFOSC*

Photometry:

- 14 nights (2 runs) on the 2.5 m Isaac Newton Telescope, La Palma, *WFC*

Reduction: I have reduced spectroscopic data from a variety of instruments using STARLINK.

Proposals: I have written a number of observing proposals requesting time on both the WHT and the VLT.

Experience

Teaching:

2010–2014 *Laboratory demonstrator*, 2nd year Physics laboratory, University of Warwick, UK. Demonstrator and marker for physics laboratory on computer control of experiments using LabVIEW. Four hour laboratory sessions once or twice per week.

Outreach:

2014 *Computer programming for scientists workshop* for students age 14–15 years.

2 hour workshop giving an introduction to programming and use of computers to record data; part of a Smallpeice Trust *Physics in engineering* course held at the University of Warwick.

2011–2013 *Departmental open days*, Physics Department, University of Warwick, UK. Astronomy and Astrophysics group representative at departmental open days/evenings for prospective undergraduate/postgraduate students.

Conferences and Talks

Sept 2013 "The hidden population of AM CVn binaries in the Sloan Digital Sky Survey." Invited talk at *The Golden Age of Cataclysmic Variables and Related Objects II* workshop, Palermo, Sicily.

July 2013 "A new pathway to AM CVn binaries." Contributed talk at the *National Astronomy Meeting*, St Andrews, UK.

June 2013 "Below the period minimum: ultracompact cataclysmic variables." Invited talk as part of the postgraduate seminar series, Department of Physics, University of Warwick, UK.

April 2012 "The hidden population of AM CVn binaries in the SDSS." Contributed talk at the *Third International Workshop on AM CVn stars*, Warwick, UK.

March 2012 "The hidden population of AM CVn binaries in the SDSS." Contributed talk at the *National Astronomy Meeting*, Manchester, UK.

Awards

2014–Present Institute of Advanced Study Early Career Fellowship, University of Warwick.

2010–2014 STFC postgraduate studentship.

Publications

Carter, P. J.; Gänsicke, B. T.; Steeghs, D.; Marsh, T. R.; Breedt, E.; Kupfer, T.; Gentile Fusillo, N. P.; Groot, P. J. and Nelemans, G., *Two new AM Canum Venaticorum binaries from the Sloan Digital Sky Survey III*, MNRAS, 439, 2848 (2014).

Carter, P. J.; Steeghs, D.; Marsh, T. R.; Kupfer, T.; Copperwheat, C. M.; Groot, P. J. and Nelemans, G., *The AM CVn binary SDSS J173047.59+554518.5*, MNRAS, 437, 2894 (2014).

Carter, P. J.; Steeghs, D.; de Miguel, E.; Goff, W.; Koff, R. A.; Krajci, T.; Marsh, T. R.; Gänsicke, B. T.; Breedt, E.; Groot, P. J.; Nelemans, G.; Roelofs, G. H. A.; Rau, A.; Koester, D. and Kupfer, T., *The helium-rich cataclysmic variable SBSS 1108+574*, MNRAS, 431, 372 (2013).

Carter, P. J.; Marsh, T. R.; Steeghs, D.; Groot, P. J.; Nelemans, G.; Levitan, D.; Rau, A.; Copperwheat, C. M.; Kupfer, T. and Roelofs, G. H. A., *A search for the hidden population of AM CVn binaries in the Sloan Digital Sky Survey*, MNRAS, 429, 2143 (2013).

Vreeswijk, P.; Groot, P.; **Carter, P.**; Xu, D.; De Cia, A.; Jakobsson, P. and Fynbo, J., *GRB 110205A: NOT redshift confirmation*, GCN Circ., 11640, 1 (2011).

Conference Proceedings

Carter, P. J.; Marsh, T. R.; Steeghs, D.; Breedt, E.; Copperwheat, C. M.; Gänsicke, B. T.; Groot, P. J. and Nelemans, G., "The hidden population of AM CVn binaries in the Sloan Digital Sky Survey," *The Golden Age of Cataclysmic Variables and Related Objects II*, Acta Poly., in press.