

CURRICULUM VITAE: CAROLIN CRAWFORD

'With a degree in maths and another in astrophysics, it was either that or back to the dole queue on Monday'

From *Fit the Second*, H2GT2G, Douglas Adams

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Present Employment:

Oct 2005 – Public Astronomer at Institute of Astronomy, Cambridge University) (*at 50% of full-time*)
Oct 2004 – Fellow, Admissions Tutor (Physical Sciences), Tutor and College Lecturer at Emmanuel College, Cambridge University (*at 50% of full-time*)

Previous Employment:

Oct 2011 – Sep 2015 Professor of Astronomy, Gresham College
Oct 1996 – Sep 2007 Royal Society University Research Fellow
(*working at 80% of full-time from Nov 1998; 50% of full-time from Oct 2005*)
Oct 2002 – Sep 2004 Associate Lecturer in Astronomy, Newnham College
Oct 1999 – Sep 2004 Assistant Director of Research at the Institute of Astronomy, Cambridge
Oct 1994 – Sep 1996 PPARC Advanced Fellow, Institute of Astronomy, Cambridge
Oct 1991 – Sep 1994 Research Fellow, Trinity Hall, University of Cambridge
Oct 1991 – Sep 1993 SERC Postdoctoral Fellow, Institute of Astronomy, Cambridge
Oct 1988 – Sep 1991 Skynner-Radcliffe Research Fellow in Astronomy at Balliol College, Oxford

Further Education:

1985 – 1988 PhD; Newnham College and Institute of Astronomy, University of Cambridge
1982 – 1985 BA Hons in Mathematics; Newnham College, University of Cambridge

Awards:

One of the UK Resource Centre for Women in Science, Engineering and Technology's 2009 *Women of Outstanding Achievement*, awarded for "communication of SET with a contribution to society".

Astronomical Educational/Outreach Presentations:

2006-2016 Over 850 presentations delivered to a total audience of over 62,200 people

In addition, my 24 Gresham College lectures have garnered over **1.8 million views on YouTube** (as of 31/4/17).

Topics covered include : (with some overlap between these!)

- **Generic Solar System:** Introduction to the planets; Life in the Solar System; Exploring the Solar System; Disasters from Space.
- **Beyond the Solar System:** The Solar System and beyond (a brief recap of our planets, but also covering exoplanets/stars/black holes/galaxies at a level appropriate for KS2 pupils).
- **Specific Solar System:** The Moon; *Cassini* at Saturn; The Red Planet; Pluto; Asteroids; Giant planet Jupiter; Comets; Small bodies of the Solar System; The Sun, our nearest star; Polar lights; How the Earth moves; Atmospheric Phenomena.
- **Exoplanets:**
- **Stars and nebulae:** Stellar evolution/birth/death; The science and beauty of nebulae; Star Dust; The Cool Universe (infra-red astronomy).
- **Black holes:** Black holes for beginners; Gravitational waves; Active Galactic Nuclei.
- **The Energetic Universe;** The Transient Universe; X-ray Astronomy; The Violent Universe.
- **Galaxies:** An introduction to the Milky Way; When galaxies collide; Clusters of galaxies.
- **Generic cosmos:** Your place in the cosmos; Sounds of the cosmos; Rotation in space; The ten best images; Recent results from the HST; The next big questions in Astronomy; Time and the Universe.
- **Cosmology:** The Early Universe; The search for dark matter; Dark energy and the ever-expanding Universe; The age of the Universe; Echoes of the big bang.
- **The Night sky:** Finding your way around the night sky; The story of the constellations; All about Orion.
- **IoA:** Current research topics at IoA; The history of the IoA.
- **Careers:** (tailored for any KS) Careers in astronomy/physics; Women in Astronomy.

- **Miscellaneous:** The representation of Space in films; Big Numbers; Symmetry and shape in astronomy; Poetry and space; Multi-wavelength astronomy; Colour, light and spectroscopy; Large telescopes and why we need them; The heads and tails astro-quiz; The scientist's perspective of radio interviews (to journalists)

Audiences and Venues include:

Adult education classes; over 43 different amateur astronomical associations ; BA Festival of Science; British Council; Birmingham Symphony Hall; Cambridge Alumni Cambridge Gates scholars alumni; Cambridge physics centre; Cambridge Science Centre; Cambridge Science Festival; Cambridge Union; Cambridge College science societies (Wolfson, Peterhouse, Trinity Hall, Downing); Cheltenham Science festival; Darwin College lecture series; Gresham College (Museum of London; 24 lectures 2012-2015); Institute of Physics; Jodrell Bank Visitors Centre; National Space Centre, Leicester; New Scientist events; Norwich Forum; Oxford and Cambridge Club, London; Peterborough Museum; Pint of Science; Priory Hospital schools; Retired Fellows of the Royal Society of Medicine; Royal Astronomical Society, London; Rotary Clubs, 41 clubs and similar; Royal Institution; Royal Society Soirees; Secondary school science teachers; School pupils at all stages of their education from reception year to sixth-formers; Science Museum London (including Lates and at the Dana Centre); Sci-Fi convention Novacon; Soapbox Science, Newcastle; U3A (many different groups...); Visiting scholars to Cambridge; Winchester Science Centre (2010-2017); Women's Institute (many different groups and federations); Women of the World Festival, Cambridge (2016).

Media appearances :

- 14 guest appearances on *In our time* on BBC Radio 4 (discussing: The Kuiper belt; Saturn; Dark Matter, The Sun, Cosmic Rays; Exoplanets; The Moon; The age of the Universe; The 'cool' Universe; Gravitational waves; Galaxies; Asteroids; Dark energy; Planets);
- Regular panellist on BBC Radio 4's *Home Planet*, appearing on 22 programmes over 2006-2011;
- Occasional appearances on other BBC radio shows, such as *Happy Birthday Neptune* (7/2011); *Woman's Hour* (9/2008); *Start the Week* (2/2004, 5/2009, 11/2013); *Between the ears* (1/2013); *Essential Classics* (10/2013); *Word of Mouth* (1/2014); *PM* (8/2014); *Broadcasting House* (11/2014), *Today* (2/2016, 7/2016, 11/2016);
- TV interviews for: on *Dark Matters* programme for the *Discovery* channel (9/2011); *Sky at Night* for the BBC (10/2014); *Planet UFO* for the *National Geographic* TV channel (12/2014); *World's Wierdest Events* (2015).
- Many *ad-hoc* radio interviews (usually live, either in the studio and by phone), and mostly with BBC Radio Cambridgeshire (60 such in 2009-2014);
- Resident panellist on the monthly *Naked Astronomers* podcast (25 episodes) during 2009-2012;

Professional Societies:

Fellow of the Royal Astronomical Society
Member of the International Astronomical Union

Research Publications:

100 research publications in refereed journals 1986-2012; my *h-number* is 43 (as of 06/2017).

The top five papers (in citation rank) each have between 502 and 286 citations.

My research papers focus on optical, near-infrared and X-ray observations of clusters of galaxies; in particular the way a supermassive black hole can affect the giant galaxy it inhabits, and the wider intra-cluster environment.

Recent professional committee work:

2014 –	Academic board and Council, Gresham College, London
2014 –	Royal Astronomical Society's 'A' awards committee
2013 – 2016	Selection and interview panel for Royal Society University Research Fellowships
2010 – 2014	External examiner for <i>The Relativistic Universe</i> for the Open University

Participation in activities promoting women in Science, Engineering and Technology:

2003 – 2008	Women's Forum steering group for the University of Cambridge
2002 – 2011	PPARC 'Women in SET' Focus Group looking at ways to improve the representation and participation of women in STFC's area of research
2001 – 2010	<i>Springboard</i> undergraduate steering committee for Cambridge University
2000 – 2012	Qualified <i>Springboard</i> trainer running regular programmes for Cambridge University staff and students. <i>Springboard</i> is a career and personal development course for women based on four one-day workshops spread over two university terms
1999 – 2011	Departmental representative for the Cambridge University Women in Science, Engineering and Technology Initiative (WiSETI).
1998 – 2004	Royal Astronomical Society committee on Women in Astronomy and Geophysics