

# Simon Mitton

[Annual Report. Dept History and Philosophy of Science, University of Cambridge, 2012 - 2013.]

I am a College Fellow (St Edmund's), and my academic field is, broadly speaking, the history of astronomy. I tend to work mostly on the 20<sup>th</sup> century because I have degrees in physics and in astrophysics. The narrative style that I have developed places an emphasis on individuals as practitioners. By contrast, most history of astronomy written at a popular level by professional physicists emphasises instrumentation, experimentation, equations, and observatories. My latest book (co-author J. P. Ostriker) is *Heart of Darkness, Unraveling the Mysteries of the Invisible Universe*. In the narrative I treat the history of intellectual puzzles such as: how structure arose in the universe, why galaxies formed, and the chance discoveries of the microwave background, the dark matter, and the dark energy. The stories are played out through the lives of the philosophers, the observers, and the cosmologists who made the key breakthroughs. I have written recently on Thomas Gold FRS and Georges Lemaître. My current biographical research project looks at the role of remarkableness and serendipity in astronomical discovery. My teaching is what professional astronomers describe as Outreach, which is currently trendy. In Outreach we engage with schools, amateur astronomers, and the general public. In the past year I have "outreached" to approximately 2000 people, about half of whom have the astronomy lectures on Cunard's RMS *Queen Mary 2* that I do jointly with my wife Dr Jacqueline Mitton. Currently I am Vice-President of the Royal Astronomical Society, and Chairman of the RAS Library Committee, which has responsibility for £10m of heritage assets (Harrison chronometer, rare books, Herschel archives, and special collections).

## Publications

### Book

(with Jeremiah P. Ostriker) *Heart of Darkness: Unraveling the mysteries of the invisible universe* (Princeton University Press, Princeton 2013)

### Edited book

(with Rodney Holder) *Georges Lemaître: Life, Science and Legacy* (Springer, Heidelberg 2012)

### Articles in books

(With Rodney D. Holder) 'Georges Lemaître: A Brief Introduction to His Science, His Theology, and His Impact,' in Rodney D. Holder and Simon Mitton (eds) *Georges Lemaître: Life, Science and Legacy* (Springer, Heidelberg 2012)

### Online/Media

Georges Lemaître, Father of the Big Bang (*BBC Radio 4, BBC World Service*) <http://bbc.in/KhvA87>

"Slow Light" <http://sciencewatch.com/nobel/predictions/slow-light> (Thomson Reuters 2012)

Photoluminescence in Porous Silicon <http://sciencewatch.com/nobel/predictions/photoluminescence-porous-silicon> (Thomson Reuters 2012)

New Field of Galileon Cosmology Slows Acceleration <http://sciencewatch.com/articles/new-field-galileon-cosmology-shows-acceleration> (Thomson Reuters 2013)

Quantum Teleportation <http://sciencewatch.com/nobel/predictions/quantum-teleportation> (Thomson Reuters 2012)

How the Exquisite Precision of Concordance Cosmology Challenges Theorists

<http://sciencewatch.com/articles/physics-top-ten-how-exquisite-precision-concordance-cosmology-challenges-theorists> (Thomson Reuters 2012)

The Impact on Cosmology of the Wilkinson Microwave Anisotropy Probe <http://sciencewatch.com/articles/impact-cosmology-wilkinson-microwave-anisotropy-probe> (Thomson Reuters 2013)

Mars Mission <http://sciencewatch.com/articles/mars-mission> (Thomson Reuters 2013)

### Reviews

Stuart Firestein, *Ignorance, How it Drives Science* (2010) reviewed in *Times Higher Education*

<http://www.timeshighereducation.co.uk/books/ignorance-how-it-drives-science/421420.article>

Steven J. Dick and Mark L. Lupisella, *Cultural Evolution in a Cosmic Context* (National Aeronautics and Space Administration, Washington DC, 2010), reviewed in *J. Hist. Astron.* 44 (2013) 104 – 105.

## Lectures, seminars and conferences

### November 2012

'Astronomy' four introductory lectures on astronomy and the history of astronomy, delivered as Royal Astronomical Guest Lecturer, RMS *Queen Mary 2*, Southampton – New York. Attendance 400 – 480 passengers

*January 2013*

'Georges Lemaître: Life Science and Legacy' St Benedict's School, Ealing, London. History of science seminar for the Sixth Form (200 pupils)

*April 2013*

'The Origin of Structure in the Universe' a public lecture on the history of attempts to understand how structure arose in the universe. Royal Astronomical Society, Burlington House, Piccadilly, London.

'Why is there Something Rather than Nothing?' Evening talk for the Oxford University Space and Astronomy Society, given at the Department of Physics, Oxford. Attendance 120.

*May 2013*

'Astronomy' four introductory lectures on astronomy and the history of astronomy, delivered as Royal Astronomical Guest Lecturer, RMS *Queen Mary 2*, New York – Hamburg. Attendance 250 – 350 passengers.

'Heart of Darkness – history of attempts to unravel the mysteries of the invisible universe'. Guest lecture for the Friends of the Royal Astronomical Society.

*June 2013*

'Heart of Darkness – history of attempts to unravel the mysteries of the invisible universe'. Featured keynote speaker (Event 381) at the Hay Festival 2013. Attendance 650.

*July 2013*

'Cambridge Scientific Minds'. Presentation at a summer school for American High School held at Magdalene College, Cambridge.