

# BRIEF CURRICULUM VITAE - MALCOLM S. LONGAIR

## 1. PERSONAL DETAILS

**Full name:** Malcolm Sim LONGAIR.

**Date and place of birth:** 18 May 1941, Dundee, Scotland.

**Present Position:** Director of Development and Outreach, Emeritus Jacksonian Professor of Natural Philosophy, Cavendish Laboratory, University of Cambridge.

**Work Address:** Cavendish Laboratory, J.J. Thomson Avenue, Cambridge CB3 0HE.

**Work Telephone:** 01223-765953 and 01223-765777,

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## 2. ACADEMIC APPOINTMENTS

1970-80: University Lecturer, Department of Physics, University of Cambridge.

1971-80: Official Fellow, Clare Hall, Cambridge; Praelector of Clare Hall, Cambridge.

1980-90: Astronomer Royal for Scotland, Regius Professor of Astronomy, University of Edinburgh, Director of the Royal Observatory, Edinburgh.

1991 to present: Jacksonian Professor of Natural Philosophy, University of Cambridge.

1991-97 Deputy Head of Cavendish Laboratory

1997-2005 Head of Cavendish Laboratory.

1991 to present: Professorial Fellow of Clare Hall, Cambridge. Vice-president 1993-2002.

2007 to 2011. Director of Development, Cavendish Laboratory.

### Visiting Professorships:

California Institute of Technology (Sept-Dec 1972);

Exchange visitor to the USSR Space Research Institute, Moscow on 6 occasions (1975-79):

Institute for Advanced Study, Princeton (Sept-Dec 1978):

University of Victoria, Canada (March 1988);

Regents' Fellowship of Smithsonian Astrophysical Observatory, Harvard University (Apr-July 1990),

Space Telescope Science Institute, Baltimore (Sept-Dec 1997),

Erskine Fellow, University of Canterbury, Christchurch, NZ (Sept-Oct 2005),

Adjunct Professor of Astrophysics, University of Massachusetts at Amherst (Feb-May 2006),

Visiting Professor MPI for Astrophysics, Garching (Oct-Dec. 2006).

Visiting Professor ESO Garching (Feb-March 2007).

## 3. SOCIETIES, HONOURS, PRIZES, ETC

1967: Royal Astronomical Society, Fellow; Council Member (1993-99), President (1996-98).

1981: Fellow of Royal Society of Edinburgh.

1982: Honorary Doctor of Law, University of Dundee.  
1994: Saltire Society-Royal Bank of Scotland Science Prize.  
1995: Pilkington Award for Excellence in Teaching, University of Cambridge.  
2000: Commander of the British Empire (CBE) for services to astronomy and cosmology.  
2000: Foreign Member of the Accademia Nazionale dei Lincei.  
2004: Fellow of Royal Society of London  
2007: Foreign member of Istituto Veneto della Scienza, Lettere ed Arte,  
2007: Honorary Professor of Physics and Astronomy, University College, London  
2012: Honorary Member of the American Astronomical Association and 2012 Kavli Lecturer  
2013: Honorary Doctor of Science, University of Edinburgh

**Other professional bodies:** Institute of Physics, Royal Institution of Great Britain, International Astronomical Union, European Astronomical Society, British Association for the Advancement of Science, Academia Europa.

#### 4. ACTIVITIES ON BEHALF OF RESEARCH COUNCILS AND OTHER UK BODIES

I have served on and chaired many Committees, Boards and Panels for the Research Councils and other UK bodies. The most important of these have included:

SERC Millimetre Telescope Users Committee, Chair (1979-83);  
SERC Space Telescope Advisory Panel, Chair (1977-1983);  
SERC/BNSC ROSAT Management Committee, Chair (1986-94);  
EPSRC Central Laser Facility Review Panel, Chair (1994);  
PPARC Merlin Steering Committee, Chair (1993-96);  
Advisor, House of Commons Select Committee for Science and Technology investigating PPARC (1996);  
PPARC Astronomy and Astrophysics Committee, Member (1996-99);  
PPARC Science Committee, Member (1996-1999);  
Trustee Lloyds' Tercentenary Foundation (1996-present);  
Scottish Universities' Physics Alliance (SUPA), Chair of Advisory Committee (2003- present).

#### 5. MAJOR PROJECTS INVOLVING SCIENTIFIC AND MANAGEMENT LEADERSHIP

- **Director of the ROE** (1980-90) with responsibility for all aspects of the operations of the Observatory in Edinburgh, the UKIRT and JCMT facilities in Hawaii and the UK Schmidt Telescope in Australia.
- Enhancement of **UK Infrared Telescope (UKIRT)** from a light-collector to the world's largest dedicated fully-instrumented infrared telescope. Construction of the **first infrared cameras** (IRCAM 1 and 2) and **spectrographs** (CGS 4) involving infrared arrays for UKIRT.
- Leading the ROE effort in the commissioning and operational phases of the **James Clerk Maxwell Telescope** (JCMT). Management/scientific oversight of the development and construction of the submillimetre continuum bolometer array camera **SCUBA** for the JCMT.
- Leading ROE effort in the UK's contribution to **ISOCAM** of the ESA Infrared Space Observatory.

## 6. OTHER INTERNATIONAL SCIENTIFIC ACTIVITIES

The most important of the many international Committees, Boards and Panels include:

**International Astronomical Union**, President of Commission No. 47, Cosmology (1973-76).

**European Space Agency**: Astronomy Working Group (1975-78);  
Space Telescope Working Group (1977-83),  
Space Telescope Advisory Team (1983-86),  
Technical Panel for the Planck Mission, Chair (1998),  
PLANCK ground segment readiness review, chair (2004-present),  
XMM Observatory Time Allocation Committee, Chair (1999- 2004).  
Chair of the HISPAC (High-level Scientific Policy Advisory Committee) (2007-2011)

### **NASA:**

Interdisciplinary Scientist for the Hubble Space Telescope (1977-92);  
Space Telescope Science Working Group (1977-92);  
Independent Science Reviews: the Second Servicing Mission of the Hubble Space Telescope, Chair (1996),  
NICMOS Recovery Program (1997), Chair.  
Tiger team for the James Webb Space Telescope (2005).

### **Space Telescope Science Institute:**

Space Telescope Advisory Committee (1982-85), Chair (1983-84);  
Institute Visiting Committee (1983-1986);  
Council Member (1987-95), Chair (1995- 1996)  
, Interim Visiting Committee, Chair (1996).  
James Webb Space Telescope Advisory Committee (2009-present)

**International Gemini Board**, (1991-95), Vice-Chair (1992-93), Chair (1994-95).

**Anglo-Australian Telescope**, Board Member, (1982-87).

**Fachbeirats of Max Planck Institute for Radio Astronomy, Bonn**, (1981-86) and **Max Planck Institute for Extraterrestrial Physics, Munich**, (1985-92), Chair (1989-91)

**Australia Telescope National Facility**, Board Member (1994-96).

**Frontier Research Programme of RIKEN**, Japan. Council Member (1995-7)

**National Science Foundation, USA**. Only non-US member of the Senior Review Committee of the NSF Astronomy Program (2008).

**European Southern Observatory** Member of Visiting Committee 2007.

## 7. PUBLIC UNDERSTANDING OF SCIENCE

Highlights include:

1986: Britannica Award for the Dissemination of Learning and the Enrichment of Life.

1990: Royal Institution Christmas Lectures for Young People, The Origins of Our Universe.  
1991-92: President, Physics Section, British Association for the Advancement of Science.  
1995: Selby Lecturer of the Australian Academy of Sciences, Measuring the Fundamentals.  
1999-2001: Institute of Physics Fellow in the Public Understanding of Physics.

I have delivered hundreds of public lectures over the last 40years.

## 8. LIST OF PUBLICATIONS – Malcolm S. Longair.

### BOOKS

#### 1. ORIGINAL TEXTS

- B1. Observational Cosmology** 1978. J E Gunn, M S Longair and M J Rees. Geneva: Geneva Observatory Publications.
- B2. High Energy Astrophysics** 1981. M S Longair. Cambridge: Cambridge University Press.
- B3. Theoretical Concepts in Physics**, 1984 (revised 1991). M S Longair, Cambridge University Press, **Theoretische Konzepte der Physik**, 1991. Berlin: Springer-Verlag. (German translation of Theoretical Concepts in Physics).
- B4 Alice and the Space Telescope**, 1989. M.S. Longair. Baltimore: Johns Hopkins University Press.
- B5. The Origins of Our Universe - 1990 Royal Institution Christmas Lectures** 1990. M.S. Longair Cambridge: Cambridge University Press. Editions in Japanese, French, Spanish, Italian, German, Portuguese and Finnish have now been published.
- B6. High Energy Astrophysics: Volume 1. Photons, Particles and their Detection**, 2nd edition, 1992 (revised 1996). Cambridge: Cambridge University Press.
- B7. Astronomy in the UK**, 1993. Booklet written for the Royal Astronomical Society. (I wrote the complete text for this booklet.)
- B8. High Energy Astrophysics: Volume 2. Stars, the Galaxy and the Interstellar Medium**, 2nd edition, 1994 (revised 1996). M.S. Longair. Cambridge: Cambridge University Press,
- B9. The Deep Universe - The 1993 Saas-Fee Lectures** 1995. A.R. Sandage, R. Kron, and M.S. Longair. Berlin: Springer-Verlag.
- B10. The Gemini Project** 1995. NSF publications. (I wrote the complete text of this booklet - I was chairman of the Gemini Board in 1994 and 1995.)
- B11. Our Evolving Universe** 1996. M.S. Longair. Cambridge: Cambridge University Press.
- B12. The Large, the Small and the Human Mind** R. Penrose, with A. Shimony, N. Cartwright and S.W. Hawking (ed. M.S. Longair) 1997. Cambridge: Cambridge University Press. Paperback edition, 1999, with two additional essays by Roger Penrose. This has been translated into many languages.
- B13. Our Evolving Universe** 1998. M.S. Longair. Spanish and German editions published by Cambridge University Press (Spain) and Springer Verlag. In both cases, there were substantial revisions to the 1996 English edition.
- B14. Galaxy Formation** 1998. M.S. Longair. Berlin: Springer-Verlag.
- B15. Astronomy in the UK**, 2000. Special edition of Astronomy and Geophysics, written for the Royal Astronomical Society and PPARC (rewritten 2005).

**B16. Theoretical Concepts in Physics**, 2nd Edition (Revised and Enlarged Edition), 2003. M S Longair, Cambridge University Press

**B17. The Cosmic Century: A History of Astrophysics and Cosmology** 2006. M.S. Longair. Cambridge: Cambridge University Press.

**B18. Galaxy Formation** 2008. M.S. Longair. Berlin: Springer-Verlag. (second edition).

**B19. High Energy Astrophysics:** 2011. (consolidated new edition) M.S. Longair. Cambridge: Cambridge University Press (third edition).

**B20. Quantum Concepts in Physics:** 2013. M.S. Longair. Cambridge: Cambridge University Press

**B21. Towards a Science-led One ESA: 2014.** M.S. Longair and four other authors. ESA Publications.

#### **In Preparation**

**B22. Maxwell's Enduring Legacy: A Scientific History of the Cavendish Laboratory:** 2016. Cambridge: Cambridge University Press

### **3. CONFERENCE PROCEEDINGS**

**C1. Confrontation of Cosmological Theories with Observational Data**, edited by M S Longair, IAU Symposium No. 63, Reidel and Co., 1974.

**C2. The Large Scale Structure of the Universe**, edited by M S Longair and J Einasto, IAU Symposium No. 79, Reidel and Co., 1978.

**C3. Scientific Research with the Space Telescope**, edited by M S Longair and J Warner, NASA Publications CP-2111, 1979.

**C4. Astrophysical Cosmology**, edited by H Brück, G Coyne and M S Longair, Vatican Symposium Academiae Scientiarum Scripta Varia, 1982.

**C5. The Physical Universe: Interface between Cosmology, Astrophysics and Particle Physics**, eds. J.D. Barrow, A.B. Henriques, M.T.V.T. Lago and M.S. Longair, 1991. Proceedings of the 12 Autumn School of Physics, Lisbon, Portugal, 1 - 5 October 1990.

**C6. The Frontiers of Space and Ground-based Astronomy - The Astrophysics of the 21st Century**, edited by W. Wamsteker, M.S. Longair and Y. Kondo, 1994. 27th ESLAB symposium, 10-14 May 1993. (Dordrecht: Kluwer Academic Publishers)

### **4. PUBLISHED SCIENTIFIC PAPERS**

Almost 300 scientific papers in learned journals (see separate list of publications).

Malcolm Longair, January 2014.