

JAMES CLERK MAXWELL FOUNDATION

ANNUAL REPORT

Year to end December 2015

JAMES CLERK MAXWELL FOUNDATION
(Scottish Charity Number SC015003)

Trustees' Annual Report and Summary Accounts for the year ended 31 December 2015

PATRON

Honorary Patron: Professor Peter Higgs CH FRS FRSE (Nobel Prize for Physics, 2013)

CURRENT TRUSTEES

David O. Forfar, MA FFA MMath DipStats FSS FIMA CMath FRSE (Chairman)

Professor David S. Ritchie, MA FRMetS FRSE (Honorary President)

Professor Peter M. Grant, OBE PhD HonDEng LFIEEE FREng FRSE (Secretary)

Dr John W. Arthur, BSc PhD FInstP FIET SMIEE FREng FRSE (Property)

Professor J. Chris Eilbeck, BSc PhD FIMA FRSE (Meetings)

David Peacock, IEng FIET (WWW master)

Sir Michael Atiyah, OM HonDSc HonFREng HonFMedSci HonFFA PPRS PPRSE

Dr Richard C. Dougal, BSc PhD CPhys FInstP

Professor T. Alastair Gillespie, BA PhD HonDSc FRSE

Professor Neil B. Graham, BSc PhD FRSC FIM FRSE

Professor Malcolm S. Longair, BSc MA PhD HonLLD FRS FRSE

Professor A. David Milne, OBE PhD HonDEng HonDSc FIET SMIEE FREng FRSE

Dr Susie P. Mitchell, BSc PhD

Professor Roland A. Paxton, MBE MSc PhD HonDEng CEng FICE FRSE

Dr James Rautio, BSEE MS PhD FIEE

Dr John S. Reid, PhD FInstP CPhys MLitt FRAS FRMetS

Professor John F. Roulston, OBE DEng HonDSc FREng FRSE

Dr Walter G. Scott, BSc PhD FRSE

Treasurer: Bruce K. C. Lee, MA CA

Contact address

James Clerk Maxwell Foundation, 14 India Street, Edinburgh, EH3 6EZ.

Recruitment and appointment of Trustees

Trustees are selected from suitably qualified persons who have an interest in James Clerk Maxwell.

Governing document

Deed of Declaration of Trust (registered 11 February 1977).

Charitable purposes

As set out in Deed of Declaration of Trust, 4th Schedule.

Activities and achievements

See Trustees Report for the year 2015.

Reserves

At 31 December 2015 the Foundation had bank account funds of £99,977.

Trustees' Report for the year ended 31 December 2015

TRUSTEES

Professor Peter Higgs (Nobel Prize for Physics, 2013) was appointed during 2015 as our Honorary Patron.

Professor Alastair Gillespie and Dr. James Rautio joined us as new Trustees in the spring of this year and Dr. Susie Mitchell in the autumn. The Foundation appointed as 'Friends of the Foundation', Professors Rebecca Cheung, Alan Shotter and Wilson Poon from Edinburgh along with Dr Aidan Robson from Glasgow.

CHARITABLE GRANTS AWARDED

"Sense of Wonder" film on Maxwell narrated by poet Rab Wilson, copy now on Foundation WWW site.

Assisting the RSE with the 9th November meeting, see below.

Institute of Mathematics and its Applications (Maxwell Prize awarded every four years).

Maxwell Prize (awarded jointly with the Mackinnon/Macneill Trust) to an outstanding student in science or engineering from the West of Scotland on entering university.

Edinburgh International Science Festival.

Institute of Physics, International Year of Light.

UPKEEP OF THE HOUSE

There was further continuing significant expenditure in 2015 on: sealing three old chimneys; rug cleaning and stair carpet repair; refurbishment and repainting of top floor windows; repainting front door and railings, electrical inspection of the entire building and subsequent remedial work; replacement digital overhead projector; and other sundry repairs.

FINANCIAL POSITION

The statement of accounts for the year 2015 shows an overall income of £36,054 (predominantly rental) but including financial support for new Museum displays plus donations of £3,726. Our total expenditure of £30,356, included six charitable disbursements totaling £7,250, Foundation development and outreach activities (such as new museum display material, hosting events, newsletter production and distribution) of £5,875, and running and maintenance costs of £17,231, giving a surplus of income over expenditure of £5,698. The balance at the banks at the end of the year amounted to £99,977.

NEWSLETTER

The Fifth (Spring 2015) Edition of our Newsletter included articles on *Saturn's Rings* by Prof. Andrew Whitaker, Queens University Belfast and on *William Dyce Cay* by our Trustee, Prof Roland Paxton. The Sixth (Winter 2015) Edition included an article on *Structural Mechanics* by Prof Ian MacLeod from Strathclyde. It is appreciated by the Foundation that the printing of the newsletters (which are available on our website) was undertaken, pro bono, by SELEX Galileo.

MAXWELL'S FAMILY, LIFE and TIMES

In an independent activity supported by the JCMF Dr John Arthur, one of our Trustees, manuscript entitled: *Brilliant Lives: The Clerk Maxwell's and the Scottish Enlightenment*, is now in press by Birlinn.

150th ANNIVERSARY OF THE PUBLICATION OF MAXWELL'S EQUATIONS

On 9 November 2015, the Royal Society of Edinburgh (RSE), in conjunction with organisational support from the Maxwell Foundation, held a very successful (175 attendees) celebratory meeting "*Inspiring Brilliance: Celebrating Maxwell's Genius and Legacy*" at the RSE to honour the 150th anniversary of the publication of Maxwell's 1865 landmark paper "*Dynamical Theory of the Electromagnetic Field*" which introduced Maxwell's equations for the first time. We had a *star-studded* group of speakers for this very successful meeting namely:

- Prof. Peter Higgs, FRS, FRSE (Physics Nobel Laureate, 2013, University of Edinburgh) : *Field Theories, Maxwellian and later developments*,
- Sir Peter Knight, FRS (President of the Institute of Physics, 2011-13) : *The impact of Maxwell's Equations on Physics*,
- Sir Michael Atiyah, OM, FRS, FRSE (Former President of the Royal Society and the Royal Society of Edinburgh): *The Influence of Maxwell's Equations on Mathematics*,
- Prof. Malcolm Longair, FRS, FRSE (former Professor of Physics, University of Cambridge and former Head of the Cavendish Laboratory and former Astronomer Royal for Scotland): *The Impact of Maxwell's work on Colour and Statistical Physics*,
- Prof. Jim Al-Khalili (Professor of Physics, Surrey University) : *The Impact of Maxwell's Demon on Information Theory and Computing*,
- Prof. Carl Murray, (Professor of Astronomy, Queen Mary University): *The Impact on Astronomy of Maxwell's Adams Prize Essay (On the Stability of Saturn's Rings)*,
- Prof. Iain McLeod (formerly Professor of Structural Engineering, Strathclyde University): *The Impact of Maxwell's work on Structural Mechanics*,
- Prof. R. Sepulchre (Professor of Control Engineering, University of Cambridge): *The Impact on Control Theory and Cybernetics of Maxwell's paper 'On Governors'*,
- Prof. H. Haas, (Professor of Mobile Communications, University of Edinburgh) and Mr. P. Reid (Planning and Communications Project Manager, University of Edinburgh), *Demonstration; Maxwell, Colour Vision and the Future of Digital Communication*.

Following this meeting 40 of the meeting attendees visited India Street on the 10th of November.

VISIT to INDIA STREET of BBC RADIO

To further celebrate the 150th Anniversary of the publication of Maxwell's Equations, BBC radio broadcast, each day of the week 21-24 September, a short programme on Clerk Maxwell with Will Self compèreing. The visit to India Street and Maxwell's life was broadcast on 21 September and took the form of an interview of our Chairman, Mr. David Forfar, Will Self conducting the interview.

VISIT to INDIA STREET of BBC TELEVISION

To celebrate the 150th Anniversary of Maxwell's Equations, BBC Television broadcast on BBC2 in Scotland on 4 December 2015 and nationwide on 26 January 2016 an hour long programme "**James Clerk Maxwell: The Man Who Changed The World**". The programme was compèred by Prof. Iain Stewart, and included interviews with several of our Trustees, namely Professor Longair and Sir Michael Atiyah.

OUTREACH

We secured permission from Edinburgh District Council to mount a new brass plaque on Maxwell's life by the front door at 14 India Street.

The University of Edinburgh was prompted to erect plaques commemorating James Clerk Maxwell at both the Old College and the JCMB, King's Buildings campus.

We added approx. 50 books from the collection of the late Eddie Fenwick to our library.

The Trustees undertook a major revision and update to the exhibits within 14 India Street: two new roller displays on "colour" and "electromagnetics" in the exhibition room; seven new wall panels in the library on Maxwell's other scientific achievements; and five new wall panels on his life and times in the upstairs former drawing room. These exhibits were generously sponsored by Lord Jenkin of Roding, Mr Basil Mahon and Schools from the Universities of Aberdeen, Edinburgh, Heriot-Watt and Glasgow.

MEETINGS AND EVENTS HOSTED AT 14 INDIA STREET

11/3/15, "Preserving Historic Structures on the Glasgow & South Western Railway" evening talk by Duncan Sooman to the Panel for Historical Engineering group, Institute for Civil Engineers.

9/4/15, "New Frontiers in the Characterization of Molecular Systems", first day of a two-day meeting organised by the Higgs Centre for Theoretical Physics.

21/4/15, "Gradient flows: from theory to application", International Centre for Mathematical Science evening meeting and wine reception,

27/5/15, Edinburgh University Graduates Association museum visit,

4/6/15, "Leibniz, Mathematics, and the Creation of the Universe", evening public lecture by Dr Lloyd Strickland,

22/6/15, Broughton History Society: Tour of house and presentation for twenty attendees

11/9/15, Evening visit for 60 participants from the IEEE EMC Compo 2015 Edinburgh Conference.

26/9/15, Doors open day,

28/10/15, "River, Railway & Ravine" Meeting of the Broughton History Society,

30/11/15, Annual Business Meeting of the Scottish Group of the ICE Panel for Historical Engineering Works,

28/12/15, Clerk Maxwell Cancer Research Fund AGM.

FUTURE PLANNING

We are still in the process of attempting to secure permission to mount explanatory plaques to accompany the statue to James Clerk Maxwell in George Street and to better highlight Maxwell's importance. We are also offering to supply copies of our new wall posters for display in selected Schools.

PRESENTATIONS

Presentations on James Clerk Maxwell were made to various groups visiting the house. Three of our Trustees gave external presentations on Clerk Maxwell: David Forfar to the Cramond Association; Professors Eilbeck and Forfar to the *Probus Group*; and Dr John Arthur on "150 Years of Maxwell's Equations" in November in Edinburgh.

MUSEUM VISITS

The number of visitors to the birthplace continued to increase in 2015 and exceed 360. We introduced a new visit request system, following the retiral from visit hosting by our Honorary President Professor David Ritchie, with hosting now shared between five of the Edinburgh based trustees. Major visit groups included 200 people who visited on the Edinburgh Doors Open Day and the 120 mentioned above (with many from overseas). In addition, we conducted 46 individually guided visits, for which the visitor profile was:

Australia 1	Italy 3	Romania 1
Brazil 1	Lebanon 2	S Africa 1
Denmark 1	Korea 2	Switzerland 7
Germany 7	Japan 2	USA 21
		UK & other 71