

CURRICULUM VITAE
21st July 2013
DAVID JOHN SOUTHWOOD

Personal Information

Personal details:

Date/Place of Birth 30 June 1945/Torquay (UK)

Marital Status Married

Nationality: British

Email: d.southwood@imperial.ac.uk (*work*)

Languages: English (native), French (qualified to A level, reading writing and conversation, very good), German (Inst. Ling. General), Spanish (O level, reading/writing very good, speaking good)

Private interests Reading, Walking, Railways, Film and Theatre

Professional Employment History

Currently: Senior Research Investigator: Imperial College, London, SW72AZ, UK.

Past Administrative Positions

Director of Science and Robotic Exploration, (July 15th 2008-30th April 2011)
European Space Agency, 8-10 Rue Mario-Nikis, 75738, Paris, Cedex 15,
France.

Director of Science, European Space Agency, Paris, France (May 2001-July 2008)

Head, Earth Observation Science Strategy, in Directorate of Applications, European
Space Agency, Paris, France (March 1999 - March 2000)

Head, Earth Observation Strategy, in Directorate of Science, European Space Agency,
Paris, France (October 1997 - February 1999)

Head of Physics Department (Blackett Laboratory), Imperial College, London.
(September 1994 - September 1997).

Head of Space and Atmospheric Physics Group (Space Physics 1984-1986), Physics
Department, Imperial College London (September 1984 - July 1990,
September 1995 – September 1997),

Academic Positions

Professor of Physics, Physics Department, Imperial College (October 1986 –
December 2008)

Reader in Physics, Physics Department, Imperial College (October 1981 to September
1986)

Lecturer, Physics Department, Imperial College, (August 1971 - September 1981)

Assistant Research Geophysicist, Institute of Geophysics and Planetary Physics,
UCLA, Los Angeles, Ca. USA (September 1970 - August 1971)

Research Assistant, Physics Department, Imperial College (October 1969 - August
1970)

Education:

Postgraduate: Imperial College, London SW7, 1966-1969,
D.I.C. and Ph.D. awarded in Physics
Undergraduate: Drapers Company Arts Exhibitioner,
Queen Mary College, London E.1, 1963-1966,
B.A., 1st Class Honours awarded in Mathematics
Secondary School: Torquay Boys Grammar School, Torquay, Devon
1956-1963 (W.H. Lord Mathematics Prize 1962)

Awards/Honours:

2012 .Doctor Honoris Causa, University of Bern, Switzerland
2012 President, Royal Astronomical Society
2011 Honorary D.Sc. University of Plymouth
2011 Sir Arthur Clarke Award, UK Space Agency
(for Exceptional Space Achievement)
2011 NASA Public Service Award
(Highest award to individual not employed by NASA)
2011 Fellowship of Royal Aeronautical Society
2008 Patron of British Science Fiction Foundation
2007 Gold Medal, European Aerospace Societies
2005 Silver Medal, Royal Aeronautical Society
2005, Associé Etranger de l'Academie Nationale de l'Air et l'Espace (France)
2003, Fellow, Queen Mary College, University of London
2000, Regent's Professor, University of California
1999 Academician, International Academy of Astronautics (Corresponding member,
1994)
1981, Fellow of American Geophysical Union
1981 James B. Macelwane Award of American Geophysical Union (for outstanding
contributions by a young scientist)
also: (Teaching/scholastic awards)
2012 American Geophysical Union award for excellence in refereeing
1992 Best 2nd year Undergraduate Lecturer (Physics, Imperial College)
1991 Best 1st year Undergraduate Lecturer (Physics, Imperial College)

Named Lectures:

2012 Archbishop Robinson Lecture, Armagh Observatory, N. Ireland (also 2012 Robinson Schools Lecture, The Royal School, Armagh)

2012 J. Tuzo Wilson Lecture, University of Toronto, Canada

2012 Thomas Tannahill Lecture, Astronomical Society of Glasgow

2011 Schuster Lecture, University of Manchester

2008, George Hay Memorial Lecturer, British Science Fiction Foundation

2005 Wilbur and Orvil Wright Lecture, Royal Aeronautical Society

2003 Herzberg Lecture, Canadian Association of Physicists.

2001 Kristian Birkeland Lecturer, Norwegian Academy of Sciences.

2001 Edinburgh Lecturer, “Frontiers” series, City of Edinburgh

1998, Leslie Bedford Lecturer, Royal Aeronautical Society

1992, Harold Jeffreys Lecturer, Royal Astronomical Society

Visiting Academic Appointments

Distinguished Visiting Scholar, Jet Propulsion Laboratory, Caltech, Pasadena, USA
(May 2011-present)

Visiting Professor, University of Plymouth, UK, (November 2011 – present).

Visiting Professor, Imperial College, London, (January 2008- September 2011)

Visiting Professor, Institute of Geophysics and Planetary Physics, UCLA (1980-2010)

University of California Regents’ Professor, UCLA (April – July 2000)

Visiting Scientist, International Space Science Institute, Berne, Switzerland (April 1997 and July-August 2000)

Visiting Fellow, Japanese Society for Promotion of Science, Tokyo University, (with additional lectures at Tohoku University, Kyoto University, Kyoto Sangyo University). (April 1987)

Visiting Scholar, Department of Astronomy, Boston University, Boston, Mass. USA (April 1986, April 1980)

Visiting Associate Professor, Institute of Geophysics and Planetary Physics (IGPP), UCLA (July 1978 - September 1979) *joint appointment with:* Department of Atmospheric Science, (September - December 1978), Department of Earth and Space Science, (January - March 1979)

Visiting Research Associate, Department of Atmospheric Sciences, UCLA (Summer 1977)

Visiting Associate Research Geophysicist, IGPP, UCLA (August - September 1976)

Visiting Senior Research Associate, Department of Space Physics and Astronomy, Rice University, Houston, Tx. USA (June - August 1976)

Visiting Research Associate, Physics Department, UCLA, (July - August 1973)

Boards/Committees (present)

Steering Board, UK Space Agency, 2011-2013
Advisory Council, Jet Propulsion Laboratory, Caltech, Pasadena, USA 2011-present
Councillor (trustee), Royal Astronomical Society, London, 2010-2011, President 2012-2014, previous service 1988-91, Vice-President, 1989-1991.
Chairman, Board of Trustees, Institute for Space Policy and Law, University of London 2010-present
Space Group Committee, Royal Aeronautical Society 2012-
Trustee, International Space Science Institute, Berne, Switzerland, 2001-2011
Trustee, National Space Centre, Leicester, England, 2001-present
Trustee, International Academy of Astronautics, Paris, 2001-2011
MIST (UK Magnetosphere, Ionosphere, Solar Terrestrial Physics) Council, 2010-present.
Advisory Board, National Centre for Earth Observation, Reading, 2012-present

Past Boards, Committees and Appointments (International)

European Space Agency

Chairman, Science Programme Committee, European Space Agency, 1993-1996.
Chairman, Space Science Advisory Committee, European Space Agency, 1990-1993.
Member, Space Science Advisory Committee, 1988-1989.
Past member of many peer review panels and expert committees for ESA.

Other Agencies/International

Chairman, EIROforum, (European International Research Organisations Forum) 2004-2005
Chairman, Science Advisory Committee, International Space Science Institute, Berne, Switzerland, 1995 – 2001
Sometime member of various ad hoc peer review boards and expert committees for other national/international agencies including European Commission, EC/Joint Research Centre, NASA, NSF (USA), Norwegian Research Council, Finnish Academy, University of Tokyo, etc.

ICSU (International Council of Scientific Unions) Organisations

COSPAR (ICSU Committee for Space Research)

Member of Council, 1995 – 2002.
Chairman, Commission D, Committee for Space Research (COSPAR), 1986-92
Executive Committee, Commission D, Committee for Space Research (COSPAR), 1982-6
COSPAR Meetings Committee, 1990-92
Chairman, COSPAR Nominations Committee, 1992-1996
COSPAR Reorganisation Committee (CORECU), 1989-92.

Chairman, Committee on Scientific Structure of COSPAR, 1994-6

International Union of Pure and Applied Physics

IUPAP Representative to COSPAR, 1995 - 2002

International Association of Geomagnetism and Aeronomy (International Union of Geodesy and Geophysics)

Co-Chairman, Division III, International Association Geomagnetism and Aeronomy, 1983-87

Reporter, Topic III-6 (Waves above 1 Hz) International Association for Geomagnetism and Aeronomy, 1979-83

Reporter, Topic III-5 (Magnetic Oscillations, Waves and Wave Particle Interactions), International Association for Geomagnetism and Aeronomy, 1975-79

American Geophysical Union

Member 1970, Fellow 1981.

Chair, Committee of Fellows, 1990-1992, Member, 1988-90;

Chair, Fleming Award Panel, 1988-90

Bowie Medal Committee 1996-1998, 2004-2006

Past Committees and Appointments (British)

British National Space Centre

Earth Observation Programme Board, 1992-94

Space Science Advisory Panel, 1992-1996

Space Science Programme Board, 1986-7

Science and Engineering Research Council

Particle, Space and Astronomy (PSA) Board 1993-1994

Astronomy and Planetary Sciences (APS) Board 1989-1993

Chairman, Solar System Science Committee 1992-1994

Chairman, Education, Training and Fellowships Panel, 1990-1992

Astronomy, Space and Radio (ASR) Board, 1983-6

Grants Committee, Astronomy and Planetary Science (APS) Board, 1986-7

Chairman: Theory Panel (ASR/APS Board) 1983-87, Member: 1981-82.,

Solar System Committee, ASR Board, 1980-3

Working Group on New Ground Based Facilities for Astronomy and Planetary Science, 1987-8

Chairman: Astronomy, Space and Radio Board In House Research Assessment Panel, 1985-6.

Chairman, Rutherford Appleton Laboratory In-House Research Assessment Panel 1983-5, 1990; Member 1981-5;

Chairman and Member of various other standing and ad hoc peer review panels

Natural Environment Research Council

Chairman, British Antarctic Survey Upper Atmospheric Sciences Review Panel 1996-1999, [Member, 1990-95].

Chairman, Geomagnetism Advisory Group (British Geological Survey and British Antarctic Survey), 1984-90 [Member, 1983].

Royal Society of London

Chairman, British National Committee for Space Research, (1997- 2002) [Member 1990-3].

Joint Royal Society - NERC Panel to examine Priorities for Earth Sciences up to 2000, (1987-8).

British National Committee for Geodesy and Geophysics, (1985-90).

Chairman: British National Sub-Committee for Geomagnetism and Aeronomy, (1986-90) [Member 1980-83]

British National Representative to IAGA (1986-90).

Chairman, Local Organising Committee, Sixth IAGA Scientific Assembly, Exeter, 1989.

Royal Astronomical Society

Council Member 2010-2012, 1988-91, President, 2012-2014, Vice-President, 1989-1991

Royal Astronomy Society Panel on Priorities for Astronomy in the UK for the period 1990-2000, 1985-6.

Institute of Physics

Institute of Physics, Plasma Physics Group Committee, 1984-7.

Standing Committee of Professors of Physics, 1994-7.

Editorial Boards

Planetary and Space Science, Associate Editor (Magnetospheres) 1992-8, Editorial Board from 1985

Editorial Board; Space Science Reviews, 1989 to present

Associate Editor, Journal of Geophysical Research (Space Physics), 1981-3

COSPAR Publications Committee (Advances in Space Research) 1986-1990

Scientific Publications

More than 200 scientific papers have been published since 1968 on topics in solar terrestrial physics, planetary science, Earth observation. List appended.

Invited/Keynote Conference papers, Public Lectures

Since 1968, almost 300 invited papers or lectures have been given on solar terrestrial physics, planetary science, Earth observation, Space Applications, and allied science policy. In the same period nearly 250 papers have been published in academic journals. Lists are appended.

Science Communication

Many popular lectures on Space Research have been given to various public, school undergraduate and other audiences (typically ~ 6/yr in the last decade). Lectures on space science have been given at many schools and astronomical societies. Public lectures have been given in most of the 19 Members States of ESA (in English or French). Lecture series on topics such as Space Science, Space Use, Earth Observation have been given in Hong Kong, and elsewhere in Far East. British Council sponsorship has been given to speak in Australia, Chile, Germany, Hong Kong, Malaysia, Poland.

I have much experience of broadcasting (both radio and TV – from Apollo in 1960's to events like landing on Titan and launching Venus Express in 2005) in many countries. Furthermore, I have a large amount of experience of interaction with the printed media (professional aerospace press, newspapers and magazines and popular science press), including experience of crisis management.

Policy issues have been addressed in a large variety of professional, political and industrial forums (UK House of Commons Select Committee on Science and Technology, UK Foundation for Science and Technology, UK Industrial Space Committee, Eurospace, Sénat de France, UK Parliamentary Space Committee, UK Institute of Physics, International Astronautics Federation, European space policy meetings).

DAVID JOHN SOUTHWOOD

INVITED PAPERS/PUBLIC LECTURES

(titles in French or Spanish given in that language)

1. *Theory of U.L.F. Waves in the Magnetosphere*, I.A.G.A. General Assembly, Madrid, Spain, September 1969.
2. *Low Frequency Interactions*, E.S.R.O. Geostationary Satellite Symposium, Lyngby, Denmark, November 1969.
3. *Low Frequency Interactions*, Upper Atmosphere Currents and Electric Fields Conference, Boulder, Colorado, August 1970.
4. *U.L.F. Waves in the Magnetosphere: Theory and Experiment*, Theory of Micropulsations Symposium, I.U.G.G. General Assembly, Moscow, U.S.S.R., August 1971.
5. *Magnetic Field Variations at Micropulsation Frequencies*, Advanced Study Institute, Earth's Magnetospheric Processes, Cortina, Italy, September 1971.
6. *Wave and Boundary Measurements with Mother-Daughter Spacecraft*, E.S.R.O. Future Programme Meeting, Frascati, Italy, March 1973.
7. *Recent Studies in the Theory of Micropulsations*, International Association of Geomagnetism and Aeronomy. 1st Scientific Assembly, Kyoto, Japan, September 1973.
8. *Progress in Waves, Wave-particle-interactions and magnetic oscillations*, Reporter Review, I.A.G.A. General Assembly, Seattle, Wa., September 1977.
9. *Plasma Waves in the Magnetosphere*, Royal Astronomical Society M.I.S.T. Meeting, Southampton, April 1978.
10. *Pulsations at the Substorm Onset*, Chapman Conference on Magnetospheric Substorms, Los Alamos, N.M., October 1978.
11. *Magnetospheric Current Systems*, Air Force Geophysics Laboratory Workshop on the Geomagnetic Field, Bedford, Mass., April 1979.
12. *Magnetopause Kelvin Helmholtz Instability*, Magnetospheric Boundary Layers Conference, Alpbach, Austria, June 1979.
13. *Hydromagnetic waves, parallel currents and geomagnetic pulsations*, Workshop on Electric Fields at High and Low Altitudes, Lindau, Federal Republic of Germany, October 1979.
14. *Particle Behaviour in Low Frequency Pulsations*, I.A.G.A. Scientific Sessions IUGG General Assembly, Canberra, Australia, December 1979.
15. *Progress in Waves, Wave-Particle-Interactions and Magnetic Oscillations*, Reporter Review, I.A.G.A. Division III I.U.G.G. General Assembly, Canberra, Australia, December 1979.
16. *Io's interaction with the Jovian Magnetosphere*, Royal Astronomical Society M.I.S.T. Meeting, November 1980.
17. *Results from the ISEE spacecraft*, Royal Astronomical Society M.I.S.T. Meeting, Cambridge, April 1981.
18. *Magnetospheric Plasma Waves above 1 Hz*, Reporter Review, I.A.G.A. General Assembly, Edinburgh, August 1981.
19. *Wave-particle interactions in ULF waves* (co-authored with M.G Kivelson) Joint URSI/IAGA Symposium, General Assembly, Edinburgh, August 1981.
20. *Waves in Magnetospheric Plasmas*, International Symposium on Solar Terrestrial Physics, Ottawa, May 1982.
21. *Circulation in the Magnetosphere*, European Geophysical Society, Leeds, August 1982.

22. *Magnetohydrodynamic waves and ion cyclotron waves in magnetospheric plasmas*, Royal Astronomical Society/Institute of Physics Joint Discussion Meeting on Waves in Plasmas, January 1983.
23. *The role of hydromagnetic waves in the terrestrial magnetosphere*, keynote paper, 6th IMS European Workshop, Windsor, England, May 1983.
24. *The Io-Jovian Magnetosphere interaction*, 5th Conference on Jovian and Saturnian Magnetosphere, Cambridge, Mass., June 1983.
25. *Waves above 1 Hz*, Reporter Review, I.U.G.G. Assembly, Hamburg, August 1983.
26. *The formation of the plasmopause*, Autumn Royal Astronomical Society M.I.S.T. Meeting, London, November 1983.
27. *Our understanding of magnetospheric plasma waves: The impact of the I.M.S.*, Rapporteur overview, Solar Terrestrial Physics Symposium, Graz, Austria, June 1984.
28. *Theoretical aspects of the Ionosphere, Magnetosphere Solar Wind Interaction*, Symposium on the Physics of the Magnetosphere-Ionosphere Connection, COSPAR XXV Plenary Meeting, Graz, Austria, July 1984.
29. *An introduction to the magnetosphere*, Summer School in Solar System Plasma Physics, Imperial College, September 1984.
30. *Hydromagnetic Waves*, Symposium to mark J.W. Dungey's retirement, Imperial College, September 1984.
31. *Compressional perturbations of the magnetosphere as sources of Pc5 waves at discrete frequencies*, (co-authored and presented by M.G. Kivelson), American Geophysical Union, Fall Meeting, San Francisco, December 1984.
32. *Hydromagnetic Waves*, Joint Solar Physics Group/Institute of Physics Plasma Physics Group Meeting, January 1985.
33. *Magnetohydrodynamic Wave-Particle Interactions*, Wave-Particle Interaction Workshop, Air Force Geophysics Laboratory, Bedford, Mass., April 1985.
34. *Small scale boundary structures*, American Geophysical Union, Baltimore, MD, May 1985 (with R.P. Rijnbeek).
35. *Hydromagnetic wave theory and the contribution made by J.W. Dungey*, 5th Scientific Assembly of the International Association for Geomagnetism and Aeronomy, Prague, August 1985.
36. *The AMPTE Active Experiments*, Reporter Review, IAGA Division III, Prague, August 1985.
37. *Magnetic fields in real and artificial comets*, R.A.S. Out-of-Town Meeting, Cardiff, September 1985.
38. *Flux Transfer Events*, AMPTE Joint British-German Workshop, Abingdon, November 1985.
39. *Dual spacecraft measurements of ion release physics*, Invited review, American Geophysical Union, San Francisco, December 1985.
40. *Solar and Terrestrial plasma physics: the Case for the First ESA Cornerstone*, ESA presentation to the Scientific Community, Darmstadt, F.R.G., January 1986.
41. *Comparative magnetotails*, Wrap up review, COSPAR Solar Wind Interactions Symposium, Toulouse, July 1986.
42. *Cometary plasma physics*, Inst. of Physics Plasma Physics Annual Conference, Oxford, July 1986.
43. *STP from the Polar Platform*, Royal Society meeting on the Uses of the Space Station, January 1987.
44. *The Oscillating Magnetosphere*, Spring MIST meeting, York University, April 1987.
45. *Hydromagnetic wave coupling*, ESLAB symposium, Norway, June 1987

46. *An introduction to the magnetosphere*, Summer School in Solar System Plasma Physics, Royal Holloway and Bedford New College, September 1987.
47. *Magnetosphere and Ionosphere*, SERC Astronomy Summer School, Birmingham, September 1987.
48. *Soviet Mars exploration*, Royal Astronomical Society meeting on Planetary Exploration, November 1987.
49. *'To the imperial few - the auroral light'*, Inaugural lecture, Imperial College, March 1988
50. *Magnetopause coupling processes and ionospheric responses: a theoretical perspective*, Royal Society Discussion Meeting on The Magnetosphere, the high-latitude Ionosphere, and their interactions, May 1988.
51. *What are flux transfer events?*, American Geophysical Union, Baltimore, Md. May 1988.
52. *Reconnection near the terrestrial magnetopause*, Symposium 13, XXVII COSPAR Plenary Meeting, Helsinki, Finland, July 1988
53. *Solar Terrestrial Science*, in British Space Research - Quo Vadimus?, Royal Society Discussion Meeting, October 1988
54. *The Phobos Mission* at UK Geophysical Assembly/MIST Meeting, Royal Holloway and Bedford New College, Egham, March 1989
55. *Flux Transfer Events, Ionospheric Vortices and Associated Phenomena*, Invited Review, Division 2/3 Symposium, IAGA 6th Scientific Assembly, Exeter, August 1989.
56. *Flux Transfer Events, Pressure Pulses, Ionospheric Vortices and Associated Phenomena*, Invited Review, GEM (Global Environmental Modeling) Workshop, National Science Foundation, University of Maryland, October 1989.
57. *The Saturnian Magnetosphere*, Royal Astronomical Society Discussion Meeting, "The Saturnian System" November 1989.
58. *Recent Magnetic Field Measurements Near Mars*, Royal Astronomical Society Discussion Meeting, "Space Studies of Solar System Magnetic Fields", January 1990
59. *Multispacecraft measurements at varying scale-lengths - the Cluster/Regatta opportunity*, Int. Workshop on Space Plasma Physics Investigations by Cluster and Regatta, Graz, Austria, February, 1990.
60. *The Plasma Environment of Io*, Invited review, COSPAR, The Hague, Netherlands, June 1990
61. *Flux Transfer Events, Pressure Pulses, Ionospheric Vortices and Associated Phenomena*, Invited Review, 7th Quadrennial Solar Terrestrial Physics Symposium, The Hague, Netherlands, June 1990.
62. *MHD Wave Propagation in the Magnetosheath: Recent Results*, Invited Review, 7th Quadrennial Solar Terrestrial Physics Symposium, The Hague, Netherlands, June 1990.
63. *The Dual Technique Magnetometer for the Cassini Orbiter spacecraft*, Symposium on the Cassini-Huygens mission to Saturn, European Geophysical Society, Wiesbaden, Germany, April 1991.
64. *The first results from the Galileo spacecraft magnetometer experiment*, Symposium on the first results from the Galileo and Ulysses missions, European Geophysical Society, Wiesbaden, Germany, April 1991.
65. *Space Science Prospects in the Next Century*, Les Apports de l'Exploration de l'Espace à l'Humanité, meeting of L'Academie de l'Air et de l'Espace, Paris, June 1991.
66. *The Jovian Io Torus Interactions*, Invited Review, IUGG General Assembly (IAGA Div III), Vienna, August 1991
67. *MHD Waves in the Terrestrial Magnetosheath*, Invited Review, IUGG General Assembly, (IAGA Div III), Vienna, August 1991

68. *Field Aligned Currents and Magnetosphere Ionosphere Coupling*, Invited Review, IUGG General Assembly, (IAGA Div II), Vienna, August 1991
69. *Patterns in the Sky: What we can learn about the magnetosphere from the ionosphere*, Invited Review, American Geophysical Union, Fall meeting, San Francisco, Ca. December 1991.
70. *The Galileo Earth Encounter*, Royal Astronomical Society Discussion Meeting, "Correlation of Spacecraft and Ground Data", January 1992.
71. *The Oscillating Magnetosphere*, The 1992 Harold Jeffreys Lecture, Royal Astronomical Society, March 1992.
72. *Non-linear Vortex Motions in the High Latitude Ionosphere*, Workshop on Solar Terrestrial Coupling Physics, Graz, Austria, September 1992
73. *Waves in the Magnetosheath*, Chapman Conference on ULF Waves, Williamsburg, Va., September 1992 (with A Fazakerley)
74. *Energy Transfer by Hydromagnetic Waves: the Magnetosphere and the Corona Compared*, UK Solar Physics Meeting, NAM, Leicester, April 1993
75. *Ionosphere, Magnetosphere and Solar Wind Coupling*, Australian National STEP Meeting, July 1993
76. *The Jovian Magnetosphere - A Comparison: Pre- and Post-Ulysses Flyby*, Symposium on Comparative Magnetospheres, COSPAR, Hamburg, 1994
77. *The Jovian Magnetosphere Post-Ulysses*, Magnetospheres of Outer Planets Conference, Graz Austria, August 1994
78. *The Magnetic Field of Mercury*, Workshop on Mercury Orbiter, Imperial College, May 1995
79. *The Jovian Magnetosphere Post-Ulysses*, International Association of Geomagnetism and Aeronomy, IUGG, Boulder Co. July 1995.
80. *The Jovian Magnetosphere Post-Ulysses*, Magnetospheres of Outer Planets Conference, Graz Austria, August 1994
81. *Magnetic Fields*, International Summer School on Planetary Science, L'Aquila, Italy, September 1995.
82. *Europe's Future Space Science Programme*, Symposium 20 Years of ESA Convention, Deutches Museum, Munich, September 1995.
83. *Fundamental Physics and the European Space Agency*, Fundamental Physics in Space, Imperial College, London, October 1995
84. *Magnetic signatures of Asteroids*, Royal Astronomical Society, December 1995.
85. *Mercury's interaction with the solar wind*, Royal Astronomical Society, February 1996.
86. *Twenty-five Years of Solar Terrestrial Physics Research*, European Geophysical Society, Den Haag, Netherlands, May 1996.
87. *Fundamental Physics in the European Space Agency and Cospar*, COSPAR symposium on Fundamental Physics in Space, Birmingham, UK, July 1996.
88. *The Cultural and Political Aspects of a Lunar Space Programme*, Alpbach Summer School in Space Science, Alpbach Austria, July 1996.
89. *The Significance of Svalbard for Space Physics*, Symposium to mark the opening of EISCAT Svalbard Radar, Longyearbyen, Svalbard, Norway, August 1996.
90. *ESA Member State Domestic Space Programmes*, L'Academie Astronautique Française, Workshop on "Future European Space Science Missions", Paris, November 1996.
91. *New results from the Galileo spacecraft magnetometer*, The Three Galileos, the Man, the Spacecraft, the Telescope, Padua, Italy, January 1997.

92. *Cosmic Research at Imperial College since the time of Arturo Duperier*, Duperier Centenary Symposium, Madrid, Spain, February 1997.
93. *Non-linear Mirror Mode Waves*, Symposium of Non-linear Waves, Köln, Germany, February 1997.
94. *The significance of the polar cap boundary in magnetospheric physics*, NATO Advanced Study Institute, Longyearbyen, Svalbard, Norway, June 1997.
95. *Ionosphere, Magnetosphere, Solar wind coupling*, IAGA, Uppsala, Sweden, August 1997.
96. *Frequency Doubling in Ultralow Frequency Wave Signals*, IAGA, Uppsala, Sweden, August 1997.
97. *New Results from the Galileo spacecraft magnetometer*, International Astronomical Union, Kyoto, August 1997.
98. *Europe in Space: Why are we there?* Royal Aerospace Society 1998 *Leslie Bedford* Lecture, November 1998.
99. *The Magnetospheres of Saturn and Jupiter*, Outer Planets Symposium, Nantes, France, May 1998.
100. *The New ESA Strategy in Earth Observation*, European Association of Remote Sensing laboratories Annual Conference, Enschede, Netherlands, May 1998.
101. *The ESA Earth Watch Programme*, JRC/SAI Annual Users Conference, Baveno, Italy, May 1998.
102. *Progress on Earth Watch*, EARSC Annual General Meeting, Brussels, Belgium, June 1998.
103. *ESA's new Living Planet Programme*, Malaysian Remote Sensing Society, Kuala Lumpur, Malaysia. (Also at Malaysian National University.) November 1998.
104. *Programmatics and Future Strategies in Earth Observation and Planetary Science*, Keynote Address, 32nd ESLAB Symposium, 'Remote Sensing Methodolgy for Earth Observation and Planetary Exploration', Noordwijk, Netherlands, September 1998.
105. *Small Satellites for Earth Observation*, Keynote Address, 2nd IAA Symposium on Small Satellites for Earth Observation, Berlin, April 1999.
106. *The New ESA Earth Observation Programme*, European Association of Remote Sensing Laboratories Annual Conference, Valladolid, Spain, May 1999.
107. *The Challenges of the Future ESA Earth Observation Programme*, Frontiers of Science and Measurement, National Physical Laboratory, UK, June 1999.
108. *Understanding the Earth System; the challenge for ESA's Earth Observation programme*, Zürcher Geographisches Kolloquium, University of Zurich, October 1999.
109. *A European Remote Sensing Information System: A Response to GMES*, Eurisy Symposium, Brussels, March 2000.
110. *Why observe the Earth? Chaos, Conflict and Resolution?* UCLA IoE-IGPP Public Seminar, Los Angeles, May 2000.
111. *The Programmes of the European Space Agency in Geophysical, Solar and Planetary Sciences*, American Geophysical Union Fall Meeting San Francisco, December 2000.
112. *The Future Plans for Space Science of the European Space Agency*, European Astrofest , London, 3rd February 2001,
113. *What Use is Space Science?* Stanford University, California, USA, March 2001,
114. *Science and Operational Systems*, ESSC GMES workshop, Brussels, March 2001
115. *Per Radar ad Cluster: interactions with T.B. Jones*, Leicester U. April 2001
116. *Forty Years of Waiting for Cluster, scientific and personal memories*, Woolliscroft memorial symposium, Sheffield, April 2001

117. *The Importance of Public Outreach to Space Activities*, ISU, Bremen, August, 2001
(repeated in Pomona, USA, August 2002)
118. *L 'Avenir de la Science Spatiale Européenne*, Liège, Sept 2001
119. *Jupiter's Dynamic Magnetosphere*, (with M. G. Kivelson, K. K. Khurana, C. T. Russell, R. J. Walker, and R. Prangé) 6th Jupiter Magnetosphere Conference, Boulder, Colorado, July 2001
120. *The Cassini flyby of Jupiter: Correlation of Cassini and Galileo Magnetometer Data*, International Association of Geomagnetism and Aeronomy, Scientific Assembly, Hanoi, Vietnam, August 2001
121. *The Interaction of the Solar Wind with Jupiter's Magnetosphere* (with M.G. Kivelson), International Association of Geomagnetism and Aeronomy, Scientific Assembly, Hanoi, Vietnam, August 2001
122. *The Future of the ESA Space Science Programme*, University of Oslo, August 2001
123. *Kr. Birkeland: Science for ever, Lessons for today*, 2001 Birkeland Lecture, Norwegian Academy of Sciences, Oslo, September, 2001
124. *The Space Science Achievements of the European Space Agency*, Public Lecture, Armagh Observatory, N. Ireland, October 2001
125. *Space Science for the Public Good*, Foundation for Science and Technology, Royal Society, London, October 2001
126. *Space: its Exploration and its Exploitation in a Modern Society*, Institute of Physics, London, England, October 2001
127. *The Cassini flyby of Jupiter: Correlation of Cassini and Galileo Magnetometer Data* (with Michele Dougherty, and Margaret Kivelson), UK national MIST meeting, November 2001
128. *Space Exploration in a Modern Society*, 2001 Edinburgh Lectures, Edinburgh, 2001
129. *Forty Years of Waiting for Cluster, scientific and personal memories*, Royal Astronomical Society, November 2001 *Y a-t-il un avenir pour les Science Spatiales en Europe ?* 2001, l'Odysée de l'Espace, UNESCO, Paris, December 2001
131. *La Science dans l'espace au XXIème siècle*, l'Odysée du Ciel et de l'Espace, Cité des Sciences et de l'Industrie, Paris, December 2001
132. *Future Perspectives on the European Space Science Programme*, XEUS symposium, Max-Planck-Institut für Extraterrestrische Physik, Munich, March 2002 *Future Perspectives for Solar Science in the European Space Programme*, Stereo Workshop, March 2002
134. *Integral et la Science Spatiale Européenne*, Inauguration of the Integral Science Data Centre, Versoix, Switzerland, April 2002
135. *The ESA Science Programme*, European Geophysical Society, Nice, April 2002
136. *The Thin Magnetopause Current Layer: The history of ideas*, European Geophysical Society, Nice, April 2002
137. *The Cassini flyby of Jupiter: Correlation of Cassini and Galileo Magnetometer Data*, (with Michele Dougherty and Margaret Kivelson) European Geophysical Society, Nice, April 2002
138. *Don't forget the Robots!*, International Space University Annual Symposium, Future Exploration, International Space University, Strasbourg, June 2002
139. *The High-Energy Astronomy Programme of ESA*, International Advanced School, Leonardo da Vinci, CNR, Bologna, Italy, June 2002
140. *ESA and Outer Planets Science*, Conference on Outer Planets Exploration, Lisbon, Portugal, June 2002
141. *Space Science In Europe: What are the prospects? - and why should we achieve them?* Rutherford and Appleton Laboratory Public Lecture, June 2002

142. *Perspectives of the European Space Science Programme*, ASA Summer School, Alpbach, Austria, July 2002
143. *European Perspectives on MOP Science*, Magnetosphere of Outer Planets Conference, Applied Physics Laboratory, Md., USA, July 2002
144. *The returns that Space Science brings to society and the need for government funding*, EADS Annual Young Managers Conference, Munich, Germany, September 2002
145. *Cosmic Vision 2020: a source for inspiration for the public*, Inauguration of Vienna Planetarium, Vienna, Austria, November 2002
146. *Space Science: What is Europe doing and why does it do it?* Australian Institute of Physics, Public Lectures in U. of Sydney, U. of Melbourne and U. of Newcastle, March 2003
147. *ESA Space Science, A review of current concerns*, Space Studies Board, National Research Council, Washington, USA, March 2003
148. *Losing the Io plasma: Local time variations of magnetospheric structure and the development of the Jovian outer magnetospheric maelstrom* (with M.G. Kivelson), European Geophysical Society, Nice, France, April 2003
149. *ESA Space Science, A review of current concerns*, European Geophysical Society, Nice, France, April 2003
150. *Space Science, Taking a satellite from cradle to grave and beyond*, Imperial College Alumni, ESTEC, Noordwijk, Netherlands, May 2003
151. *Space Near and Far, Exploring the Universe and Our Place in It*, Herzberg Lecture, Canadian Association of Physicists Annual Congress, Prince Edward Island, Canada, June 2003
152. *Science in Space: Exploring a New Frontier*, Armagh Planetarium, Armagh, Northern Ireland, August 2003.
153. *Reconnection in the Magnetopause, Magnetic Reconnection and the Dynamic Sun*, in celebration of Eric Priest's 60th Birthday, St Andrew's, Scotland, Sept 2003.
154. *Managing in ESA*, ESA Management Development Seminar, Brussels, September 2003
155. *Europe's Cosmic Vision*, ANTARES Seminar, Helsinki, Finland, October 2003
156. *The Significance of Magnetospheric Physics to EISCAT*, Royal Astronomical Society, Phil Williams Memorial Meeting, November 2003
157. *MHD Waves in the Magnetosphere*, Royal Astronomical Society Discussion Meeting, Waves in the Solar Corona and Magnetosphere, January 2004
158. *Science in Space: Why do we do it?* 2004 Astronomy Ireland Lecture, Dublin, Ireland, January 2004
159. *Planck: Europe's mission to map the Cosmic Microwave Background*, International Planck Symposium, Orsay, France, February 2004
160. *Cassini/Huygens, the next steps towards the outer planets*, Titan from Discovery to Encounter, ESTEC, Netherlands, April 2004
161. *European Space Science*, Berlin International Air Show (ILA), Schönefeld, Berlin; May 2004
162. *Science Spatiale en Europe*, Rencontres du Sénat, Sénat de France, Paris, July 2004
163. *Keynote Address*, Birth, Life and Death of Stars, Alpbach Summer School, July 2004
164. *MHD waves in the Magnetosphere*, 3rd Alfvén Conference, Steamboat Springs, Colorado, USA, August 2004
165. *Space et l'Europe*, Ecole Polytechnique, Jour de l'Europe, September 2004
166. *Space Science and Exploration and the Public: Education and Communication*, 5th European Space Policy Workshop, KU Leuven < Belgium, September 2004

167. *Cosmic Vision*, Presentation to Swedish Parliamentarians, Stockholm, Sweden, October 2004
168. *Space in a Modern Society: Inspiration and Utility*, Public Lecture, Krakow, Poland, October 2004
169. *ESA Cosmic Vision Programme*, Presentation to the Polish space science community, Warsaw, Poland, October 2004
170. *Centrifugal instability in Jupiter's outer magnetosphere*, Meeting in honour of Vytenis Vasylunas, Lindau Germany, November 2004
171. *Space Science :Why do we need to do it?* Institute of Physics, Manchester England November 2004
172. *Planetary Exploration and Europe: Where next?* British Council, Athens Greece, January 2005
173. *Europe goes to the planets: Where we are now?* European Astrofest, London England, February 2005
174. *Moon, Mars, Titan and beyond; Europe's new steps into space* Public Lecture. La Trobe University, Melbourne, Australia. March 2005
175. *Cassini-Huygens:and the ESA Programme* Royal Astronomical Society, London England, March 2005
176. *Moon, Mars, Titan and Beyond, Where is Europe going in space?* CERN, Geneva Switzerland, April 2005
177. *ESA's Cosmic Vision: Where are we now?* European Geophysical Union, Vienna Austria, April 2005
178. *ESA's Cosmic Vision:* UK Parliamentary Space Committee, ESA HQ, Paris France, June 2005
179. *Space Science: Why does a modern society need it?* Sheffield, UK, June 2005
180. *ESA's Cosmic Vision*, Keynote address, Alpbach Summer School, July 2005
181. *Future Outer Planet Exploration*, Magnetospheres of Outer Planets Conference, Leicester UK, July 2005
182. *Two Modes of Centrifugal Instability*, Magnetospheres of Outer Planets Conference, Leicester UK, July 2005
183. *Titan and the Imagination: How far is reality from Science Fiction?*, WorldCon, World Science Fiction Conference, Glasgow, UK, August 2005
184. *Moon, Mars, Titan and Beyond*, Federation of Astronomical Societies, Institute of Astronomy Cambridge, October 2005
185. *Space Science in Europe*, Opening address at ADASS XV - El Escorial, Spain, October 2005
186. *Cosmic Vision: Perspectives pour le Programme Scientifique de L'ESA*, Grand Seminaire de L'Obsertavtoire Midi-Pyrenées, OMPTOB, Toulouse, France October 2005
187. *Mars, Titan et au delà*, Grand seminaire de L'Obsertavtoire Midi-Pyrenées, Mairie de Toulouse, Toulouse, France October 2005
188. *Science Spatiale dans l'Europe* Seminar, Orsay, France
189. ***Mars, Titan and Beyond.....*** Wilbur and Orvil Wright Lecture RAeS, London, December 2005
190. *Titan, Mars and beyond*, Crayford Astronomical Society February 2006
191. *Titan, Mars and beyond*, Eastbourne Astronomical February 2006
192. *Science Spatiale dans l'Europe* Grand Seminaire, Observatoire Midi-Pyrenées, Toulouse France, February 2006

193. *Titan, Mars et au-delà* Seminaire au grand public, Mairie de Toulouse, Toulouse, France February 2006
194. Witness, Citizens Jury on Space Exploration, Demos, Dana Centre, London, March 2006
195. *Europe exploring space*, British School in the Netherlands, The Hague, NL, March 2006
196. *Mars, Titan and beyond*, Public lectures in Armagh, Dublin, March 2006
197. *ESA and India – the experience of cooperation*, Arianespace/India 20th anniversary of Apple launch, Paris June 2006
198. Keynote address, ISU Summer Session opening, Strasbourg, France, July 2006
199. ESA spokesman, Round Table on "Establishing an Approach and a Framework for International Science Cooperation in the New Age of Exploration", COSPAR, Beijing, China, July 2006
200. *Space Science in Society* Plenary session on "Impact of Space on Society" International Astronautics Congress, Valencia, Spain, October 2006
201. *Saturn's magnetic rotation: an update and an explanation*, Royal Astronomical Society, London, October 2006
202. *Space Science in Europe*, Plenary talk, Australian Institute of Physics, Brisbane, Australia, (similar talks at Newcastle, Melbourne)
203. *La rotation magnétique dans la Magnétosphère saturnienne*, Seminar, Ecole Normale Supérieure, Paris, France, February 2007
204. *Space Science and Exploration*, UK Space Conference (BROHP), Charterhouse, Godalming, UK, April 2007
205. *Saturn's magnetic field*, International School of Space Science, L'Aquila, Italy, April 2007
206. *Big Shots & Space Shots*, Festspeil for Colin Carlile, Sardinia, Italy, May 2007
207. *Space exploration prospects in Europe*, Space Nuclear Conference 07, American Nuclear Society, Boston USA, June 2007
208. *Space Science and Exploration: Thoughts for ESPI*, Keynote Speech, European Space Policy Institute (ESPI), Vienna, Austria, September 2007
209. *Table ronde et conclusion*, 50 Ans de l'Éspace, Sénat de France, Paris, France, October 2007
210. *Space Science and Exploration*, Crayford Manor astronomical society, Bexley, UK, November 2007
211. *Astronomy in Space*, Royal Academy of Spain, Madrid, January 2008
212. *ESA's Cosmic Vision*, Departmental Seminar, University of Exeter, UK, February 2008,
213. *What Europe is doing in Space*, Plymouth Astronomical Society, Plymouth UK, February 2008
214. *The Cassini-Huygens mission to Saturn and Titan*, Kings College School, Wimbledon, UK, February 2007
215. *50 Years of Space Science*, Eastbourne Astronomical Society, Eastbourne, UK, March 2008
216. *Space Science in Europe*, UK Space Conference, UK Space Conference (BROHP), Charterhouse, Godalming, UK, March 2008
217. *Strategy for CV 2015-2025*, Closing Address, XEUS Workshop, ESTEC, Netherlands, March 2008
218. *How much fiction is there in science?* George Hay Memorial Lecture, British Science Fiction Foundation, EasterCon, London UK, March 2008 (also round table on Alternative History)
219. *Cosmic Vision: Future Space Science for Europe*, UK and Ireland National Astronomy Meeting, Belfast, N. Ireland, April 2008

220. *ESA's Cosmic Vision: the prospect ahead* European Geophysical Society, Vienna, Austria, April 2008
221. *Introduction The X-Ray Universe*, 10 Years of XMM-Newton Granada Spain, May 2008
222. *Exploration, Science, Applications, L'ESA Aujourd'hui*, 40th Anniversary ESRO 2 , CNES, Paris France, June 2008
223. *Mars Sample Return as a goal of Space Agency Exploration*, International Mars Sample Return Conference, Paris, France, July 2008
224. *Space Exploration*, Keynote Address, Alpbach Summer School, Alpbach, Austria, July 2008
225. *Europe (and me) in Space, a personal history*, COSPAR Symposium 3.5 : From ISEE to Cluster-Space Plasma Physics comes out of age, COSPAR Assembly, Montreal Canada July 2008
226. *L'ESA et sa contribution au JWST*, Inauguration of James Webb Space telescope exhibit, Montréal, Canada, July 2008
227. *Saturnian Magnetic Cam Fields*, COSPAR Symposium B03 (Outer Planet Magnetospheres), COSPAR Assembly, Montreal Canada July 2008
228. *Space Science in Europe*, Northampton Natural History Society, Northampton, UK, August 2008
229. *Cosmic Vision: Perspectives for the Future*, Department Seminar Institut d'Astrophysique de Paris, Paris, 2008
230. *European lunar and planetary Missions*, Plenary Event, Lunar and Planetary Missions: Science and Exploration International Astronautics Federation, Glasgow, UK, September 2008
231. *Space in a Modern Society*, Electronic and Control Engineering Departmental Seminar, University of Sheffield, UK, December 2008
232. *ESA's Cosmic Vision*, Inauguration of International Year of Astronomy, UNESCO, Paris, France, January 2009
233. *Felicitaciones del ESA.*, Apertura del Año Internacional de Astronomía en España, Madrid, Spain January 2009
234. *Space Exploration*, Kings College School, Wimbledon, UK, February 2009
235. *Space in a Modern Society*, Public lecture, St Patrick's Triam, Armagh, N. Ireland, March 2009
236. *European Space Science, Where are we now?* Public Lecture, Astronomy Ireland, Trinity College, Dublin, March 2009.
237. *European Space Science, Where are we now?* Public Lecture, Association Pro-ISSI, Bern, Switzerland, March 2009.
238. *Overall ESA Mars Robotic Exploration program and approach*, Belgium Space Office Community meeting, Brussels, March 2009.
239. *Report on European Space Science and Exploration*, UKSEDS Plenary Session, UK Space Conference, Charterhouse, UK, April 2009
240. *European Space Science, Where are we now?* Joint European National Astronomy Meeting (JENAM), RAS/EAS, University of Hertfordshire, UK, April 2009
241. *Herschel and Planck –Europe's next flagship missions*, STFC Presentation of Herschel-Planck, Westminster Hall, UK, May 2009.
242. *European Space Science, What is going on now?* Plymouth Astronomical Society, Plymouth, UK. May 2009
243. *Herschel and Planck –Europe's next flagship astronomy missions*, Public Lecture, Royal Aerospace Society, London, UK, May 2009.

244. *Space Discovery and Exploration*, Parliamentary Seminar on Space, Portcullis House, Westminster, UK. May 2009
245. *L'Europe et l'Exploration Spatiale de l'Univers, Où sommes-nous aujourd'hui?* (Conférence publique conjointe avec Geneviève Debouzy sous l'égide de l'Académie Nationale de l'Air et l'Espace), Mediapole, Toulouse, France May 2009
246. ***What's the use of the European Space Agency?*** Oxford Union, University of Oxford, UK, June 2009
247. *Europe in Space*, Address to Czech Space Science Community, Prague, Czech Republic, June 2009.
248. *What Harwell can mean to ESA and what ESA means to Harwell*, Inauguration of the ESA Harwell Centre, London, UK, July 2009.
249. *Programme Perspective, Outer Planets Science and ESA*, Magnetospheres of Outer Planets, Köln, Germany, July 2009
250. *European plans for Mars Exploration*, Soffen Memorial Panel, International Space University (summer session), Ames Research Center, Ca. USA. August 2009.
251. *Magnetism and Rotation at Saturn: The puzzles produced by the Cassini space mission*, Applied Mathematics Department, University of Sheffield, Sheffield, UK.
252. *Space Science and Space Exploration in a Modern Society*, Keynote Address, inauguration, Advanced Space Concepts Laboratory, Faculty of Engineering, University of Strathclyde, Glasgow October 2009
253. *Space and Space Exploration: for what it's worth.....* UK Students for the Economic Development of Space (UKSEDS), University of Surrey, November 2009
254. *ESA Science and Robotic Exploration programme perspectives*, European Astronaut Centre, Cologne, Germany, October 2009.
255. *ESA and what it is like to work there*, Physics and Astronomy Department, Undergraduate careers lecture, University of Southampton, UK, December 2009
256. *The ESA Space Science Programme* Physics and Astronomy Department, University of Southampton, UK, December 2009
257. *Astronomy and Exploration in the Space Age*, Public Lecture, Institut fuer Experimentelle und Angewandte Physik, University of Kiel, December 2009
258. *Astronomy and Exploration in the Space Age*, Departmental Colloquium, Physics Department, Imperial College, January 2010
259. *ESA Science and Robotic Exploration Perspectives*, Stockholm Sweden, February 2010
260. *L'Astronomie et l'Exploration dans l'Age de l'Espace*, University of Luxembourg, Luxembourg March 2010
261. *La Mission Cassini – presentation et séance question-réponse* (talk and question and answer session with francophone schoolchildren), University of Luxembourg, Luxembourg, March 2010
262. *ESA and Space Exploration*, Introduction, ESA-EU Joint Workshop on Science and Education within Space Exploration, ISU, Strasbourg, France, March 2010
263. *Harry Elliot, British Space Science Pioneer, 1920-2009*, UK Space Conference, Charterhouse School, UK, March 2010
264. *ESA Science and Robotic Exploration programme perspectives*, UK Space Conference, Charterhouse School, UK, March 2010
265. *Les sciences spatiales au service de la société* Cité de l'Espace, Toulouse France, April 2010.
266. ***Les télescopes spatiaux européens***, Cité de l'Espace, Toulouse France, April 2010.

267. *Opening ceremony remarks*, National Astronomy Meeting, Univeristy of Glasgow, Glasgow, UK, April 2010.
268. *Life elsewhere in the universe*, Science in the Pub, Panel session, Glasgow, UK, April 2010.
269. *Source of periodic radio emission; lessons from Saturn*, NAM, Glasgow, April 2010
270. *Exploration and Innovation*, Introductory address, ESA-EU Second Joint Workshop on Exploration, Industrial Competitiveness and Technological Advance, Harwell, UK, April 2010.
271. *ESA's Cosmic Vision ; Space science in today's Europe*, University of Heidelberg, Heidelberg, Germany, May 2010.
272. *ESA's Cosmic Vision, Space science and robotic exploration in Europe today*. University of Aarhus, Denmark, June 2010
273. *Space Science and Exploration: For what it's worth*, ISU Distinguished Lecture, Space Studies Summer Programme, International Space University , Strasbourg, France, July 2010.
274. *The Herschel and Planck Space Missions*, International Academy of Astronautics, Bremen, Germany, July 2010.
275. *L'Univers et La Lumière*, Présentation et table ronde, La Nuit des Chercheurs, Observatoire de Paris, Paris France, September 2010.
276. *Space science and Robotic Exploration ; Report on the ESA Directorate of Science and Robotic Exploration Programmes*, European Space Science Committee, European Science Foundation, ESRIN, Frascati, Italy. September 2010.
277. *What's next in space science and robotic exploration for Europe?* Public Lecture, Dublin Castle, Dublin Ireland, September 2010.
278. *Hubble and Space Science*, Welcome Address, Science with the Hubble Space Telescope - III: Two Decades and Counting, Palazzo Cavalli-Franchetti, Venice, Italy
279. *The Herschel Observatory, The Inspiration of Astronomical Phenomena (INSAP VII)*, Bath Royal Literary and Scientific Institute, Bath, UK. October 2010.
280. *Space Exploration Talks to Years 11 and 12*, The Bishop of Hereford's Bluecoat School, Hereford, UK. November 2010.
281. *Space Exploration Talk to Year 6*, Leominster Junior School, Leominster, UK November 2010.
282. *Space Science and Exploration in a Modern Society*, Institute of Engineering and Technology Devon & Cornwall Network, University of Plymouth, Plymouth, UK, November 2010
283. *Space Weather Today, Europe's heritage*, European Space Weather Week 7 Keynote Lecture, Oud Sint-Jan Congresscentre, Bruges, Belgium, November 2010.
284. *La Science et l'Exploration de l'Espace dans une Societé Moderne*, Astronautix, Ecole Polytechnique, Palaiseau, France, November 2010
285. *Europe's place in space*, Astronomy Ireland New Year Public Lecture, Trinity College Dublin, January 2011.
286. *Space and Space Exploration in a Modern Society*, 6th Interntaional Ilan Ramon Memorial Conference, The Fisher Insitute for Air and Space Strategic Studies, Herzliya, Israel, January 2011.
287. *Space Science and Exploration*, Presentation and Round table discussion, Tel Aviv University, Israel, January 2011.
288. *European space exploration prospects*, European Parliament, Members' Salon, Brussels, Belgium, February 2011.
289. *Ten Years of ESA Space Science*, Crayford Astronomical Society, Bexley, February 2011.
290. *Europe and space*, Eastbourne Branch of European Movement, Eastbourne, UK, May 2011.
291. *What we expect of the UK Space Agency*, Keynote speech for UK Students for Exploration and Development of Space (UKSEDS), University of Warwick, July 2011.

292. *The ABC of Solar Terrestrial Science*, Symposium to mark 200th Anniversary of University of Oslo, Oslo, Norway, November 2011.
293. *What is the Use of Space? Space in a Modern Society*, Departmental Colloquium, Dept. of Meteorology/Environmental Systems Science Centre, University of Reading, December 2011.
294. *How Space changed Our Universe*, Royal Astronomical Society Public Lecture, Burlington House, London, 2011.
295. *The Cassini/Huygens mission to Saturn and Titan*, The Schuster Lecture, University of Manchester, December 2011.
296. *“What’s the Use of Space Science?: Space Science in a Modern Society”*, Lancaster University Christmas Science Conference, University of Lancaster, December 2011.
297. *“What’s the Use of Space Science?: Space Science in a Modern Society”*, Crayford Astronomical Society, Bexley, February 2012.
298. *To Mars, Titan and the Universe Beyond*, 2012 J. Tuzo Wilson Lecture, University of Toronto, Canada, March 2012.
299. *The ABC of Solar Terrestrial Science*, Institute for Space Science, Exploration and Technology University of Alberta, Canada March 2012.
300. *To Mars, Titan and the Universe Beyond*, TELUS World of Science, Edmonton, Alberta, Canada, March 2012.
301. *Ten Years of ESA Space Science*, West of London Astronomical Society, London, September 2012.
302. *Keynote Address, Space Providing Educational Inspiration*, Space Provider Conference (for teachers), National STEM (Education) Centre, University of York, September 2012
303. *The Cassini/Huygens mission to Saturn and Titan*, Royal Astronomical Society Public Lecture, Burlington House, London, October 2012
304. *International Cooperation and the US, a European perspective*, Invited talk, Space Studies Board of US National Academy of Sciences, Irvine, Ca. USA, November 2012
305. *To Mars, Titan and the Universe Beyond! Europe’s Arrival on the Final Frontier*, 2012 Archbishop Robinson Lecture, Armagh Observatory, N. Ireland, November 2012
306. *What is Space Exploration About?* 2012 Robinson Schools Lecture, Armagh, N. Ireland, November 2012
307. *What is Space Exploration About?* Earl Mortimer School, Leominster, Herefordshire, December 2012
308. *Keynote Address, Space Providing Educational Inspiration*, Association for Science Education Annual Conference, Reading, January 2013
309. *Saturn’s Mysterious Magnetism*, Presidential Address, Royal Astronomical Society, London, May 2013

Scientific Publications: D.J. Southwood

1. Southwood, D.J., The hydromagnetic stability of the magnetosphere boundary, Planet. Space Sci., 16, 587, 1968.
2. Southwood, D.J., J.W. Dungey and R.J. Etherington, Neglected plasma instability involving bounce resonance, Nature, 219, 56, 1968.
3. Southwood, D.J., J.W. Dungey and R.J. Etherington, Bounce resonant interaction between pulsations and trapped particles, Planet. Space Sci., 17, 349, 1969.
4. Dungey, J.W. and D.J. Southwood, Ultra low frequency waves in the magnetosphere, Space Sci. Rev., 10, 672, 1970.
5. Southwood, D.J., Low frequency interactions, in The ESRO Geostationary Magnetospheric Satellite, p.101, ESRO SP-60, 1971.
6. Dungey, J.W. and D.J. Southwood, Effect of resonant interactions on observed flux, in The ESRO Geostationary Magnetospheric Satellite, p.107, ESRO SP-60, 1971.
7. Barfield, J.N., R.L. McPherron, D.J. Southwood and P.J. Coleman, Jr., Storm-associated pc5 micropulsation events observed at the synchronous equatorial orbit, J. Geophys. Res., 77, 143, 1972.
8. Southwood, D.J., Preservation of second adiabatic invariant during cross-L diffusion, J. Geophys. Res., 77, 1123, 1972.
9. Southwood, D.J., Magnetic field variations at micropulsation frequencies, in Earth's Magnetospheric Processes, p.302 (ed. B. McCormac) Riedel, Dordrecht-Holland, 1972.
10. Haskell, G.P., and D.J. Southwood, Comments on paper by J.R. Sharper and W.J. Heikkila "Fermi acceleration of auroral particles", J. Geophys. Res., 77, 6926, 1972.
11. Southwood, D.J., Behaviour of ULF waves and particles in the magnetosphere, Planet. Space Sci., 21, 53, 1973.
12. Southwood, D.J., Some features of field line resonances in the magnetosphere, Planet. Space Sci., 22, 483, 1974.
13. Southwood, D.J., Recent studies in micropulsation theory, Space Sci. Rev., 16, 413, 1974.
14. Hughes, W.J. and D.J. Southwood, Effect of atmosphere and ionosphere on magnetospheric micropulsation signals, Nature, 248, 493, 1974.
15. Kivelson, M.G. and D.J. Southwood, Local time variations of particle flux produced by an electrostatic field in the magnetosphere, J. Geophys. Res., 80, 56, 1975.
16. Southwood, D.J., Micropulsations and the plasmapause, Ann. Geophys., 31, 101, 1975.
17. Southwood, D.J., Comments on field line resonances and micropulsations, Geophys. J. Roy. Astr. Soc., 41, 425, 1975.
18. Southwood, D.J. and M.G. Kivelson, An approximate analytic description of plasma bulk parameters and pitch angle anisotropy under adiabatic flow in a dipolar magnetospheric field, J. Geophys. Res., 80, 2069, 1975.
19. Dungey, J.W. and D.J. Southwood, Ultra-low frequency waves in the magnetosphere, Phil. Trans. R. Soc. Lond. A., 280, p.131, 1975.
20. Kivelson, M.G. and D.J. Southwood, Approximations for the study of drift boundaries in the magnetosphere, J. Geophys. Res., 80, 3525, 1975.
21. Kivelson, M.G. and D.J. Southwood, Note on the electric splitting of drift shells, J. Geophys. Res., 80, 3528, 1975.
22. Southwood, D.J., Interpretations of apparent phase motion in micropulsation signals, Geophys. Res. Lett., 2, (11), 483, 1975.
23. Hughes, W.J. and D.J. Southwood, The screening of micropulsation signals by the atmosphere and ionosphere, J. Geophys. Res., 81, (19), 3234, 1976.

24. Hughes, W.J. and D.J. Southwood, An illustration of modification of geomagnetic pulsation structure by the ionosphere, J. Geophys. Res., 81, (19), 3241, 1976.
25. Southwood, D.J., A general approach to low-frequency instability in the ring current plasma, J. Geophys. Res., 81, (19), 3340, 1976.
26. Southwood, D.J., Localised compressional hydromagnetic waves in the magnetospheric ring current, Planet. Space Sci., 25, 549, 1977.
27. Southwood, D.J., The role of hot plasma in magnetospheric convection, J. Geophys. Res., 82, 5512, 1977.
28. Newton, R.S., D.J. Southwood and W.J. Hughes, The damping of pulsations by the ionosphere, Planet. Space Sci., 26, 201, 1978.
29. Southwood, D.J., Plasma waves in the magnetosphere, Nature, 271, 309, 1978.
30. Southwood, D.J. and W.J. Hughes, Source induced vertical components in geomagnetic pulsation signals, Planet. Space Sci., 26, 715, 1978.
31. Lanzerotti, L.J. and D.J. Southwood, Hydromagnetic waves in the Earth's magnetosphere, in Solar System Plasma Physics, Vol. III, p.110, ed. C.F. Kennel, L.J. Lanzerotti and E.N. Parker, North Holland, Amsterdam, 1979.
32. Southwood, D.J. and R.A. Wolf, An assessment of the role of precipitation in magnetospheric convection, J. Geophys. Res., 83, 5227, 1978.
33. Hughes, W.J., D.J. Southwood, B.H. Mauk, R.L. McPherron and J.N. Barfield, Alfvén waves generated by an inverted plasma energy distribution, Nature, 275, 43, 1978.
34. Mier-Jedrzejowicz, W.A.C. and D.J. Southwood, The east-west structure of mid-latitude geomagnetic pulsations in the 8-25 mHz band, Planet. Space Sci., 27, 617, 1979.
35. Southwood, D.J. and W.F. Stuart, Pulsations at the substorm onset, in Dynamics of the Magnetosphere, ed. S.-I. Akasofu, p.341, Riedel, Dordrecht, Holland, 1979.
36. Kivelson, M.G., S.M. Kaye and D.J. Southwood, The physics of plasma injection events, in Dynamics of the Magnetosphere, ed. S.-I. Akasofu, p.385, Reidel, Dordrecht, Holland, 1979.
37. Southwood, D.J. and S.M. Kaye, Drift boundary approximations in simple magnetospheric convection models, J. Geophys. Res., 84, 5773, 1979.
38. Kaye, S.M., M.G. Kivelson and D.J. Southwood, Evolution of ion cyclotron instability in the plasma convection system of the magnetosphere, J. Geophys. Res., 84, 6397, 1979.
39. Kivelson, M.G., J.A. Slavin and D.J. Southwood, Magnetospheres of the Galilean satellites, Science, 205, 491, 1979.
40. Southwood, D.J., Magnetopause Kelvin-Helmholtz instability, in Magnetospheric Boundary Layers, ESA SP-148, p. 357 1979.
41. Southwood, D.J., M.G. Kivelson, R.J. Walker and J.A. Slavin, Io and its plasma environment, J. Geophys. Res., 85, 5959, 1980.
42. Southwood, D.J., Low frequency pulsation generation by energetic particles, J. Geomag. Geoelectr., 32, SII, 75, 1980.
43. Singer, H.J., D.J. Southwood, R.J. Walker and M.G. Kivelson, Alfvén wave resonance in a realistic magnetospheric magnetic field geometry, J. Geophys. Res., 86, 4589, 1981.
44. Cowley, S.W.H. and D.J. Southwood, Some properties of a steady state geomagnetic tail, Geophys. Res. Lett., 7, 833, 1980.
45. Southwood, D.J., Report from the IUGG Assembly: IAGA Sessions on Pulsations, EOS Trans. Amer. Geophys. Un., 61, 476, 1980, also in IAGA News, No. 19, November 1980 and in expanded form in IAGA Working Group III Newsletter, November 1980.
46. Southwood, D.J., Editor, ULF Pulsations in the Magnetosphere, Japan Scientific Societies Press, Tokyo, pp. 145, 1980.

47. Saunders, M.A., D.J. Southwood, E. Hones, Jr. and C.T. Russell, A hydromagnetic vortex seen by ISEE 1 and 2, J. Atmos. Terr. Phys., **43**, 927-932, 1981.
48. Mier-Jedrzejowicz, W.A.C. and D.J. Southwood, Comparison of pc3 and pc4 pulsation characteristics on an East-West mid-latitude chain of magnetometers, J. Atmos. Terr. Phys., **43**, (9), 911-917, 1981.
49. Southwood, D.J. and M.G. Kivelson, Charged particle behaviour in low frequency geomagnetic pulsations I: Transverse waves, J. Geophys. Res., **86**, 5463-5655, 1981.
50. Kivelson, M.G. and D.J. Southwood, Plasma near Io: estimates of some physical parameters, J. Geophys. Res., **86**, 10122, 1981.
51. Southwood, D.J. and M.G. Kivelson, Charged particle behaviour in low frequency geomagnetic pulsations II; Graphical approach, J. Geophys. Res., **87**, 1707, 1982.
52. Russell, C.T. and D.J. Southwood, (Editors): The IMS Source Book: Guide to the International Magnetospheric Study data analysis, Amer. Geophys. Un., Washington, D.C., 1982.
53. Rijnbeek, R.P., S.W.H. Cowley, D.J. Southwood and C.T. Russell, Observations of "reverse polarity" flux transfer events at the Earth's dayside magnetopause, Nature, **300**, **23**, 1982.
54. Ellis, P. and D.J. Southwood, Reflection of Alfvén waves by non-uniform ionospheres, Planet. Space Sci., **31**, 107, 1983.
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