

CURRICULUM VITAE

- Name:** JOHN DAVID BARROW
- Work Address:** Dept. of Applied Mathematics & Theoretical Physics, Centre for Mathematical Sciences, Cambridge University, Wilberforce Road, Cambridge CB3 0WA.
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Email: J.D.Barrow@damtp.cam.ac.uk
- Date of Birth:** 29th November 1952
- Place of Birth:** London, England
- Degrees:** BSc (Hons), Mathematics (University of Durham) 1974: 1st Class Honours.
DPhil, Astrophysics (University of Oxford) 1977. Thesis title: 'Non-Uniform Cosmological Models'. Supervisor: Professor D W Sciama FRS.
- Honorary Degree:** D.Sc. University of Hertfordshire, 1999.
- Academic Career:** Ealing Grammar School 1964-71
Van Mildert College, Durham University 1971-4
Magdalen College & Dept. of Astrophysics, Oxford University 1974-7
Astronomy Dept., Univ. California Berkeley (Lindemann Fellow) 1977-8
Christ Church and Dept. of Astrophysics, Oxford (Junior Research Lecturer) 1978-80
Physics Dept., Univ. California Berkeley (Miller Fellow) 1980-1
Lecturer, Astronomy Centre, University of Sussex 1981-8
Nuffield Foundation Science Fellow, University of Sussex 1986-7
Senior Lecturer, Astronomy Centre, University of Sussex 1988-9
Reader, Astronomy Centre, University of Sussex, 1989
Professor, Astronomy Centre, University of Sussex 1989-99
Acting Director, Astronomy Centre, University of Sussex 1989-90
Royal Society Leverhulme Fellow, University of Sussex 1992-3
PPARC Senior Fellow, University of Sussex 1994-99
Director, Astronomy Centre, University of Sussex 1995-99
Professor of Mathematical Sciences, Dept. Applied Mathematics and Theoretical Physics, University of Cambridge, 1999-
Director, Millennium Mathematics Project, University of Cambridge, 1999-
Professorial Fellow, Clare Hall, Cambridge 1999-

Vice President, Clare Hall, Cambridge, 2004-
Gresham Professor of Astronomy (and other Physical Sciences),
Gresham College, London 2003-7
Li Ka Shing Foundation Visiting Scholar (China and Hong Kong),
2006

Awards:

Durham University Mathematical Prize 1973.
Durham University Prize 1974.
Collingwood Mathematical Prize (Durham University and London
Mathematical Society) 1974.
Johnson Memorial Prize (Oxford University) 1975.
Wallace Research Prize (Oxford University) 1977.
Lindemann Fellowship of the English Speaking Union of the
Commonwealth 1977.
Junior Research Lectureship, Christ Church, Oxford 1977.
Gravity Prize (5th), Gravity Foundation Awards 1979.
Miller Fellowship, University of California at Berkeley 1980.
Gravity Prize (3rd), Gravity Foundation Awards 1981.
Nominated for the Bhappu Prize of the International Astronomical
Union by the Council of the Royal Astronomical Society 1986/7.
Nuffield Foundation Science Fellowship 1986/87.
Samuel Locker Award in Astronomy 1989.
Gravity Prize (4th), Gravity Foundation Awards 1993
Royal Society Leverhulme Senior Fellowship 1992/3.
PPARC Senior Fellowship (5 years) 1994-9
Templeton Award 1995.
Gravity Prize (5th), Gravity Foundation Awards 1997.
Gordon Godfrey Visiting Professor of Physics, University of New
South Wales, Sydney, 1998.
Kelvin Medal, Royal Glasgow Philosophical Society, 1999
Wellcome Sci-art 2000 Award, 2000
Gordon Godfrey Visiting Professor, University of New South
Wales, Sydney, December 2000.
Italian Theatre Awards, Premi Ubu 2002 Prize for best play
(awarded for *Infinites*).
Gresham Professor of Astronomy, Gresham College, 2003-7
Elected Fellow of the Royal Society (London), 2003
Gordon Godfrey Visiting Professor of Physics, University of New
South Wales, Sydney, November 2003.
Italgas Prize for Promulgation of Science 2003, (awarded for
Infinites).
Lacchini Prize and Medal of the Unione Astrofili Italiani 2005.
Honorary Concurrent Professor of Physics, University of Nanjing,
China 2005-
Queen's Anniversary Prize 2006 to Millennium Mathematics
Project.

Templeton Prize, 2006.
Honorary Citizen, City of Louisville, Kentucky, 2006

Named Lectures: Centenary Gifford Lectures, Glasgow University 1989
Elizabeth Scott Memorial Lecture, European Math. Society 1989
Prime Minister's Science Seminar, 10 Downing St., 1989
Collingwood Memorial Lecture, Durham University 1990
Sigma-Tau-Laterza Lectures, University of Milan 1991
George Darwin Lecture, Royal Astronomical Society 1992
Spinoza Lecture, University of Amsterdam, Amsterdam 1993
University of London Annual Physics Lecture, Royal Holloway
College, London. 1993
Elizabeth Spreadbury Lecture, University College London 1994
BBV Science Lectures, Madrid, Bilbao & Tenerife 1994
Royal Institution Evening Discourse, 1994
Robert Boyle Memorial Lecture, Oxford 1996
Amnesty International Science Lecture, Oxford University 1997
Benedum Lecture, University of West Virginia, 1997
Kelvin Lecture, Royal Glasgow Philosophical Society, 1999
Royal Society of Arts Children's Christmas Lecture 1999
Nicki Shaw Lecture, Cambridge 2000
London Mathematical Society Popular Lectures, Leeds, Glasgow,
London, 2000
Flamsteed Lecture, University of Derby, 2000
Bologna 2000 Lecture, 2000
Tyndall Memorial Lecture, University of Bristol, 2001
Darwin Lecture, Darwin College, University of Cambridge, 2001
Whitrow Lecture, Royal Astronomical Society, 2002
Brasher Lecture, University of Kingston, 2002.
Gresham Lectures, Gresham College, London 2003-7
Isaac Newton Memorial Lecture, King's School Grantham, 2004
Hubert James Lecture, Purdue University, 2004
Carl Von Weizsäcker Lectures, Hamburg University, 2004
McCrea Centenary Lecture, Sussex, 2004.
Finnish International Year of Physics, Univ. Helsinki, 2005.
Wood Memorial Lecture, Newcastle University, 2005
Hamilton Lecture, Royal Dublin Society, Trinity College Dublin,
2005
Edinburgh Science Festival Address, St Giles Cathedral, 2005
Knight Lecture, Monkton College, Bath, 2006.
Borderlands Lecture, Durham University, 2007 (elect).
Boyle Lecture, St Mary-le-Bow, London, 2007 (elect).
Roscoe Lecture, Liverpool, 2007.

Committees: In-House Research Panel (APS Board of SERC) 1987-8

and

Voting delegate representing the Royal Society and the British Academy, VIII International Congress on Logic, Methodology, Philosophy of Science, Moscow 1987
Steering Committee, UK Dark Matter Experiment 1988-9
Theory and Computation Panel (APS Board of SERC) 1988-92
Ground-based Programme Committee (APS Board of SERC) 1989-92
Anglo-German Gravitational Wave Panel (SERC member) 1990
Lisbon Particle Physics and Cosmology School, Organising Committee, 1990
International Organising Committee, Texas Symposia on Relativistic Astrophysics 1990-
Co-chair, Local Organising Committee, Texas/ESO-CERN Symposium on Relativistic Astrophysics, Cosmology and Fundamental Physics, Brighton 1991
Statistical Challenges in Modern Astronomy, Penn State 1991, Programme Committee.
Brioni Conference on States of Matter in the Universe, 1991, Organising Committee.
Gravitational Radiation Review Panel, (APS Board of SERC) 1994
European Union & Council of Europe SEPS Science Committee 1996-1998
Organising Committee M. Grossmann Meeting, Jerusalem 1997
Conference Organising Committee The Non-sleeping Universe, Porto 1997
Board of European Advisors, Templeton Foundation 1995-8, 2000-2004.
Board of Trustees, Templeton Foundation, 1999-2005, 2006-
Board of Trustees, TWC Foundation, 2006-
Planning Committee, Templeton Foundation, 2005-
British Council Associate Advisor, 1997-8
Nuffield Foundation Grants Panel, 1998-
Awards Committee, Royal Astronomical Society, 1998-2002
Co-organiser, Newton Institute Cambridge programme, Statistics and Astronomy, August 1999.
Organising Committee Marcel Grossmann Meeting, Rome, 2000.
Council of the Royal Astronomical Society, 1999-2002
THES and OUP Science Writing Prize Judge, 1999-2000, 2002-3
Board of Governors, Cheshunt Foundation, 2000-
Board of Continuing Education, Cambridge University, 2001-2.
Inst. of Continuing Education, Cambridge, Board member, 2002-4
Finance Committee, Board of Continuing Education, Cambridge University, 2001-2.
Finance Committee, Inst. of Continuing Education, Cambridge University, 2002-4
CARET Advisory Board, Cambridge 2002-3

Gruber Cosmology Prize Committee, 2000-3.
Board of Governors, Westminster College, Cambridge, 2001-
International Advisory Committee CosPA, Taiwan, 2002-3
Forum 21, 2002-4
Chair, EPSRC Culture and Creativity Grants Panel, 2004.
Advisory Committee, Einstein Centenary Meeting, Paris, 2005.
Audit Committee, Westminster College, Cambridge, 2005-
Scientific Advisory Board, Foundation Questions in Physics and
Cosmology (FQX) Project, 2005-
Royal Society A-Awards Committee, 2005-
Editorial Advisory Board, University of Cambridge 800th
Anniversary Volume, 2006-
International Advisory Committee, CosPA International
Symposium on Particle Physics & Cosmology, Taipei, 2006.
Patron, Cambridge Science Festival, 2007-9

Telescope Time: J. Kapetyn and Isaac Newton Telescopes, La Palma, (7 nights),
1987.
Anglo-Australian Telescope, (3 nights), April 1998.

Memberships: Fellow of the Royal Astronomical Society (FRAS).
Fellow of the Institute of Physics and Chartered Physicist (CPhys
FInstP)
International Astronomical Union, Member of Commission 47.
L'Academie Internationale de Philosophie des Sciences,
Corresponding Member.
Forum Fellow, World Economic Forum, Davos,
Switzerland 1999, 2000.
Fellow of the Royal Society of Arts (FRSA), elected 1999.
International Society for Science and Religion (ISSR), elected
2002.
Fellow of the Royal Society of London (FRS), elected 2003.

PUBLICATIONS

1. Light Elements and the Isotropy of the Universe, 1976. *Mon. Not. Roy. astr. Soc.*, 175, 359-370.
2. The Synthesis of Light Elements in Turbulent Cosmologies, 1977. *Mon. Not. Roy. astr. Soc.*, 178, 625-650.
3. A Chaotic Cosmology, 1977. *Nature*, 267, 117-120.
4. On the Origin of Cosmic Turbulence, 1977. *Mon. Not. Roy. astr. Soc.*, 179, 47P-49P.
5. The Homogeneity and Isotropy of the Universe, 1977. *Mon. Not. Roy. astr. Soc.*, 181, 719-728 (with R A Matzner).
6. Modern Cosmological Models, 1978. *Science Progress* 65, 129-160.
7. Quiescent Cosmology, 1978. *Nature*, 272, 211-215.
8. Primordial Black Hole Formation in an Anisotropic Universe, 1978. *Mon. Not. Roy. astr. Soc.*, 182, 537-558 (with B J Carr).
9. A Cosmological Limit on the Possible Variation of G, 1978. *Mon. Not. Roy. astr. Soc.*, 184, 677-682.
10. Eternity is Unstable, 1978. *Nature*, 276, 453-459 (with F J Tipler).
11. Analysis of the Singularity Studies of Belinskii, Lifshitz and Khalatnikov, 1979. *Phys. Reports*, 56, 371-402 (with F J Tipler).
12. Pre-galactic Black Holes: A New Constraint, 1979. *Gen. Rel. Gravn.*, 11, 633-638 (with J Silk).
13. The Structure of the Early Universe, 1980. *Scientific American*, April issue, pp118-129 (with J Silk).
14. The Early Stages of the Universe, 1980. Chapter 4, Proc. of the General Meeting of the European Physical Society, Inst. of Physics, Heinemann, London.
15. Galaxy Formation: The First Million Years, 1980. *Phil. Trans. Roy. Soc.* A296, 273-288.
16. Black Holes are not the end of the World, 1979. *Phys. Bulletin*, 30, 149-150.
17. Baryon Asymmetry and Cosmological Asymmetries, 1979. *Mon. Not. Roy. astr. Soc.*, 188, 23P-29P.
18. Evolutionary Cosmological Models, 1979. In 'Problems of the Cosmos', (Einstein Centenary Volume, Enciclopedia Italiana, Rome).
19. Shear Hell-Holes and Anisotropic Universes, 1979. *Gen. Rel. Gravn.*, 11, 383-389 (with B J Carr).
20. The Size of a Bouncing Mixmaster Universe, 1980. *Phys. Rev. D* 21, 336-340 (with R A Matzner).

21. The Baryon Asymmetry of the Universe, 1980. *Surveys in High Energy Physics*, 1, 1-30.
22. The Proton Half-life and the Dirac Hypothesis, 1979. *Nature*, 282, 698-9.
23. Primordial Baryon Generation by Black Holes, 1979. *Mon. Not. Roy. astr. Soc.*, 192, 427-439.
24. Cosmological Constraints on the Scale of Grand Unification, 1980. *Nucl. Phys. B*, 181, 461-487 (with G G Ross).
25. Grand Unification Theories and the Dirac Hypothesis, 1980. *Nature*, 287, 566.
26. Cosmological Baryon Annihilation, 1980. *Mon. Not. Roy. astr. Soc.*, 192, 19P-23P.
27. Coagulation with Fragmentation, 1981. *J. Phys. A*, 14, 729-733.
28. Generic Singularity Studies Revisited, 1981. *Phys. Lett. A*, 82, 441-6 (with F J Tipler).
29. Chaos in the Einstein Equations, 1981. *Phys. Rev. Lett.*, 46, 963-967.
30. Baryosynthesis and the Origin of Galaxies, 1981. *Nature*, 291, 469-472 (with M S Turner).
31. Inflation in the Universe, 1981. *Nature*, 292, 35-38 (with M S Turner).
32. The Growth of Anisotropic Structures in a Friedman Universe, 1981. *Astrophys. J.*, 250, 432-449 (with J Silk).
33. Cosmological Constraints on Elementary Particle Masses in Lemaître Cosmological Models, 1981. *Phys. Lett.*, B 107, 358-362.
34. Cosmology and High Energy Physics, 1981. Proc. Inst. of Physics Conference 'Nuclear Structure and Particle Physics', A Hilger, Bristol.
35. The Lore of Large Numbers: Some Historical Background to the Anthropic Principle, 1981. *Quart. Jl. Roy. astr. Soc.*, 22, 388-420.
36. General Relativity and Non-linear Dynamics, 1982. *Gen. Rel. Gravn.*, 14, 1523-1530.
37. Chaotic Behaviour in General Relativity, 1982. *Phys. Reports* 85, 1-49.
38. Cosmology and Particle Physics, 1982. In 'Cosmology: an Oxford Symposium', ed. A Wolfendale, Reidel, Dordrecht, pp21-38.
39. Dissipation and Unification, 1982. *Mon. Not. Roy. astr. Soc.*, 199, 45P-48P.
40. Massive Particles as a Probe of the Early Universe, 1982. *Nucl. Phys. B*, 208, 501-508.
41. Anthropic Definitions, 1983. *Quart. Jl. Roy. astr. Soc.*, 24, 146-153.
42. Natural Units before Planck, 1983. *Quart. Jl. Roy. astr. Soc.*, 24, 24-26.
43. Neutrino Proliferation, 1983. *Phys. Lett. B*, 125, 377-378.
44. Cosmology and Elementary Particles, 1983. *Fund. Cosmic Physics*, 8, 83-200.

45. Perturbations of a De Sitter Universe, 1983. In 'The Very Early Universe', ed. G Gibbons, S W Hawking and S T C Siklos, Cambridge University Press, Cambridge, pp267-272.
46. Chaos in the Mixmaster Universe, 1983. *Phys. Rev. Lett.*, 50, 134-137 (with D. Chernoff).
47. The Stability of General Relativistic Cosmological Theory, 1983. *J. Phys. A*, 16, 2757-2776 (with A. C. Ottewill).
48. Limits on the Neutrino Number and Baryon Density of a Realistic Universe, 1983. *Mon. Not. Roy. astr. Soc.*, 203, 393-401 (with J Morgan).
49. Monopoles in the Milky Way, 1983. *Phys. Lett. B*, 122, 31-32 (with J Stein Schabes).
50. The Isotropy of the Universe, 1982. *Quart. Jl. Roy. astr. Soc.*, 23, 344-357.
51. Structure of the Cosmic Microwave Background, 1983. *Nature*, 305, 397-402 (with R Juszkiewicz and D H Sonoda).
52. Dimensionality, 1983. *Phil. Trans. Roy. Soc. A*, 310, 337-346.
53. Cosmology, Elementary Particles, and the Regularity of the Universe. In 'Relativistic Astrophysics and Cosmology', 1984. eds. X Fustero and E Verdaguer, World Publ. Singapore pp137-199.
54. Non-linear Gravitational Clustering, 1984. *Mon. Not. Roy. astr. Soc.*, 209, 19-144 (with R Juszkiewicz and D H Sonoda).
55. Percolation Analyses of Observed and Simulated Galaxy Clustering, 1983. *Mon. Not. Roy. astr. Soc.*, 205, 61P-66P (with S P Bhavsar).
56. Inhomogeneous Cosmologies with Cosmological Constant, 1984. *Phys. Lett. A*, 103, 315-318 (with J Stein Schabes).
57. Percolation Studies of Galaxy Clustering, 1984. In 'Clusters and Groups of Galaxies', eds. M Mardirossian, G Giuricin, and M Mezetti, Reidel, Dordrecht (with S P Bhavsar), pp 415-421.
58. New Light on Heavy Light, 1984. *Nature*, 307, 14-15 (with R Burman).
59. Microwave Sky Patterns and the Density of the Universe, 1984. In Proc. 1st ESO-CERN Symposium, ed. G Setti and L van Hove, CERN, Geneva (with R Juszkiewicz and D H Sonoda) pp170-176.
60. Chaotic Behaviour and the Einstein Equations, 1984. In 'Classical General Relativity', eds. W Bonnor, J Islam and M A H MacCallum, CUP, Cambridge pp 25-41.
61. A Bootstrap Resampling Analysis of Galaxy Clustering, 1984. *Mon. Not. Roy. astr. Soc.*, 210, 19P-23P, (with S P Bhavsar and D H Sonoda).
62. The Invisible Universe, 1984. *New Scientist*, August 30, p 28-31 (with J Silk).
63. From Quark to Cosmos, 1984. *Nature*, 308, 13-14 (with J Silk).
64. The Stability of Certain Spatially Homogeneous Cosmological Models, 1985. *Gen. Rel. Gravn.*, 17, 409-416 (with D H Sonoda).

65. Helium Formation in Cosmologies with Anisotropic Curvature, 1984. *Mon. Not. Roy. astr. Soc.*, 211, 221-227.
66. Cosmology, the Existence of Observers and Ensembles of Possible Universes, 1985. In 'Les Voies de la Connaissance', ed. M Cazenave, A Michel, Paris.
67. First-Ranked Galaxies in Groups and Clusters, 1985. *Mon. Not. Roy. astr. Soc.*, 213, 857-869 (with S P Bhavsar).
68. Universal Rotation: How Large Can it be?, 1985. *Mon. Not. Roy. astr. Soc.*, 213, 917-943 (with R Juszkiewicz and D H Sonoda).
69. Closed Universes: Their Evolution and Final State, 1985. *Mon. Not. Roy. astr. Soc.*, 216, 395-402 (with F J Tipler).
70. Microwave Background Spottiness, 1985. *Nature*, 316, 48 (with R Juszkiewicz and D H Sonoda).
71. The Asymptotic Behaviour of Bianchi Universes, 1986. *Phys. Reports*, 139, 1-49 (with D H Sonoda).
72. The Limits of Observational Cosmology, 1985. *Observatory*, 105, 120.
73. Minimal Spanning Trees, Filaments and Galaxy Clustering, 1985. *Mon. Not. Roy. astr. Soc.*, 216, 17-35 (with S P Bhavsar and D H Sonoda).
74. Kaluza-Klein Mixmaster Universes, 1985. *Phys. Rev. D*32, 1595-8 (with J Stein-Schabes).
75. The Stability of Kaluza-Klein Cosmologies, 1986. *Phys. Lett. B*, 167, 173-177 (with J Stein-Schabes).
76. General Relativistic Cosmological Models and the Cosmic Microwave Background, 1986. *Canadian J. Phys.*, 64, 152-159.
77. Alignments of Clustered Quasars, 1985. *Mon. Not. Roy. astr. Soc.*, 218, 587-592 (with K Subramanian).
78. The Left Hand of Creation: the origin and evolution of the expanding universe, (with J Silk), Basic Books, New York, pp 256.
79. Three-Dimensional Classical Space-Times, 1985. *Classical & Quantum Gravity*, 3, 551-567 (with A Burd and D Lancaster).
80. The Inflationary Universe -- Birth, Death, and Transfiguration, 1982. *Nature* 298, 801-5 (with M S Turner)
81. Observational Limits on the Time-Evolution of Extra Spatial Dimensions, 1987. *Phys. Rev. D*, 35, 1805-1810.
82. Filaments: What the Astronomer's Eye Tells the Astronomer's Brain, 1987. *Quart. Jl. Roy. Astr. Soc.*, 28, 109-128 (with S P Bhavsar).
83. Chaotic Space-times, 1987. In 'The Physics of Phase Space', Proc. 1st International Conference on Phase Space, pp 18-21, eds. A Zachary & S Kim, Springer LNP Series no. 278, Springer, NY.

84. The Closed-Universe Recollapse Conjecture, 1986. *Mon. Not. Roy. astr. Soc.*, 223, 835- 844 (with G J Galloway & F J Tipler).
85. Uncertainties in the Cluster-Cluster Correlation Function, 1986. *Mon. Not. Roy. astr. Soc.*, 223, P21-P27 (with E N Ling & C Frenk).
86. Topics in Relativistic Cosmology, 1987. Cargèse Lectures in Physics, pp 239-292, eds. B Carter & J Hartle, Plenum, NY.
87. Relativistic Cosmology, 1987. Vancouver Lectures. In 'The Early Universe', pp125-202, eds. W Unruh & G Semanoff, Plenum, NY.
88. The Deflationary Universe: An Instability of the De Sitter Universe, 1987. *Phys. Lett. B*, 180, 335-339.
89. The Homogenisation and Isotropisation of an Inflationary Cosmological Model, 1986. *Phys. Lett. B*, 182, 25-27 (with O Gron).
90. Deflationary Universes with Quadratic Lagrangians, 1987. *Phys. Lett. B*, 183, 285-289.
91. Filaments and Cells -- Reality of Illusions?. *Bull. Amer. Astronomical Soc.* Abstracts of 169th Meeting (with S P Bhavsar). 1987
92. The Inflationary Universe: Modern Developments, 1988. *Quart. Jl. Roy. astr. Soc.*, 29, 101-117.
93. Inflation and No-hair Theorems, 1987. Proc. Paris-Meudon Colloquium -- String Theory, Quantum Cosmology and Quantum Gravity, pp 42-53, eds. H de Vega & N Sanchez , World Scientific, Singapore.
94. Cosmic No-hair Theorems and Inflation, 1987. *Phys. Lett. B*, 187, 12-16.
95. Non-gaussian Statistics and the Microwave Background Radiation, 1987. *Mon. Not. Roy. astr. Soc.*, 228, 407-426 (with P Coles).
96. Life, the Universe and the Anthropic Principle, 1987. *The World and I*, 2, 179-187.
97. The Premature Recollapse Problem in Closed Inflationary Universes, 1988. *Nucl. Phys. B*, 296, 697-709.
98. The Confrontation of No-scale Supergravity with Cosmology, 1988. *Nucl. Phys. B*, 298, 733-747 (with N Deruelle).
99. Chairman's Introduction to Royal Society Discussion meeting on the Material Content of the Universe, 1986. *Phil. Trans. Roy. Soc. A*, 320, 433-34.
100. Introduction to Relativistic Cosmology, 1987. In 'Proc. of the 1st CERN-ESO School on Astroparticle Physics, Erice, pp 487-571, ed. A De Rujula, World Scientific, Singapore.
101. The Inflationary Universe, 1988. In 'Interactions and Structures in Nuclei', pp 135-150, eds. R Blin Stoye & W D Hamilton, Adam Hilger, Bristol.
102. Action in the Universe, 1988. *Nature*, 331, 31-34 (with F J Tipler).
103. Lensing of Supernova Neutrinos?, 1987. *Nature*, 327, 375 (with K Subramanian).

104. Inflationary Universes with Exponential Potentials, 1988. *Nucl. Phys. B*, 308, 929-945 (with A Burd).
105. String-driven Inflationary and Deflationary Universes, 1988. *Nucl. Phys. B*, 310, 743-763.
106. The Mysterious Lore of Large Numbers, 1988. Contributed chapter of 'Modern Cosmology in Retrospect', ed. B Bertotti, R Balbinot, S Bergia & A Messina, CUP, Cambridge, pp 67-92.
107. Cosmology Limits the Number of Neutrinos, 1989. *New Scientist* 28th October, p 30 (with N Dombey)
108. Inflation and the Conformal Structure of Higher-order Gravity Theories, 1988. *Phys. Lett. B*, 214, 515-518 (with S Cotsakis).
109. No New Kasner Solution in Higher-Derivative Gravity, 1989. *Mod. Phys. Lett. A*, 4, 519.
110. The New Cosmology, 1988. *Beshara* 6, 19-25.
111. Constants of Physics and the Structure of the Universe, 1988. In 'Unites de Mesure et Constantes Physiques', 30th Saas Fee Lectures, Chapter 8, pp 1-29, eds. M Batato *et al.*, Assoc. Vaudoise, Lausanne.
112. What is the Principal Evidence for the Cosmological Principle?, 1989. *Quart. J. Roy. astr. Soc.*, 30, 163-167.
113. Newtonian No-hair Theorems, 1989. *Class. Quantum Gravity*, 6, 1253-1265 (with G Götz)
114. The Mathematical Universe, 1989. *World & I*, May, pp306-311.
115. Mixmaster Cosmological Model in Theories of Gravity with a Quadratic Lagrangian, 1989. *Phys. Rev. D*, 39, 2187-92 (with H Sirousse-Zia).
116. Microwave Background Constraints on the Voronoi Model of Large-scale Structure, 1990. *Mon. Not. Roy. astr. Soc.*, 244, 557-562 (with P Coles).
117. New Patterns of Explanation in Cosmology, 1989. Venice Conference on Philosophy and Cosmology, ed. U Curi, CUP, pp1-15.
118. The Asymptotic Approach to De Sitter Space-time, 1989. *Phys. Lett. B*, 231, 228-230 (with G Götz).
119. Cosmological Theories: An Overview, 1992. The Astronomy and Astrophysics Encyclopedia, ed. S P Marran, pp 168-9, Van Nostrand, NY and Cambridge UP.
120. Equilibrium Matter Fields in the Early Universe, 1990. *Mon. Not. Roy. astr. Soc.*, 243, 602-609 (with W S Hawthorne).
121. String-driven Inflation, 1990. In 'The Formation and Evolution of Cosmic Strings', eds. G Gibbons & T Vasasparti, pp 449-464, CUP, Cambridge.
122. Inner Space and Outer Space: The Quest for Ultimate Explanation, 1989. The Centenary Gifford Lectures, ed. N Spurway, Chapter 3, pp 48-103, Blackwell, Oxford.

123. The Inflationary Universe, 1989. In 'New Ideas in Cosmology' 1989, ed. M Shallis, Blackwell, Oxford.
124. The Statistics of Primordial Density Perturbations, 1990. *Mon. Not. Roy. astr. Soc.*, 244, 188-193 (with P Coles).
125. Chaotic Behaviour in Higher-order Lagrangian Theories of Gravity, 1989. *Phys. Lett. B*, 232, 172-176 (with S Cotsakis).
126. Graduated Inflationary Universes, 1990. *Phys. Lett. B*, 235, 40-43.
127. De Sitter Ground States and Boundary Terms in Generalised Gravity, 1989. *Nucl. Phys. B*, 323, 242-252 (with M Madsen).
128. Platonic Relationships in the Universe, 1991. *New Scientist*, April 20th, pp40-43.
129. Why is the World Mathematical? *Scienza & Technica Annuario Astronomical, Astrofisica e Cosmologica*, 1990, pp 10-17.
130. Extended Inflationary Universes, 1990. *Nucl. Phys. B* 341, 294-308 (with K Maeda).
131. Projected and Intrinsic Shapes of Galaxy Clusters, 1990. *Mon. Not. Roy. astr. Soc.*, 249, 662-677 (with M Plionis and C Frenk).
132. Primordial Density Fluctuations and the Microwave Background Spectrum, 1991. *Mon. Not. Roy. astr. Soc.*, 248, 52-57 (with P Coles).
133. Baryogenesis in Extended Inflation I: Baryogenesis via Production and Decay of Supermassive Bosons, 1991. *Phys. Rev. D* 43, 977-983 (with E Copeland, E W Kolb & A R Liddle).
134. Baryogenesis in Extended Inflation II: Baryogenesis via Primordial Black Holes, 1991. *Phys. Rev. D* 43, 984-994 (with E Copeland, E W Kolb & A R Liddle).
135. Why is the Universe Mathematical?, 1990. In the Proceedings of 'Truth in Science', ed. V Erspamer, Acad. Licencei, Rome.
136. Life, the Universe and the Anthropic Principle, In 'The Anthropic Principle', 1990. ed. J Taylor, Penguin.
137. The Behaviour of Intermediate Inflationary Universes, 1990. *Phys. Lett B* 249, 406-410 (with P Saich).
138. Why is the Universe Mathematical, 1990. *Nuovo Civiltà delle Macchine* 4, 175-183.
139. The Origin of the Universe, 1991. In 'La Narrazione delle Origini', ed. L Preta, Laterza, Rome.
140. The Evolution of the Universe, 1991. *New Literary History* 22, 835-856.
141. The Evolution of Black Holes in an Expanding Universe, 1991. *Mon. Not. Roy. astr. Soc.*, 253, 675-682 (with E Copeland & A R Liddle).
142. Some Statistical Problems in Cosmology, 1992. In 'Statistical Problems in Astronomy', eds. A Feigelson and G J Babu, pp 21-45, Springer, NY.

143. Self-regenerating Inflationary Universes in Higher-order Gravity in Arbitrary Dimension, 1991. *Phys. Lett. B* 258, 299-304 (with S Cotsakis).
144. Galaxy Clustering, 1992. In 'Statistical Problems in Astronomy', eds. A Feigelson and G J Babu, pp 163-170, Springer, NY.
145. Making Machines of Gods, 1991. *The Times Higher Ed. Suppl.*, June 1st issue, pp13-14.
146. Baryosynthesis, Gravitation and Hot Big Bang Cosmology, 1992. In 'Latin American Winter School Lectures in Theoretical Physics', ed. D Altschuler, J Nieves, J Ponce de Leon & M Urbriaco, pp 171-214, World Scientific, Singapore.
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