

## CURRICULUM VITAE

### **Professor Nalin Chandra Wickramasinghe**

BSc (Ceylon), MA, PhD, ScD (Cantab), Hon DSc (Soka-Tokyo), Hon DSc (Sri Lanka: Ruhuna Univ), FRAS, FRSA, FIMA, CMath

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#### **Personal Details:**

Date of Birth: January 20, 1939

Place of Birth: Colombo, Sri Lanka

Nationality: British *and* Sri Lankan

#### **Education:**

Royal College, Colombo, 1950-1957

University of Ceylon, 1957-1960

First Class Honours in BSc Special Mathematics Examination, 1960

Awarded Commonwealth Scholarship, 1960

University of Cambridge, 1960-1963

PhD in Astrophysics, 1963

ScD, 1973

#### **Awards etc:**

Powell Prize for English Poetry, Trinity College, Cambridge, 1962

International Dag Hammarskjold Gold Medal for Science, 1986

Scholarly Achievement Award of the Institute of Oriental Philosophy, Japan, 1988

Awarded title of *Vidya Jyothi* (Sri-Lanka National Honour), 1992

Sahabdeen International Award for Science, 1996

Honorary Doctorate of Soka University, Tokyo, 1996

John Snow Medal, Association of Anaesthetists of Great Britain and Ireland, 2004

Honorary DSc (Sri Lanka: Ruhuna University) 2004

***Asian Power 100 list (2005) named Chandra Wickramasinghe as one of the 100 most influential Asians living in the UK***

#### **Present Positions:**

Director of the Buckingham Centre for Astrobiology, University of Buckingham,  
Buckingham, UK; (2011- )  
Professor, Cardiff University  
Honorary Professor, University of Buckingham, UK

Editorial Board Member of *Astrophysics and Space Science*  
Editorial Board Member of *Journal of Scientific Exploration*  
Editor of Astrobiology for internet journal *JournalofCosmology.com*  
Team member of European Space Agency's *Rosetta Mission*

**Previous Positions:**

Research Fellow, California Institute of Technology, 1965  
Professor of Mathematics, Vidyodaya University of Ceylon, 1966  
Visiting Professor at Universities of Arizona and Maryland USA, 1966-1970  
Visiting Professor at Yukawa Institute, Kyoto University, Japan, 1969  
Fellow of Jesus College, Cambridge; Tutor, Jesus College, Cambridge and College  
Supervisor in Mathematics; Member of the Graduate Staff of the Institute of Theoretical  
Astronomy, University of Cambridge, 1966-1973  
Visiting Professor at the University of Western Ontario, London, Ontario, Canada, 1974 and  
1976  
Director, Institute of Fundamental Studies, Sri Lanka, 1982-1984  
UNDP Consultant/Advisor to the President of Sri Lanka, 1982-1984  
Visiting Professor at Institute of Space and Astronautical Studies, Japan, 1993  
Visiting Professor, University of the West Indies, Mona, Kingston, 1994  
Professor and Head of the Dept. of Applied Maths and Astronomy, Univ. Coll., Cardiff, 1973-  
89  
Professor of Applied Mathematics and Astronomy, University of Cardiff, Wales, 1990-2006  
Professor and Director of the Cardiff Centre for Astrobiology (2006-2011)

**Research Interests:**

Interstellar Matter, Infrared Astronomy, Light Scattering Theory, Applications of Solid State  
Theory to Astronomy, The early Solar System, Comets, Astrochemistry and the Origins of  
Life, Astrobiology, panspermia.

**Endowed Lectures (recent)**

*Joule Millennium Lecturer, University of Salford, 2000*  
*Alfred Curtis Memorial Lecture, British Astronomical Association, 2002*  
*Flamsteed Lecture, University of Derby, 2002*  
*Sujatha Jayawardena Memorial Oration, University of Colombo Alumni Association,*  
*2004-09-27 John Snow Memorial Lecture, Association of Anaesthetists of Great Britain and*  
*Ireland (2004)*

**Books:**

*Interstellar Grains: Chapman & Hall, London, 1967*  
*Light Scattering Functions for Small Particles with Applications in Astronomy: J. Wiley,*  
*1973*  
*Solid-State Astrophysics: (ed with D.J. Morgan) D. Reidel Co., 1975*  
*Interstellar Matter: (with F.D. Khan & P.G. Mezger) Swiss Astron.Soc., 1974*  
*Cosmic Laboratory: University College, Cardiff Press, 1975*  
*Lifecloud: The Origin of Life in the Galaxy: (with Fred Hoyle) J.M. Dent, Lond., 1978*

*Diseases from Space*: (with Fred Hoyle) J.M. Dent, Lond., 1979  
*Origin of Life*: (with Fred Hoyle) University College Cardiff Press, 1979  
*Space Travellers: The Bringers of Life*: (with Fred Hoyle) University College Cardiff Press, 1981  
*Evolution from Space*: (with Fred Hoyle), J.M. Dent, 1981  
*Is Life an Astronomical Phenomenon?*: University College, Cardiff Press, 1982  
*Why Neo Darwinism does not Work*: (with Fred Hoyle) University College Cardiff Press, 1982  
*Proofs that Life is Cosmic*: (with Fred Hoyle) Inst. of Fund.Studies, Sri Lanka, Mem, No. 1, 1982  
*From Grains to Bacteria*: (with Fred Hoyle) University College, Cardiff Press, 1984  
*Fundamental Studies and the Future of Science*: (editor) University College Cardiff Press, 1984  
*Living Comets*: (with Fred Hoyle) University College, Cardiff Press, 1985  
*Viruses from Space*: (with F. Hoyle and J. Watkins), University College Cardiff Press, 1986  
*Archaeopteryx - The Primordial Bird: A Case of Fossil Forgery*: (with Fred Hoyle) Christopher Davies, Swansea, 1986  
*Cosmic Life Force*: (with Fred Hoyle), J.M. Dent, Lond., 1988  
*The Theory of Cosmic Grains*: (with F. Hoyle), Kluwer Academic Publishers, 1990  
*Our Place in the Cosmos*: (with Fred Hoyle) Weidenfeld and Nicholson, Lond., 1993  
*The Wonders of Life and the Universe* (with Daisaku Ikeda) Mainichi Press, 1992, 1993  
*Glimpses of Life, Time and Space (a book of poems)* Writers' Workshop, Redbird, 1994  
*Life of Mars: The Case for a Cosmic Heritage*: (with Fred Hoyle) Clinical Press, 1997  
*Space and Eternal Life* (a dialogue with Daisaku Ikeda) Journeyman Press, 1997  
*Astronomical Origins of Life: Steps towards panspermia* (with F. Hoyle) Kluwer Academic Press, 2000  
*Cosmic Dragons: Life and Death on Our Planet*. Souvenir Press, 2001  
*Fred Hoyle's Universe* (eds with G. Burbidge and J.V. Narlikar) Kluwer Academic Publ. 2003  
*A Journey with Fred Hoyle: The search for cosmic life*, World Scientific and Imperial College Press, 2004  
Comets and the Origin of Life (with J.T. Wickramasinghe and W.M. Napier), World Scientific and Imperial College Press, 2009  
*The Quest for the Origins of Life*, Taylor and Francis, 2013 in press

### **Endowed Lectures**

*Joule Millennium Lecturer, University of Salford, 2000*  
*Alfred Curtis Memorial Lecture, British Astronomical Association, 2002*  
*Flamsteed Lecture, University of Derby, 2002*  
*Sujatha Jayawardene Memorial Oration, University of Colombo Alumni Association, 2004-09-27*  
*John Snow Memorial Lecture, Association of Anaesthetists of Great Britain and Ireland (2004)*

### **List of Technical Papers**

1. "A note on the origin of the Sun's polar field", F.Hoyle and N.C. Wickramasinghe, *Mon.Not.Roy.Astr.Soc.*, **123**,51,1962
2. "On graphite particles as interstellar grains", F. Hoyle and N.C. Wickramasinghe, *Mon.Not.Roy.Astr.Soc.*, **124**,417,1962

3. "A note on interstellar polarization by graphite flakes", N.C. Wickramasinghe, *Mon.Not.Roy.Astr.Soc.*, **125**, 87,1962
4. "On graphite particles as interstellar grains II", N.C. Wickramasinghe, *Mon.Not.Roy.Astr.Soc.*, **126**, 99,1963
5. "On the deficiency in the ultraviolet fluxes from early type stars", F.Hoyle and N.C. Wickramasinghe, *Mon.Not.Roy.Astr.Soc.*, **126**, 401,1963
6. "Interstellar extinction by graphite grains", N.C. Wickramasinghe and C. Guillaume, *Nature*, **207**, 366,1965
7. "On the growth and destruction of ice mantles on interstellar graphite grains", N.C. Wickramasinghe, *Mon.Not.Roy.Astr.Soc.*, **131**,177,1965
8. "A mechanism for mass ejection in red giant stars", B. Donn, T.P. Stecher and N.C. Wickramasinghe, *Ap.J.*, **146**,590,1966
9. "A note on the vapour pressure of a crystal", N.C. Wickramasinghe, *Proc.Camb.Phil.Soc.*, **59**,255,1963
10. "A survey of recent interstellar reddening observations", K.Nandy and N.C. Wickramasinghe, *Pub.Roy.Obs.Edin*, **5**, No.3, 1965
11. "Light scattering by graphite core-ice mantle grains", N.C. Wickramasinghe, M.W.C. Dharmawardene and C. Wyld, *Mon.Not.Roy.Astr.Soc.*, **134**,25,1966
12. "On the frequency distribution of ice grains sizes", N.C. Wickramasinghe, W.D. Ray and C. Wyld, *Mon.Not.Roy.Astr.Soc.*, **132**,137,1966
13. "On the optics of small graphite spheres, I", N.C. Wickramasinghe, *Mon.Not.Roy.Astr.Soc.*, **131**, 263,1966
14. "On the optics of small graphite spheres, II", K.S. Krishna Swamy and N.C. Wickramasinghe, *Mon.Not.Roy.Astr.Soc.*, **132**,193,1966
15. "On the optics of small graphite spheres,III", C. Grevesse-Guillaume and N.C. Wickramasinghe, *Mon.Not.Roy.Astr.Soc.*,**132**,471,1966
16. "Comments on the intrinsic polarization of Mira variables", B.Donn, T.P. Stecher, N.C. Wickramasinghe and D.A. Williams, *Ap.J.*, **145**,949,1966
17. "The wavelength dependence of interstellar polarization by graphite grains", N.C. Wickramasinghe, B.Donn, T.P. Stecher and D.A. Williams, *Nature*, **212**, 167,1966
18. "Unified model for interstellar extinction and polarization", N.C. Wickramasinghe and K.S. Krishna Swamy, *Nature*, **213**, 895, 1967
19. "On the formation of graphite grains in cool stars", B.Donn, N.C. Wickramasinghe, J.P.Hudson and T.P.Stecher, *Ap.J.*, **153**, 451,1968
20. "Graphite grains and graphite core-ice mantle grains", N.C. Wickramasinghe, in *Interstellar Grains*, ed. by J.M. Greenberg and T.P. Roark, *NASA SP-140*, Washington, 1967
21. "Wavelength dependence of the position angle of interstellar polarization", J.G. Ireland, K. Nandy, V.C.Reddish and N.C. Wickramasinghe, *Nature*, **212**, 990,1966
22. "Impurities in interstellar grains", F.Hoyle and N.C.Wickramasinghe, *Nature*, **214**, 969,1967
23. "Evidence for lattice bands in interstellar grains", N.C. Wickramasinghe, *Nature*, **216**, 249,1967
24. "Origin of the diffuse interstellar bands", N.C. Wickramasinghe, J.G. Ireland, K. Nandy, H. Seddon and R.D. Wolstencroft, *Nature*, **217**, 412,1968
25. "Condensation of the planets", F.Hoyle and N.C. Wickramasinghe, *Nature*, **217**, 415,1968
26. "Microwave background in a steady-state universe", J.V. Narlikar and N.C. Wickramasinghe, *Nature*, **216**,43,1968

27. "Interpretation of the cosmic microwave background", J.V. Narlikar and N.C. Wickramasinghe, *Nature*, **217**, 1235,1968
28. "On the temperature of interstellar grains", K.S. Krishna Swamy and N.C. Wickramasinghe, *Mon.Not.Roy.Astr.Soc.*, **139**, 283,1968
29. "Comments on the possibility of interstellar quartz grains", K.S. Krishna Swamy and N.C. Wickramasinghe, *Ap.J.*, **154**,297, 1968
30. "Interstellar extinction by quartz grains", K.S. Krishna Swamy and N.C. Wickramasinghe, *Nature*, **217**, 1236, 1968
31. "On the formation of graphite particles in the atmospheres of Mira variables", N.C. Wickramasinghe, *Mon.Not.Roy.Astr.Soc.*, **140**,273,1968
32. "Stimulation of intersellar OH by phonons", N.C. Wickramasinghe, *Nature*, **217**, 1131,1968
33. "Accretion of solid hydrogen mantles by grains in OB associations", V.C. Reddish and N.C. Wickramasinghe, *Nature*, **218**, 661, 1968
34. "Interpretation of the diffuse galactic light", N.C. Wickramasinghe, *Nature*, **218**, 1039, 1968
35. "Solid hydrogen and the microwave background", F.Hoyle, N.C. Wickramasinghe and V.C. Reddish, *Nature*, **218**, 1124, 1968
36. "Chemical sputtering of ice grains and mantles in HII regions", N.C. Wickramasinghe and D.A. Williams, *Observatory*, **88**, 272, 1968
37. "Condensation of dust in galactic explosions", F. Hoyle and N.C. Wickramasinghe, *Nature*, **218**, 1127, 1968
38. "Colour centres in interstellar grains", N.C. Wickramasinghe, K. Nandy, H. Seddon, R.D. Wolstencroft and J.G. Ireland, *Nature*, **218**, 1236, 1968
39. "Extinction curves for graphite particles coated with solid hydrogen", K.Nandy and N.C. Wickramasinghe, *Nature*, **219**, 1347, 1968
40. "Graphite particle model for NML Cygnus", K.S. Krishna Swamy and N.C. Wickramasinghe, *Nature*, **220**, 896, 1968
41. "Localised interstellar molecular hydrogen", V.C. Reddish and N.C. Wickramasinghe, *Nature*, **220**, 463,1968
41. "Chemical exchange reactions and H<sub>2</sub> formation in dark interstellar clouds", P. Solomon and N.C. Wickramasinghe, *Nature*, **220**, 1214,1968
42. "Interstellar dust and diamonds", N.C. Wickramasinghe, *Nature*, **222**, 154,1969
43. "Interstellar dust", B.T. Lynds and N.C. Wickramasinghe, *Ann Rev. Astron. Astrophys.*, **6**, 215,1968
44. "On interstellar abundance anomalies", N.C. Wickramasinghe, *Observatory*, **88**,246,1968
45. "A spectral feature of grains at 10 microns?", K.S. Krishna Swamy and N.C. Wickramasinghe, *Observatory*, **89**, 55,1969
46. "Strengths of the fundamental bands of ice and solid hydrogen in composite grains", K.S. Krishna Swamy and N.C. Wickramasinghe, *Observatory*, **89**, 57,1969
47. "Star formation in clouds of solid hydrogen grains", V.C. Reddish and N.C. Wickramasinghe, *Mon.Not.Roy.Astr.Soc.*, **143**, 189,1969
48. "Solid hydrogen coated graphite particles in the interstellar medium I", K.S. Krishna Swamy and N.C. Wickramasinghe, *Mon.Not.Roy.Astr.Soc.*, **144**,41,1969
49. "Alignment of interstellar grains by cosmic rays", E.E. Salpeter and N.C. Wickramasinghe, *Nature*, **222**, 442, 1969
50. "Interstellar grains", F.Hoyle and N.C. Wickramasinghe, *Nature*, **223**, 459, 1969

51. "Molecular and solid hydrogen in dense interstellar clouds", P.M. Solomon and N.C. Wickramasinghe, *Ap.J.*, **158**,449, 1969
52. "Infrared radiation from dust in Seyfert galaxies", M.J. Rees, J.I. Silk, M.W. Werner and N.C. Wickramasinghe, *Nature*, **223**, 778, 1969
53. "Wavelength dependence of polarization XVIII. Interstellar polarization and composite interstellar particles", G.V. Coyne and N.C. Wickramasinghe, *Astron.J.*, **74**, 1179,1969
54. "Extinction curves for graphite-silicate grain mixtures", N.C. Wickramasinghe, *Proc. IAU Symposium No.36* (eds Houziaux and Butler), p.42,1970
55. "Graphite-silicate grain mixtures and the diffuse galactic light", N.C. Wickramasinghe, *Publ.Astro.Soc.Japan*, **22**, 85,1970
56. "Interstellar polarization by graphite-silicate grain mixtures", N.C. Wickramasinghe, *Nature*, **224**, 656, 1969
57. "The shape of the interstellar 4430A absorption band", K.Nandy and N.C. Wickramasinghe, *Astrophys.Sp.Sci.*,**6**,154,1970
58. "Retention of dust grains near galactic nuclei", N.C. Wickramasinghe, *Nature*, **225**, 145,1970
59. "Dust in supernova explosions", F.Hoyle and N.C. Wickramasinghe, *Nature*, **226**, 62,1970
60. "Infrared spectrum of the galactic centre" H.Okuda and N.C. Wickramasinghe, *Nature*, **226**, 134,1970
61. "Interstellar extinction by graphite, iron and silicate grains", K.Nandy and N.C. Wickramasinghe, *Nature*, **227**, 51,1970
62. "Radio waves from grains in HII regions", F.Hoyle and N.C. Wickramasinghe, *Nature*, **227**, 473, 1970
63. "Small dust grains and the heating of HI clouds", N.C. Wickramasinghe, *Nature*, **227**, 587, 1970
64. "Galactic component of the diffuse X-ray background", N.C. Wickramasinghe, *Nature*, **227**, 265,1970
65. "Galactic soft X-rays and the alignment of intersellar grains", N.C. Wickramasinghe, *Nature*, **228**, 540,1970
66. "Reply to Mack and Webster", N.C. Wickramasinghe, *Nature*, **228**, 544,1970
67. "Interstellar dust-graphite, iron and silicates", N.C. Wickramasinghe and K. Nandy, *Nature Physical Science*, **229**, 81,1971
68. "Dust clouds in space", N.C. Wickramasinghe, *Science Journal*, **6**, 46, 1970
69. "Polarization within the 4430A absorption band", K.Nandy and N.C. Wickramasinghe, *Nature Physical Science*, **229**, 234, 1971
70. "Enstatite grains and the 2200A interstellar extinction feature", K. Nandy and N.C. Wickramasinghe, *Nature Physical Science*, **230**, 16,1971
71. "Interstellar dust- reply to Duley's criticisms", N.C. Wickramasinghe and K. Nandy, *Nature Physical Science*, **230**, 24,1971
72. "A model for cosmic infrared sources", N.C. Wickramasinghe, *Nature Physical Science*, **230**, 116,1971
73. "Optical properties of graphite-iron-silicate grain mixtures", K.Nandy and N.C. Wickramasinghe, *Mon.Not.Roy.Astr.Soc.*, **153**,205,1971
74. "Dust in the Orion nebula", K.Nandy and N.C. Wickramasinghe, *Mon.Not.Roy.Astr.Soc.*,**154**, 255,1971
75. "Strong infrared galaxies", N.C. Wickramasinghe, *Science Journal*, 17 June 1971

76. "Irradiated quartz particles as interstellar grains", N.C. Wickramasinghe, *Nature Physical Science*, **234**, 7,1971
77. "Recent work on interstellar grains", N.C. Wickramasinghe & K.Nandy, *Rep. Progress Phys.*, **35**, 157,1972
78. "On the injection of grains into interstellar clouds", N.C. Wickramasinghe, *Mon.Not.Roy.Astr.Soc.*, **159**, 269,1972
79. "Radiation-driven efflux and circulation of dust in spiral galaxies", R.Y. Chiao and N.C. Wickramasinghe, *Mon.Not.Roy.Astr.Soc.*, **159**, 361, 1972
80. "Dust models for infrared galaxies", N.C. Wickramasinghe, *Mem. Soc. Roy.Sci. Liege*, 6 series, tome III, p.601, 1972
81. "The expulsion of dust from galaxies", R.Y. Chiao and N.C. Wickramasinghe, *Astrophys. Lett.* **14**, 19,1973
82. "Extinction and scattering by small planetesimal particles", K.Nandy and N.C. Wickramasinghe, *Astrophys.Sp.Sci.*,**23**, 51,1973
83. "The 2200A extinction feature and the shape distribution of graphite grains", N.C. Wickramasinghe and K. Nandy, *Astrophys. Sp.Sci.*, **26**, 123,1974
84. "Electric charge and acceleration of suprathemal grains", N.C. Wickramasinghe, *Astrophys. Sp. Sci.*, **28**, 25, 1974
85. "Extinction and polarization models", N.C. Wickramasinghe, *Solid State Astrophysics* (ed. N.C. Wickramasinghe and D.J. Morgan, 1976)
86. "Mean free path limitation of conduction electrons and extinction efficiencies of graphite grains", N.C. Wickramasinghe, T. Lukes and M.J. Dempsey, *Astrophys. Sp.Sci.*, **30**, 315,1974
87. "On the formation of metal-poor stars", M.G. Edmunds and N.C. Wickramasinghe, *Astrophys. Sp.Sci.*, **30**,L9, 1974
88. "The cosmic laboratory", N.C. Wickramasinghe, *Inaugural Lecture*, University College, Cardiff, (UCC Press) 1975
89. "Formaldehyde polymers in interstellar space", N.C. Wickramasinghe, *Nature*, **252**, 462,1974
90. "Polyoxymethylene polymers as interstellar grains", N.C. Wickramasinghe, *Mon.Not.Roy.Astr.Soc.*, **170**, 11P,1974
91. "Formaldehyde polymers in comets", N.C. Wickramasinghe and V. Vanysek, *Astrophys. Sp.Sc.*, **33**, L19,1975
92. "The mystery of the cosmic boron abundance", S. Ramadurai and N.C. Wickramasinghe, *Astrophys. Sp.Sci.*, **33**, L41,1975
93. "How to make metal-poor stars, redden associations and grow mantles on grains", M.G. Edmunds and N.C. Wickramasinghe, *Astrophys. Sp.Sci.*, **34**, 131,1975
94. "The plausibility of silicate-core ice mantle grains", M.J. Dempsey and N.C. Wickramasinghe, *Astrophys. Sp.Sci.*, **34**, 185,1975
95. "A dust model for the cosmic microwave background", N.C. Wickramasinghe, M.G. Edmunds, S. Chitre, J.V. Narlikar and S. Ramadurai, *Astrophys. Sp.Sci.*, **35**, L9,1975
96. "Hydrocarbon molecules in carbon stars", S.P. Tarafdar and N.C. Wickramasinghe, *Astrophys. Sp.Sci.*, **35**, L41,1975
97. "Charged dust grains and excitation of rotational levels of interstellar molecular hydrogen", S.P. Tarafdar and N.C. Wickramasinghe, *Nature*, **254**, 203,1975
98. "Whiskers and cosmic millimetre-wave sources", M.G. Edmunds and N.C. Wickramasinghe, *Nature*, **256**, 713,1975

99. "Composition of cometary dust: the case against silicates" D.A. Mendis and N.C. Wickramasinghe, *Astrophys. Sp.Sci.*, **37**, L13, 1975
100. "Ejection of grains from cool stars", N.C. Wickramasinghe, *IAU Symposium No.52*, ed. J.M.Greenberg and H.C. van de Hulst, p.345, 1973
101. "A proto-planetary contribution to interstellar dust", D.A. Mendis and N.C. Wickramasinghe, *Astrophys. Sp.Sc.*, **38**, L13,1975
102. "Effects of suprathemal grains", S.P. Tarafdar and N.C. Wickramasinghe, *Astrophys. Sp.Sci.*, **39**, 19,1976
103. "The optics of spherically stratified graphite grains", N.C. Wickramasinghe, *Astrophys. Sp.Sci.*, **39**, 151,1976
104. "Extinction properties of porous spheres", H. Abadi and N.C. Wickramasinghe, *Astrophys. Sp.Sc.*, **39**, L.31, 1976
105. "On the acceleration of interstellar grains", D.A. Mendis and N.C. Wickramasinghe, *Astrophys. Sp.Sci.*, **42**, L11, 1976
106. "On the development of infrared radiation from an expanding nova shell", D.D. Clayton and N.C. Wickramasinghe, *Astrophys. Sp.Sci.*, **42**, 463, 1976
107. "Effects of physical adsorption on porous interstellar grains", H. Abadi, P. Joshi, S. Ramadurai and N.C. Wickramasinghe, *Nature*, **263**, 214, 1976
108. "The role of Lyman alpha photons in the interstellar medium", S.P. Tarafdar and N.C. Wickramasinghe, *Nature*, **264**, 44,1976
109. "Limits on a microwave background without the big bang", J.V. Narlikar, M.G. Edmunds and N.C. Wickramasinghe, in *Far Infrared Astronomy*, ed. M. Rowan-Robinson, Pergamon Press, 1976
110. "Supergrain models of far infrared sources", M.G. Edmunds and N.C. Wickramasinghe, in *Far Infrared Astronomy*, ed. M. Rowan-Robinson, Pergamon Press, 1976
111. "Polyformaldehyde grains", A. Cooke and N.C. Wickramasinghe, in *Far Infrared Astronomy*, ed. M. Rowan-Robinson, Pergamon Press, 1976
112. "Formation and destruction of grains", N.C. Wickramasinghe, in *Topics in Interstellar Matter*, ed. H. van Woerden, D.Reidel, 1977
113. "The composition of dust in the Ring Nebula NGC6888", S.P. Tarafdar and N.C. Wickramasinghe, *Astron.Astrophys.*, **54**, 963, 1977
114. "Primitive grain clumps and organic compounds in carbonaceous chondrites", F. Hoyle and N.C. Wickramasinghe, *Nature*, **264**, 45, 1976
115. "Organic molecules in interstellar dust: a possible spectral signature at 2200A?", N.C. Wickramasinghe, F. Hoyle and K. Nandy, *Astrophys. Sp.Sci.*, **47**, L1, 1977
116. "Polyoxymethylene co-polymers on grains", A. Cooke and N.C. Wickramasinghe, *Astrophys. Sp.Sci.*, **50**, 43,1977
117. "On the production of positive molecular ions in cometary comas", S.P. Tarafdar and N.C. Wickramasinghe, *Astrophys. Sp.Sci.*, **50**, 163, 1977
118. "On the computation of optical properties of heterogeneous grains", Craig F. Bohren and N.C. Wickramasinghe, *Astrophys. Sp.Sci.*, **50**, 461,1977
119. "Polysaccharides and the infrared spectrum of OH26.5+0.6", F. Hoyle and N.C. Wickramasinghe, *Mon.Not.Roy.Astr.Soc.*, **181** 51P,1977
120. "Spectroscopic evidence for interstellar grain clumps in meteoritic inclusions", A. Sakata, N. Nakagawa, T. Iguchi, S. Isobe, M. Morimoto, F.Hoyle and N.C. Wickramasinghe, *Nature*, **266**, 241, 1977
121. "Pre-biotic molecules in Martian dust clouds", H.Abadi and N.C. Wickramasinghe, *Nature*, **267**, 687, 1977



122. "Polysaccharides and the infrared spectra of galactic sources", F. Hoyle and N.C. Wickramasinghe, *Nature*, **268**, 610, 1977
123. "Prebiotic polymers and infrared spectra of galactic sources", N.C. Wickramasinghe, F. Hoyle, J. Brooks, and G. Shaw, *Nature*, **269**, 674, 1977
124. "Identification of the 2200A interstellar absorption feature", F. Hoyle and N.C. Wickramasinghe, *Nature*, **270**, 323, 1977
125. "Origin and nature of carbonaceous material in the galaxy", F. Hoyle and N.C. Wickramasinghe, *Nature*, **270**, 701, 1977
126. "Identification of interstellar polysaccharides and related hydrocarbons", F. Hoyle, N.C. Wickramasinghe and A.H. Olavesen, *Nature*, **271**, 229, 1978
127. "Infrared observations of Comet West (1975N).II. A model of the cometary dust", M. Oishi, H. Okuda and N.C. Wickramasinghe, *Pub. Astron. Soc. Japan*, **30**, 161, 1978
128. "Calculations of infrared fluxes from galactic sources for a polysaccharide grain model", F. Hoyle and N.C. Wickramasinghe, *Astrophys. Sp.Sci.*, **53**, 489, 1978
129. "Comets, ice ages and ecological catastrophes", F. Hoyle and N.C. Wickramasinghe, *Astrophys. Sp.Sci.*, **53**, 523, 1978
130. "Biochemical chromophores and the interstellar extinction at ultraviolet wavelengths", F. Hoyle and N.C. Wickramasinghe, *Astrophys. Sp.Sci.*, **65**, 241, 1979
131. "On the nature of interstellar grains", F. Hoyle and N.C. Wickramasinghe, *Astrophys. Sp.Sci.*, **66**, 77, 1979
132. "The identification of the 3 micron spectral feature in galactic infrared sources", F. Hoyle and N.C. Wickramasinghe, *Astrophys. Sp.Sci.*, **68**, 499, 1980
133. "Organic grains in space", F. Hoyle and N.C. Wickramasinghe, *Astrophys. Sp.Sci.*, **69**, 511, 1980
134. "Molecules and grains in interstellar space", N.C. Wickramasinghe, *Proc. International School of Physics "Enrico Fermi"*, Course LXXIII, 1980, p.122
135. "Organic material and the 1.5-4 micron spectra of galactic sources", F. Hoyle and N.C. Wickramasinghe, *Astrophys. Sp.Sci.*, **72**, 183, 1980
136. "Dry polysaccharides and the infrared spectrum of OH26.5+0.6", F. Hoyle and N.C. Wickramasinghe, *Astrophys. Sp.Sci.*, **72**, 247, 1980
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