

**Burbidge, Burbidge, Fowler, Hoyle (B<sup>2</sup>FH) and Wickramasinghe**  
[and others]:

An Annotated Bibliography  
with Notes on “Cosmology and the Origins of Life” [volume 30]  
and Evolution,  
including biological evolution, behavioral evolution, stellar evolution,  
life as a cosmic phenomenon, cosmic life, panspermia, astrobiology,  
cosmic biology, and cosmic evolution.

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**Various Others** on astronomy, cosmology, theology, origins of life,  
creation, and evolution

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## Burbidge, E. Margaret

Burbidge, E. Margaret, Geoffrey R. Burbidge, William A. Fowler, and Fred Hoyle. (1 October 1957). “Synthesis of the Elements in Stars” in *Review of Modern Physics*, volume 29, issue number 4, pages 547-650, doi:10.1103/RevModPhys.29.547, identified by author initials as **B<sup>2</sup>FH**.

Concerning “synthesis of the elements” and “stellar evolution,” see: “The Evolution of Stars” (Hoyle and Lyttleton 1939), “On the Accretion of Interstellar Matter by Stars” (Hoyle and Lyttleton 1940), “On the Accretion Theory of Stellar Evolution” (Hoyle and Lyttleton 1941), “On the Nature of Red Giant Stars” (Hoyle and Lyttleton 1942), “The Synthesis of the Elements from Hydrogen” (Hoyle 1946), “On the Condensation of the Planets” (Hoyle 1946), “The Chemical Composition of the Stars” (Hoyle 1946), “On the Formation of Heavy Elements in Stars” (Hoyle 1947), “A New Model for the Expanding Universe” (Hoyle 1948), “Stellar Evolution and the Expanding Universe” (Hoyle 1949), “On the Fragmentation of Gas Clouds into Galaxies and Stars” (Hoyle 1953), “On Nuclear Reactions Occurring in Very Hot Stars. I. The Synthesis of Elements from Carbon to Nickel” (Hoyle 1954), “On the Evolution of Type II Stars” (Hoyle and Schwarzschild 1955), “Origin of the Elements in Stars” (Hoyle, Fowler, Burbidge, and Burbidge 1956) and “Synthesis of the Elements in Stars” (Burbidge, Burbidge, Fowler, and Fred Hoyle [**B<sup>2</sup>FH**] 1957). Concerning “life as a cosmic phenomenon” and “cosmic evolution,” see: “The Case for Life as a Cosmic Phenomenon” (Hoyle and Wickramasinghe 1986) and *Origins: Fourteen Billion Years of Cosmic Evolution* (Tyson and Goldsmith 2004) where **B<sup>2</sup>FH** is described as “a turning point in our knowledge of how the universe works” (page 165).

Burbidge, E. Margaret. (September 1994). “Watchers of the Skies” [a memoir expressing love of poetry with a title from Keats and “a lifetime in astronomy”] in *Annual Review of Astronomy and Astrophysics*, volume 32, pages 1-36, doi:10.1146/annurev.aa.32.090194.000245, <https://adsabs.harvard.edu/pdf/1994ARA%26A..32....1B>.

Burbidge, E. Margaret. (2005). “Modern Alchemy: Fred Hoyle and Element Building by Neutron Capture” is chapter 11 in *The Scientific Legacy of*

*Fred Hoyle*, edited by Douglas Gough. Cambridge: Cambridge University Press, 2011 paperback.

**Burbidge, Geoffrey R.**

Burbidge, Geoffrey R. (17 June 1961). “Galactic Explosions as Sources of Radio Emission” in *Nature*, volume 190, issue number 4781, pages 1053-1056, doi:10.1038/1901053a0.  
<https://www.nature.com/articles/1901053a0>.

Burbidge, Geoffrey R. (August 1966). “The Origin of Cosmic Rays” in *Scientific American*, volume 215, issue number 2, pages 32-38, doi:10.1038/scientificamerican0866-32,  
<https://www.jstor.org/stable/24931020>.

Burbidge, Geoffrey R. (1967). *Lectures on High Energy Astrophysics*. Bombay, India: Tata Institute of Fundamental Research.

Burbidge, Geoffrey R. (3 September 1971). “Was There Really a Big Bang?” in *Nature*, volume 233, issue number 5314, page 36-40,  
<https://www.nature.com/articles/233036a0>.

Burbidge, Geoffrey R. (12 November 1973). “Problem of the Redshifts” in *Nature Physical Science*, volume 246, issue number 150, pages 17-25,  
<https://www.nature.com/articles/physci246017a0>.

Burbidge, Geoffrey R. (February 1992). “Why Only One Big Bang?” in *Scientific American*, volume 266, page 120,  
<https://www.scientificamerican.com/article/why-only-one-big-bang/>.

Burbidge, Geoffrey R., FRS. (1 December 2003). “Sir Fred Hoyle. 24 June 1915 – 20 August 2001, Elected FRS 1957” in *Biographical Memoirs of Fellows of the Royal Society*, volume 49, pages 213-247, doi:10.1098/rsbm.2003.0013,  
<https://royalsocietypublishing.org/doi/abs/10.1098/rsbm.2003.0013>.

Burbidge, Geoffrey R. (2008). “B<sup>2</sup>FH, the Cosmic Microwave Background and Cosmology” in *Publications of the Astronomical Society of Australia*, volume 25, issue number 1, pages 30-35, doi:10.1071/AS07029,  
<https://doi.org/10.1071/AS07029>.

- Burbidge, Geoffrey R. (2008). “Hoyle’s Role in B<sup>2</sup>FH” in *Science*, volume 319, issue number 5869, page 1484b, doi:10.1126/science.319.5869.1484b, <https://www.jstor.org/stable/20053568>.
- Burbidge, Geoffrey R. (Submitted 14 November 2008). “A Realistic Cosmological Model Based on Observations and Some Theory Developed Over the Last 90 Years” [a paper presented at a meeting entitled “A Century of Cosmology” online 16 June 2008] in *Italian Physical Society/Società Italiana Di Fisica*, year 2007, issue number 12, pages 1437-1452, <https://arxiv.org/pdf/0811.2402.pdf>.
- Burbidge, Geoffrey R., and **Fred Hoyle**. (December 1966). “The Problem of the Quasi-Stellar Objects” in *Scientific American*, volume 215, pages 40-52, doi:10.1038//Scientificamerican1266-40, <https://www.jstor.org/stable/24931353>.
- Burbidge, Geoffrey R., and **E. Margaret Burbidge**. (1967). *Quasi-Stellar Objects*. San Francisco: W. H. Freeman Publisher.
- Burbidge, Geoffrey R., and **Fred Hoyle**. (1 March 1969). “Condensed Objects in the Crab Nebula” in *Nature*, volume 221, issue number 5183, pages 847-848, doi:10.1038/221847a0, <https://www.nature.com/articles/221847a0>.
- Burbidge, Geoffrey R., and **E. Margaret Burbidge**. (4 October 1969). “Quasi-stellar Objects—A Progress Report” in *Nature*, volume 224, issue number 5214, pages 21-24, doi:10.1038/224021a0, <https://link.springer.com/article/10.1038/224021a0>.

**Fowler, William A.**

Fowler, William A. (1954). “Experimental and Theoretical Results on Nuclear Reactions in Stars” in *Mémoires de la Société Royale des Sciences de Liège*, volume 13, pages 88-112.

Fowler, William A. (September 1956). “The Origin of the Elements” in *Scientific American*, volume 195, issue number 3, pages 82-91, doi:10.1038/scientificamerican0956-82, <https://www.jstor.org/stable/24941744>.

Fowler, William A. (July 1965). *Neutrino Astrophysics: Supermassive Stars, Quasars, and Extragalactic Radio Sources and Nuclear Energy Generation in Supermassive Stars*. W. K. Kellogg Foundation: Orange Aid Preprint Series in Nuclear Astrophysics.

Fowler, William A. (1967). *Nuclear Astrophysics*. Philadelphia, Pennsylvania: American Philosophical Society.

Fowler, William A. (November 1984). “The Quest for the Origin of the Elements” in *Science*, volume 226, issue number 4677, pages 922-935, doi:10.1126/science.226.4677.922, <https://www.science.org/doi/abs/10.1126/science.226.4677.922>.

Fowler, William A., and Jesse L. Greenstein. (15 April 1956). “Element-Building Reactions in Stars” in *Proceedings of the National Academy of Sciences*, volume 42, issue number 4, pages 173-180.

Fowler, William A., and **Fred Hoyle**. (November 1960 [21 May 1960]). “Nucleosynthesis in Supernovae” in *Astrophysical Journal*, volume 132, pages 565-590, <https://adsabs.harvard.edu/full/record/seri/ApJ../0132/1960ApJ...132..565H.html>, <https://www.osti.gov/biblio/4099797>.

Fowler, William A., and **Fred Hoyle**. (December 1964 [8 April 1964]). “Neutrino Processes and Pair Formation in Massive Stars and Supernovae” in *Astrophysical Journal Supplement Series*, volume 9, pages 201-319, doi:10.1086/190103, <https://adsabs.harvard.edu/pdf/1964ApJS...9..201F>.

Fowler, William A., and **Fred Hoyle**. (c1964). *Nucleosynthesis in Massive Stars and Supernovae*. Chicago: University of Chicago Press, 1965.

## Hoyle, Fred

Hoyle, Fred. (1939). “Quantum Electrodynamics, part I and part II” in *Mathematical Proceedings of the Cambridge Philosophical Society*, volume 35, issue number 3, pages 419-462.

Hoyle, Fred. (2 December 1946 [6 April 1946]). “The Synthesis of the Elements from Hydrogen” in *Monthly Notices of the Royal Astronomical Society*, volume 106, issue number 5, pages 343-383.

Hoyle, Fred. (13 April 1946). “On the Condensation of the Planets” in *Monthly Notices of the Royal Astronomical Society*, volume 106, issue number 5, pages 406-422.

Hoyle, Fred. (29 December 1946). “The Chemical Composition of the Stars” in *Monthly Notices of the Royal Astronomical Society*, volume 106, issue number 4, pages 255-259.

Hoyle, Fred. (1947). “On the Formation of Heavy Elements in Stars” in *Proceedings of the Physical Society*, volume 59, issue number 6, pages 972-978.

Hoyle, Fred. (5 August 1948). “A New Model for the Expanding Universe” in *Monthly Notices of the Royal Astronomical Society*, volume 108, issue number 1748, pages 372-382.

Hoyle, Fred. (1949). *Some Recent Researches in Solar Physics*. Cambridge: Cambridge University Press.

Hoyle, Fred. (14 January 1949). “On the Cosmological Problem” in *Monthly Notices of the Royal Astronomical Society*, volume 109, issue number 3, pages 365-371.

Hoyle, Fred. (5 February 1949). “Stellar Evolution and the Expanding Universe” in *Nature*, volume 163, pages 196-198, doi:10.1038/163196a0, <https://www.nature.com/articles/163196a0>.

Hoyle, Fred. (1950). *The Nature of the Universe: A Series of Broadcast Lectures*. Oxford: B. Blackwell [New York: Harper, 1951].



- Hoyle, Fred. (1952). *Nature of the Universe*. Oxford: Blackwell.
- Hoyle, Fred. (1 June 1952). "Concepts of the Universe" in *New York Times Magazine*, pages 11-12, 50-51. [Kragh 1996: 463].
- Hoyle, Fred. (1953). *A Decade of Decision*. London: W. Heinemann Publishing.
- Hoyle, Fred. (15 August 1953). "Cosmic Origin of Radiation at Radio Frequencies" in *Nature*, volume 172, issue number 4372, pages 296-297, doi:10.1038/172296a0.  
<https://www.nature.com/articles/172296a0>.
- Hoyle, Fred. (November 1953). "On the Fragmentation of Gas Clouds into Galaxies and Stars" in *Astrophysical Journal*, volume 118, pages 513-528, doi:10.1086/145780,  
<https://adsabs.harvard.edu/pdf/1953ApJ...118..513H>.
- Hoyle, Fred. (13 March 1954). "Generation of Radio Noise by Cosmic Sources" in *Nature*, volume 173, issue number 4402, pages 483-484, doi:10.1038/173483a0, <https://www.nature.com/articles/173483a0>.
- Hoyle, Fred. (September 1954 [Received 22 December 1953]). "On Nuclear Reactions Occurring in Very Hot Stars. I. The Synthesis of Elements from Carbon to Nickel" in *Astrophysical Journal Supplement*, volume 1, pages 121-146.
- Hoyle, Fred. (1955). *Frontiers of Astronomy*. London: Heinemann Publishing; New York: Harper and Brothers Publishers [reprinted in 1956, 1961, and 1963; Spanish version in 1960, and 1970].
- Hoyle, Fred. (7 May 1955). "The 'Horizon' of the Steady-State Universe" [reply to Thomas Gold 26 February 1955] in *Nature*, volume 175, issue number 4462, page 808, doi:10.1038/175808a0.  
<https://www.nature.com/articles/175808a0>.
- Hoyle, Fred. (September 1956). "The Steady-State Universe" in *Scientific American*, volume 195, pages 157-167, doi:10.1038/scientificamerican0956-157.

- Hoyle, Fred. (1956). *Man and Materialism*. New York: Harper and Brothers Publishers.
- Hoyle, Fred. (1957). *The Black Cloud*. London: Heinemann Publishing; New York: Harper and Brothers Publishers.
- Hoyle, Fred. (1959). *Rockets in Ursa Major: A Novel*. London: Heinemann Publishing.
- Hoyle, Fred. (1960). *The Nature of the Universe*. New York: Harper and Brothers Publishers.
- Hoyle, Fred. (1960). "On the Origin of the Solar Nebula" in *Quarterly Journal of the Royal Astronomical Society*, volume 1, issue number 1, pages 28-55.
- Hoyle, Fred. (1961). "Observational Tests in Cosmology" [44<sup>th</sup> Guthrie Lecture] in *Proceedings of the Physical Society*, volume 77, issue number 1, pages 1-16, doi:10.1088/0370-1328/77/1/302.  
<https://iopscience.iop.org/article/10.1088/0370-1328/77/1/302/meta>.
- Hoyle, Fred. (1962). *Astronomy*. Garden City, New York: Doubleday Publishing Group.
- Hoyle, Fred. (1963). "Formation of the Planets" in *Origin of the Solar System: Proceedings of a Conference Held at the Goddard Institute for Space Studies, New York, January 23-34, 1962*, edited by Robert Jastrow and A. G. W. Cameron. New York: Academic Press.
- Hoyle, Fred. (1965). *Galaxies, Nuclei and Quasars*. New York: Harper and Row; London: Heinemann Publishing, 1966.
- Hoyle, Fred. (9 October 1965). "Recent Developments in Cosmology" in *Nature*, volume 208, issue number 5006, pages 111-114, doi:10.1038/208111a0,  
<https://link.springer.com/article/10.1038/208111a0>.
- Hoyle, Fred. (1966). *October the First is Too Late* [a science fiction novel]. London: Heinemann Publishing Company.

- Hoyle, Fred. (1968). "Review of Recent Developments in Cosmology" [The Bakerian Lecture] in *Proceedings of the Royal Society of London, Series A. Mathematical and Physical Sciences*, volume 308, issue number 1492, pages 1-17, doi:10.1098/rspa.1968.0204, <https://royalsocietypublishing.org/doi/abs/10.1098/rspa.1968.0204>.
- Hoyle, Fred. (1972). *From Stonehenge to Modern Cosmology*. San Francisco: W. H. Freeman Publishing.
- Hoyle, Fred. (1973). *Nicolaus Copernicus: An Essay on His Life and Work*. London: Heinemann Publishing.
- Hoyle, Fred. (1973). "The Origin of the Universe" in *Quarterly Journal of the Royal Astronomical Society*, volume 14, pages 278-287.
- Hoyle, Fred. (1975). *Astronomy and Cosmology: A Modern Course*. San Francisco: W. H. Freeman Publisher.
- Hoyle, Fred. (1975). *Astronomy Today*. London: Heinemann Publishing.
- Hoyle, Fred. (1975). *Highlights in Astronomy*. San Francisco: W. H. Freeman Publisher.
- Hoyle, Fred. (15 March 1975 [15 August 1974]). "On the Origin of the Microwave Background" in *The Astrophysical Journal*, volume 196, pages 661-670, doi:10.1086/153452, <https://adsabs.harvard.edu/pdf/1975ApJ...196..661H>.
- Hoyle, Fred. (1977). *On Stonehenge*. London: Heinemann Publishing.
- Hoyle, Fred. (1977). *Ten Faces of the Universe*. London: Heinemann Publishing.
- Hoyle, Fred. (1978). *The Cosmogony of the Solar System*. Cardiff, Wales, United Kingdom: University College Cardiff Press.
- Hoyle, Fred. (1980). *Steady-State Cosmology Revisited*. Cardiff, Wales, United Kingdom: University College Cardiff Press.

Hoyle, Fred. (15 April 1980). *The Relation of Biology to Astronomy*. Cardiff, Wales, United Kingdom: University College Cardiff Press.

Here the idea of life *as such* originating from some “warm little pond” (Darwin to Joseph Hooker 1871) or “primordial soup” (Oparin 1924; Haldane 1929) on planet Earth is replaced with the idea of life originating from a vastly larger pond, the Milky Way galaxy and billions of galactic ponds. Contrary to the astronomically improbable hypothesis that microbial life originated from our little pond; Fred Hoyle advanced the vastly more probable hypothesis that microbial life “did not begin on the Earth” (15 April 1980: 21), that “life is not confined to a particular galaxy,” and that “Life can spread itself through the Universe” (15 April 1980: 23). Microbiology has a cosmic quality. Hoyle wrote: “*I suspect that the cosmic quality of microbiology will seem as obvious to future generations as the Sun being the centre of our solar system seems obvious to the present generation*” (15 April 1980: 24-25). [Italics added.] Also, concerning “cosmic biology,” see “The Imperatives of Cosmic Biology” (2010) by Chandra Wickramasinghe and Carl H. Gibson, *Cosmic Biology: How Life Could Evolve on Other Worlds* (c2011) by Louis N. Irwin and Dirk Schulze-Makuch, “Growing Evidence for Cosmic Biology” (September 2014) by Chandra Wickramasinghe, Gensuke Tokoro, and Milton Wainwright, and *Vindication of Cosmic Biology: Tribute to Sir Fred Hoyle (2015-2001)* (2015) edited by Chandra Wickramasinghe.

Concerning **future generations** and cosmic biology, including astrobiology, in *The Relation of Biology to Astronomy* (Cardiff, Wales, United Kingdom: University College Cardiff Press, 15 April 1980) Fred Hoyle said, “I suspect that the cosmic quality of microbiology will seem as obvious to future generations as the Sun being the centre of our solar system seems obvious to the present generation” (24-25).

*When* is that future?

Predictions concerning when scientific evidence for extraterrestrial life will be widely received as obvious include the following years:

**The year 2061** - In 2000, Arthur C. Clark foresaw probable compelling evidence in the year 2061. He said: “2061. The return of Halley’s Comet; first landing by humans. The sensational discovery of both dormant and active life-forms vindicates Hoyle and Wickramasinghe’s century old hypothesis that life is omnipresent throughout space.” (Clarke 2000: 539)

**By the year 2035** - In 2015, David Darling said, “Within the next 10 to 20 years there is every reason to hope that we will find the first evidence for life beyond Earth.” (Darling’s note to the second edition of - David Darling and Dick Schulze-Makuch 2016 [2000]).

**By the year 2029** – In 2019, C. Wickramasinghe, K. Wickramasinghe, and G. Tokoro said: “We predict that ten years from now our cosmic origin will be deemed as obvious as the sun being the center of the solar system is considered obvious today” (2019: 1).

**Perhaps sooner** – Recent advances toward panpsychism in development biology (Levin 2019), mycology (Paul Stamets), and artificial intelligence (Gawdat 2021) might accelerate progress favoring panspermia, astrobiology, cosmic biology, and constructive postmodern natural scientific “astro-theology” (Derham 1715; Wickramasinghe and Walker 2015).

Hoyle, Fred. (May 1981). *The Universe: Past and Present Reflections*. Cardiff, Wales, United Kingdom: University College Cardiff Press.

Hoyle, Fred. (November 1981). “The Universe: Past and Present Reflections” in *Engineering and Science*, pages 8-12.

Hoyle, Fred. (12 November 1981). “Hoyle on Evolution” in *Nature*, volume 294, issue number 5837, pages 104-105.

Herein is Hoyle’s famous “chance that a tornado sweeping through a junk-yard might assemble a Boeing 747” analogy for theory of evolution by chance assembly from random mutations.

Hoyle, Fred. (19 November 1981). “The Big Bang in Astronomy” in *New Scientist*, volume 92, issue number 1280, pages 521-527.

Hoyle, Fred. (1982). “The Universe: Past and Present Reflections” in *Annual Review of Astronomy and Astrophysics*, volume 20, pages 1-35, <https://articles.adsabs.harvard.edu//full/1982ARA%26A..20....1H/0000001.000.html>.

Hoyle, Fred. (December 1982). “From Virus to Cosmology.”  
Sir Fred Hoyle’s IFS Lecture, audio-video online at  
<https://www.buckingham.ac.uk/research/bcab/hrwarchive>

- Hoyle, Fred. (1984 [c1983]). *The Intelligent Universe: A New View of Creation and Evolution*. New York: Holt, Rinehart, and Winston Publishing.
- Hoyle, Fred. (1985). *Comet Halley: A Novel in Two Parts*. New York: St. Martin's Press.
- Hoyle, Fred. (1 January 1986). *The Small World of Fred Hoyle: An Autobiography*. London: M. Joseph Publisher.
- Hoyle, Fred. (1989). "The Steady-State Theory Revived" in *Comments on Astrophysics*, volume 13, issue number 2, pages 81-86, <https://adsabs.harvard.edu/pdf/1989ComAp..13...81H>.
- Hoyle, Fred. (4 May 1989). "Articles of Faith" [book review of *Science and Providence* (1989) by John C. Polkinghorne] in *Nature*, volume 339, issue number 6219, pages 23-24, doi:10.1038/339023a0, <https://link.springer.com/content/pdf/10.1038/339023a0.pdf>.
- Hoyle, Fred. (5 October 1989). "What's in a Name?" in *Nature*, volume 341, issue number 6241, page 380-380.
- Hoyle, Fred. (26 April 1990). "High Hopes for the Space Telescope" in *Nature*, volume 344, issue number 6269, pages 808-810, doi:10.1038/344808a0. <https://www.nature.com/articles/344808a0>.
- Hoyle, Fred. (22 November 1990). "Birth of the Gods" in *Nature*, volume 348, issue number 6299, pages 353-354, doi:10.1038/348353a0, <https://link.springer.com/content/pdf/10.1038/348353a0.pdf>.
- Hoyle, Fred. (15 April 1993). "Heavenly Works" [book review of *Nicholas Copernicus: Complete Works in Two Volumes* (1993) and *Johannes Kepler: New Astronomy* (1992)] in *Nature*, volume 362, issue number 6421, pages 657-658, doi:10.1038/362657a0, <https://link.springer.com/content/pdf/10.1038/362657a0.pdf>.
- Hoyle, Fred. (1993). *The Origin of the Universe and the Origin of Religion*. Wakefield, Rhode Island: Moyer Bell Books.

Hoyle, Fred. (1994). *Home is Where the Wind Blows: Chapters from a Cosmologist's Life*. Mill Valley, California: University Science Books.

\* Also, see “Preprints of Sir Fred Hoyle (1915-2001),” online at [https://www.joh.cam.ac.uk/library/special\\_collections/personal\\_papers/hoylepreprints](https://www.joh.cam.ac.uk/library/special_collections/personal_papers/hoylepreprints)

**Hoyle, Fred, and Nalin Chandra Wickramasinghe**

Hoyle, Fred, and Nalin Chandra Wickramasinghe. (13 June 1962). “On Graphite Particles as Interstellar Grains” in *Monthly Notices of the Royal Astronomical Society*, volume 124, pages 417-433, <https://academic.oup.com/mnras/article/124/5/417/2601371>.

Hoyle, Fred, and Nalin Chandra Wickramasinghe. (8 July 1963). “On the Deficiency in the Ultraviolet Fluxes from Early Type Stars” in *Monthly Notices of the Royal Astronomical Society*, volume 126, issue number 4, pages 401-404, <https://academic.oup.com/mnras/article/126/4/401/2602450>.

Hoyle, Fred, and Nalin Chandra Wickramasinghe. (3 June 1967). “Impurities in Interstellar Grains” in *Nature*, volume 214, issue number 5092, pages 969-971, <https://www.nature.com/articles/214969a0>.

Hoyle, Fred, and Nalin Chandra Wickramasinghe. (1 February 1968). “Condensation of the Planets” in *Nature*, volume 217, issue number 5127, pages 415-418, doi:10.1038/217415a0, <https://www.nature.com/articles/217415a0>.

Hoyle, Fred, and Nalin Chandra Wickramasinghe. (22 June 1968). “Condensation of Dust in Galactic Explosions” in *Nature*, volume 218, issue number 5147, pages 1126-1127, <http://physics.ruh.ac.lk/ab/pub/131.pdf>.

Hoyle, Fred, and Nalin Chandra Wickramasinghe. (2 August 1969a). “Interstellar Graphite and Silicates” in *Nature*, volume 223, issue number 5205, page 445-446, <https://www.nature.com/articles/223445a0>.

Hoyle, Fred, and Nalin Chandra Wickramasinghe. (2 August 1969b). “Interstellar Grains” in *Nature*, volume 223, issue number 5205, pages 459-462, doi:10.1038/223459a0, <https://www.nature.com/articles/223459a0>.



- Hoyle, Fred, and Nalin Chandra Wickramasinghe. (4 April 1970). "Dust in Supernova Explosions" in *Nature*, volume 226, issue number 5240, pages 62-63, <https://www.nature.com/articles/226062a0>.
- Hoyle, Fred, and Nalin Chandra Wickramasinghe. (1 August 1970 [15 June 1970]). "Radio Waves from Grains in HII Regions" in *Nature*, volume 227, issue number 5257, pages 473-474, <https://www.nature.com/articles/227473a0>.
- Hoyle, Fred, and Nalin Chandra Wickramasinghe. (4 November 1976). "Primitive Grain Clumps and Organic Compounds in Carbonaceous Chondrites" in *Nature*, volume 264, issue number 5581, pages 45-46, <https://www.nature.com/articles/264045a0>.
- Hoyle, Fred, and Nalin Chandra Wickramasinghe. (1977). "Polysaccharides and the infrared spectra of galactic sources" in *Nature*, volume 268, page 610. [Darling and Schulze-Makuch 2016: 447]
- Hoyle, Fred, and Nalin Chandra Wickramasinghe. (1 November 1977 [4 August 1977]). "Polysaccharides and the Infrared Spectrum of OH 26.5 + 0.6" in *Monthly Notices of the Royal Astronomical Society*, volume 181, *Short Communication*, pages 51P-55P, <https://academic.oup.com/mnras/article/181/1/51P/1142216>.
- Hoyle, Fred, and Nalin Chandra Wickramasinghe. (24 November 1977). "Identification of the  $\lambda_2$ , 200Å Interstellar Absorption Feature" in *Nature*, volume 270, issue number 5635, pages 323-324, doi:10.1038/270323a0, <https://www.nature.com/articles/270323a0>.
- Hoyle, Fred, and Nalin Chandra Wickramasinghe. (22 December 1977 [9 August 1977]) "Origin and Nature of Carbonaceous Material in the Galaxy" in *Nature*, volume 270, issue number 5639, pages 701-703, doi:10.1038/270701a0, <https://www.nature.com/articles/270701a0>.
- Hoyle, Fred, Nalin Chandra Wickramasinghe, and A. H. Olavesen. (19 January 1978 [9 September 1977]) "Identification of Interstellar Polysaccharides and Related Hydrocarbons" in *Nature*, volume 271, issue number 5642, pages 229-231, <https://doi.org/10.1038/271229a0> <https://www.nature.com/articles/271229a0>.

- Hoyle, Fred, and Nalin Chandra Wickramasinghe. (February 1978 [20 September 1977]). "Calculations of Infrared Fluxes from Galactic Sources for a Polysaccharide Grain Model" in *Astrophysics and Space Science*, volume 53, issue number 2, pages 489-505, <https://link.springer.com/article/10.1007/BF00645036>.
- Hoyle, Fred, and Nalin Chandra Wickramasinghe. (February 1978 [19 December 1977]). "Comets, Ice Ages and Ecological Catastrophes" [Letter to the Editor] in *Astrophysics and Space Science*, volume 53, issue number 2, pages 523-526, <https://link.springer.com/article/10.1007/BF00645040>.
- Hoyle, Fred, and Nalin Chandra Wickramasinghe. (1978). *Lifecloud: The Origin of Life in the Universe*. London: J. M. Dent & Sons.
- Hoyle, Fred, and Chandra Wickramasinghe. (1979). *Diseases from Space*. London: J. M. Dent & Sons.
- Hoyle, Fred, and Nalin Chandra Wickramasinghe. (30 March 1979). "On the Nature of Interstellar Grains" in *Astrophysics and Space Science*, volume 66, issue number 1, pages 77-90. [https://link.springer.com/chapter/10.1007/978-94-011-4297-7\\_26](https://link.springer.com/chapter/10.1007/978-94-011-4297-7_26).
- Hoyle, Fred, and Nalin Chandra Wickramasinghe. (May 1979). *On the Ubiquity of Bacteria: Searching the Planets and Beyond*. Astrophysics and Relativity Preprint Series 54, 51p
- Hoyle, Fred, and Nalin Chandra Wickramasinghe. (May 1980 [6 November 1979]). "Organic Grains in Space" in *Astrophysics and Space Science*, volume 69, issue number 2, pages 511-513, <https://link.springer.com/article/10.1007/BF00661935>.
- Hoyle, Fred, and Nalin Chandra Wickramasinghe. (1981 [29-31 October 1980]). "Comets—a Vehicle for Panspermia" (pages 227-239) in *Comets and the Origin of Life: Proceedings of the Fifth College Park Colloquium on Chemical Evolution, University of Maryland, College Park, Maryland, U.S.A., October 29th to 31st, 1980*, edited by Cyril Ponnampereuma. Boston: Kluwer Academic Publishers.

Wickramasinghe describes “Comets—a Vehicle for Panspermia” (Hoyle and Wickramasinghe: 1981 [29-31 October 1980]) as the first “explicit exposition of our cometary panspermia theory” in a reprint of this essay in *The Journal of Cosmology*, volume 16, September-October 2011.

Hoyle, Fred, and N. Chandra Wickramasinghe. (1981). *Evolution from Space: A Theory of Cosmic Creationism*. New York: Simon and Schuster.

The title of chapter 9 – “Convergence to God” is also the original more descriptive penultimate title of *the Big Bang and God: An Astro-Theology ...* (2015) by Theodore Walker Jr. and Chandra Wickramasinghe.

Hoyle, Fred, and N. Chandra Wickramasinghe. (1981). *Space Travellers: The Bringers of Life*. Cardiff, Wales, United Kingdom: University College, Cardiff Press.

Hoyle, Fred, and N. Chandra Wickramasinghe. (1982). “Comets” (pages 23-35) in *Proofs that Life is Cosmic*, Memoirs of the Institute of Fundamental Studies. Sri Lanka: Government Press.

Hoyle, Fred, and Nalin Chandra Wickramasinghe. (1982). *Why Neo-Darwinism Does Not Work*. Cardiff, Wales, United Kingdom: University College Cardiff Press.

Hoyle, Fred, and Nalin Chandra Wickramasinghe. (8 September 1983). “Organic Grains in Taurus Interstellar Clouds” in *Nature*, volume 305, issue number 5930, page 161, doi:10.1038/305161a0, <https://www.nature.com/articles/305161a0>.

Hoyle, Fred, and Nalin Chandra Wickramasinghe. (1 December 1983). “Bacterial Life in Space” in *Nature*, volume 306, issue number 5942, page 420, doi:10.1038/306420a0, <https://link.springer.com/content/pdf/10.1038/306420a0.pdf>.

Hoyle, Fred, and Nalin Chandra Wickramasinghe. (1984). *From Grains to Bacteria*. Cardiff, Wales, United Kingdom: University College Cardiff Press.

- Hoyle, Fred, Nalin Chandra Wickramasinghe, and Sirwan Al-Mufti. (1985 [29 October 1984]). “The Ultraviolet Absorbance of Presumably Interstellar Bacteria and Related Matters” in *Astrophysics and Space Science*, volume 111, issue number 1, pages 65-78.
- Hoyle, Fred, Nalin Chandra Wickramasinghe, and Hans D. Plug. (July 1985 [11 February 1985]). “An Object within a Particle of Extra-terrestrial Origin Compared with an Object of Presumed Terrestrial Origin” [Letter to the Editor] in *Astrophysics and Space Science*, volume 113, issue number 1, pages 209-210, doi:10.1023/A:1002432332393, <https://adsabs.harvard.edu/full/1985Ap%26SS.113..209H> Reprinted (pages 43-44) in *Astronomical Origins of Life: Steps towards Panspermia* (2000) edited by F. Hoyle and N. C. Wickramasinghe.
- Hoyle, Fred, and Chandra Wickramasinghe. (1985). *Living Comets*. Cardiff, Wales, United Kingdom: University College Cardiff Press.
- Hoyle, Fred, Nalin Chandra Wickramasinghe, and M. K. Wallis. (1985). “On the Nature of Dust Grains in the Comae of Comets Cernis and Bowell” in *Earth, Moon, and Planets*, volume 33, issue number 2, pages 179-187, <https://link.springer.com/article/10.1007/BF00116794>.
- Hoyle, Fred, and N. Chandra Wickramasinghe. (1986). *Viruses from Space*. Cardiff, Wales, United Kingdom: University College Cardiff Press.
- Hoyle, Fred, and Nalin Chandra Wickramasinghe. (7 August 1986). “The Case for Life as a Cosmic Phenomenon” in *Nature*, volume 322, issue number 6079, pages 509-511, doi:10.1038/322509a0, <https://www.nature.com/articles/322509a0>.
- Hoyle, Fred, and Nalin Chandra Wickramasinghe. (9 July 1987). “Organic Dust in Comet Halley” in *Nature*, volume 328, issue number 6126, page 117, <https://doi.org/10.1038/328117a0>, <https://www.nature.com/articles/328117a0#citeas>.
- Hoyle, Fred, and Nalin Chandra Wickramasinghe. (January 1988). “The Organic Nature of Cometary Grains” in *Earth, Moon, and Planets*, volume 40, issue number 1, pages 101-108, <https://link.springer.com/article/10.1007/BF00057948>.

- Hoyle, Fred, and N. Chandra Wickramasinghe. (1988). *Cosmic Life-Force*. London: J. M. Dent & Sons; first American edition, New York: Paragon Books, 1990.  
Includes “The Concept of a Creator” (pages 132-144).
- Hoyle, Fred, and Nalin Chandra Wickramasinghe. (14 January 1988). “Cometary Organics” in *Nature*, volume 331, issue number 6152, pages 123-124, doi:10.1038/331123c0,  
<https://www.nature.com/articles/331123c0>.
- Hoyle, Fred, and Nalin Chandra Wickramasinghe. (25 February 1988). “Cometary Organics” in *Nature*, volume 331, issue number 6158, page 666, <https://www.nature.com/articles/331666c0>.
- Hoyle, Fred, and Nalin Chandra Wickramasinghe. (August 1988 [2 March 1988]). “Metallic Particles in Astronomy” in *Astrophysics and Space Science*, volume 147, pages 245–256,  
<https://doi.org/10.1007/BF00645669>;  
<https://link.springer.com/article/10.1007/BF00645669#citeas>.  
Also, see “Metallic Particles in Astronomy” (October 1999) by F. Hoyle and N. C. Wickramasinghe.
- Hoyle, Fred, and Chandra Wickramasinghe. (1990 [1988]). *Cosmic Life-Force*. New York: Paragon Books.  
Includes “The Concept of a Creator” (pages 132-144).
- Hoyle, Fred, and Nalin Chandra Wickramasinghe. (April 1990). “Influenza – Evidence Against Contagion” in *Journal of the Royal Society of Medicine*, volume 83, issue number 4, pages 258-261,  
<https://journals.sagepub.com/doi/pdf/10.1177/014107689008300417>.
- Hoyle, Fred, and N. Chandra Wickramasinghe. (1991). *The Theory of Cosmic Grains*. Dordrecht, Netherlands: Kluwer Academic Publishers.
- Hoyle, Fred, and N. Chandra Wickramasinghe. (1993). *Our Place in the Cosmos: The Unfinished Revolution*. London: J. M. Dent & Sons Publishing.

Hoyle, Fred, and Chandra Wickramasinghe. (1997). *Life on Mars? The Case for a Cosmic Heritage*, Foreword by series editor Paul R. Goddard. Redland, England: Clinical Press.

Hoyle, Fred, and Nalin Chandra Wickramasinghe. (October 1999). “Metallic Particles in Astronomy” in *Astrophysics and Space Science*, volume 268, pages 77–88, © 2000. Dordrecht, Netherlands: Kluwer Academic Publishers, <https://doi.org/10.1023/A:1002492618280>.

Also, see “Metallic Particles in Astronomy” (August 1988) by F. Hoyle and N. C. Wickramasinghe.

Hoyle, Fred, and Nalin Chandra Wickramasinghe. (October 1999). “The Universe and Life: Deductions from the Weak Anthropic Principle” in *Astrophysics and Space Science*, volume 268, issue numbers 1-3, pages 89-102, <https://doi.org/10.1023/A:1002444702350>.

Hoyle, F., and N. C. Wickramasinghe, editors. (2000 [1999]). *Astronomical Origins of Life: Steps towards Panspermia*. Dordrecht, Netherlands: Kluwer Academic Publishers.

## Hoyle, Fred, and Others

Hoyle, Fred, and Raymond A. Lyttleton. (July 1939). "The Effect of Interstellar Matter on Climatic Variation" in *Mathematical Proceedings of the Cambridge Philosophical Society*, volume 35, issue number 3, pages 405-415, doi:10.1017/s0305004100021150.  
<https://www.cambridge.org/core/journals/mathematical-proceedings-of-the-cambridge-philosophical-society/article/abs/effect-of-interstellar-matter-on-climatic-variation/0EA53316502FBA0B9D8FD21A62D7FF68>.

Hoyle, Fred, and R. A. Lyttleton. (4 November 1939). "The Evolution of Stars" in *Mathematical Proceedings of the Cambridge Philosophical Society*, volume 35, issue number 4, page 592-609,  
<https://doi.org/10.1017/S0305004100021368>.

Hoyle, Fred, and R. A. Lyttleton. (June 1940). "On the Accretion of Interstellar Matter by Stars" in *Mathematical Proceedings of the Cambridge Philosophical Society*, volume 36, issue number 3, page 325-330, <https://doi.org/10.1017/S0305004100017369>.

Hoyle, Fred, and R. A. Lyttleton. (July 1940). "Note on Dr. Atkinson's Paper" in *Mathematical Proceedings of the Cambridge Philosophical Society*, volume 36, issue number 3, page 323-324,  
<https://doi.org/10.1017/S0305004100017357>.

Hoyle, Fred, and R. A. Lyttleton. (Received 8 March 1941). "On the Accretion Theory of Stellar Evolution" in *Monthly Notices of the Royal Astronomical Society*, volume 101, issue number 4, pages 227-236,  
<https://academic.oup.com/mnras/article/101/4/227/2601180>.

Hoyle, Fred, and R. A. Lyttleton. (Received 4 June 1942). "On the Nature of Red Giant Stars" in *Monthly Notices of the Royal Astronomical Society*, volume 102, issue number 5, pages 218-225,  
<https://academic.oup.com/mnras/article/102/5/218/2600932>.

Hoyle, Fred, D. Noel F. Dunbar, William A. Wenzel, and Ward Whaling. (January 1953). "A State in  $C^{12}$  Predicted from Astrophysical Evidence" in *Physical Review*, volume 92, issue number 4. page 1095-1095. [Kragh 2010: 34]

Hoyle, Fred, and M. Schwarzschild. (June 1955). “On the Evolution of Type II Stars” in *Astrophysical Journal Supplement*, volume 2, page 1, doi:10.1086/190015, <https://ui.adsabs.harvard.edu/abs/1955ApJS....2....1H/abstract>.

Hoyle, Fred, and Allan Sandage. (1956). “The Second-Order Term in the Redshift-Magnitude Relation” in *Proceedings of the Astronomical Society of the Pacific*, volume 68, issue number 403, pages 301-307, <https://adsabs.harvard.edu/full/1956PASP...68..301H>.

Hoyle, Fred, with William A. Fowler, G. R. Burbidge, and E. M. Burbidge. (5 October 1956). “Origin of the Elements in Stars” in *Science*, volume 124, issue number 3223, pages 611-614, doi:10.1126/science.124.3223.611, <https://pubmed.ncbi.nlm.nih.gov/17832307/>.

Hoyle, Fred, and Geoffrey Hoyle. (1959). *Rockers in Ursa Major* [a sci-fi novel]. London, Heinemann.

Hoyle, Fred, and J. V. Narlikar. (Received 13 June 1961). “On the Counting of Radio Sources in the Steady-State Cosmology” in *Monthly Notices of the Royal Astronomical Society*, volume 123, issue number 2, pages 133-149, <https://academic.oup.com/mnras/article/125/1/13/2601372>.

Hoyle, Fred, and John Elliot. (1962). *A for Andromeda: A Novel of Tomorrow*. London: Souvenir Press.

This 1962 sci-fi novel derives from the 1961 BBC black-and-white television series “A for Andromeda” written by John Elliot and Fred Hoyle. Elliot and Hoyle were attentive to dangers from artificial intelligence and biological engineering. “A for Andromeda” became a BBC color movie in 2006.

Hoyle, Fred, and J. V. Narlikar. (Received 5 July 1962). “On the Counting of Radio Sources in the Steady-State Cosmology, II” in *Monthly Notices of the Royal Astronomical Society*, volume 125, issue number 1, pages 13-20, <https://adsabs.harvard.edu/full/1962MNRAS.125...13H>.



- Hoyle, Fred, and J. V. Narlikar. (February 1962). "The Steady-State Model and the Ages of Galaxies" in *Observatory*, volume 82, issue number 926, pages 13-14.  
<https://adsabs.harvard.edu/full/1962Obs....82...13H>.
- Hoyle, Fred, and William A. Fowler. (1 August 1962). "On the Nature of Strong Radio Sources" in *Monthly Notices of the Royal Astronomical Society*, volume 125, issue number 2, pages 169-176,  
[doi.org/10.1093/mnras/125.2.169](https://doi.org/10.1093/mnras/125.2.169),  
<https://adsabs.harvard.edu/full/1963MNRAS.125..169H>.
- Hoyle, Fred, and William A. Fowler. (9 February 1963). "Nature of Strong Radio Sources" in *Nature*, volume 197, issue number 4867, pages 533-535.
- Hoyle, Fred, and Geoffrey Hoyle. (1963). *Fifth Planet* [science fiction]. New York: Harper and Row.
- Hoyle, Fred, and Jayant Vishnu Narlikar. (7 January 1964). "Time Symmetric Electrodynamics and the Arrow of Time in Cosmology" in *Proceedings of the Royal Society of London*, volume 277, issue number 1368, pages 1-23, [doi.org/10.1098/rspa.1964.0002](https://doi.org/10.1098/rspa.1964.0002),  
<https://royalsocietypublishing.org/doi/abs/10.1098/rspa.1964.0002>.
- Hoyle, Fred, and R. J. Tayler. (12 September 1964). "The Mystery of the Cosmic Helium Abundance" in *Nature*, volume 203, issue number 4950, pages 1108-1110,  
[doi:10.1038/2031108a0](https://doi.org/10.1038/2031108a0). <https://www.nature.com/articles/2031108a0>.
- Hoyle, Fred, and J. V. Narlikar. (3 November 1964). "A New Theory of Gravitation" in *Proceedings of the Royal Society of London*, volume 282, issue number 1389, pages 191-207,  
<https://royalsocietypublishing.org/doi/pdf/10.1098/rspa.1964.0227>.
- Hoyle, Fred, and others. (1965). *University of Denver Centennial Symposium: The Responsible Individual and a Free Society in an Expanding Universe*. Denver, Colorado: Published for University of Denver by Big Mountain Press.

- Hoyle, Fred, and J. V. Narlikar. (1966 [1 March 1965]). “A Radical Departure from the ‘Steady-State’ Concept in Cosmology” in *Proceedings of the Royal Society of London*, volume 290, issue number 1421, pages 162-176.
- Hoyle, Fred, and William A. Fowler. (28 January 1967). “Gravitational Redshifts in Quasi-stellar Objects” in *Nature*, volume 213, issue number 5074, pages 373-374, doi:10.1038/213373a0.  
<https://www.nature.com/articles/213373a0>.
- Hoyle, Fred, and Geoffrey R. Burbidge. (25 July 1970). “The Log S-log z Diagram for Radio Galaxies and its Relation to Cosmology” in *Nature*, volume 227, issue number 5256, pages 359-361, doi:10.1038/227359a0, <https://www.nature.com/articles/227359a0>.
- Hoyle, Fred, and Geoffrey R. Burbidge. (1970). *Seven Steps to the Sun* [science fiction]. London: Heinemann.
- Hoyle, Fred, and Geoffrey Hoyle. (1971). *The Molecule Men; and, The Monster of Loch Ness* [science fiction]. London, Heinemann.
- Hoyle, Fred, and J. V. Narlikar. (January 1972 [27 July 1971]). “Cosmological Models in a Conformally Invariant Gravitational Theory—I: The Friedmann Models” in *Monthly Notices of the Royal Astronomical Society*, volume 155, issue number 3, pages 305-322, <https://academic.oup.com/mnras/article/155/3/305/2603041>.
- Hoyle, Fred, and J. V. Narlikar. (January 1972 [27 July 1971]). “Cosmological Models in a Conformally Invariant Gravitational Theory—II: A New Model” in *Monthly Notices of the Royal Astronomical Society*, volume 155, issue number 3, pages 323-335, <https://academic.oup.com/mnras/article/155/3/323/2603045>.
- Hoyle, Fred, and William A. Fowler. (9 February 1973 [Received 12 December 1972]). “On the Origin of Deuterium” in *Nature*, volume 241, issue number 5389, pages 384-386, doi:10.1038/241384a0. <https://www.nature.com/articles/241384a0>.
- Hoyle, Fred, and Jayant V. Narlikar. (1974). *Action at a Distance in Physics and Cosmology*. San Francisco: W. H. Freeman Publisher.

Hoyle, Fred, and Jayant V. Narlikar, John Faulkner, editorial consultant. (1980). *The Physics-Astronomy Frontier*. San Francisco: W. H. Freeman.

Hoyle, Fred, Geoffrey R. Burbidge, and Jayant V. Narlikar. (June 1993). “A Quasi-Steady State Cosmological Model with Creation of Matter” in *Astrophysical Journal*, Part 1, volume 410, issue number 2, pages 437-457.

Hoyle, Fred, G. Burbidge, and J. V. Narlikar. (1994, [23 November 1993, original form 10 June 1993]). “Astrophysical Deductions from the Quasi-Steady-State Cosmology” in *Monthly Notices of the Royal Astronomical Society*, volume 267, pages 1007-1019, <https://academic.oup.com/mnras/article/267/4/1007/1227351>.

Hoyle, Fred, and Jayant V. Narlikar. (January 1995 [31 December 1994]). “Cosmology and Action-at-a-Distance Electrodynamics” in *Review of Modern Physics*, volume 67, issue number 1, pages 113-155, doi:10.1103/RevModPhys.67.113, <https://journals.aps.org/rmp/abstract/10.1103/RevModPhys.67.113>.

Hoyle, Fred, and Jayant V. Narlikar. (1996). *Lectures on Cosmology and Action at a Distance Electrodynamics*. River Edge, New Jersey: World Scientific Books.

Hoyle, Fred, G. Burbidge, and Jayant V. Narlikar. (1997 [21 June 1996]). “On the Hubble Constant and the Cosmological Constant” in *Monthly Notices of the Royal Astronomical Society*, volume 286, issue number 1, pages 173-182, doi:10.1093/mnras/286.1.173, <https://academic.oup.com/mnras/article/286/1/173/1010536>.

Hoyle, Fred, Geoffrey Burbidge, and Jayant V. Narlikar. (2000). *A Different Approach to Cosmology: From a Static Universe Through the Big Bang Towards Reality*. Cambridge: Cambridge University Press.

**Wickramasinghe, Nalin Chandra**

Wickramasinghe, Nalin Chandra. (Received 13 June 1962). “On Graphite Particles as Interstellar Grains” in *Monthly Notices of the Royal Astronomical Society*, volume 124, issue number 5, pages 417-433, <https://academic.oup.com/mnras/article/124/5/417/2601371>.

Wickramasinghe, N. C. (Received 8 February 1963 [originally 8 November 1962]). “On Graphite Particles as Interstellar Grains, II” in *Monthly Notices of the Royal Astronomical Society*, volume 126, issue number 1, pages 7, 99-114, <https://academic.oup.com/mnras/article/126/1/99/2602427>.

Wickramasinghe, N. C. (Received 4 January 1965). “On the Growth and Destruction of Ice Mantles on Interstellar Graphite Grains” in *Monthly Notices of the Royal Astronomical Society*, volume 131, issue number 2, pages 177-190, <https://academic.oup.com/mnras/article/131/1/177/2604212>.

Wickramasinghe, N. C. (1966 [Received 7 January 1965]). “On the Optics of Small Graphite Spheres, I” in *Monthly Notices of the Royal Astronomical Society*, volume 131, issue number 3, page 18, 263-269, <https://academic.oup.com/mnras/article/131/2/263/2604198>.

Wickramasinghe, N. Chandra. (1967). *Interstellar Grains*. London: Chapman & Hall Publishers.

Wickramasinghe, N. C. (15 November 1969). “Interstellar Polarization by Graphite-Silicate Grain Mixtures” in *Nature*, volume 224, issue number 5220, pages 656-658, doi:10.1038/224656a0, <http://physics.ruh.ac.lk/ab/pub/94.pdf>.

Wickramasinghe, N. C. (31 October 1970). “Between the Stars” in *Nature*, volume 228, issue number 5270, pages 483-484, doi:10.1038/228483c0, <https://www.nature.com/articles/228483c0>.

Wickramasinghe, N. C. (6 December 1974). “Formaldehyde Polymers in Interstellar Space” in *Nature*, volume 252, issue number 5483, pages 462-463, <https://doi.org/10.1038/252462a0>.

- Wickramasinghe, Nalin Chandra. (April 1980). “The Origin of Life” is among the Historic Panspermia Lectures in the online Archive at the University of Buckingham, audio-video at <https://www.buckingham.ac.uk/research/bcab/hrwarchive>
- Wickramasinghe, Nalin Chandra. (1982). *Is Life an Astronomical Phenomenon?* Cardiff, Wales, United Kingdom: University College Cardiff Press.
- Wickramasinghe, N. C. (October 1999). “Formaldehyde Polymers in Interstellar Space” in *Astrophysics and Space Science*, volume 268, issue number 1, pages 111–114, <https://doi.org/10.1023/A:1002448820097>.
- Wickramasinghe, Chandra. (2001). *Cosmic Dragons: Life and Death on Our Planet*. London: Souvenir Press.
- Wickramasinghe, Chandra. (2004 [Received 29 September 2003]). “The Universe: A Cryogenic Habitat for Microbial Life” in *Cryobiology*, volume 48, pages 113-125.
- Wickramasinghe, Chandra. (2005). “Alternative Cosmologies” is chapter 19 in *A Journey with Fred Hoyle: The Search for Cosmic Life*, edited by Kamala Wickramasinghe. London: World Scientific Books.
- Wickramasinghe, Chandra. (2005). “From Dust to Life” is chapter 6 in *The Scientific Legacy of Fred Hoyle*, edited by Douglas Gough. Cambridge: Cambridge University Press, 2011 paperback.
- Wickramasinghe, Chandra. (April 2010 [Online 29 January 2010]). “The Astrobiological Case for Our Cosmic Ancestry” in *International Journal of Astrobiology*, volume 9, issue number 2, pages 119-129, [https://www.worldscientific.com/doi/abs/10.1142/9789814675260\\_0005](https://www.worldscientific.com/doi/abs/10.1142/9789814675260_0005).
- Wickramasinghe, Chandra. (4 November 2010). “Microfossils in Comet Dust and Meteorites Support Panspermia” in *SPIE – the International Society for Optics and Photonics*, <https://spie.org/news/3239-microfossils-in-comet-dust-and-meteorites-support-panspermia?SSO=1>.

- Wickramasinghe, Chandra. (2011). "The Compelling Case for Panspermia" (pages 211-224) in *Astronomy and Civilization in the New Enlightenment: Passions of the Skies* [Analecta Husserliana: The Yearbook of Phenomenological Research, Volume CVII], edited by Anna-Teresa Tymieniecka and Attila Grandpierre. Dordrecht, Neatherlands; London; New York: Springer Publishing.
- Wickramasinghe, Nalin Chandra. (April 2011). "Extraterrestrial Life and Censorship." *Research Gate*, <https://arxiv.org/abs/1104.1314>, [https://www.researchgate.net/publication/51021901\\_Extraterrestrial\\_Life\\_and\\_Censorship](https://www.researchgate.net/publication/51021901_Extraterrestrial_Life_and_Censorship).
- Wickramasinghe, Chandra. (September-October 2011). "From Astrochemistry to Astrobiology" in *The Journal of Cosmology*, volume 16, issue number 1, pages 6519-6527, [https://thejournalofcosmology.com/Wick\\_1R%20-%20Copy.pdf](https://thejournalofcosmology.com/Wick_1R%20-%20Copy.pdf).
- Wickramasinghe, Nalin Chandra. (2 January 2014 [December 2011]). *A Destiny of Cosmic Life: Chapters in the Life of an Astrobiologist*. Kindle/Amazon Books.  
Contains "A Galaxy Strewn with Microorganisms" (chapter 13) and "Cosmic Life, Microfossils and Evolution" (chapter 14).
- Wickramasinghe, Nalin Chandra. (January 2013). "DNA Sequencing and Predictions of the Cosmic Theory of Life" in *Astrophysics and Space Science*, volume 343, issue number 1, pages 1-5, doi:10.1007/s10509-012-1227-y, <https://link.springer.com/article/10.1007/s10509-012-1227-y>.
- Wickramasinghe, N. C. (February 2013). "Simulation of Earth-Based Theory with Lifeless Results" [Review of *First Life: Discovering the Connections between Stars, Cells, and How Life Began* (2012) by David Deamer] in *Bio Science*, volume 63, issue number 2, pages 141-143.
- Wickramasinghe, Chandra. (2014). *The Search for Our Cosmic Ancestry*. Hackensack, New Jersey: World Scientific Publishing.

Wickramasinghe, N. Chandra. (September 2014). "Comet 67P/Churyumov-Gerasimenko and Cometary Biology" in *The Journal of Cosmology*, volume 24, issue number 3, 12032-12036,  
[https://thejournalofcosmology.com/Rosetta\\_1.pdf](https://thejournalofcosmology.com/Rosetta_1.pdf).

Wickramasinghe, Chandra, editor. (2015). *Vindication of Cosmic Biology: Tribute to Sir Fred Hoyle (1915-2001)*. Hackensack, New Jersey: World Scientific.

Wickramasinghe, Chandra. (2015). *Where Did We Come from? Life of an Astrobiologist*, edited by Kamala Wickramasinghe. Hackensack, New Jersey: World Scientific.

Wickramasinghe, Chandra, with Introduction by Edward J. Steele. (14 July 2020). "COVID-19 Pandemic: A Challenge for Humanity" is Appendix 4 in *Diseases from Outer Space: Our Cosmic Destiny*. Hackensack, New Jersey: World Scientific.

Here is a revised and extended second edition of *Diseases from Space* (London: Dent, 1979) by Fred Hoyle and Chandra Wickramasinghe.

Wickramasinghe, Chandra. (May 2020). "Coronavirus from Outer Space - Interview with World-Renowned Astrobiologist Wickramasinghe" on YouTube at <https://www.youtube.com/watch?v=o5LZ8YtCNz0>.  
(Andre Waits, TC 8360, Summer 2020)

Wickramasinghe, Chandra. (May-June 2022). "Prof. Wickramasinghe – LIFE from SPACE – Our true origin" on YouTube at <https://www.youtube.com/watch?v=KveZopEdYa4>.  
Here Prof. Wickramasinghe says, "We are creatures of the cosmos ... a cosmic living entity," and "all life" is "part of a single cosmic unity."

**Wickramasinghe, Nalin Chandra, and Others**

Wickramasinghe, N. C., and C. Guillaume (24 July 1965). “Interstellar Extinction by Graphite Grains” in *Nature*, volume 207, issue number 4995, pages 366-368, doi:10.1038/207366a0, <http://www.physics.ruh.ac.lk/ab/pub/111.pdf>.

Wickramasinghe, N. C., F. Hoyle, and K. Nandy. (1977). “Organic Molecules in Interstellar Dust: A Possible Spectral Signature at  $\lambda 2200 \text{ \AA}$ ?” [Letter to the Editor] in *Astrophysics and Space Science*, [10-1999] volume 268, issue number 1-3, pages 295-299 [volume 47, L9-L11].

Wickramasinghe, N. C., F. Hoyle, and K. Nandy. “Organic Molecules in Interstellar Dust: A Possible Spectral Signature at  $\lambda 2200 \text{ \AA}$ ?” in *Astronomical Origins of Life* (Dordrecht: Springer, 2000), pages 295-299, [https://link.springer.com/chapter/10.1007/978-94-011-4297-7\\_30](https://link.springer.com/chapter/10.1007/978-94-011-4297-7_30).

Wickramasinghe, N. C., F. Hoyle, J. Brooks, and G. Shaw. (20 October 1977 [19 August 1977]). “Prebiotic Polymers and Infrared Spectra of Galactic Sources” [Letter to Nature] in *Nature*, volume 269, issue number 5630, pages 674-676, doi:10.1038/269674a0, <https://www.nature.com/articles/269674a0>.

Wickramasinghe, N. C., and J. V. Narlikar. (7 October 1967). “Microwave Background in a Steady-State Universe” in *Nature*, volume 216, issue number 5110, pages 43-44, doi:10.1038/216043a0, <https://www.nature.com/articles/217339a0>.

Wickramasinghe, N. C., and K. S. Krishna Swamy. (1968 [Received 13 November 1967]). “On the Temperature of Interstellar Grains” in *Monthly Notices of the Royal Astronomical Society*, volume 139, issue number 3, pages 283-287.

Wickramasinghe, N. C., J. G. Ireland, K. Nandy, H. Seddon, and R. D. Wolstencroft. (3 February 1968). “Origin of the Diffuse Interstellar Bands” in *Nature*, volume 217, issue number 5127, pages 412-415, doi:10.1038/217412b0, <https://www.nature.com/articles/217412b0>.



- Wickramasinghe, N. C., and A. H. Olavesen. (26 October 1978). "Cosmochemistry and Evolution" in *Nature*, volume 275, issue number 5682, page 694, doi:10.1038/275694a0, <https://www.nature.com/articles/275694a0>.
- Wickramasinghe, N. C., A. N. Wickramasinghe, and Fred Hoyle. (October 1992). "The Case Against Graphite Particles in Interstellar Space" [Letter to the Editor] in *Astrophysics and Space Science*, volume 196, issue number 1, pages 167-169.  
Also, in *Astronomical Origins of Life: Steps towards Panspermia* (Dordrecht: Springer, 2000), edited by F. Hoyle and N. C. Wickramasinghe, pages 289-292.
- Wickramasinghe, N. C., and Daisaku Ikeda. (1998). *Space and Eternal Life: A Dialogue between Chandra Wickramasinghe and Daisaku Ikeda*, Foreword by Sir Fred Hoyle. Chicago: Journeyman Press.
- Wickramasinghe, Chandra, Jayant Narlikar, and Geoffrey Burbidge, editors. (2003). *Fred Hoyle's Universe*. Dordrecht, Netherlands: Kluwer Academic Publishers [from Proceedings of a Conference Celebrating Fred Hoyle's Extraordinary Contributions to Science 25-26 June 2002 Cardiff University, United Kingdom].
- Wickramasinghe, N. C., J. V. Narlikar, J. T. Wickramasinghe and M. Wainwright. (2003). "The Expanding Horizons of Cosmic Life" in *Proceedings of SPIE – International Society for Optics and Photonics*, volume 4859, pages 154-163, <https://doi.org/10.1117/12.459301>.
- Wickramasinghe, N. Chandra, and Carl H. Gibson. (2 March 2010 [Submitted 27 February 2010]). "The Imperatives of Cosmic Biology" in *Inspire: High Energy Physics Information System*, 17 pages, <https://arxiv.org/abs/1003.0091>, [https://www.researchgate.net/publication/45903478\\_The\\_Imperatives\\_of\\_Cosmic\\_Biology](https://www.researchgate.net/publication/45903478_The_Imperatives_of_Cosmic_Biology).
- Wickramasinghe, N. Chandra, and Janaki T. Wickramasinghe. (5 June 2012). "A Note on Venus Transit and Microbial Injection to Earth" in *The Journal of Cosmology*, volume 18, issue number 20, pages 8506-8510, [https://thejournalofcosmology.com/VENUS2012\\_R.pdf](https://thejournalofcosmology.com/VENUS2012_R.pdf).

- Wickramasinghe, N. C., J. Wallis, D. H. Wallis, and A. Samaranayake. (10 January 2013). "Fossil Diatoms in a New Carbonaceous Meteorite" in *The Journal of Cosmology*, volume 21, issue number 37, pages 9560-9571,  
<https://thejournalofcosmology.com/PolonnaruwaRRRR.pdf>.
- Wickramasinghe, N. C., J. Wallis, D. H. Wallis, M. K. Wallis, S. Al-Mufti, J. T. Wickramasinghe, A. Samaranayake and K. Wickramaratne. (13 January 2013). "On the Cometary Origin of the Polonnaruwa Meteorite" in *The Journal of Cosmology*, volume 21, issue number 38, pages 9572-9578, <https://thejournalofcosmology.com/Polonn2.pdf>.
- Wickramasinghe, N. C., J. Wallis, D. H. Wallis, M. K. Wallis, N. Miyake, S. G. Coulson, Carol H. Gibson, J. T. Wickramasinghe, A. Samaranayake, K. Wickramaratne, and Richard B. Hoover. (6 March 2013). "Incidence of Low-Density Meteoroids of the Polonnaruwa-Type" in *The Journal of Cosmology*, volume 22, issue number 1, pages 1-8,  
[https://thejournalofcosmology.com/Paper22\(1a\).pdf](https://thejournalofcosmology.com/Paper22(1a).pdf).
- Wickramasinghe, Chandra, and Gensuke Tokoro. (January 2014). "Life as a Cosmic Phenomenon: 2. The Panspermia Trajectory of *Homo sapiens*" in *Astrobiology and Outreach*, volume 2, issue number 2, 115,  
<https://www.walshmedicalmedia.com/open-access/life-as-a-cosmic-phenomenon-the-panspermia-trajectory-of-homo-sapiens-2332-2519-2-115.pdf>.
- Wickramasinghe, N. Chandra, Gensuke Tokoro, and Milton Wainwright. (September 2014). "Growing Evidence for Cosmic Biology" in *The Journal of Cosmology*, 2014, volume 24, issue number 8, pages 12097-12101,  
<https://thejournalofcosmology.com/Cosmic%20Biology%20rev.pdf>.  
Abstract - New data from astronomy and biology continues to favour the Hoyle-Wickramasinghe theory of cometary panspermia. Alternative explanations on the basis of Earth-centred biology, with Neo-Darwinian evolution occurring within a closed system, appear to be far-fetched and fundamentally flawed. Keywords: Astrobiology, panspermia, interstellar matter, viruses.

Wickramasinghe, N. Chandra, Gensuke Tokoro, and Milton Wainwright. (September 2014). "The Transition from Earth-Centred Biology to Cosmic Life" [a paper presented at United Nations/Austria Symposium on "Space Science and the United Nations" Graz, Austria, 22 to 24 September 2014] in *The Journal of Cosmology*, 2014, volume 24, issue number 7, pages 12080-12096, <https://thejournalofcosmology.com/CHANDRA%20PAPER-RR4.pdf>.

Wickramasinghe, Chandra, and Gensuke Tokoro. (2015 [2014]). "Life as a Cosmic Phenomenon: 1. The Socio-economic Control of a Scientific Paradigm" and "Life as a Cosmic Phenomenon: 2. The Panspermic Trajectory of Homo Sapiens" (pages 3-33) in *Vindication of Cosmic Biology: Tribute to Sir Fred Hoyle (2015-2001)* (2015) edited by Chandra Wickramasinghe. Hackensack, New Jersey: World Scientific.

Wickramasinghe, Chandra, and Theodore Walker Jr., with editing by Alexander Vishio. (2015). *The Big Bang and God: An Astro-Theology wherein an astronomer and a theologian offer a study of interdisciplinary convergences with natural theology both in the scientific researches of Sir Fred Hoyle and in the philosophical researches of Charles Hartshorne and Alfred North Whitehead, thereby illustrating a constructive postmodern trend*. New York: Palgrave Macmillan.

Wickramasinghe, Chandra, and Robert Bauval. (2017). *Cosmic Womb: The Seeding of Planet Earth*. Rochester, Vermont: Bear & Company Books.

Wickramasinghe, Chandra, Kamala Wickramasinghe, and Gensuke Tokoro. (2019). *Our Cosmic Ancestry in the Stars: The Panspermia Revolution and the Origins of Humanity*. Rochester, Vermont: Bear & Company Books.

Wainwright, Milton, and N. Chandra Wickramasinghe, with Foreword by Gensuke Tokoro. (2023). *Life Comes from Space: The Decisive Evidence*. Hackensack, New Jersey: World Scientific.

Wickramasinghe, N. Chandra, and others. (Begun March 2023).

“Cosmology and the Origins of Life”

in *The Journal of Cosmology*, volume 30,

online at

<https://thejournalofcosmology.com/indexVol30CONTENTS.htm>:

1. N. Chandra Wickramasinghe, Jayant V. Narlikar and Gensuke Tokoro, Cosmology and the Origins of Life, New evidence related to the origins of life in the cosmos combined with continuing progress in probing conditions of the early universe using the James Web Telescope suggest that long-held orthodox positions may be flawed. Only by objective evaluating the new facts and recognising the cultural forces at work can further progress be made towards resolving perhaps the most important and fundamental questions in science. pp 30001 - 30013.
2. N. Chandra Wickramasinghe Life Beyond the Limits of Our Planetary System, Evidence for the widespread distribution of biologically relevant molecules widely throughout the Galaxy and beyond has been in existence for many decades. The recent discovery of a nucleobase uracil adds to an already impressive body of evidence that supports a cosmic origin of the complex building blocks of life. pp 30020 - 30024.
3. N. Chandra Wickramasinghe and Gensuke Tokoro, Quest for Life on Jupiter and Its Moons, The final confirmation of the existence of multicellular life in aqueous habitats on the moons of Jupiter, will be a game changer for the societal approval and acceptance of panspermia which has been long overdue. pp 30030 - 30034.
4. N. Chandra Wickramasinghe, Gensuke Tokoro, Robert Temple and Rudy Schild Reluctance to Admit We Are Not Alone as an Intelligent Lifeform in the Cosmos, With an ever-increasing body of evidence from diverse scientific disciplines all pointing to the existence of alien life and alien intelligence on a cosmic scale, there has developed a growing tendency to maintain that we might still be alone as intelligent beings in the universe. This a stubborn resistance to admit facts may well signal the end of our civilization. pp 30040 - 30053.
5. N. Chandra Wickramasinghe, Rudy Schild and J.H. (Cass) Forrington Second Copernican Revolution, The recent discovery by the James Webb Space Telescope of organic molecules possibly related to life in

a galaxy at redshift  $z=12.4$  may well signal a concluding phase of the second Copernican revolution, thus removing the Earth from the centre and focus of biology and charting a new course in our understanding of the universe, and concluding a process that began 4 decades ago. pp 30060 - 30071.

6. N. Chandra Wickramasinghe, Rudy Schild, Gensuke Tokoro, Robert Temple and J.H. (Cass) Forrington Search For Aliens, and UFO's, The widespread existence of primitive life in the form of bacteria and viruses in the universe combined with the large numbers of habitable planets that are being discovered, leads to the serious possibility that intelligent life could be widespread throughout the cosmos. Discovering such alien intelligence in our vicinity continues to pose a challenge. pp 30080 - 30089.

Wickramasinghe, **Dayal Tissa**, and Others

Wickramasinghe, Dayal Tissa, and David A. Allen. (9 October 1980). “The 3.4- $\mu\text{m}$  Interstellar Absorption Feature” in *Nature*, volume 287, issue number 5782, pages 518-519, doi:10.1038/287518a0, <https://www.sciencedirect.com/science/article/abs/pii/S0065266020300067>.

Wickramasinghe, Dayal Tissa, Fred Hoyle, Nalin Chandra Wickramasinghe, and Sirwan Al-Mufti. (Received 24 June 1986). “A Model of the 2-4 Micron Spectrum of Comet Halley” [Letter to the Editor] in *Earth, Moon, and Planets*, volume 36, pages 295-299.

Wickramasinghe, Dayal Tissa, and David A. Allen. (4 September 1986). “Discovery of Organic Grains in Comet Halley” in *Nature*, volume 323, issue number 6083, pages 44-46, doi:10.1038/323044a0, <https://www.nature.com/articles/323044a0>.

Wickramasinghe, Dayal Tissa, and David A. Allen. (21 October 1987). “Discovery of Organic Grains in Comet Wilson” in *Nature*, volume 329, issue number 6140, pages 615-616, doi:10.1038/329615a0, <https://www.nature.com/articles/329615a0>.

Wickramasinghe, **Janaki Tara**, and Others

Wickramasinghe, Janaki Tara. (25 May 2007). *The Role of Comets in Panspermia*: Cardiff University PhD Thesis. Ann Arbor, Michigan: ProQuest LLC Publishing, 2013 [MUI Dissertation Publishing, UMI Issue number: U584951].

Wickramasinghe, J. T., and N. C. Wickramasinghe. (December 2006). “A Cosmic Prevalence of Nanobacteria?” in *Astrophysics and Space Science*, vol. 305, issue number 4, pages 411-413 [Also in *Vindication of Cosmic Biology* (2015) pages 193-198], doi:10.1007/s10509-006-9181-1, <https://link.springer.com/article/10.1007/s10509-006-9181-1>.

Wickramasinghe, Janaki, Chandra Wickramasinghe, and William Napier. (2010 [July 2009]). *Comets and the Origin of Life*. Hackensack, New Jersey: World Scientific Books.

**Various Others** on astronomy, cosmology, theology, origins of life, creation, and evolution

Baker-Fletcher, Karen. (1998). *Sisters of Dust, Sisters of Spirit: Womanist Wordings on God and Creation*. Minneapolis: Fortress Press.

Clark, Arthur C. (2000 [1999]). “The Twenty-First Century: A (Very) Brief History” in *Greetings, Carbon-based Bipeds!: Collected Essays 1934-1998*, edited by Ian T. Macauley. New York: St. Martin’s.

Coulson, S. G., and N. C. Wickramasinghe. (August 2003 [online 12 August 2003]). “Frictional and Radiation Heating of Micro-Sized Meteoroids in the Earth’s Upper Atmosphere” in *Monthly Notices of the Royal Astronomical Society*, volume 343, issue number 4, pages 1123-1130, <https://academic.oup.com/mnras/article/343/4/1123/1065355>.

Darling, David, and Dick Schulze-Makuch. (2016 [2000]). *The Extraterrestrial Encyclopedia: An Alphabetic Guide to Life in the Universe*. Sarasota, Florida: First Edition Design Publishing.

Davis, Andrew M. (2023). *Metaphysics of Exo-Life: Toward a Constructive Whiteheadian Cosmotheology*. Grasmere, ID: SacraSage Press.

Deamer, David. (2012 [c2011]). *First Life: Discovering the Connections between Stars, Cells, and How Life Began*. Berkeley: University of California Press.

Derham, William. (1715). *Astro-Theology: or, A Demonstration of the Being and Attributes of God, from a Survey of the Heavens*. London: Printed for William Innys.

See *excerpts* from Derham’s *Astro-Theology* ... (1715) in the Astro-Theology volume of *The Journal of Cosmology*, volume 20, pages 8746-9749, online at

<https://thejournalofcosmology.com/Derham%20excerpts%201.pdf>.

Also, see *The Big Bang and God: An Astro-Theology* ... (2015) by Theodore Walker Jr. and Chandra Wickramasinghe.

Devenish, Philip E. (4 October 1981). “Mind, Brain, and Dualism” in *The Journal of Religion*, volume 61, number 4, pages 422-427.



Devenish, Philip E., and George L. Goodwin, editors. (1989). *Witness and Existence: Essays in Honor of Schubert M. Ogden*. Chicago: University of Chicago Press.

Dover, Cedric. (June 1954). “The Significance of the Cell Surface (The Work of E. E. Just)” in *Journal of the Zoological Society of India*, volume 6, issue number 1, pages 3-42.

In India, said Cedric Dover [Cedric Cyril Dover], “we have preserved in biology a view of life as process, as interrelatedness, as a totality of subtle harmonies rather than a Darwinian war ...” and “Asian biologists” (including Calcutta zoologists such as Nelson Annandale and Sunder Lal Hora) emphasize “living things in their natural milieu.” Accordingly, concerning Howard University biologist Ernest Everett Just, Dover said: “He belongs to their company ... his philosophy, like theirs, was a unitary one ...” (June 1954: 3-4).

Also, concerning Cedric Dover, biology, race, color, and class in the USA and India, see *The Prism of Race: W.E.B. Du Bois, Langston Hughes, Paul Robeson, and the Colored World of Cedric Dover* (Palgrave Macmillan, 2014) by Nico Slate.

Also, by Nico Slate:

*Colored Cosmopolitanism: The Shared Struggle for Freedom in the United States and India* (Harvard University Press, 2012), *Gandhi’s Search for the Perfect Diet: Eating with the World* (University of Washington Press, 2019), *Lord Cornwallis Is Dead: The Struggle for Democracy in the United States and India* (Harvard University Press, 2019), and *Brothers: A Memoir of Love, Loss, and Race* (Temple University Press, 2023).

Gawdat, Mo. (2021). *Scary Smart: The Future of Artificial Intelligence and How You Can Save Our World*. Bluebird | Pan Macmillan.

Gibson, Carl H., Rudolph E. Schild, and N. Chandra Wickramasinghe. (2010 [Submitted 4 April 2010, accepted 9 August 2010]). “The Origin of Life from Primordial Planets” in *International Journal of Astrobiology*, volume 10, issue number 2, pages 83-98, doi:10.1017/S1473550410000352, <https://arxiv.org/abs/1004.0504>.

Gingerich, Owen. (2014). Chapter 3 “Was Hoyle Right?” in *God’s Planet*. Cambridge, Massachusetts: Harvard University Press.

Gough, Douglas, editor. (2005). *The Scientific Legacy of Fred Hoyle*. Cambridge: Cambridge University Press, 2011 paperback.

Graves, Joseph L. (2022). *A Voice in the Wilderness: A Pioneering Biologist Explains How Evolution Can Help Us Solve Our Biggest Problems*. New York: Basic Books.

Gregory, Jane. (January 2003). “The Popularization and Excommunication of Fred Hoyle’s ‘Life-from-Space’ Theory” in *Public Understanding of Science*, volume 12, issue number 1, pages 25-46.

Gregory, Jane. (2005). *Fred Hoyle’s Universe*. Oxford: Oxford University Press.

Grevesse-Guillaume, C., and N. C. Wickramasinghe. (1966 [Received 21 July 1965]). “On the Optics of Small Graphite Spheres, III” in *Monthly Notices of the Royal Astronomical Society*, volume 132, issue number 4, pages 471-473, <https://adsabs.harvard.edu/pdf/1966MNRAS.132..471G>.

Haldane, J. B. S. [John Burdon Sanderson Haldane] (1929). *The Origin of Life*. London: Chatto and Windus Publishing.

Hannay, J. B. (15 February 1883). “Natural Selection and Natural Theology” [Letter to the Editor] in *Nature*, volume 27, issue number 694, page 364-364, doi:10.1038/027364a0, <https://www.nature.com/articles/027364a0>.

Hartshorne, Charles. (c1937). *Beyond Humanism: Essays in the Philosophy of Nature*. Chicago; New York: Willett, Clark & Company [Reprinted with important new preface, Gloucester, Massachusetts: Peter Smith Books, 1975].

Concerning relations between astronomy and biology: In 1936-37 in *Beyond Humanism: Essays in the Philosophy of Nature* (1975 [c1937]) Charles Hartshorne was saying “astronomy is not as yet of much help in determining the prevalence in space-time of conditions favoring animal organism” (58). Since then, especially since *B<sup>2</sup>FH* (1957), astronomers have learned to be of much help to

biology; and in so doing, they created the new convergent discipline of *astrobiology*.]

Hartshorne, Charles. ([1941a] 1964). "The Theological Analogies and the Cosmic Organism" (chapter V, pages 174-211) in *Man's Vision of God and the Logic of Theism*. Hamden, Connecticut: Archon Books, 1964 [New York: Willet, Clark & Company, 1941].

Hartshorne, Charles. (1991). "An Open Letter to Carl Sagan" in *The Journal of Speculative Philosophy*, volume 5, pages 227-232.

Hartshorne, Charles, and William L. Reese. (1953). *Philosophers Speak of God*. Chicago: University of Chicago Press. Reprints: Chicago: Midway Reprints, 1976; Amherst, New York: Humanity Books, 2000. [Here Alfred North Whitehead's view of God is classified as "panentheism." The word "panentheism" comes from pan-en-theos-ism, literally meaning <all included-in God> -ism (which is distinguished from classical theism, and from classical pantheism).]

Haselgrove, C. B., and F. Hoyle. (10 May 1956). "A Preliminary Determination of the Age of Type II Stars" in *Monthly Notices of the Royal Astronomical Society*, volume 116, issue number 5, pages 527-532.

Hauerwas, Stanley. (2001). *With the Grain of the Universe: The Church's Witness and Natural Theology – Being the Gifford Lectures Delivered at the University of St. Andrews in 2001*. Grand Rapids, Michigan: Brazos Press.

Hoover, Richard B. (July-August 2011). "Fossils of Cyanobacteria in CII Carbonaceous Meteorites: Implications to Life on Comets, Europa, and Enceladus" in *The Journal of Cosmology*, volume 15, issue number II-3, pages 6249-6287, [https://thejournalofcosmology.com/Contents15\\_files/Hoover\\_JOC\\_MS.pdf](https://thejournalofcosmology.com/Contents15_files/Hoover_JOC_MS.pdf).

Hoover, Richard B., Fred Hoyle, Nalin Chandra Wickramasinghe, Miriam J. Hoover, and Sirwan Al-Mufti. (April 1986). "Diatoms on Earth, Comets, Europa, and in Interstellar Space" in *Earth, Moon and Planets*, volume 35, issue number 1, pages 19-45.

[https://link.springer.com/chapter/10.1007/978-94-011-4297-7\\_23](https://link.springer.com/chapter/10.1007/978-94-011-4297-7_23).

Hoover, Richard B., A. Yu Rozanov, and Roland Paepe, editors. (2005). *Perspectives in Astrobiology*, Amsterdam: IOS Press.

Irwin, Louis N., and Dirk Schulze-Makuch. (c2011). *Cosmic Biology: How Life Could Evolve on Other Worlds*. New York; London: Springer; Chichester, UK; Published in association with Praxis Pub.

Jenkins, Lillie R. (3 April 2021). “Black Apollo of Science: The Life of Ernest Everett Just – Summarizing Timeline, Sumitography and Concept Poster” [Alternative title: “E. E. Just: Administrative and Fund-seeking Pioneer”], online via *SMU Scholar* at [https://scholar.smu.edu/theology\\_research/27/](https://scholar.smu.edu/theology_research/27/).

Just, Ernest Everett. (January 1939). *The Biology of the Cell Surface*. Philadelphia: P Blakiston’s Son.

Just, Ernest Everett. (June 1939). *Basic Methods for Experiments on Eggs of Marine Animals*. Philadelphia: P. Blakiston’s Son.

Just, Ernest Everett, and Hedwig Schnetzler Just. (October 1941 unpublished [2020]). *The Origin of Man’s Ethical Behavior*.

This 251-page archival edition was transcribed and edited during 2018-2020 by Theodore Walker Jr. and Lillie R. Jenkins, with additional co-editing by Walker, Jenkins, and W. Malcolm Byrnes, in consultation with Stuart Newman, Kenneth R. Manning, Charles H. Long, and Joellen ElBashir; independently published as *The ORIGIN OF MAN’S ETHICAL BEHAVIOR (1941) by ERNEST EVERETT JUST & HEDWIG SCHNETZLER JUST*.

Joseph, Gabriel R., Chandra Wickramasinghe, Richard Hoover, Gilbert Levin, Ben Goertzel, Allan Combs, Robert J.D. McLean, Malcolm A. C. McLean, Milton Wainwright, Pabulo Herique Rampelotto, and others. (18 November 2017). *Aliens, Extraterrestrials, Space Fungi, Moon Microbes, Martian Mushrooms, Diseases from Space, Sagan’s Aliens in the Thermosphere, Evolution*. Cambridge, MA.: Cosmology Science Publishers.

- Joseph, Rhawn, and N. Chandra Wickramasinghe. (September-October 2011). "Genetics Indicates Extraterrestrial Origins for Life: The First Gene – Did Life Begin Following the Big Bang?" in *The Journal of Cosmology*, volume 16, issue number 21,  
[https://thejournalofcosmology.com/27\\_JosephWickGeneticOriginsLife.pdf](https://thejournalofcosmology.com/27_JosephWickGeneticOriginsLife.pdf).
- Karim, L. M., Fred Hoyle, and N. C. Wickramasinghe (July 1983). "Interstellar Proteins and the Discovery of a New Absorption Feature at  $\lambda = 2800\text{\AA}$ " in *Astrophysics and Space Science*, volume 94, issue number 1, pages 223-229,  
<https://adsabs.harvard.edu/pdf/1983Ap%26SS..94..223K>.
- Kragh, Helge. (1993). "Big Bang Cosmology" (pages 371-390) in *Cosmology: Historical, Literary, Philosophical, Religious, and Scientific Perspectives*, edited by Norriss S. Hetherington. New York: Garland Publishing.
- Kragh, Helge. (1993). "Steady State Theory" (pages 391-406) in *Cosmology: Historical, Literary, Philosophical, Religious, and Scientific Perspectives*, edited by Norriss S. Hetherington. New York: Garland Publishing.
- Kragh, Helge. (1996). *Cosmology and Controversy: The Historical Development of Two Theories of the Universe*. Princeton, New Jersey: Princeton University Press.
- Kragh, Helge S. (2010). "When is a Prediction Anthropic? Fred Hoyle and the 7.65 MeV Carbon Resonance" in *PhilSci-Archive – An Archive for Preprints in Philosophy of Science*: University of Pittsburgh University Library System, pages 1-36,  
<http://philsci-archive.pitt.edu/5332/1/3alphaphil.pdf>.
- Kragh, Helge. (November 2010). "An Anthropic Myth: Fred Hoyle's Carbon-12 Resonance Level" in *Archives for History of Exact Sciences*, volume 64, issue number 6, pages 721-751,  
<https://link.springer.com/article/10.1007/s00407-010-0068-8>.

- Kragh, Helge S. (February-March 2011). "The Origin of the Modern Anthropic Principle" in *The Journal of Cosmology*, volume 13, issue number 1, pages 3700-3705,  
<http://cosmology.com/Anthropic100.html>.
- Kragh, Helge, and Robert W. Smith. (June 2003). "Who Discovered the Expanding Universe?" in *History of Science*, volume 41, part 2, issue number 132, pages 141-162,  
<https://journals.sagepub.com/doi/abs/10.1177/007327530304100202>.
- Kragh, Helge S., and Dominique Lambert. (10 October 2007). "The Context of Discovery: Lemaitre and the Origin of the Primeval-Atom Universe" in *Annals of Science*, volume 64, issue number 4, pages 445-470,  
doi:10.1080/00033790701317692,  
<https://www.tandfonline.com/doi/abs/10.1080/00033790701317692>.
- Kwok, Sun. (2008). "Synthesis of Organic Compounds in the Late Stages of Stellar Evolution and Their Connection to the Solar System" [a Conference Paper] in *Proceedings of the 10<sup>th</sup> Asian-Pacific Regional International Astronomical Union [IAU] Meeting (APRIM 2008)*, Kunming, China, 3-6 August 2008, and in Faculty of Science: Conference Papers: HKU Scholars Hub, University of Hong Kong.
- Kwok, Sun. (2009). "Delivery of Complex Organic Compounds from Planetary Nebulae to the Solar System" in *International Journal of Astrobiology*, volume 8, issue number 3, pages 161-167,  
doi:10.1017/S1473550409004492,  
<https://doi.org/10.1017/S1473550409004492>.
- Kwok, Sun. (2009). "Organic Matter in Space: From Star Dust to the Solar System" in *Astrophysics and Space Science*, volume 319, issue number 1, pages 5-21, doi:10.1007/s10509-008-9965-6, online at  
<https://link.springer.com/article/10.1007/s10509-008-9965-6>.
- Kwok, Sun. (September-October 2011). "From 'Frontiers of Astronomy' to Astrobiology" in *The Journal of Cosmology*, volume 16, issue number 13, pages 6643-6660, online at  
[https://thejournalofcosmology.com/13\\_Kwok.pdf](https://thejournalofcosmology.com/13_Kwok.pdf).

- Kwok, Sun. (December 2011 [Received 3 August 2011]). “Delivery of Complex Organic Compounds from Evolved Stars to the Solar System” in *Origins of Life and Evolution of Biospheres*, volume 41, issue number 6, pages 497-502, doi:10.1007/s11084-011-9254-1, online at <https://link.springer.com/article/10.1007/s11084-011-9254-1>.
- Kwok, Sun. (2012). *Organic Matter in the Universe*. Weinheim, Germany: Wiley-VCH Publishing.
- Kwok, Sun and Scott A. Sandford, editors. (2008). *Organic Matter in Space: Proceedings of the 251<sup>st</sup> Symposium of the International Astronomical Union Held in Hong Kong, China, February 18-22, 2008*. Cambridge, England: Cambridge University Press.
- Lal, Ashwini Kumar, and Rhawn Joseph. (30 January 2010). “Big Bang? A Critical Review” in *The Journal of Cosmology*, volume 6, issue number 11, pages 1533-1547, online at <https://thejournalofcosmology.com/BigBang101.html>.
- Lemaître, Georges Edouard. (1927). “Un Univers homogène de masse constant et de rayon croissant rendant compte de la 47<sup>ar</sup> radiale des nébuleuses extragalactiques” [A homogeneous Universe of constant mass and growing radius accounting for the radial velocity of extragalactic nebulae]. *Annales de la Société Scientifique de Bruxelles*.
- Lemaître, G. [Georges Edouard]. (9 May 1931). “The Beginning of the World from the Point of View of Quantum Theory” in *Nature*, volume 127, issue number 3210, page 706-706, <https://www.nature.com/articles/127706b0>.
- Lemaître, Georges Edouard. (1946). *L’Hypothèse de l’Atome Primitive: Essai de Cosmogonie*. Neuchatel, Switzerland: Éditions du Griffon. [Kragh 1996: 469] [J. J. O’Connor, E. F. Robertson July 2008]
- Lemaître, Georges Edouard. (1950). *The Primeval Atom: An Essay on Cosmogony* [*L’Hypothèse de l’atome primitive: Essai de Cosmogonie* (1946)], translation by Betty H. and Serge A. Korff, Preface by Ferdinand Gonseth, Foreword by Henry Norris Russell. New York: D. Van Nostrand Company.

Lemaître, Georges Edouard, and others. (1933). *Discussion sur l'évolution de l'univers*. Paris, France: Gauthier-Villars Publishing.

Lerner, Eric J. (1992 [1991]). *The Big Bang Never Happened*, paperback with new author Preface. New York: Random House Vintage Books.

Levin, Michael. (December 2019). "The Computational Boundary of a 'Self': Developmental Bioelectricity Drives Multicellularity and Scale-Free Cognition" in *Frontiers in Psychology* [DOI: 10.3389/fpsyg.2019.02688].

Also, see "What are Cognitive Light Cones? (Michael Levin Interview)" (2023) on YouTube

at <https://www.youtube.com/watch?v=YnObwxJZpZc&t=19s>,

and see "What is The Field of Diverse Intelligence? Hacking the Spectrum of Mind & Matter | Michael Levin" (August 2023) on YouTube at

<https://www.youtube.com/watch?v=kMxTS7eKkNM&t=364s>.

Longair, Malcolm S. (2005). "Evolutionary Cosmologies: Then and Now" is chapter 8 in *The Scientific Legacy of Fred Hoyle*, edited by Douglas Gough. Cambridge: Cambridge University Press, 2011 paperback.

Manning, Kenneth R. (1983). *Black Apollo of Science: The Life of Ernest Everett Just*. Oxford: Oxford University Press.

Maddox, John. (1 September 1994). "The Return of Cosmological Creation" in *Nature*, volume 371, issue number 6492, page 11-11, <https://ui.adsabs.harvard.edu/abs/1994Natur.371...11M/abstract>.

Maddox, John. (20 September 2001). "Obituary: Fred Hoyle (1915-2001)" in *Nature*, volume 413, issue number 6853, page 270-270, doi:10.1038/35095162, <https://www.nature.com/articles/35095162>.

Maddox, John. (6 June 2002). "Astronomy: The Hoyle Story" in *Nature*, volume 417, issue number 6889, pages 603-605, doi:10.1038/417603a, <https://www.nature.com/articles/417603a>.

Mathis, John S., William Rumpl, and Kenneth H. Nordsieck. (15 October 1977). "The Size Distribution of Interstellar Grains" in *the Astrophysical Journal*, Part 1, volume 217, pages 425-433,



doi:10.1086/155591,  
<https://adsabs.harvard.edu/pdf/1977ApJ...217..425M>.

Mautner, Michael N. (February-March 2010). “Seeding the Universe with Life: Securing Our Cosmological Future” in *The Journal of Cosmology*, volume 5, issue number 26, pages 982-994,  
<https://thejournalofcosmology.com/SearchForLife111.html>.

McConnell, Craig. (October 2006). “The BBC, the Victoria Institute, and the Theological Context for the Big Bang – Steady State Debate” in *Science and Christian Belief*, volume 18, issue number 2, pages 151-168.

McNaughton, N. J. and C. T. Pillinger. (11 December 1980). “Comets and the Origin of Life” in *Nature*, volume 288, issue number 5791, page 540-540, doi:10.1038/288540a0, online at  
<https://www.nature.com/articles/288540a0>.

Miller, Stanley L. and Harold C. Urey. (July 1959). “Organic Compound Synthesis on the Primitive Earth: Several Questions about the Origin of Life Have Been Answered, But Much Remains to be Studied” in *Science*, volume 130, issue number 3370, pages 245-251, online at  
<https://www.science.org/doi/abs/10.1126/science.130.3370.245>.

Miller, Stanley L. and Leslie E. Orgel. (1974). *The Origins of Life on the Earth*. Upper Saddle River, New Jersey: Prentice Hall Publisher.

Mitton, Simon. (2005). *Conflict in the Cosmos: Fred Hoyle’s Life in Science*. Washington, DC: Joseph Henry Press.

Mitton, Simon. (2005). *Fred Hoyle: A Life in Science*. London: Aurum Press [reprint, Cambridge University Press, 2011].

Mitton, Simon. (2008). “Hoyle, Fred” (pages 388-392) in *New Dictionary of Scientific Biography*. Detroit: Charles Scribner’s Sons.

Napier, W. M. (February 2004 [Online 30 January 2004]). “A Mechanism for Interstellar Panspermia” in *Monthly Notices of the Royal Astronomical Society*, volume 348, issue number 1, pages 46-51,  
<https://academic.oup.com/mnras/article/348/1/46/1415892>.

- Napier, W. M., J. T. Wickramasinghe, and N. C. Wickramasinghe. (2004 [Received 12 August 2004]). “Extreme Albedo Comets and the Impact Hazard” in *Monthly Notices of the Royal Astronomical Society*, volume 355, issue number 1, pages 191-195, doi:10.1111/j.1365-2966.2004.08309.x, <https://academic.oup.com/mnras/article/355/1/191/3101517>.
- Narlikar, Jayant V. (1973). “Steady State Defended” (pages 69-84) in *Cosmology Now*, edited by L. John. London: BBC. [Kragh 1996: 467, 474]
- Narlikar, Jayant V. (2005). “Alternative Ideas in Cosmology” is chapter 9 in *The Scientific Legacy of Fred Hoyle*, edited by Douglas Gough. Cambridge: Cambridge University Press, 2011 paperback.
- Narlikar, Jayant V., and Nalin Chandra Wickramasinghe. (7 October 1967). “Microwave Background in a Steady State” in *Nature*, volume 216, issue number 5110, pages 43-44, doi:10.1038/216043a0, online at <https://www.nature.com/articles/216043a0>.
- Narlikar, Jayant V., and N. Chandra Wickramasinghe. (30 March 1968). “Interpretation of Cosmic Microwave Background” in *Nature*, volume 217, issue number 5135, pages 1235-1236, doi:10.1038/2171235a0, <https://www.nature.com/articles/2171235a0>.
- Narlikar, Jayant V. (September 1992). “The Concepts of ‘Beginning’ and ‘Creation’ in Cosmology” (pages 361-371) in *Philosophy of Science*, volume 59, issue number 3, pages 361-371.
- Narlikar, Jayant V., Indu Banga, and Chanda Gupta, editors. (1992). *Philosophy of Science: Perspectives from Natural and Social Sciences*. Shimla, India: Indian Institute of Advanced Study; Delhi, India: Munshiram Manoharlal Publishers.
- Narlikar, Jayant V., and Geoffrey Burbidge. (2008). “An Alternative Cosmology” is chapter 15 in *Facts and Speculations in Cosmology*. Cambridge: Cambridge University Press.
- O’Connor, J. J. and E. F. Robertson. (July 2008). “Georges Henri-Joseph-Edouard Lemaître” in *MacTutor History of Mathematics* online at

[www-history.mcs.st-andrews.ac.uk/Biographies/Lemaitre.html](http://www-history.mcs.st-andrews.ac.uk/Biographies/Lemaitre.html).

- Ogden, Schubert M. (Spring 1984). "Process Theology and the Wesleyan Witness" in *Perkins School of Theology Journal*, volume 37, number 3, pages 18-33 Reprinted with a collection of essays responsive to Ogden's essay in *Thy Nature and Thy Name Is Love: Wesleyan and Process Theologies in Dialogue*, (Nashville: Abingdon Press, 2001), edited by Bryan P. Stone and Thomas Jay Oord.
- Oparin, Alexander Ivanovitch. (1924). *The Origin of Life*. Moscow: Moscow Worker publisher, 1924 (in Russian); English translation: New York: Dover (1952 [1938]).  
Also, see "ALEXANDER OPARIN (1894-1980)" online at [https://www.physicsoftheuniverse.com/scientists\\_oparin.html](https://www.physicsoftheuniverse.com/scientists_oparin.html), where is said: "In 1924, Oparin officially put forward his influential theory that life on Earth developed through gradual chemical evolution of carbon-based molecules in a "primordial soup", at just about the same time as the British biologist J. B. S. Haldane was independently proposing a similar theory." (Accessed 11 January 2023)]
- Oparin, Aleksandr Ivanovič. (1938 [1936]). *The Origin of Life*, translation with annotations by Sergius Morgulis. New York: Macmillan Publishers; Reprint, Mineola, New York: Courier Dover Publishers, 1953 and 2003.
- Oparin, Aleksandr Ivanovič. (1968 [1966]). *Genesis and Evolutionary Development of Life*. New York: Academic Press, 2017.
- Pasteur, Louis. (6 February 1860). "Expériences relatives aux générations spontanées" in *Comptes rendus de l'Académie des Sciences* [Proceedings of the [French] Academy of Sciences], volume 50, pages 303-307.
- Pasteur, Louis. (7 May 1860). "De l'origines des ferments: Nouvelle experiences relatives aux generations dites spontanées" in *Comptes rendus de l'Académie des Sciences* - Proceedings of the [French] Academy of Sciences, 3, volume 50, pages 849-854.

- Pasteur, Louis. (3 September 1860). “Nouvelle experiences relatives aux generations dites spontanées” in *Comptes rendus de l’Académie des Sciences* [Proceedings of the [French] Academy of Sciences], volume 51, pages 348-353.
- Pasteur, Louis. (5 November 1860). “Suite à une précédente communication relative aux generations dites spontanées” in *Comptes rendus de l’Académie des Sciences* [Proceedings of the [French] Academy of Sciences], volume 51, pages 675-678.
- Pasteur, Louis. (1861). “Mémoires sur les corpuscules organisés qui existent dans l’atmosphère: Examen de la doctrine des generations spontanées” in *Annales des Sciences Naturelles* (partie Zoologique), 4e série, volume 16, pages 5-68.
- Penrose, Roger. (1991). *The Emperor’s New Mind: Concerning Computers, Minds, and the Laws of Physics*, Foreword by Martin Gardner. New York: Penguin Books [originally Oxford University Press, 1989].
- Penrose, Roger. (1994). *Shadows of the Mind: A Search for the Missing Science of Consciousness*. Oxford: Oxford University Press.
- Penrose, Roger. (2004). “Speculative Theories of the Early Universe” and “The Anthropic Principle” in *The Road to Reality: A Complete Guide to the Laws of the Universe*. London: Jonathan Cape Publisher.
- Penrose, Roger. (2010). “Conformal Cyclic Cosmology” in *Cycles of Time: An Extraordinary New View of the Universe*. London: Bodley Head Publisher; Reprint, New York: Alfred A. Knopf, 2011.
- Penrose, Roger. (2011). *Collected Works*. Oxford; New York: Oxford University Press.
- Penrose, Roger, and Wolfgang Rindler. (1984, 1986). *Spinors and Space-time*, volumes 1 and 2. Cambridge; New York: Cambridge University Press.
- Penrose, Roger, and others. (1999 [originally 1997]). *The Large, the Small, and the Human Mind*, new and revised, edited by Malcolm Longair. Cambridge; New York: Cambridge University Press.

- Pflug, Hans Dieter. (26 November 1981). "Extraterrestrial Life: New Evidence of Microfossils in the Murchison Meteorite." A public lecture in Cardiff.
- Pflug, Hans Dieter. (1984). "Ultrafine Structure of the Organic Matter in Meteorites" in *Fundamental Studies and the Future of Science*, edited by Chandra Wickramasinghe. Cardiff, Wales, United Kingdom: University College Cardiff Press.
- Pflug, Hans Dieter and H. Haescheke-Boyer. (9 August 1979). "Combined Structural and Chemical Analysis of 3,800-Myr-Old Microfossils" in *Nature*, volume 280, issue number 5722, pages 483-486, doi:10.1038/280483a0, <https://www.nature.com/articles/280483a0>.
- Polkinghorne, John C. (1989). *Science and Providence: God's Interaction with the World*. Boston: New Science Library.  
For a review of *Science and Providence*, see "Articles of Faith" (4 May 1989) by Fred Hoyle in *Nature*, volume 339, issue number 6219, pages 23-24.
- Ponnamperuma, Cyril, editor. (c1981). *Comets and the Origin of Life: Proceedings of the Fifth College Park Colloquium on Chemical Evolution, University of Maryland, College Park, Maryland, U.S.A., October 29th to 31st, 1980*. Boston: Kluwer Academic Publishers.
- Powell, Russell. (2020). *Contingency and Convergence: Toward a Cosmic Biology of Body and Mind*. Cambridge, Massachusetts: The MIT Press.
- Raymo, Chat. (February 2005). "Big Bang vs. Steady State: How the Big Bang Theory Won the 20th Century's Biggest Cosmological Debate" [book review of *Big Bang: The Origin of the Universe* (HarperCollins 2005) by Simon Singh] in *Scientific American*, volume 292, issue number 2, pages 98-100, doi:10.1038/scientificamerican0205-98.
- Rees, Martin. (1997). *Before the Beginning: Our Universe and Others*, Foreword by Stephen Hawking. Cambridge, Massachusetts: Helix Books.

- Rees, Martin. (2001). *Our Cosmic Habitat*. Princeton, New Jersey: Princeton University Press.
- Rees, Martin (2005). Foreword (pages x-xiii) in *The Scientific Legacy of Fred Hoyle*, edited by Douglas Gough. Cambridge: Cambridge University Press, 2011 paperback.
- Rees, Martin. (10 January 2011). “Life in the Cosmos” is a Madingley Lecture at University of Cambridge.
- Rees, M. J., and J. P. Ostriker. (June 1977 [Received 5 November 1976 [original form 7 July 1976]). “Cooling, Dynamics and Fragmentation of Massive Gas Clouds: Clues to the Masses and Radii of Galaxies and Clusters” in *Monthly Notices of the Royal Astronomical Society*, volume 179, pages 541-559.
- Richards, Robert J. (1987). *Darwin and the Emergence of Evolutionary Theories of Mind and Behavior*. Chicago and London: University of Chicago Press.
- Rowan-Robinson, Michael. (22 December 1972). “Steady State Obituary?” in *Nature*, volume 240, issue number 5382, page 439-439, online at <https://www.nature.com/articles/240439a0>.
- Rushton, Simon K. and Rob Gray. (5 October 2006). “Hoyle’s Observations Were Right on the Ball” in *Nature*, volume 443, issue number 7111, page 506-506, doi:10.1038/443506d, online at <https://www.nature.com/articles/443506d>.
- Ryle, Martin. (August 1955). “Radio Stars and Their Cosmological Significance” in *The Observatory*, volume 75, issue number 887, pages 137-147, online at <https://adsabs.harvard.edu/pdf/1955Obs....75..137R>.
- Ryle, Martin. (3 June 1961). “Radio Astronomy and Cosmology” in *Nature*, volume 190, issue number 4779, pages 852-854, doi:10.1038/190852a0, online at <https://link.springer.com/article/10.1038/190852a0>.
- Ryle, Martin, and R. W. Clarke (30 January 1961). “An Examination of the Steady-State Model in the Light of Some Recent Observations of Radio

- Sources” in *Monthly Notices of the Royal Astronomical Society*, volume 122, issue number 4, pages 349-362,  
<https://academic.oup.com/mnras/article/122/4/349/2602359>.
- Sagan, Carl, and Ann Druyan. (1985). *Comet*. New York: Random House Publishing [reprint, Ballantine Books, 1997].
- Saint John’s College University of Cambridge “Preprints of Sir Fred Hoyle (1915-2001), astronomer” from the Astrophysics and Relativity Preprint Series and Special Preprints, produced by the Department of Applied Mathematics and Astronomy, University College, Cardiff and the Mathematics Institute, Cardiff,  
[https://www.joh.cam.ac.uk/library/special\\_collections/personal\\_papers/hoylepreprints](https://www.joh.cam.ac.uk/library/special_collections/personal_papers/hoylepreprints).
- Sakata, A., N. Nakagawa, T. Iguchi, S. Isobe, M. Morimoto, F. Hoyle, and N. C. Wickramasinghe. (17 March 1977). “Spectroscopic Evidence for Interstellar Grain Clumps in Meteoritic Inclusions” [Letter to Nature] in *Nature*, volume 266, issue number 5599, page 241-241,  
<https://www.nature.com/articles/266241a0>.
- Salpeter, E. E. and N. C. Wickramasinghe. (3 May 1969). “Alignment of Interstellar Grains by Cosmic Rays” in *Nature*, volume 222, issue number 5192, pages 442-444,  
doi:10.1038/222442a0, <https://www.nature.com/articles/222442a0>.
- Sandford, Scott A. (2008). “Organics in the Samples Returned from Comet 81P/Wild 2 by the Stardust Spacecraft” (pages 299-308) in *Organic Matter in Space: Proceedings of the 251st Symposium of the International Astronomical Union Held in Hong Kong, China, February 18-22, 2008*, edited by Sun Kwok and Scott A. Sandford. Cambridge: Cambridge University Press.
- Sargent, Wallace L. W. (2005). “Fred Hoyle’s Major Work in the Context of Astronomy and Astrophysics Today” is chapter 1 in *The Scientific Legacy of Fred Hoyle*, edited by Douglas Gough. Cambridge: Cambridge University Press, 2011 paperback.

Savage, Blair. D., and John S. Mathis. (1979). “Observed Properties of Interstellar Dust” in *Annual Review of Astronomy and Astrophysics*, volume 17, pages 73-111, doi:10.1146/annurev.aa.17.090179.000445, <https://adsabs.harvard.edu/pdf/1979ARA%26A..17...73S>.

Scalzi, Giuliano, Laura Selbmann, Laura Zucconi, Elke Rabbow, Gerda Horneck, Patrizia Albertano, and Silvano Onofri. (12 June 2012 [Received 5 December 2011]). “LIFE Experiment: Isolation of Cryptoendolithic Organisms from Antarctic Colonized Sandstone Exposed to Space and Simulated Mars Conditions on the International Space Station” in *Origins of Life and Evolution of Biospheres*, volume 42, issue number 2, pages 253-262, doi:10.1007/s11084-012-9282-5, <https://link.springer.com/article/10.1007/s11084-012-9282-5>.

Schalén, C. (1939). *Uppsala Obs.* Ann. 1, No. 2.  
“In Astronomy, 1939 was the year when a Swedish astronomer by name C. Schalén first showed that the universe contained vast amounts of cosmic dust (microscopic dust particles) that blocked out the light of distant stars ...” (Wickramasinghe, December 2011).

Schild, Rudolf E. (June 2012). “COMMENTARY: Introduction to Astro-Theology” in *The Journal of Cosmology*, volume 19, issue number 1, pages 8547-8551, <https://thejournalofcosmology.com/indexVol19CONTENTS.htm>, <https://thejournalofcosmology.com/commentary.pdf>.

Schild, Rudolf, R. Gabriel Joseph, Chandra Wickramasinghe, Robert J. C. McLean, Richard B. Hoover, Gilbert V. Levin, Milton Wainwright, and Max K. Wallis. (2014 [2010]). *Biological Cosmology, Astrobiology, Extraterrestrial Life*. Cosmology Science Publishers.

Shapiro, Robert (13 May 1993). “Life, the Universe and Anything Goes” [a review of *Our Place in the Cosmos* (1993) by Fred Hoyle and N. Chandra Wickramasinghe] in *Nature*, volume 363, issue number 6425, page 124-124, doi:10.1038/363124a0, <https://www.nature.com/articles/363124a0>.

Shaviv, Giora. (2012). *The Synthesis of the Elements: The Astrophysical Quest for Nucleosynthesis and What It Can Tell Us About the Universe*. Heidelberg, Germany: Springer-Verlag Publisher.



Shivaji, Sisinthy. Sreenivas Ara, Snajay Kumar Singh, Sunil Bandi, Aditya Singh, and Anil Kumar Pinnaka. (December 2012 [9 November 2012]). “Draft Genome Sequence of *Bacillus Isronensis* Strain B3W22, Isolated from the Upper Atmosphere” in *Journal of Bacteriology*, volume 194, issue number 23, pages 6624-6625, doi:10.1128/JB.01651-12, <https://journals.asm.org/doi/full/10.1128/JB.01651-12>.

Shivaji, Sisinthy with Preeti Chaturvedi, Zareena Begum, Pavan Kumar Pindi, R. Manorama, D. Ananth Padmanaban, Yogesh S. Shouche, Shrikant Pawar, Parag Vaishampayan, C. B. S. Dutt, G. N. Datta, R. K. Manchanda, U. R. Rao, P. M. Bhargava and J. V. Narlikar. (2009). “*Janibacter hoylei* sp. nov. [a new species of bacteria named for Fred Holye], *Bacillus isronensis* sp. nov. and *Bacillus aryabhatai* sp. nov., isolated from cryotubes used for collecting air from the upper atmosphere” in the *International Journal of Systematic and Evolutionary Microbiology*, volume 59, issue number 12, pages 2977-2986, doi:10.1099/ijs.0.002527-0, <https://www.microbiologyresearch.org/content/journal/ijsem/10.1099/ij.0.002527-0>.

Singh, Simon. (2005). *Big Bang: The Origin of the Universe*. New York: HarperCollins.

Slate, Nico. (2014). *The Prism of Race: W.E.B. Du Bois, Langston Hughes, Paul Robeson, and the Colored World of Cedric Dover*. New York: Palgrave Macmillan.

Smith, Eric, and Harold J. Morowitz. (2022 [first edition 2016]). *The Origin and Nature of Life on Earth: The Emergence of the Fourth Geosphere*. Cambridge, UK: Cambridge University Press.

Smith and Morowitz argue that “the emergence of life was a necessary cascade of non-equilibrium phase transitions that opened new channels for chemical energy flow on Earth” (2022: i) and that “the core of intermediary metabolism is *a necessary consequence of galactic processes*” (2022: xvi). [Italics added.] Though not mentioned by Smith and Morowitz, their arguments are consistent with the generic idea of panspermia (seeds of potential new life panoramically distributed) and

the Hoyle-Wickramasinghe conviction that life is a stellar-galactic and cosmic phenomenon.

Smolin, Lee. (29 July 2004). “Scientific Alternatives to the Anthropic Principle” in *Universe or Multiverse* (21 June 2007), edited by Bernard Carr. Cambridge: Cambridge University Press, pages 323-366.

Steele, Edward J., Shirwan Al-Mufti, Kenneth A. Augustyn, Rohana Chandrajith, John P. Coghlan, S. G. Coulson, Sudipto Ghosh, Mark Gillman, Reginald M. Gorczynski, Brig Klyce, Godfrey Louis, Kithsir Mahanama, Keith R Oliver, Julio Padron, Jiangwen Qu, John A Schuster, W. E. Smith, Duane P Snyder, Julian A. Steele, Brent J. Stewart, Robert Temple, Gensuke Tokoro, Christopher A Tout, Alexander Unzicker, Milton Wainwright, Jamie Wallis, Daryl H. Wallis, Max K. Wallis, John Wetherall, D. T. Wickramasinghe, J. T. Wickramasinghe, N. C. Wickramasinghe, and Yongsheng Liu. (August 2018). “Cause of Cambrian Explosion - Terrestrial or Cosmic?” in *Progress in Biophysics and Molecular Biology*, volume 136, pages 3-23, <https://www.sciencedirect.com/science/article/pii/S0079610718300798>.

Steele, Edward J., Reginald M Gorczynski, Robyn A Lindley Yongsheng Liu, Robert Temple, Gensuke Tokoro, Dayal T Wickramasinghe, and N Chandra Wickramasinghe. (December 2019). “Lamarck and Panspermia – On the Efficient Spread of Living Systems throughout the Cosmos” in *Progress in Biophysics & Molecular Biology - An International Review Journal*, volume 149, pages 10-32, doi:10.1016/j.pbiomolbio.2019.08.010, <https://www.sciencedirect.com/science/article/pii/S0079610719301129>.

Tepfer, David, and Sydney Leach. (December 2006 [Received 22 June 2006, accepted 16 August 2006, published 15 November 2006]). “Plant Seeds as Model Vectors for the Transfer of Life Through Space” in *Astrophysics and Space Science*, volume 306, issue number 1, pages 69-75, doi:10.1007/s10509-006-9239-0, <https://link.springer.com/article/10.1007/s10509-006-9239-0>.

Thomas, Paul J. with Christopher F. Chyba, and Christopher P. McKay, editors. (1997). *Comets and the Origin and Evolution of Life*. New York: Springer [Reprint, Berlin: Springer-Verlag, 2006].

Tirard, Stéphane. (24 November 2017). “J. B. S. Haldane and the origin of life” in *Journal of Genetics*, volume 96, pages 735-739, online at <https://pubmed.ncbi.nlm.nih.gov/29237880/>.

Abstract - In 1929 the British biologist John Burdon Sanderson Haldane published a hypothesis on the origin of life on earth, which was one of the most emblematic of the interwar period. It was a scenario describing the progressive evolution of matter on the primitive earth and the emergence of life. Firstly, this paper presents the main ideas put forward by Haldane in this famous text. The second part makes comparisons between Haldane and Alexander Ivanovitch Oparin's ideas regarding the origins of life (1924). These two theories, apparently very similar, presented distinct conclusions. The third part focusses on Haldane's reflections on the emergence of life during the 1950s and 1960s, and shows how they were linked to the recent developments of prebiotic chemistry and molecular biology.

Tyson, Neil de Grasse, and Donald Goldsmith. (2004). *Origins: Fourteen Billion Years of Cosmic Evolution*. New York; London: W. W. Norton.

Urey, Harold Clayton. (1952). *The Planets, Their Origin and Development*. New Haven, Connecticut: Yale University Press.

Urey, Harold C. (24 March 1962). “Life-Forms in Meteorites: Origin of Life-like Forms in Carbonaceous Chondrites Introduction” in *Nature*, volume 193, issue number 4821, pages 1119-1123, doi:10.1038/1931119a0, <https://www.nature.com/articles/1931119a0>.

Urey, Harold Clayton (1963). *Some Cosmochemical Problems*. University Park, Pennsylvania: Pennsylvania State University.

Vanysek, V. and N. C. Wickramasinghe. (October 1999 [originally April 1975]). “Formaldehyde Polymers in Comets” [Letter to the Editor] in *Astrophysics and Space Science*, volume 268, issue number 1, pages 115-124 [originally, volume 33, issue number 2, L19-L28], doi:10.1023/A:1002452904168, <https://link.springer.com/article/10.1023/A:1002452904168>.

- Vsekhsvyatskiy, Sergei Konstantinovich. (1970). *The Nature and Origin of Comets and Meteors*. Washington, DC: National Aeronautics and Space Administration.
- Wagoner, Robert V., William A. Fowler, and Fred Hoyle. (April 1967 [Received 1 September 1966]). “On the Synthesis of Elements at Very High Temperatures” in *the Astrophysical Journal*, volume 148, issue number 1, pages 3-49, doi:10.1086/149126, <https://adsabs.harvard.edu/pdf/1967ApJ...148....3W>.
- Wainwright, Milton, Fawaz Alshammari, and Khalid Alabri. (May 2010). “Are Microbes Currently Arriving to Earth from Space?” in *The Journal of Cosmology*, volume 7, issue number 3, pages 1692-1702, <https://thejournalofcosmology.com/Panspermia2.html>.
- Wainwright, Milton, Christopher E. Rose, Alexander J. Baker, and N. Chandra Wickramasinghe. (January 2014). “Impact Events on a Graphite Stub Provide Evidence That a Biological Entity Arrived at the Stratosphere from Space” in *The Journal of Cosmology*, volume 23, issue number 7, pages 11131-11135, online at [https://thejournalofcosmology.com/joc-32\\_wainwright.pdf](https://thejournalofcosmology.com/joc-32_wainwright.pdf).
- Wainwright, Milton, N. C. Wickramasinghe, J. V. Narlikar, and P. Rajaratnam. (January 2003 [Received 24 September 2002, revised 31 October 2002, accepted 5 November 2002, online 3 December 2002]). “Microorganisms Cultured from Stratospheric Air Samples Obtained at 41km” in *Federation of European Microbiological Societies - Microbiology Letters*, volume 218, issue number 1, pages 161-165, <https://academic.oup.com/femsle/article/218/1/161/532689>.
- Wainwright, Milton, and N. Chandra Wickramasinghe, Foreword by Gensuke Tokoro. (2023). *Life Comes from Space: The Decisive Evidence*. New Jersey, London: World Scientific.
- Walker, Theodore, Jr. (June 2012). “The Liberating Role of Astronomy in an Old Farmer’s Almanac: David Rittenhouse’s ‘Useful Knowledge’ and a Benjamin Banneker Almanac for 1792” in *The Journal of Cosmology*, volume 19, online at <https://thejournalofcosmology.com/walker4a.cor3.pdf>.

Abstract - Traditionally, astronomy met theology and political ethics in almanacs. As presented in early New England almanacs of the farmer's type, astronomy was deity-affirming and liberty-oriented. The old English label for astronomy that affirms theology was "Astro-theology" (William Derham, 1715). The New England rendering of astro-theology was so strongly oriented towards liberty that it can now be labeled astro-liberation theology. This 21st century label is appropriate because 18th century New England printers and astronomers used astronomy to demonstrate the glory of the Creator (astro-theology) and to encourage liberation from colonialism and slavery (astro-liberation theology). A philosophy of astronomy as "useful knowledge" expressed by David Rittenhouse in 1775—and implicit in a Benjamin Banneker almanac for 1792—included liberty-oriented visions of planet Earth as seen from outer space, and liberty-oriented visions of intelligent life on other planets orbiting other stars.

Walker, Theodore, Jr. (29 April 2020). "Interdisciplinary Convergences with Biology and Ethics via Cell Biologist Ernest Everett Just and Astrobiologist Sir Fred Hoyle" (chapter 2, pages 11-35) in *Panentheism and Panpsychism: Philosophy of Religion Meets Philosophy of Mind*; Series: Innsbruck Studies in Philosophy of Religion, Volume: 2. Brill | mentis, 2020), edited by Godehard Brüntrup, Benedikt Paul Göcke, and Ludwig Jaskolla.

Walker, Theodore, Jr. (December 2021). "Reviewing Ernest Everett Just's *Biology of the Cell Surface* (1939) and related literature, plus annotated references, hereby advancing evolutionary biology and evolutionary bioethics" in *SCIREA Journal of Health*, volume 5, issue number 6, pages 123-144,  
<https://www.scirea.org/journal/PaperInformation?PaperID=6569>.

Walker, Theodore, Jr. (27 June 2023). "Evolutionary Biology with Prophetic Structure and Content" [review article about *A Voice in the Wilderness: A Pioneering Biologist Explains How Evolution Can Help Us Solve Our Biggest Problems* (2022) by Joseph L. Graves Jr.] in *Black Theology: An International Journal*  
doi: 10.1080/14769948.2023.2228623, online at  
<https://doi.org/10.1080/14769948.2023.2228623>.

- Walker, Theodore, Jr., and Chandra Wickramasinghe, with editing by Alexander Vishio. (2015). *The Big Bang and God: An Astro-Theology wherein an astronomer and a theologian offer a study of interdisciplinary convergences with natural theology both in the scientific researches of Sir Fred Hoyle and in the philosophical researches of Charles Hartshorne and Alfred North Whitehead, thereby illustrating a constructive postmodern trend*. New York: Palgrave Macmillan.
- Wallis, Jamie with Nori Miyake, Richard B. Hoover, Andrew Oldroyd, Daryl H. Wallis, Anil Samaranayake, K. Wickramaratne, M. K. Wallis, Carl H. Gibson and Nalin Chandra Wickramasinghe. (5 March 2013). "The Polonnaruwa Meteorite: Oxygen Isotope, Crystalline and Biological Composition" in *The Journal of Cosmology*, volume 22, issue number 2, pages 10004-10011, [https://thejournalofcosmology.com/Paper22\(2a\).pdf](https://thejournalofcosmology.com/Paper22(2a).pdf).
- Wallis, Max K. (3 April 1980). "Radiogenic Melting of Primordial Comet Interiors" in *Nature*, volume 284, issue number 5755, pages 431-433, doi:10.1038/284431a0, <https://www.nature.com/articles/284431a0>.
- Wallis, Max K. (17 July 1980). "Cometary Science" in *Nature*, volume 286, issue number 5770, pages 207-208, doi:10.1038/286207a0, <https://www.nature.com/articles/286207a0>.
- Wallis, Max K., and N. C. Wickramasinghe, F. Hoyle, and R. Rabilizirov. (January 1989 [Received 29 December 1988]). "Biologic Verses Abiotic Models of Cometary Grains" in *Monthly Notices of the Royal Astronomical Society*, volume 238, issue number 4, pages 1165-1170, <https://academic.oup.com/mnras/article/238/4/1165/1037496>.
- Wallis, Max K., and N. C. Wickramasinghe. (April 1991 [Received 17 July 1990]). "Structural Evolution of Cometary Surfaces" in *Space Science Reviews*, volume 56, issue number 1, pages 93-97, doi:10.1007/BF00178395, <https://link.springer.com/article/10.1007/BF00178395>.
- Wallis, Max K., N. C. Wickramasinghe, and F. Hoyle. (1992). "Cometary Habitats for Primitive Life" in *Advances in Space Research*, volume 12, issue number 4, pages 281-285,

<https://www.sciencedirect.com/science/article/abs/pii/027311779290184Y>.

Wallis, Max K., and N. C. Wickramasinghe. (1995). "Role of Major Terrestrial Cratering Events in Dispersing Life in the Solar System" in *Earth and Planetary Science Letters*, volume 130, pages 69-73, <https://www.sciencedirect.com/science/article/abs/pii/0012821X9400232N>.

Wallis, Max K. and Sirwan Al-Mufti. (February 1996). "Processing of Cometary Grains at the Nucleus Surface" in *Earth, Moon, and Planets*, volume 72, issue number 1, pages 91-97, doi:10.1007/BF00117507, <https://link.springer.com/article/10.1007/BF00117507>.

Wallis, Max K., and Nalin Chandra Wickramasinghe. (2004). "Interstellar Transfer of Planetary Microbiota" in *Monthly Notices of the Royal Astronomical Society*, volume 348, issue number 1, pages 52-57, 61, <https://academic.oup.com/mnras/article/348/1/52/1415928>.

Wasserburg, G. J. with William A. Fowler and Fred Hoyle. (February 1960 [Received 31 January 1960]). "Duration of Nucleosynthesis" in *Physical Review Letters*, volume 4, issue number 3, pages 112-114, doi: 10.1103/PhysRevLett.4.112.

Weinberg, Steven. (January 1989). "The Cosmological Constant Problem" in *Reviews of Modern Physics*, volume 61, issue number 1, pages 1-23, doi:10.1103/RevModPhys.61.1, <https://journals.aps.org/rmp/abstract/10.1103/RevModPhys.61.1>.

Weinberg, Steven. (1993 [first edition 1977]). *The First Three Minutes: A Modern View of the Origin of the Universe*, updated edition. New York: Basic Books.

Weinberg, Steven. (October 1994). "Life in the Universe" in *Scientific American*, volume 271, issue number 4, pages 44-49, <https://www.jstor.org/stable/24942868>.

Weinberg, Steven. (2008). *Cosmology*. Oxford: Oxford University Press.

- White, Simon D. M., and Martin J. Rees. (May 1978 [Received 26 September 1977]). “Core Condensation in Heavy Halos: A Two-Stage Theory for Galaxy Formation and Clustering” in *Monthly Notices of the Royal Astronomical Society*, volume 183, issue number 3, pages 341-358, <https://academic.oup.com/mnras/article/183/3/341/972568>.
- Whitehead, Alfred North. (1927-28). *Process and Reality: An Essay in Cosmology* (Gifford Lectures Delivered in the University of Edinburgh During the Session 1927-28), 1978 *Corrected Edition*, edited by David Ray Griffin and Donald W. Sherburne. New York: Free Press.  
See “PART V FINAL INTERPRETATION” from *Process and Reality: An Essay in Cosmology* (1978 [1927-28]) by Alfred North Whitehead in *The Journal of Cosmology*, volume 20, online at [https://thejournalofcosmology.com/Whitehead\\_PR\\_Part5\\_Final\\_Interpration.pdf](https://thejournalofcosmology.com/Whitehead_PR_Part5_Final_Interpration.pdf).
- Whittet, D. C. B. (25 October 1979). “Interstellar Grains: Organic or Refractory?” in *Nature*, volume 281, issue number 5733, page 708-708, doi:10.1038/281708a0, online at <https://link.springer.com/content/pdf/10.1038/281708a0.pdf>.
- Witham, Larry. (2005). *The Measure of God: Our Century-Long Struggle to Reconcile Science and Religion*. New York: HarperCollins Publishers.
- Wolfram, Stephen. (2002). *A New Kind of Science*. Champaign, Illinois: Wolfram Media.
- Woosley, S. E. (1999). “Hoyle and Fowler’s Nucleosynthesis in Supernovae” in *Astrophysical Journal*, Centennial Issue number, volume 525, pages 924-925, <https://adsabs.harvard.edu/pdf/1999ApJ...525C.924W>.
- Woosley, S. E. (December 2007). “Nuclear Astrophysics: The First 50 Years” in *Nature Physics*, volume 3, issue number 12, pages 832-833, doi:10.1038/nphys804, <https://www.nature.com/articles/nphys804>.
- Wu, Katherine, and Shirlee Wohl. (4 November 2015). “Growing Together: How Viruses Have Shaped Human Evolution” from Fall 2015 Seminar Series, Science in the News – Boston (SITNBoston) on YouTube at <https://www.youtube.com/watch?v=BdsRKdeA-ss&t=2297s> [accessed 10 January 2023].



Zenil, Hector, editor. (2012 [Alan Turing Year.]). *A Computable Universe: Understanding and Exploring Nature as Computation*, Foreword by Roger Penrose. Hackensack, New Jersey: World Scientific Publishing.

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