

# NASA Reference Publication 1021

## A Bibliography on the Search for Extraterrestrial Intelligence

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# A Bibliography on the Search for Extraterrestrial Intelligence

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“The Universe is full of magical things, patiently waiting for our wits to grow sharper.”  
*Eden Phillpotts*

## INTRODUCTION

Few questions excite the human imagination as do: “Are we alone in the universe?” and, if we are not alone then, “Where are “They”?” The concept of innumerable populated worlds in the universe has existed for millenia, but only in comparatively recent times has serious thought been given to how we might communicate with our presumed extraterrestrial neighbors. Willey Ley and Wernher von Braun note in their book, *The Exploration of Mars* (ref. 722), that the Pierre Guzman Prize of 100,000 francs was offered by the French Academy of Sciences in 1900 to “whoever succeeded in establishing communication with another world *other than Mars*.” In 1900, communication with supposed intelligent beings on Mars was considered too easy to merit an award! Present scientific understanding holds little hope that advanced nonhuman intelligence exists elsewhere in this solar system (whales and porpoises, perhaps, excepted). If contact is to be made with other intelligence in the universe, man must bridge the gulf of interstellar space, which for the nearest stellar neighbor is 500,000 times larger than Earth’s closest approach to the red planet.

In 1959 Giuseppe Cocconi and Philip Morrison proposed in a pioneering article in *Nature* that the 21-cm neutral hydrogen wavelength be monitored by radio telescopes for signs of communicative intelligence on planets of the nearer stars. In the early 1960’s the literature of interstellar communication — searching for extraterrestrial intelligence (SETI) — was miniscule. Following the publication in 1963 of A. G. W. Cameron’s *Interstellar Communication*, a veritable explosion of journal articles and books about SETI began to appear. A first step in keeping track of this expanding literature was taken in 1967 with the publication by Robert L. Forward of a “Bibliography of Interstellar Travel and Communication.” This initial bibliography was supplemented considerably from the body of growing literature and was issued as a research report by Hughes Research Laboratories in May, 1971 by Eugene Mallove and Robert L. Forward. Subsequent updating of this bibliography by Mallove, Forward, and Paprotny led to its serialized publication in the *Journal of the British Interplanetary Society* (red-cover interstellar studies issues) in 1974, 1975, and 1976. Another version of this same bibliography was published in 1974 in *Interstellar Communication: Scientific Perspectives*, edited by Cyril Ponnampertuma and A. G. W. Cameron.

The present “Bibliography on Searching for Extraterrestrial Intelligence” is a uniform compilation and update of the previous bibliographies through February 1977. The major decision to omit references dealing with interstellar transport was made in order to reflect the thrust of the intensified research on listening for signals from extraterrestrial intelligence. In this bibliography of 1488 references, the entries are ordered alphabetically by first author and are consecutively

numbered. A topic index having the organization shown on pages 3 and 4 precedes the list of references. An effort was made to define topics more narrowly than in previous bibliographies. The vast majority of works was obtained, scanned, and classified into one or more topics, thus acknowledging the breadth of some of the references. Works which were unavailable for reading or which were untranslated were assigned to most probable topics based on their title, authorship, and source.

Following the topic index is a periodical and source index which may be useful in recalling forgotten references and in exhaustively obtaining SETI material from journals which may be convenient to a particular researcher.

In compiling the bibliography, prominent scientific journals were scanned for possible entries. Certain periodicals contain a wealth of relevant material and others have very little, so a certain degree of unevenness in the search was inevitable. The *International Aerospace Abstracts* were used to find many of the technical articles. Material in a more popular vein was obtained from the *Reader's Guide*. Cross references to other literature in articles which were obtained were also valuable in finding additional references. Many Eastern European and other international works were obtained by Zbigniew Paprotny of Poland. Some references were gathered from suggestions sent by people from various nations following publication of the earlier bibliographies.

The authors wish to apologize for any important omissions or errors which may have occurred. Letters with corrections or suggestions for additions which might affect future editions of this report should be sent to Dr. Mary Connors at NASA Ames Research Center, Moffett Field, California.

The universal appeal of the SETI problem has been overwhelmingly apparent from the international character of the expanding literature. People the world over are increasingly aware of the very real prospects for contacting other civilizations. At present there are only dim intimations of the true scope of the problem, crude and speculative probabilities with which to judge the chances of a successful search. Men widely debate the consequences of contact — some fear the prospect. The consequences of failure to detect signals may be even greater and may be an ominous portent for our civilization, but if signals from distant life are now beaming our way, sooner or later we will find them!

Ames Research Center  
National Aeronautics and Space Administration  
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## BIBLIOGRAPHY

1. ABD-EL-KHALIM, M.  
"Possibility of Life in Space," *Al Arabi*, no. 79, 1965, pp. 44–51 (in Arabic).
2. ABELL, G. O.  
"The Nearest Stars," Appendix 12 of *Exploration of the Universe*, Holt, Rinehart, and Winston, New York, 1969.
3. ABELL, George  
"The Search for Life Beyond Earth: A Scientific Update," in *Extraterrestrial Intelligence: The First Encounter*, (James Christian, editor) Prometheus Books, Buffalo, New York, 1976, pp. 53–72.
4. ACCOMAZZI, S.  
"Radio Communication with Intelligent Beings of Other Planets," *Coelum*, vol. 32, no. 9-10, 1964, pp. 152–156 (in Italian).
5. ACKERMANN, G.  
"The Arecibo 1974 Message," *Sterne und Weltraum*, vol. 14, no. 3, 1975, p. 89 (in German).
6. ADLER, Alfred  
"Behold the Stars," *The Atlantic*, vol. 234, no. 4, October 1974, pp. 109–112.
7. AGEL, Jerome  
*The Making of Kubrick's "2001,"* The New American Library, Inc., New York, 1970 (included is extensive commentary from scientists and literary sources on interpretation of the movie).
8. AGENIYAN, T. A.  
"Life in the Universe," in *Stars, Galaxies, Metagalaxy*, Nauka, Moscow, 1966, pp. 339-374 (in Russian).
9. AGNEW, I.  
"Life on Other Planets?" *Science Digest*, vol. 72, September 1972, p. 86.
10. AITKEN, Robert G.  
"Is the Solar System Unique?" *Astronomical Society of the Pacific, Leaflet*, no. 112, June 1938, pp. 98–105.
11. AKSENOV, S. I.  
"Limits of Adaptability of Life to Extreme Conditions," in *Problemy Kosmicheskoi Biologii* (B. Tarusov, editor) Nauka, Moscow, 1972, pp. 7–89 (in Russian).
12. ALFVÉN, Hannes  
"Non-Solar Planets and the Origin of the Solar System," *Nature*, vol. 152, no. 3868, December 18, 1943, p. 721.
13. ALLEN, C. W.  
"The Nearest Stars," Chapter 12, Section 13 of *Astrophysical Quantities*, University of London, 1962.
14. ALLEN, Tom  
*The Quest: A Report on Extraterrestrial Life*, Chilton Books, Philadelphia, 1965.

15. ALLISON, John  
 "Extraterrestrial Message," satire in *Spaceflight*, vol. 16, no. 2, February 1974, p. 79.
16. ALLISON, John  
 "Contacting Other Intelligences," correspondence in *Spaceflight*, vol. 17, nos. 8 and 9, August-September 1975, p. 343.
17. ALNAES, Egil  
 "A Message to the Stars," *Nytt om Romfart*, vol. 5, no. 16/17, 1975, pp. 12–13 (in Norwegian).
18. AL'TOV, G., and ZHURAVLYOVA, V.  
 "The Epicentre of Polemics," in *Science Fiction, 1964*, Molodaya Gvardiya, pp. 318–335 (in Russian).
19. AMBARTSUMIYAN, V. A.  
 "Problem of Searching for Extraterrestrial Civilizations," in *Inhabited Cosmos* (B. P. Konstantinov and V. D. Pekelis, editors), Nauka, Moscow, 1972, pp. 266–269 (in Russian).
20. *America*  
 "Messages from Space," *America*, vol. 111, no. 24, December 12, 1964, pp. 770–771.
21. AMIDEI, R.  
 "Ingredients for Life in Outer Space," *Science Digest*, vol. 70, September 1971, pp. 24–29.
22. ANDERSON, C. W.  
 "Relic Interstellar Corner Reflector in the Solar System?" *Mercury*, vol. 3, no. 5, 1974, pp. 2–3.
23. ANDERSON, Gerald M.  
 "Some Problems in Communications with Relativistic Interstellar Rockets," *JBIS*, vol. 28, no. 3, March 1975, pp. 168–174.
24. ANDERSON, Leland I.  
 "Extra-Terrestrial Radio Transmissions," *Nature*, vol. 190, April 22, 1961, p. 374.
25. ANDERSON, Poul  
 "Artificial Biosphere," correspondence in *Science*, vol. 132, July 22, 1960, pp. 251–252.
26. ANDERSON, Poul  
*Is There Life on Other Worlds?* Collier Books, 1968.
27. ANDRAS, Bekessy  
 "Lingua Cosmica," *Termesztudományi Koszony*, vol. 11, no. 10, 1967, pp. 467–471 (in Hungarian).
28. ANGELES, Peter  
 "ETI's and the Problem of Intelligence," in *Extraterrestrial Intelligence: The First Encounter*, (James Christian, editor), Prometheus Books, Buffalo, New York, 1976, pp. 161–176.
29. APPLETON, E. V.  
 "Short Wave Echoes and the Aurora Borealis," *Nature*, vol. 122, no. 3084, December 8, 1928, p. 879.

30. ARBIB, Michael  
 "The Likelihood of the Evolution of Communicating Intelligences on Other Planets," Ch. 4 of *Interstellar Communication: Scientific Perspectives*, by Cyril Ponnampereuma and A. G. W. Cameron, Houghton Mifflin Co., Boston, 1974, pp. 59–78.
31. ARCHER, Jack L., and O'DONNELL, Arthur J.  
 "The Scientific Exploration of Near Stellar Systems," Proc. of AAS 17th Annual Meeting, Preprint no. AAS-71-166, June 28–30, 1971; *Advances in the Astronautical Sciences – The Outer Solar System*, vol. 29, Part II, Juris Vagners (editor), pp. 691–724.
32. von ARDENNE, M.  
 "Is It Possible to Receive Signals from the Other Planetary Systems?" *Sterne*, vol. 37, no. 7-8, 1961, pp. 146–149 (in German).
33. von ARDENNE, M.  
 "Receiving Signals from Other Planetary Systems?" *Wiss. und Fortschr.*, vol. 12, no. 1, 1962, pp. 14–16 (in German).
34. ARGYLE, Edward  
 "On the Observability of Extrasolar Planetary Systems," *Icarus*, vol. 21, February, 1974, pp. 199–201.
35. ARONOFF, Samuel  
 "From Chemical to Biological to Social Evolution," Ch. 6 of *Interstellar Communication: Scientific Perspectives*, by Cyril Ponnampereuma and A. G. W. Cameron, Houghton Mifflin Co., Boston, 1974, pp. 88–99.
36. ARRHENIUS, S.  
 "The Transmission of Life from Star to Star," *Scientific American*, vol. 96, March 2, 1907, p. 196.
37. ARRHENIUS, Svante  
 "The Spreading of Life Through the Universe," Ch. 8 of *Worlds in the Making*, Harper and Brothers, New York, 1908, pp. 212–230.
38. ASCHER, Robert, and ASCHER, Marcia  
 "Interstellar Communication and Human Evolution," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 306–315; *Nature*, vol. 193, March 10, 1962, pp. 940–941.
39. ASHBROOK, Joseph  
 "Astronomical Scrapbook – Beginnings of the Space Age," *Sky and Telescope*, vol. 22, no. 2, August 1961, p. 85.
40. ASHBROOK, Joseph  
 Review of *The Cosmic Connection* (by Carl Sagan), *Sky and Telescope*, vol. 48, no. 3, September 1974, pp. 175–177.
41. ASIMOV, Isaac  
 "Hello, CTA-21 – Is Anyone There?" *New York Times Magazine*, November 29, 1964.
42. ASIMOV, Isaac  
 "A Science in Search of a Subject," (*New York Times Magazine*, May 23, 1965), "We, the In-Betweens," "Anatomy of a Martian," Chapters 20, 21, and 23 in *Is Anyone There?*, Doubleday and Co. Inc., Garden City, New York, 1967, pp. 183–196 and 207–211.

43. ASIMOV, I.  
"Microwave Radio Beams from Space Might Be Signals from Other Intelligences," *Catholic Digest*, vol. 29, June 1965, pp. 37–40.
44. ASIMOV, Isaac  
"Is Anyone There?" in *Is Anyone There?*, Doubleday and Co., Inc., Garden City, N.Y., 1967, pp. 197–206.
45. ASIMOV, Isaac  
"The Chemical Evidence for Life in Outer Space," *Science Digest*, vol. 75, no. 6, June 1974, pp. 10–19.
46. ASIMOV, Isaac  
"Planet of the Double Sun," *Astronomy*, vol. 2, no. 9, September 1974, pp. 5–12.
47. ASIMOV, Isaac  
"Is There Life Out There?" *Family Weekly* (Sunday newspaper supplement), October 26, 1975, pp. 4–5.
48. ASIMOV, Isaac  
"Of Life Beyond: Man's Age-Old Speculations," in *Extraterrestrial Intelligence: The First Encounter* (James Christian, editor), Prometheus Books, Buffalo, New York, 1976, pp. 33–52.
49. *Astronautics* (Bulletin of the American Interplanetary Society)  
"Device is Built to Find if Stars Have Planets," *Astronautics*, no. 23, October 1932, p. 3.
50. *Astronautics and Aeronautics*  
"The CETI (Communication with Extraterrestrial Intelligence) Resolutions," *Astronautics and Aeronautics*, vol. 9, no. 11, November 1971, pp. 35, 57.
51. *Astronomy*  
"Have Extraterrestrials Influenced Life on Earth?" *Astronomy*, vol. 1, no. 4, November 1973, pp. 52–53.
52. *Astronomy*  
Review of *The Cosmic Connection* (by Carl Sagan), *Astronomy*, vol. 2, no. 8, August 1974, p. 45.
53. *Astronomy*  
Review of *Starflight and Other Improbabilities* (by Ben Bova), *Astronomy*, vol. 2, no. 8, August 1974, p. 45.
54. *Astronomy*  
Review of *Interstellar Communication: A Scientific Perspective* (by Cyril Ponnampereuma and A. G. W. Cameron), *Astronomy*, vol. 2, no. 8, August 1974, p. 45.
55. *Astronomy*  
"Message Beamed to M-13," *Astronomy*, vol. 3, no. 2, February 1975, pp. 61–64.
56. *Astronomy*  
"Lunan's Theory Junked," *Astronomy*, vol. 3, no. 3, March 1975, p. 53.
57. *Astronomy*  
"Major Astronomical Advances Seen in Search for Extraterrestrial Life," *Astronomy*, vol. 3, no. 5, May 1975, pp. 56–57.

58. *Astronomy*  
Review of *Communication with Extraterrestrial Intelligence* (Carl Sagan, Editor), *Astronomy*, vol. 3, no. 7, July 1975, p. 48.
59. *Astronomy*  
Review of *Life Beyond Earth and the Mind of Man* (by Richard Berendzen), *Astronomy*, vol. 3, no. 7, July 1975, p. 48.
60. *Astronomy*  
"Soviets Plan Search for Intelligent Life," *Astronomy*, vol. 4, no. 1, January 1976, p. 59.
61. *Astronomy*  
"NASA Considers New Search for ET Life," *Astronomy*, vol. 4, no. 3, March 1976, p. 53.
62. *Astronomy*  
"Finding Unseen Worlds," *Astronomy*, vol. 4, no. 4, April 1976, pp. 6–15.
63. ATCHLEY, D. W., Jr.  
"Speculations on Communications with Other Planet Civilizations," *QST*, vol. 44, no. 3, 1960, pp. 71–75.
64. AUSTIN, R. R.  
"Extraterrestrial Life," correspondence in *Spaceflight*, vol. 4, no. 5, September 1962, p. 176.
65. *Aviation Week and Space Technology*  
"Pioneer Plaque to Identify Spacecraft Origin," *Aviation Week*, vol. 96, no. 9, February 28, 1972, p. 13.
66. *Aviation Week and Space Technology*  
"OAO Capabilities Used Part Time to Search for Life in Universe," *Aviation Week and Space Technology*, vol. 102, no. 23, 1975, p. 53.
67. BAIDINS, A.  
Correspondence in *Analog*, vol. 86, no. 3, November 1970, p. 173.
68. BAINES, M. J., WILLIAMS, I. P., and ASEBIOMO, A. S.  
"Resistance to the Motion of a Small Sphere Moving Through a Gas," *Royal Astronomical Society Monthly Notices*, vol. 130, no. 1, 1965, pp. 63–74.
69. BALL, Gloria  
"Listen in on Other Suns," *Science News Letter*, vol. 77, April 30, 1960, pp. 282–283.
70. BALL, John A.  
"The Zoo Hypothesis," *Icarus*, vol. 19, no. 3, July 1973, pp. 347–349.
71. BANERJI, A. C.  
"Non-Solar Planetary Systems," *Nature*, vol. 153, no. 3895, June 24, 1944, p. 779.
72. BANIN, Amos, and NAVROT, Jerzy  
"Origin of Life: Clues from Relations Between Chemical Compositions of Living Organisms and Natural Environments," *Science*, vol. 189, August 15, 1975, pp. 550–551.
73. BARBER, V.  
"Theories of the Chemical Origin of Life on the Earth," *Mercury*, vol. 3, no. 5, 1974, pp. 20–23.

74. BARRETT, Alan H.  
 "Radio Observations of Interstellar Hydroxyl Radicals," *Science*, vol. 157, no. 3791, August 25, 1967, pp. 881-889.
75. BART, Peter  
 "Symposium on Coast Assays Life On Other Planets," *New York Times*, May 29, 1966, p. 58.
76. BART, Peter  
 "Scientist Tells Meeting at Caltech He Is Doubtful of Interstellar Messages," *New York Times*, October 26, 1966, p. 37.
77. BASLER, R. P., JOHNSON, G. L., and VONDRAK, R. R.  
 "Parametric Study of Interstellar Search Systems," prepared for NASA Ames Research Center, Contract NAS2-8938, August 1976.
78. BASOV, N. G.  
 "Radio-Communication with the Stars," in *Technika Molodyozhi*, vol. 9, 1961, pp. 5-7 (in Russian).
79. BASSET, D.  
 "Life in the Universe," *Ciel et Espace*, vol. 28, no. 133, 1973, pp. 20-22 (in French).
80. BASTIDOS, A.  
 "Migration to Other Planets - A Perspective for Mankind," *Boletin Academia Ciencias Fisicas, Matematicas y Naturales (Venezuela)*, vol. 30, no. 89, 1971, pp. 93-97 (in Spanish).
81. BATES, D. R.  
 "Communication With Galactic Civilizations," *Physics Bulletin*, vol. 23, January 1972, pp. 26-29.
82. BATES, D. R.  
 "Difficulty of Interstellar Radio Communication," *Nature*, vol. 248, 1974, pp. 317-318.
83. BATES, D. R.  
 "CETI: Put Not Your Trust in Beacons," *Nature*, vol. 252, no. 5483, 1974, pp. 432-433.
84. BAUMSHTEIN, A. I.  
 "Origin of the Inhabited Planet," *Priroda*, no. 12, 1961, p. 76 (in Russian).
85. BAUR, Franz  
 "Cosmic Aspects of Organic Evolution - A Supplement to the Contribution by Prof. G. Simpson," *Naturwissenschaftliche Rundschau*, vol. 22, April 1969, pp. 167-168 (in German).
86. BAYLEY, Donald S.  
 "The Interplanetary and Interstellar Communication Potential of the Laser," NAECON Proceedings, 1962.
87. BECQUEREL, P.  
 "La Suspension de la Vie des Spores des Bactéries et de Moisissures Deséchées dans le Vide Vers le Zero Absolu. Ses Conséquences pour la Dissémination et la Conservation de la Vie dans l'Univers," *C.R. Acad. Sci.*, Paris, vol. 231, 1950, p. 1392.
88. BÉKÉSSY, A.  
 "Lingua Cosmica," *Termesztudományi Közlemények*, vol. 11, no. 10, 1967, pp. 467-471 (in Hungarian).

89. BELITSKY, Boris  
"Signals from Other Worlds," *Spaceflight*, vol. 14, no.1, January 1972, pp. 17–18.
90. BELITSKY, Boris  
"Reflections on CETI," *Spaceflight*, vol. 15, no. 7, July 1973, p. 255.
91. BELLER, William  
"How to Contact 'People' in Space?" *Missiles and Rockets*, vol. 7, July 25, 1960, pp. 42–44.
92. BENFEY, Theodor  
"Did Life Have to Be?" *Chemistry*, vol. 48, no. 3, March 1975, p. 2.
93. BENFORD, James  
"Project Cyclops," *Vertex*, vol. 1, October 1974, pp. 50, 52, 95.
94. BENFORD, Gregory  
"Supercivilizations," *Vertex*, vol. 1, October 1975, pp. 51, 53, 95.
95. BENNETT, William  
"Mars and Beyond – Why?" *Harvard Magazine*, 1976; *Boston Sunday Globe*, November 28, 1976, p. A3.
96. BERENDZEN, R.  
*Life Beyond Earth and the Mind of Man* (R. Berendzen, editor), NASA SP-328, 1973, based on November 1972 Symposium at Boston University.
97. BERENDZEN, Richard  
"Search for Life in the Universe," *Vital Issues*, vol. 22, no. 10, Center for Information on America, Washington, Connecticut, June 1973.
98. BERENDZEN, R.  
Review of "The Cosmic Connection" (by C. Sagan), *Bulletin of the Atomic Scientists*, vol. 31, no. 4, 1975, pp. 47–48.
99. BERGER, William J.  
"Celestial Iconospherics, the Ultimate Astronomy," *Jet Propulsion*, vol. 28, no. 5, May 1958, pp. 337–338.
100. BERGET, A.  
"Appearance of Life on Worlds and the Hypothesis of Arrhenius," *Smithsonian Institution Annual Report*, 1912–1913, pp. 543–551.
101. BERGIER, Jacques  
*A L'écoute des Planètes*, Fayard, Paris, 1963.
102. BERGIER, Jacques  
*Extraterrestrial Visitations from Prehistoric Times to the Present*, Regnery, Chicago, 1973.
103. BERGIER, Jacques  
*Extraterrestrial Intervention: The Evidence*, New American Library, Inc., New York, 1975.
104. BERNAL, J. D.  
*The World, the Flesh, and the Devil*, Indiana University Press, Bloomington, Ind., 1969 (originally published in 1929).

105. BERNSTEIN, Jeremy  
 "Life in the Universe," *New Yorker*, May 28, 1966, pp. 117–120, 123–126, 129–132, 135–138, 141–142.
106. BERRILL, N. J.  
*You and the Universe*, Dodd, Mead, and Co., New York, 1958, Ch. 15 "The Origin of Life" and Ch. 20 "You and the Universe."
107. BERRILL, N. J.  
 "The Search for Life," *The Atlantic*, vol. 212, no. 2, August 1963, pp. 35–40.
108. BERRILL, N. J.  
*Worlds Without End – A Reflection on Planets, Life and Time*, Macmillan Co., New York, 1964.
109. BERRILL, N. J.  
 "The Search for Life," in *Reflections on Space* (Lt. Col. Oscar H. Rechtschaffen, editor), U.S. Air Force Academy, Colorado, January 1964, pp. 37–45.
110. BERRY, Adrian  
*The Next Ten Thousand Years*, Jonathan Cape, England, 1974, and The New American Library, Inc., New York, 1975.
111. BIERI, Robert  
 "Humanoids on Other Planets," *American Scientist*, vol. 52, 1964, pp. 452–458.
112. BILLINGHAM, J., WOLFE, J. H., and OLIVER, B. M.  
 "A Review of the Theory of Interstellar Communication," IAF, International Astronautical Congress, 26th, Lisbon, Portugal, September 21–27, 1975, IAF Paper A75-31.
113. BINDER, Otto O.  
 "Star Search," *Space World*, vol. 27, July 1962, pp. 50–51.
114. BINDER, Otto O.  
*Riddles of Astronomy*, Basic Books, New York, 1964, Chapters 10, 11, and 12, pp. 135–186.
115. *Bioscience*  
 "First Soviet-American Conference on Communication with Extraterrestrial Intelligence (CETI)," *Bioscience*, vol. 21, no. 23, 1971, p. 1177.
116. BIRAUD, Francois, and RIBES, Jean-Claude  
*Le Dossier des Civilisations Extra-Terrestres*, Fayard, Paris, 1970.
117. BLACK, David C., and SUFFOLK, Graham  
 "Concerning the Planetary System of Barnard's Star," *Icarus*, vol. 19, no. 3; July 1973, pp. 353–357.
118. BLOIS, M. S., Jr.  
 Review of *Life in the Universe* by Michael Ovenden, *Science*, vol. 135, no. 3507, March 16, 1962, pp. 914–915.
119. BLUMRICH, Josef F.  
*The Spaceships of Ezekiel*, Bantam Books Inc., New York, 1974.



120. BLUMRICH, Josef F.  
"The Spaceships of the Prophet Ezekiel," *Impact of Science on Society*, vol. 24, no. 4, 1974, pp. 329–335.
121. BLUZMANAS, P.  
*Life in the Universe*, Mintis, Vilnius, 1973 (in Russian).
122. BOBROVNIKOFF, N. T.  
"Soviet Attitudes Concerning the Existence of Life in Space," in *Handbook of Soviet Space-Science Research* (G. E. Wukelic, editor), Gordon and Breach, Science Publishers, Inc., New York, 1968, pp. 453–472.
123. BOEHM, G. A. W.  
"Are We Being Hailed from Interstellar Space?" *Fortune*, vol. 63, March 1961, pp. 144–149, 193–194.
124. BOND, A.  
"Some Comments Relating to Population Explosion and Interstellar Expansion," *JBIS*, vol. 29, no. 12, pp. 824–825.
125. BONI, A.  
"Telecomunicazioni spaziali e caratteristiche dei loro canali," ("Telecommunication Systems in Space and Properties of their Channels"), in *Proc. 10th Int. Astronautical Congress*, London, 1959, Vienna, Springer-Verlag, 1960, pp. 871–910.
126. BONI, A.  
"Stellar Signals Programme," paper abstract in *Proc. 11th Int. Astronautical Congress*, Stockholm, 1960, Vienna, Springer-Verlag, 1961, p. 630.
127. BONOV, A.  
"International Program for Contacting Extraterrestrial Civilizations," *Matematika i Frizika*, vol. 16, no. 3, 1973, pp. 58–59 (in Bulgarian).
128. BOROTSKI, G.  
"Radio Signals from the Universe," *Vasiona*, vol. 14, no. 3, 1966, pp. 63–64 (in Serbo-Croatian).
129. BOSCHKE, F. L.  
*Creation Still Goes On*, translated from the German by L. Parks, McGraw-Hill Book Company, London, 1964.
130. BOULDING, Kenneth E.  
Review of *We Are Not Alone: The Search for Intelligent Life on Other Worlds* by Walter Sullivan, *Scientific American*, vol. 212, no. 5, May 1965, p. 144.
131. BOVA, Ben  
"It's Right Over Your Nose," *Analog*, vol. 81; no. 4, June 1968, pp. 95–100.
132. BOVA, Ben  
*Planets, Life and LGM*, Addison-Wesley Publishing Inc., Reading, Massachusetts, 1970.
133. BOVA, Ben  
*Starflight and Other Improbabilities*, The Westminster Press, Philadelphia, 1972.
134. BOVA, Ben  
"Galactic Geopolitics," *Analog*, vol. 88, no. 5, January 1972, pp. 51–62.

135. BOVA, Ben  
 "Life Cycles," *Analog*, vol. 89, no. 4, May 1972, pp. 5–6, and 174–175.
136. BOVA, Ben  
 "What Chariots of Which Gods," *Astronomy*, vol. 2, no. 8, August 1974, pp. 4–18.
137. BOVA, Ben  
 "The Search for Intelligence," *Astronomy*, vol. 3, no. 5, May 1975, pp. 6–17.
138. BRACEWELL, R. N.  
 "Communications from Superior Galactic Communities," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin Inc., New York, 1963, pp. 242–248; *Nature*, vol. 186, no. 4726, May 28, 1960, pp. 670–671.
139. BRACEWELL, R. N.  
 "Radio Signals from Other Planets," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 199–200; *Proc. IRE*, vol. 50, February 1962, p. 214.
140. BRACEWELL, R. N.  
 "Life in the Galaxy," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 232–242; *A Journey Through Space and the Atom* (S. T. Butler and H. Messel, editors), Nuclear Research Foundation, Sydney, Australia, 1962.
141. BRACEWELL, Ronald N.  
 "The Opening Message from an Extraterrestrial Probe," *Astronautics and Aeronautics*, vol. 11, no. 5, May 1973, pp. 58–60.
142. BRACEWELL, R. N.  
 "Interstellar Probes," Ch. 7 of *Interstellar Communication: Scientific Perspectives*, by Cyril Ponnamparuma and A. G. W. Cameron, Houghton Mifflin, Boston, 1974, pp. 102–116.
143. BRACEWELL, Ronald N.  
*The Galactic Club: Intelligent Life in Outer Space*, W. H. Freeman and Company, San Francisco, 1974.
144. BRACEWELL, R. N.  
 "Refinement to Drake's Equation," Proceedings of the 27th International Astronautical Federation Meeting, Anaheim, Calif., October 10–16, 1976, IAF Paper IAF-A-76-30.
145. BRADBURY, Ray  
 "A Serious Search for Weird Worlds," *Life*, vol. 49, no. 17, October 24, 1960, pp. 116–118, 120, 123–124, 126, 128, and 130.
146. BRADBURY, Ray, CLARKE, A. C., MURRAY, Bruce, SAGAN, Carl, and SULLIVAN, Walter  
*Mars and the Mind of Man*, Harper and Row, N.Y., 1973, a panel discussion by the authors at Cal Tech., November 1971.
147. BRADBURY, Ray  
 "The Nefertiti-Tut Express – A Journey Through Time, Thought, and Being," in *Extraterrestrial Intelligence: The First Encounter* (James Christian, editor), Prometheus Books, Buffalo, New York, 1976, pp. 5–14.
148. BRAMSON, Herbert J.  
 "The Detection of Interstellar Planets: A Feasibility Study," Hughes Aerospace Group TM-825, June 1965.

149. BRANDENBURG, R.  
 "A Survey of Interstellar Missions," Illinois Institute of Technology, Research Institute Technical Memorandum M-30, July 1971, NASA Contract NASW-2144.
150. BRANDT, R.  
 "Is There Life on Other Worlds?" *Wissen und Leben*, vol. 4, no. 6, 1959, pp. 432–436 (in German).
151. BREIG, Joseph A., and McHUGH, L. C.  
 "Other Worlds for Man," *America*, vol. 104, November 26, 1960, pp. 294–297.
152. BREWSTER, D.  
*More Worlds Than One: The Creed of the Philosopher, and the Hope of the Christian*, John C. Hotten, London, 1870.
153. BRIGGS, M. H.  
 "The Detection of Planets at Interstellar Distances," *JBIS*, vol. 17, March-April 1959, pp. 59–60.
154. BRIGGS, M. H.  
 "Terrestrial and Extraterrestrial Life," *Spaceflight*, vol. 2, October 1959, pp. 120–121.
155. BRIGGS, M. H.  
 "Other Astronomers in the Universe?" *Southern Stars* (New Zealand), vol. 18, 1960, pp. 147–151.
156. BRIGGS, Michael H.  
 "Superior Galactic Communities," *Spaceflight*, vol. 3, May 1961, pp. 109–110.
157. *British Interplanetary Society Journal*  
 Notes and News, B.B.C. Talk "Is There Life Elsewhere in the Universe?" (Fred Hoyle and C. D. Darlington), *JBIS*, vol. 8, no. 5, September 1949, pp. 200–201.
158. *British Interplanetary Society Journal*  
 "Biological Problems of Space Flight," a report on Prof. J. B. S. Haldane's lecture, *JBIS*, vol. 10, no. 4, July 1951, pp. 154–158.
159. *British Interplanetary Society Journal*  
 Notes and News, "The Detection of Extrasolar Planets," report on Otto Struve proposal, *JBIS*, vol. 12, no. 1, January 1953, pp. 77–78.
160. *British Interplanetary Society Journal*  
 "The Evolution of Life in the Universe," a report on a lecture by Prof. J. D. Bernal, *JBIS*, vol. 12, no. 3, May 1953, pp. 114–118.
161. *British Interplanetary Society Journal*  
 Notes and News, "The Evolution of Life in the Universe," report on argument between J. D. Bernal and N. W. Pirie, *JBIS*, vol. 12, no. 4, July 1953, pp. 180–181.
162. *British Interplanetary Society Journal*  
 "Space Law," (discussion of a paper by A. G. Haley), *JBIS*, vol. 16, no. 1, January-March 1957, pp. 40–43.

163. Brookings Institution  
 "The Implications of a Discovery of Extraterrestrial Life," *Proposed Studies on the Implications of Peaceful Space Activities for Human Affairs*, Prepared for NASA, Report of the Committee on Science and Astronautics, U.S. House of Representatives, March 24, 1961, 87th Congress, U.S. Government Printing Office, Washington, D. C., 1961, 272 pages.
164. BROWN, Harrison  
 "Planetary Systems Associated with Main-Sequence Stars," *Science*, vol. 145, no. 3637, September 11, 1964, pp. 1177-1181.
165. BRUNK, W. E.  
 "The Planets, the Universe, and Cosmic Evolution," presented at the 1976 National Telecommunications Conference, Dallas, Texas, November 29-December 1, 1976.
166. BRUNS, J. E.  
 "Cosmolatry," *Catholic World*, vol. 191, August 1960, pp. 283-287.
167. BUCKLEY, T.  
 "Is Anybody Out There?" *New York Times Magazine*, September 12, 1976, pp. 42-43.
168. BUDDEN, K. G., and YATES, G. G.  
 "A Search for Radio Echoes of Long Delay," *Journal of Atmospheric and Terrestrial Physics*, vol. 2, 1952, pp. 272-281.
169. BUHL, D.  
 "Chemical Constituents of Interstellar Clouds," *Nature*, vol. 234, December 10, 1971, pp. 332-334.
170. BUHL, David, and PONNAMPERUMA, Cyril  
 "Interstellar Molecules and the Origin of Life," *Space Life Sciences*, vol. 3, no. 2, December 1971, pp. 157-164.
171. BUJANDA, J. P.  
*Astronomy and Inhabited Stars*, Razan y Fe, Fax Editors, Madrid, 1957 (in Spanish).
172. *Bulletin of the American Interplanetary Society*  
 "Presence of Lunar Life Debated," *Bulletin of the American Interplanetary Society*, no. 12, September 1931, pp. 9-10.
173. *Bulletin of the American Interplanetary Society*  
 "Martians May Detect Earth Messages," *Bulletin of the American Interplanetary Society*, no. 14, December 1931, p. 9.
174. *Bulletin of the American Interplanetary Society*  
 "Can Man Exist on Other Planets?" *Bulletin of the American Interplanetary Society*, no. 15, January 1932, pp. 3-10.
175. *Bulletin of the American Interplanetary Society*  
 "Other Life in the Universe Possible Under New Planetary Theory," *Bulletin of the American Interplanetary Society*, no. 16, February 1932, p. 7.

176. *Bulletin of the American Interplanetary Society*  
 "Interplanetary Communication Predicted by Engineer," *Bulletin of the American Interplanetary Society*, no. 18, April 1932, pp. 7–8.
177. BÚN, Thomas P., and PEREIRA, Flavio A.  
 "Biospheric Index, a Contribution to the Problem of Determination of the Existence of Extrasolar Planetary Biospheres," in *Proc. 8th Intl. Astronautical Congress*, Barcelona, 1957, Vienna, Springer-Verlag, 1958, p. 63.
178. BURGESS, Andrew  
 "Earth Chauvinism," *Christian Century*, vol. 93, no. 40, December 8, 1976, pp. 1098–1102.
179. BURGESS, Eric  
 "Voyage Beyond Apollo," *Spaceflight*, vol. 15, no. 5, May 1973, pp. 186–187.
180. BUTLER, Clay P.  
 "The Light of the Atom Bomb," *Science*, vol. 138, no. 3539, October 26, 1962, pp. 483–489.
181. BZHEZINA, F.  
 "Are There Extraterrestrial Civilizations?" *Matematika i Fizika ve Shkole*, vol. 3, no. 9, 1973, pp. 683–691 (in Czechoslovakian).
182. BZHOSTKIYEVITCH, S. R.  
 "Are We Alone in the Universe?" *Urania* (Poland), vol. 46, no. 10, 1975, pp. 296–304 (in Polish).
183. BZHOSTKIYEVITCH, S. R.  
 "Gods from Space," *Urania* (Poland), vol. 46, no. 7, 1975, pp. 198–206 (in Polish).
184. CADE, C. M.  
 "Are We Alone in Space?" *Discovery*, vol. 24, April 1963, pp. 27–29 and 32–34.
185. CADE, C. M.  
 "Communicating with Life in Space," *Discovery*, vol. 24, May 1963, pp. 36–41.
186. CADE, C. M.  
*Other Worlds Than Ours*, Museum Press, London, 1966.
187. CALVIN, M.  
 "The Origin of Life on Earth and Elsewhere," *Proceedings of Lunar and Planetary Exploration*, Coll. I, no. 6, 1959, p. 8; *Annals of Internal Medicine*, vol. 54, no. 5, 1961, pp. 954–976.
188. CALVIN, Melvin  
 "Communication: From Molecules to Mars," *A.I.B.S. Bulletin*, October 1962, pp. 29–44.
189. CALVIN, Melvin  
 "Talking to Life on Other Worlds," *Science Digest*, vol. 53, January 1963, pp. 14–19 and 88–89.
190. CAMERON, A. G. W., Editor  
*Interstellar Communication*, W. A. Benjamin Inc., New York, 1963.
191. CAMERON, A. G. W.  
 "Stellar Life Zones," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, 1963, pp. 107–110.

192. CAMERON, A. G. W.  
 "Future Research on Interstellar Communication," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 309–315.
193. CAMERON, A. G. W.  
 "Communicating with Intelligent Life on Other Worlds," *Sky and Telescope*, vol. 26, no. 5, November 1963, p. 258.
194. CAMERON, A. G. W.  
 "Planetary Systems in the Galaxy," Ch. 2 of *Interstellar Communication: Scientific Perspectives*, by Cyril Ponnampuruma and A. G. W. Cameron, Houghton Mifflin Co., Boston, 1974, pp. 26–44.
195. CAMPBELL, John W.  
 "Where Did Everybody Go?" in *Collected Editorials from Analog* (selected by Harry Harrison), Doubleday and Co., Inc., Garden City, New York, 1966, pp. 232–243; *Analog*, July, 1963.
196. CAMPBELL, John W.  
 "Hydrogen Isn't Cultural," in *Collected Editorials from Analog* (selected by Harry Harrison), Doubleday and Co., Inc., Garden City, New York, 1966, pp. 173–178; *Analog*, December 1963.
197. CAMPBELL, John W.  
 "The Nature of Intelligent Aliens," *Analog*, vol. 80, no. 2, October 1967, pp. 5–7 and 172–178.
198. CAMPBELL, G. K. C., and DAMONTE, J. B.  
 "Large Deployable Antenna Forecast: 1975–2000," Lockheed Missiles and Space Company, Sunnyvale, Calif., December 1974.
199. CAMPBELL, G. K. C.  
 "Large Furlable Antenna Study," LMSC/D384797, Lockheed Missiles and Space Company, Sunnyvale, Calif., revised May 1, 1975.
200. CARBO, T.  
 "Interplanetary Linguistics," *Iberica*, vol. 52, no. 143, 1974, pp. 208–211 (in Spanish).
201. CAREY, G. C. S.  
 "Lewis and Space: Biology, Ecology and Theology," *Commonweal*, vol. 69, October 24, 1958, pp. 100–101.
202. CARLSON, J. B., and STURROCK, P. A.  
 "Stanford Workshop on Extraterrestrial Civilization: Opening a New Scientific Dialog," *Origins of Life*, vol. 6, 1975, pp. 459–470.
203. CARLSON, J. B., and STURROCK, Peter A.  
 "Stanford Workshop on Extraterrestrial Civilization: Opening a New Scientific Dialog," *Astronautics and Aeronautics*, vol. 13, no. 6, June 1975, pp. 63–64.
204. CARR, A.  
 "Take Me to Your Leader," *Homiletic and Pastoral Review* (New York), vol. 65, December 1964, pp. 255–256.
205. CASTANEDA, G. M.  
*Galaxy Doesn't Answer*, University of Guadalajara, Guadalajara, 1973 (in Spanish).

206. CHAIKIN, G. L.  
 "A Transitional Hypothesis Concerning Life on Interstellar Bodies," *Popular Astronomy*, vol. 59, no. 1, January 1951, pp. 50–51.
207. CHAISSON, Eric J.  
 Review of *The Galactic Club* by Ronald N. Bracewell, *Science*, vol. 190, no. 4209, October 1975, p. 43.
208. CHAMBERLIN, R. V.  
 "Life in Other Worlds: A Study in the History of Opinion," *Bulletin of the University of Utah*, vol. 22, no. 3, February 1932.
209. CHAPPELL, W. R., MEGLEN, R. R., and RUNNELLS, D. D.  
 "Comments on Directed Panspermia," *Icarus*, vol. 21, 1974, p. 513.
210. CHARROUX, Robert  
*The Gods Unknown*, Berkley Medallion Books, New York, 1974.
211. *Chemical and Engineering News*  
 "Chance of Life," *Chemical and Engineering News*, vol. 49, March 29, 1971, pp. 8–9.
212. *Chemistry*  
 "Extraterrestrial Neighbours?" *Chemistry*, vol. 46, no. 2, February 1973, pp. 16–17.
213. *Chemistry*  
 "New Theories on Origin of Life," *Chemistry*, vol. 47, no. 8, September 1974, p. 23.
214. *Chemistry*  
 "To Whom It May Concern," *Chemistry*, vol. 48, no. 2, February 1975, pp. 21–22.
215. CHESTNOV, F.  
*Are We Alone in the Universe?*, Moskovskiy Rabochiy, Moscow, 1968 (in Russian).
216. CHRISTIAN, James L.  
*Extraterrestrial Intelligence: The First Encounter* (James L. Christian, editor), Prometheus Books, Buffalo, New York, 1976.
217. CHRISTIAN, James L.  
 "The Story of Life: Earth's Four-Billion-Year Beginning," in *Extraterrestrial Intelligence: The First Encounter* (James Christian, editor), Prometheus Books, Buffalo, New York, 1976, pp. 15–32.
218. CIARDI, John  
 "Is Anyone There?" (humor), *Saturday Review*, November 20, 1971, p. 27.
219. CLARKE, A. C.  
 "The Challenge of the Spaceship," *JBIS*, vol. 6, no. 3, December 1946, pp. 66–81.
220. CLARKE, A. C.  
 "The Sentinel," in *Expedition to Earth*, Ballantine Books Inc., New York, 1953; *The Avon Science Fiction and Fantasy Reader*, Avon Periodicals Inc., 1951.
221. CLARKE, Arthur C.  
 "On the Morality of Space," *Saturday Review*, vol. 40, October 5, 1957, pp. 8–10 and 35–36.

222. CLARKE, Arthur C.  
 "Where's Everybody?" *Harpers' Magazine*, vol. 215, November 1957, pp. 75–79.
223. CLARKE, Arthur C.  
 "The Songs of Distant Earth," in *The Other Side of The Sky*, A. C. Clarke, The New American Library of World Literature Inc., New York, 1959.
224. CLARKE, Arthur C.  
*The Challenge of the Spaceship*, Ballantine Books Inc., New York, 1961.
225. CLARKE, A. C.  
 "Messages from the Invisible Universe," in *Speaking of Space: The Best from Space Digest* (Richard M. Skinner and William Leavitt, editors), Little, Brown and Company, Boston, 1962, pp. 32–39.
226. CLARKE, Arthur C.  
 "Trouble in Aquila, and other Astronomical Brainstorms," in *The Scientist Speculates* (I. J. Good, editor), William Heinemann, Ltd., London, 1962, pp. 235–238.
227. CLARKE, Arthur C.  
*Profiles of the Future*, Harper and Row, New York, 1963.
228. CLARKE, A. C.  
*2001: A Space Odyssey*, a Signet Book by The New American Library Inc., New York, 1968.
229. CLARKE, Arthur C.  
 "When Earthman and Alien Meet," *Playboy*, vol. 15, no. 1, January 1968, pp. 118–121, 126, and 210–212.
230. CLARKE, Arthur C.  
*The Lost Worlds of '2001'*, New American Library, Inc., New York, 1972.
231. CLARKE, Arthur C.  
 "Are There Others?" in "Communications in the Second Century of the Telephone," *Technology Review*, vol. 78, no. 6, May 1976, p. 41.
232. CLARKE, C. R.  
 "Two Possible Explanations of LDE," *QST*, vol. 55, no. 11, November 1971, pp. 40–41 and 45.
233. CLEAVER, A. V.  
*Goals and Means in the Conquest of Space* – a review (book by R. G. Perel'man, NASA TT F-595, 1970), *Spaceflight*, vol. 13, no. 12, December 1971, pp. 473–474.
234. COCCONI, Giuseppe, and MORRISON, Philip  
 "Searching for Interstellar Communications," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 160–164; *Nature*, vol. 184, 1959, pp. 844–846.
235. COCCONI, G., and MORRISON, P.  
 "Problems of Interstellar Communication," in *Space – Collection of Articles* (V. I. Krasovskiy, editor), trans. from Russian *Kosmos* (Moscow), no. 1, 1963, pp. 82–85, Air Force Sys. Comm., Wright-Patterson AFB, Ohio, Foreign Tech. Div., FTD-MT-64-239, AD-608184.
236. COFFEY, Enrico J., and LAWTON, A. T.  
 "Could 'Stray' Planets Form?" correspondence in *Spaceflight*, vol. 16, no. 10, October 1974, pp. 398–399.



237. COFFEY, Enrico J.  
 "Characteristics of Life," correspondence in *Spaceflight*, vol. 17, no. 10, October 1975, p. 376.
238. COFFEY, Enrico J.  
 "Life: Its Definition and Some Consequences," *JBIS*, vol. 29, no. 10, October 1976, pp. 633–640.
239. COHEN, Daniel  
 "Life on Earth and Elsewhere," *Science Digest*, vol. 59, March 1966, pp. 92–93.
240. COHEN, Daniel  
*The Ancient Visitors*, Doubleday and Company, Inc., New York, 1976.
241. COLE, D. M.  
 "Macro-Life: Parts I and II," *Space World*, vol. 1, no. 10, September 1961, pp. 16–19, 44, and 46–48; vol. 10, no. 11, October, 1961, pp. 16–17, 48–58, and 60.
242. COLE, Dandridge M.  
*The Next Fifty Years in Space – Man and Maturity*, General Electric Co., Internal Document, Missile and Space Division, Valley Forge, Pa., PIBD-30-4, 1963; *Beyond Tomorrow: The Next 50 Years in Space*, Amherst Press, Amherst, Wisconsin, 1965.
243. COMPTE-PORTA, R.  
 "Life as Cosmic Phenomenon," *El Universo*, vol. 20, 1966, pp. 111–115, and vol. 21, 1967, pp. 9–12 (in Spanish).
244. CONDON, Edward U.  
 "Intelligent Life Elsewhere," in *Scientific Study of Unidentified Flying Objects*, New York Times, 1969, pp. 26–33.
245. *The Conservationist*  
 Description of Interstellar Message Plaque, *The Conservationist*, vol. 30, no. 5, March-April 1976, p. 11.
246. CONWAY, J.  
 "If There is Life on Other Planets Wouldn't There Have to be Polygenesis?" *Catholic Messenger*, vol. 82, August 6, 1964, p. 10.
247. COOK, Rick  
 "Life as We Don't Know It," *Analog*, vol. 86, no. 3, November 1970, pp. 39–59.
248. COPLAND, Alexander  
*Existence of Other Worlds: Peopled with Living and Intelligent Beings*, J. G. and F. Rivington, London, 1834.
249. CORLISS, William R.  
 "The Search for Life Beyond the Earth," Ch. 11 of *Mysteries of the Universe*, Thomas Y. Crowell Inc., N.Y., 1967, pp. 180–207.
250. CORLISS, William R.  
*Strange Artifacts*, 1974, privately printed loose-leaf sourcebook.

251. CORNFORD, F. M.  
 "Innumerable Worlds in Pre-Socratic Philosophy," *Classical Quarterly* (London), vol. 28, January 1934, pp. 1–16.
252. COTTRELL, John  
 "The Great Moon Hoax," *Science Digest*, vol. 66, no. 1, July 1969, pp. 40–44.
253. COUPE, C.  
 "Are the Planets Inhabited?" *American Catholic Quarterly*, vol. 31, no. 124, 1906, pp. 699–720.
254. COUSINS, Norman  
 "A Rendezvous With Infinity," *Saturday Review World*, February 9, 1974, p. 4.
255. COUSINS, Norman  
 "The Ultimate in Communication," *Saturday Review World*, November 30, 1974, pp. 4–5.
256. COWEN, Robert C.  
 "Star-Sent Couriers?" *Christian Science Monitor*, March 31, 1973, p. 11.
257. CRAWFORD, F. W.  
 "A New Look at Very Long Delayed Radio Echoes," Combined Session, URSI Spring Meeting, April 1968.
258. CRAWFORD, F. W.  
 "Possible Observations and Mechanism of Very Long Delayed Radio Echoes," *Journal of Geophysical Research*, vol. 75, 1970.
259. CRICHTON, Michael  
*The Andromeda Strain* (a novel), Alfred A. Knopf, New York, 1969, pp. 228–230.
260. CRICK, F. H. C., and ORGEL, L. E.  
 "Directed Panspermia," *Icarus*, vol. 19, no. 3, July 1973, pp. 341–346.
261. *Current Opinion*  
 "The Transmission of Life to a Dead World Despite the Ultraviolet Ray," *Current Opinion*, vol. 56, April 1914, p. 286.
262. *Current Opinion*  
 "That Prospective Communication With Another Planet," *Current Opinion*, vol. 66, March 1919, pp. 170–171.
263. *Current Opinion*  
 "The Type of Mind That Believes in Life on Other Worlds," *Current Opinion*, vol. 71, November 1921, pp. 630–631.
264. DALZELL, Bonnie  
 "Exotic Bestiary for Vicarious Space Voyagers," *Smithsonian Magazine*, October 1974, also in "The Possibility of Intelligent Life Elsewhere in the Universe," report prepared by Marcia S. Smith of Congressional Research Service for the Committee on Science and Technology, U.S. House of Representatives, Appendix B, November 1975, p. 65.
265. DANES, C. E.  
 "Life in the Universe," *Astron. and Space*, vol. 3, no. 1, 1973, pp. 5–18.

266. von DÄNIKEN, Erich  
*Gods from Outer Space*, Bantam Books, Inc., New York, 1972; first published in Germany by Econ-Verlag GmbH, as *Zurück zu den Sternen (Return to the Stars)*, 1968.
267. von DÄNIKEN, Erich  
*Chariots of the Gods?* Bantam Books, Inc., New York, 1971.
268. von DÄNIKEN, Erich  
*In Search of Ancient Gods*, G. Putnam's Sons, New York, 1974.
269. DAVIDSON, Kris  
 "Does the Solar System Include Distant but Discoverable Infrared Dwarfs?" *Icarus*, vol. 26, no. 1, September 1975, pp. 99–101.
270. DAVIES, P. C. W.  
 Review of *Interstellar Communication: Scientific Perspectives* (C. Ponnamperuma and A. G. W. Cameron, editors), Houghton/Mifflin Company, Boston, in *Nature*, vol. 254, no. 5497, March 20, 1975, pp. 222–223.
271. DAVIS, C.  
 "The Place of Christ," *Clergy Review* (London), vol. 45, December 1960, pp. 706–718.
272. DAVYDOV, V. D.  
 "Dyson's Sphere Impossible," *Priroda*, no. 11, 1963, pp. 100–101 (in Russian).
273. DEAN, J. C.  
 "The Transmission of Life from Star to Star," *Scientific American*, vol. 96, April 20, 1907, p. 331.
274. DELLINGER  
 "Observations on Long-Delay Radio Echoes," *QST*, August 1934.
275. DESAN, Wilfrid  
 "Angular Truth and the Planet X," in *Extraterrestrial Intelligence: The First Encounter* (James Christian, editor), Prometheus Books, Buffalo, New York, 1976, pp. 197–214.
276. DETHIER, V. G.  
 "Life On Other Planets," *Catholic World*, vol. 198, January 1964, pp. 245–250.
277. DIAMOND, Edwin  
 "Is There Life in Outer Space?" *Newsweek*, February 22, 1960.
278. DICKINSON, Dale F.  
 "Chemistry in Space," *Astronomy*, vol. 4, no. 5, May 1976, p. 33.
279. DICKINSON, Terence  
 "The Zeta Reticuli Incident," *Astronomy*, vol. 2, no. 12, December 1974, pp. 4–18.
280. DIXON, Robert S.  
 "A Search Strategy for Finding Extraterrestrial Radio Beacons," *Icarus*, vol. 20, no. 2, October 1973, pp. 187–199.

281. DOBZHANSKY, Theodosius  
 "Darwinian Evolution and the Problem of Extraterrestrial Life," *Perspectives in Biology and Medicine*, vol. 15, no. 2, Winter, 1972, pp. 157–175.
282. DOEBEL, G.  
*Man Doesn't Live Lonely in the Universe*, M. Dumont Schauberg, Köln, 1966 (in German).
283. DOLE, Stephen H.  
 "Habitable Planets for Man," RAND Corp., Report R-414-PR, March 1964.
284. DOLE, Stephen H.  
*Habitable Planets for Man*, Blaisdell Publishing Company, New York, 1964.
285. DOLE, S. H., and ASIMOV, I.  
*Planets for Man*, Random House, New York, 1964.
286. DOLE, Stephen H.  
 "The Search for a Rationale for Interstellar Communications," paper for presentation at AAAS 132nd Annual Meeting, Berkeley, Calif., symposium: "Communication with Extraterrestrial Life," December 30, 1965.
287. DOLE, Stephen H.  
 "Formation of Planetary Systems by Aggregation: A Computer Simulation," Rand Corp. Paper p-4226, October 1969.
288. DOLE, S. H.  
 "Computer Simulation of the Formation of Planetary Systems," *Icarus*, vol. 13, 1970, pp. 494–508.
289. DOLEZAL, E.  
 "Traces of Life in the Universe," *Universum*, vol. 30, no. 1, 1975, pp. 1–2 (in German).
290. DOMMANGET, J.  
 "The Search for Unknown Planetary Systems," *Ciel et Terre*, no. 9-10, 1953, p. 229 (in French).
291. DONAHOE, F. G.  
 "On the Abundance of Earth-Like Planets," *Icarus*, vol. 5, no. 3, May 1966, pp. 303–304.
292. DONIMIRSKI, A.  
 "Visitors from Space – Reality or Phantasy?" Slask Publishing House, Katowice, 1976 (in Polish).
293. DOOLING, Dave  
 "Speculating on Man's Neighbors," *Spaceflight*, vol. 17, no. 6, June 1975, pp. 231–232 and 240.
294. DORSCHNER, J.  
 "Are We Alone in the Universe?" *Urania Verlag*, Leipzig, 1974 (in German).
295. DORSCHNER, J.  
 "Present Astronomical Opinions on Planetary Systems Formation," *Sterne*, vol. 50, no. 2, 1974, pp. 91–100 (in German).
296. DOSS, Richard  
 "Life and Death in the Biocosmos," in *Extraterrestrial Intelligence: The First Encounter* (James Christian, editor), Prometheus Books, Buffalo, New York, 1976, pp. 215–228.

297. DRAKE, Frank D.  
 "How Can We Detect Radio Transmissions from Distant Planetary Systems?" in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 165–175; *Sky and Telescope*, vol. 19, no. 3, January 1960, pp. 140–143.
298. DRAKE, Frank D.  
 "Project Ozma," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 176–177; *McGraw-Hill Yearbook of Science and Technology*, 1962; *Phys. Today*, vol. 14, April 1961, pp. 40–42, 44, and 46.
299. DRAKE, F. D.  
*Intelligent Life in Space*, MacMillan Company, New York, 1962.
300. DRAKE, Frank D.  
 "Inter-Galactic Communication," discussion in Boston; Summarized in *PGNE News*, *IEEE Transactions on Aerospace and Navigational Electronics*; issues of September 1962, December 1962, and March 1963.
301. DRAKE, Frank D.  
 "The Radio Search for Intelligent Extraterrestrial Life," in *Current Aspects of Exobiology* (G. Mamikunian and M. H. Briggs, editors), Pergamon Press Inc., New York, 1965, pp. 323–345.
302. DRAKE, Frank D.  
 "Great Goal of Space Science-Life Itself," (editorial), *Astronautics and Aeronautics*, vol. 3, January 1965, pp. 16–17.
303. DRAKE, F. D.  
 "Prospects in the Search for Extraterrestrial Civilizations," American Astronautical Society, 12th Annual Meeting, Paper 66-78, Anaheim, California, May 23–25, 1966.
304. DRAKE, F. D.  
 "Intelligent Life in Other Parts of the Universe," *The Earth in Space* (Hugh Odishaw, editor), ch. 30, Basic Books, Inc., New York, 1967, pp. 308–316.
305. DRAKE, F. D.  
 "Intelligent Life in the Universe," review of the book of the same name, by I. S. Shklovskii and C. Sagan, *American Scientist*, vol. 55, no. 3, 1967, pp. 300A and 302A.
306. DRAKE, F. D., and SAGAN, Carl  
 "Interstellar Radio Communication and the Frequency Selection Problem," *Nature*, vol. 245, no. 5423, October 5, 1973, pp. 257–258.
307. DRAKE, Frank  
 "Life on a Neutron Star," *Astronomy*, vol. 1, no. 5, December 1973, pp. 4–8.
308. DRAKE, F. D., KARDASHEV, N. S., TROITSKY, V. S., GINDILIS, L. M., PETROVICH, N. T., PARIISKY, Y. N., MOROZ, V. I., OLIVER, B. M., and TOWNES, C. H.  
 "Techniques of Contact," in *Communication with Extraterrestrial Intelligence* (Carl Sagan, editor), MIT Press, Cambridge, Mass., 1973, pp. 230–316.

309. DRAKE, Frank D.  
 "Methods of Communication: Message Content, Search Strategy, Interstellar Travel," Ch. 8 of *Interstellar Communication: Scientific Perspectives*, by Cyril Ponnamparuma and A. G. W. Cameron, Houghton Mifflin Co., Boston, 1974, pp. 118–139.
310. DRAKE, Frank  
 "On-Hands-and-Knees-in-Search of Elysium," *Technology Review*, vol. 78, no. 7, June 1976, pp. 22–29.
311. DRAPER, C. S.  
 "Remarks Before IAA Symposium on Communication with Extraterrestrial Intelligence," XXIII IAF Congress, Vienna, Austria, *Astronautica Acta*, vol. 18, no. 6, December 1973, p. 455.
312. DROBYSHEVSKII, E. M.  
 "Peculiar A-Stars and Planetary Systems," *Astrophysics and Space Science*, vol. 35, July 1975, pp. 403–408.
313. DUCKWORTH, E.  
 "In Search of the Galactic Library," *Mercury*, vol. 4, no. 3, 1975, pp. 10–13.
314. DUGAN, George  
 "Other-World Bid to Earth Doubted," *New York Times*, June 24, 1960, p. 31.
315. DUGAN, George  
 "Priest Suggests Rational Beings Could Well Exist in Outer Space," *New York Times*, August 7, 1960, p. 14.
316. DUKHOVNER, A. N.  
 "Transmission of Beacon Radio Signals to Extraterrestrial Civilizations," *Referativnyi Zhurnal Astronomiya*, no. 8, 1974, p. 1, and *Referativnyi Zhurnal Issledovaniye Kosmicheskovo Prostranstva*, no. 7, 1974, ref. 364 (in Russian).
317. DUPAS, A.  
 "Astrophysicists Interested in Extraterrestrials," *Recherche*, no. 40, 1973, pp. 1094–1097 (in French).
318. DUPAS, A.  
 "CETI Viewed as a Scientific Problem," *L'Aeronautique et L'Astronautique*, no. 59, 1976, pp. 25–28 (in French).
319. DUSHANE, G.  
 "Next Question," *Science*, vol. 130, December 25, 1959, p. 1733; "Hello Out There," *New Republic*, vol. 142, January 25, 1960, p. 9 (articles identical).
320. DYSON, Freeman J.  
 "Search for Artificial Stellar Sources of Infrared Radiation," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 111–114; *Science*, vol. 131, June 3, 1960, pp. 1667–1668.
321. DYSON, Freeman J.  
 "Artificial Biosphere," correspondence in *Science*, vol. 132, July 22, 1960, pp. 252–253.
322. DYSON, Freeman J.  
 "Gravitational Machines," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 115–120; Gravity Research Foundation Essay, New Boston, New Hampshire, 1962.

323. DYSON, F. J.  
Reply to James R. Newman's review of *Interstellar Communication* (A. G. W. Cameron, editor), correspondence in *Scientific American*, vol. 210, no. 4, April 1964, pp. 8–9.
324. DYSON, Freeman J.  
“The Search for Extraterrestrial Technology,” in *Perspectives in Modern Physics, Essays in Honor of Hans A. Bethe* (R. E. Marshak, editor), John Wiley and Sons, New York, 1966, pp. 641–655.
325. DYSON, F. J.  
“Searches for Extraterrestrial Engineering Activity,” *Zemlya i Vselennaya*, no. 6, 1968, pp. 68–74 (in Russian).
326. DYSON, Freeman J.  
“Letter from Armenia,” *The New Yorker*, November 6, 1971, pp. 126–137.
327. DYSON, F. J.  
“Intelligence in the Universe,” *Mercury*, vol. 1, no. 6, 1972, p. 9.
328. DYSON, F. J., KARDASHEV, N. S., GINZBURG, V. L., and MARX, G.  
“Astroengineering Activity: The Possibility of ETI in Present Astrophysical Phenomena,” in *Communication with Extraterrestrial Intelligence* (Carl Sagan, editor), MIT Press, Cambridge, Mass., 1973, pp. 188–229.
329. DYSON, Freeman J.  
“The World, The Flesh and The Devil,” Appendix D of *Communication with Extraterrestrial Intelligence* (Carl Sagan, editor), MIT Press, Cambridge, Mass., 1973, pp. 371–389.
330. EASTON, W. B.  
“Space Travel and Space Theology,” *Theology Today*, vol. 17, January 1961, pp. 428–429.
331. EDELSON, R. E.  
“An Observational Program to Search for Radio Signals from Extraterrestrial Intelligence Through the Use of Existing Facilities,” Proceedings of the 27th International Astronautical Federation Meeting, Anaheim, Calif., IAF Paper IAF-A-76-33.
332. EDELSON, R. E., and LEVY, G. S.  
“The Search for Extraterrestrial Intelligence: Telecommunications Technology,” presented at the 1976 National Telecommunications Conference, Dallas, Texas, November 29–December 1, 1976.
333. EDIE, Leslie C.  
“Messages from Other Worlds,” correspondence in *Science*, vol. 136, no. 3511, April 13, 1962, p. 184.
334. EDSON, J. B.  
“Tuning in on Other Worlds,” *New York Times*, March 13, 1960, Section VI, pp. 31 and 78–79.
335. EDSON, James B.  
“Tuning in on Other Worlds,” *Space Digest*, vol. 3, no. 5, May 1960, pp. 55–56.
336. EHRENSVARD, Gösta  
*Man On Another World*, University of Chicago Press, Chicago, 1965.

337. EHRICKE, Krafft A.  
 "Astrogenic Environments — The Effect of Stellar Spectral Classes on the Evolutionary Pace of Life," SD71-716, Space Division of North American Rockwell, Downey, California; *Spaceflight*, vol. 14, no. 1, January 1972, pp. 2–14.
338. EHRICKE, Krafft A.  
 "A Long-Range Perspective and Some Fundamental Aspects of Interstellar Evolution, *JBIS*; vol. 28, no. 11, November 1975, pp. 713–734.
339. EISELEY, Loren C.  
 "Is Man Alone in Space?" *Scientific American*, vol. 189, July 1953, pp. 80–82, 84, and 86.
340. EISELEY, Loren  
 "The Crisis Animal," *Science Digest*, April 1975, pp. 74–76.
341. ELÄSSER, H.  
 "Are We Alone in the Universe?" *Ruperto Carola*, University of Heidelberg, vol. 46, 1969, pp. 221–228; *Sterne und Weltraum*, vol. 8, no. 8–9, 1969, pp. 185–189; *Universitas*, vol. 24, no. 11, 1969, pp. 1205–1216 (all articles in German).
342. ELLIOT, James L.  
 "X-ray Pulses for Interstellar Communication," Appendix H. of *Communication with Extraterrestrial Intelligence* (Carl Sagan, editor), MIT Press, Cambridge, Mass., 1973, pp. 398–402.
343. ELLIOTT, Walter A.  
 "A New Frontier: Do We Still Think Primitively?" *Spaceflight*, vol. 16, no. 5, May 1974, pp. 179–180.
344. ELSNAU, Mary  
 "Is There Intelligent Life on the Planets?" *American Mercury*, vol. 91, no. 441, October 1960, pp. 32–45.
345. *Encyclopaedia Britannica*  
 "Extraterrestrial Life," Section V of "Life," *Encyclopaedia Britannica*, vol. 13, William Benton, Publisher, Chicago, 1972, pp. 1083M–1088.
346. ENSANIAN, Minas  
 "Does Life Exist Elsewhere in the Universe?" in *Proceedings of the Fifth Space Congress*, Cocoa Beach Florida, March 11–14, 1968, pp. 25.5-1 through 25.5-20.
347. ETTINGER, Robert C.  
*The Prospect For Immortality*, Doubleday and Company, Inc., 1964.
348. EUGSTER, Jakob  
 "What Does Space Flight Teach Us?" *Aerospace Medicine*, vol. 36, no. 4, April 1965, pp. 345–350.
349. EVANS, Selby  
 "A New Thought About Life on Other Planets," *American Mercury*, vol. 86, no. 413, June 1958, pp. 83–88.
350. EWING, Ann  
 "Tiny 'Stars' with Life," *Science News Letter*, vol. 81, no. 21, May 26, 1962, p. 323.
351. EWING, Ann  
 "Life on Tiny, Dark Stars," *Science News Letter*, vol. 82, no. 3, July 21, 1962, p. 39.



352. EWING, Ann  
 "Life in All Solar Systems?" *Science News Letter*, vol. 86, September 26, 1964, p. 199.
353. EYJÓLFSSON, Reynir  
 "Cyanogenic Compounds and Their Possible Significance Concerning the Origin of Life," *JBIS*, vol. 29, nos. 7 and 8, July-August 1976, pp. 482-488.
354. FAIRWEATHER, John C.  
 "Message to M.13," correspondence in *Spaceflight*, vol. 17, no. 5, May 1975, p. 200.
355. FASAN, E.  
 "Extraterrestrial Intelligences and Kant's Categorical Imperative," *Astronautik*, vol. 5, no. 2, 1968, pp. 43-47 (in German).
356. FAUST, H.  
 "On the Question of Extraterrestrial Life," *Weltraumfahrt*, vol. 9, no. 3, 1958, pp. 23-24 (in German).
357. FEIX, G.  
 "Microwave Contact With Cultures in Other Solar Systems," *AM+R Angew. Elektron. Mess- und Receltechnik*, no. 11/12, 1975, pp. 368-370 (in German).
358. FENNELLY, A. J., and MATLOFF, G. L.  
 "Radio Detection of Jupiter-Like Extrasolar Planets," *JBIS*, vol. 27, no. 9, September 1974, pp. 660-667.
359. FENNELLY, A. J., MATLOFF, G. L., and FRYE, G.  
 "Photometric Detection of Extrasolar Planets Using L.S.T.-Type Telescopes," *JBIS*, vol. 28, no. 6, June 1975, pp. 399-404.
360. FERRIS, Timothy  
 "The Universe as an Ocean of Thought," *Harper's Magazine*, vol. 251, no. 1502, July 1975, pp. 38-43.
361. FESENKOV, V., SHKLOVSKII, I. S., PASYNSKIY, A., and LYAPUNOV, B.  
 "Civilization on Other Planets?" *USSR*, vol. 1, no. 88, January 1964, pp. 46-47.
362. FESENKOV, V. G.  
 "Conditions for Life in the Universe," in *Extraterrestrial Life and Its Detection Methods* (A. A. Imshenetskii, editor), 1970, NASA TT F-710, pp. 1-12; *Priroda*, no. 1.70, 1970, pp. 20-27 (in Russian); Joint Publications Research Service, Washington, D.C., available from NTIS in its Soviet Studies of the Universe, January, 1970, 1.16.
363. FIELD, George B.  
 Review of *Interstellar Communication: Scientific Perspectives* by C. Ponnampereuma and A. G. W. Cameron, Houghton-Mifflin, Boston, 1974; *Origins of Life*, vol. 6, 1975, p. 451.
364. FIELD, George  
 Review of *Communication with Extraterrestrial Intelligence* (Carl Sagan, editor), *Icarus*, vol. 24, no. 1, January 1975, pp. 140-141.
365. FILIPOWSKY, R. F., and MUEHLDOERF, E. I.  
 "Stellar Communications," in *Space Communications Systems*, Prentice-Hall Inc., Englewood Cliffs, N.J., 1965, pp. 482-492.

366. FINE, Terrence  
 "Nature of Probability Statements in Discussions of the Prevalence of Extraterrestrial Intelligent Life," Appendix A of *Communication with Extraterrestrial Intelligence* (Carl Sagan, editor), MIT Press, Cambridge, Mass., 1972, pp. 357–361.
367. FINNEY, John W.  
 "Radio Ear Cocked for Talk in Space," *New York Times*, April 13, 1960, p. 3.
368. FINNEY, John W.  
 "Scientists and Congress Ponder If Life Exists in Other Worlds," *New York Times*, March 23, 1962, pp. 1 and 16.
369. FIRSOFF, V. A.  
 "An Ammonia-Based Life," *Discovery*, vol. 23, no. 1, January 1962, pp. 36–42.
370. FIRSOFF, V. A.  
*Life Beyond the Earth – A Study in Exobiology*, Basic Books Inc., New York, 1963.
371. FIRSOFF, V. A.  
 "Possible Alternative Chemistries of Life," *Spaceflight*, vol. 7, no. 4, July 1965, pp. 132–136.
372. FIRSOFF, V. A.  
*Life Among the Stars*, Allan Wingate, England, 1974.
373. FITCH, C. J.  
 "Interplanetary Communication," *Astronautics*, vol. 4 (*ARS Journal*), October 1930, pp. 1–2 and 5–7.
374. FLAMMARION, Camille  
*La Pluralité des Mondes Habités; Étude ou L'on Expose les Conditions d'Habitabilité des Terres Célèstes Discutées au Point de vue de l'Astronomie, de la Physiologie et de la Philosophie Naturelle*, 28th Edition, Didier, Paris, 1880.
375. FLAMMARION, C.  
 "Inter-Astral Communication," *American Review of Reviews*, vol. 5, February 1892, p. 90.
376. FLETCHER, James C.  
 An Address by the Administrator of NASA at the National Academy of Engineering, Washington, D.C., November 10, 1975, comments on SETI, p. 10.
377. FONTENELLE, B. LeBovier de (1657–1757)  
*Entretiens sur la Pluralité des Mondes. Digression sur les Anciens et les Modernes* (Robert Shackleton, editor), Clarendon Press, Oxford, 1955, 218 pp.
378. FORKOSCH, Morris D.  
 "Reaching Other Galaxies," correspondence in *New York Times*, February 14, 1962, p. 34.
379. FORWARD, R. L.  
 "Bibliography of Interstellar Travel and Communication," in *Use of Space Systems for Planetary Geology and Geophysics*, vol. 17 of *AAS Science and Technology Series* (Robert D. Enzmann, editor), Proc. of an AAS Symposium in Boston, Mass., May 25–27, 1967, pp. 307–325.

380. FORWARD, R. L.  
 "A National Space Program for Interstellar Exploration," Hughes Research Laboratories Research Report no. 492, July 1975.
381. FORWARD, Robert L.  
 "A Program for Interstellar Exploration," *JBIS*, vol. 29, no. 10, October 1976, pp. 611–632.
382. FOSTER, G. V.  
 "Non-Human Artifacts in the Solar System," *Spaceflight*, vol. 14, no. 12, December 1972, pp. 447–453.
383. FOUTS, R.  
 "The Use of Guidance in Teaching Sign Language to a Chimpanzee," *J. Comp. Psychol.*, vol. 80, 1972, pp. 515–522.
384. FOX, Sidney W.  
 "Humanoids and Proteinoids," *Science*, vol. 144, no. 3621, May 22, 1964, p. 954.
385. FRATI, W., LANDE, K., SUPPLEE, J., BOZOKI, G., FENYVES, E., and LEE, C. K.  
 "Status of the Search for Electron Antineutrino Signals of Extraterrestrial Origin," *Annals of the New York Academy of Sciences*, vol. 262, Oct. 15, 1975, pp. 219–224.
386. FRAZIER, Kendrick  
 "Sagan, Starfolk, and UFO's," *Science News*, vol. 104, no. 18, November 3, 1973, p. 284.
387. FRAZIER, Kendrick  
 "First Contact: The News Event and the Human Response," in *Extraterrestrial Intelligence: The First Encounter* (James Christian, editor), Prometheus Books, Buffalo, New York, 1976, pp. 73–86.
388. FRÉDRICK, Laurence W.  
 Review of *We Are Not Alone: The Search for Intelligent Life on Other Worlds*, by Walter Sullivan, *Science*, vol. 146, no. 3652, December 25, 1964, pp. 1666–1667.
389. FREEMAN, J., and LAMPTON, M.  
 "Interstellar Archaeology and the Prevalence of Intelligence," *Icarus*, vol. 25, no. 2, June 1975, pp. 368–369.
390. FRESA, A.  
 "Possibility of Life on Other Planets," *Coelum*, vol. 25, no. 9/10, 1957, pp. 129–136 (in Italian).
391. FREUDENTHAL, Hans  
*LINCOS: Design of a Language for Cosmic Intercourse*, North Holland Publishing Co., Amsterdam, 1960.
392. FREUDENTHAL, H.  
 "Lincos – Interplanetary Language," in *Inhabited Cosmos* (B. P. Konstantinov and V. D. Pekelis, editors), Nauka, Moscow, 1972, pp. 306–316 (in Russian).
393. FRIEDMAN, B.  
 "Millions of Inhabited Planets?" *Inform. UNESCO*, no. 430, 1964, pp. 9–13 (in French).
394. FRISCH, Bruce  
 "Dyson's Cool Worlds," *Science Digest*, vol. 163, no. 6, June 1968, pp. 35–41.

395. FRYERS, W. R.  
 "Polar Sites for Galactic Beacons," *Canadian Aeronautics and Space Journal*, vol. 19, no. 5, 1973, p. 247.
396. FUCHS, W. R.  
*Life on Distant Stars?* Droemersche Verlaganstalt Th. Knaur Nachf., Munich, 1973 (in German).
397. de la FUENTE, J.  
 "Extraterrestrial Civilizations," Ed. P. P. C., Madrid, 1968 (in Spanish).
398. FUJIOKA, Hiromu, SHIOZAWA, Toshiyuki, and KUMAGAI, Nobuyuki  
 "Electromagnetic Radiation from an Electric Dipole Moving with Relativistic Velocity," *Journal of the Institute of Electronic Communication Engineers, Japan*, vol. 49, no. 6, June 1966, pp. 1147–1152 (in Japanese).
399. FULCHIGNONI, M.  
 "Possibilities of Life in the Universe," *Sapere*, vol. 72, no. 743, 1971, pp. 17–21 (in Italian).
400. GABEL, Norman W.  
 "Chemical Evolution: A Terrestrial Reassessment," in *Progress in Molecular and Subcellular Biology*, vol. 5. (F. E. Hahn, editor), Heidelberg and Berlin, Springer-Verlag, 1976.
401. GADOMSKI, Jan  
 "Die Sternensphären im Radius von 17 Lichtjahren um die Sonne," in *Proc. 8th Int. Astronautical Congress*, Barcelona, 1957, Springer, Vienna, 1958, pp. 127–136; "The Stellar Ecospheres within a Radius of 17 Light Years Around the Sun," translation no. T115, Rand Corporation, Santa Monica, California, June 11, 1959.
402. GADOMSKI, Jan  
 "Fünf Arten von ökosphärischen Planeten," ("Five Types of Ecospheric Planets"), in *Proc. 9th Int. Astronautical Congress*, Amsterdam, 1958; Vienna, Springer-Verlag, 1959, pp. 785–793.
403. GADOMSKI, J.  
 "Quest for Planets with Life," *Urania* (Poland), vol. 30, 1959, no. 2, pp. 41–45; no. 4, pp. 125–130; no. 9, pp. 316–319 (in Polish).
404. GADOMSKI, J.  
 "Ecospheres," *Postepy Astronomii*, vol. 7, no. 4, 1959, pp. 272–277 (in Polish).
405. GADOMSKI, Jan  
 "Die Ökosphären der veränderlichen Sterne," ("The Ecospheres of Pulsating Stars"), in *Proc. 11th Int. Astronautical Congress*, Stockholm, 1960; Vienna, Springer-Verlag, 1961, pp. 108–113.
406. GADOMSKI, J.  
 "Number of Planets in the Universe," *Astronautyka*, no. 3, 1960, pp. 14–15 (in Polish).
407. GADOMSKI, J.  
 "Life-Supporting Regions in Cosmos," in *Nauka i Technika*, vol. 8, 1961, pp. 12–14 (in Russian).
408. GADOMSKI, J.  
 "Interstellar Radio Communication," *Astronautyka*, no. 2, 1961, pp. 17–18 (in Polish).

409. GADOMSKI, J.  
 "Ecospheres of Giant Stars and Ecospheric Evolution of Sun's Planetary System," *Astronautica Acta*, vol. 7, 1961, pp. 1–7 (in German).
410. GADOMSKI, Jan  
 "Ecospheric Consequences of the Haselgrove-Hoyle-Schwarzschild Theory Concerning the Evolution of the Sun," in *Proc. 13th Int. Astronautical Congress*, Varna, 1962; Vienna, Springer-Verlag, 1964, pp. 54–58.
411. GADOMSKI, J.  
 "Far Perspectives of Astronautics," *Astronautyka*, no. 1, 1962, p. 35 (in Polish).
412. GADOMSKI, J.  
 "Ecospheres of Double Stars," *Postepy Astronomii*, vol. 13, no. 4, 1965, pp. 241–243 (in Polish).
413. GALTON, F.  
 "Intelligible Signals Between Neighboring Stars," *Fortnightly Review* (London), vol. 66, November 1896, pp. 657–664.
414. GARCIA-ALMONTA, G. M. L.  
 "Existence of Life in Other, Distant Planetary Systems," *Revista de Aeronautica y Astronautica*, vol. 26, 1966, pp. 595–603 (in Spanish).
415. GARDNER, B. T., and GARDNER, R. A.  
 "Teaching Sign Language to a Chimpanzee," *Science*, vol. 165, 1969, pp. 664–672.
416. GARDNER, Martin  
 "Mathematical Games: Communications with Intelligent Organisms on Other Worlds," *Scientific American*, vol. 213, August 1965, pp. 96–100.
417. GARDNER, Martin  
 Solution to hypothetical message in August 1965 *Scientific American*, "Mathematical Games" section, *Scientific American*, vol. 213, no. 3, September 1965, pp. 232, 234, and 236.
418. GARDNER, Martin  
*The Ambidextrous Universe*, New American Library Inc., New York, 1969.
419. GARDNER, Martin  
 "Plants and Animals," Ch. 7 in *The Ambidextrous Universe*, New American Library, Inc., 1969, New York, pp. 55–65.
420. GARDNER, Martin  
 "The Origin of Life," Ch. 15 in *The Ambidextrous Universe*, New American Library, Inc., New York, 1969, pp. 129–139.
421. GARDNER, Martin  
 "The Ozma Problem" and "Is The Ozma Problem Solved?"; Chapters 18 and 25 in *The Ambidextrous Universe*, New American Library, Inc., New York, 1969, pp. 158–165 and 237–243.
422. GARDNER, Martin  
 "Extraterrestrial Communication," Ch. 25 in *Martin Gardner's Sixth Book of Mathematical Games from Scientific American*, W. H. Freeman and Co., San Francisco, 1971, pp. 253–262.

423. GATEWOOD, G. D:  
 "An Astrometric Study of Barnard's Star," Ph.D. Thesis, University of Pittsburgh, 1972. University Microfilms No. 73-4991.
424. GATEWOOD, George, and EICHHORN, Heinrich  
 "An Unsuccessful Search for a Planetary Companion of Barnard's Star (BD + 4° 3561)," *Astronomical Journal*, vol. 78, no. 8, October 1973, pp. 769-776.
425. GATEWOOD, George  
 "An Astrometric Study of Lalande 21185," *Astronomical Journal*, vol. 79, 1974, p. 52.
426. GATEWOOD, George  
 "The Astrometric Detection of Extrasolar Planetary Systems," *Bulletin of the American Astronomical Society*, vol. 7, 1975.
427. GATEWOOD, George  
 "On the Astrometric Detection of Neighboring Planetary Systems," *Icarus*, vol. 27, no. 1, January 1976, pp. 1-12.
428. GATLAND, K. W., and KUNESCH, A. M.  
 "The Stars Beckon," Ch. 7 of *Space Travel*, Philosophical Library, New York, 1953, pp. 176-187.
429. GATLAND, Kenneth W., and DEMPSTER, Derek D.  
*The Inhabited Universe*, Fawcett Publications, Inc., Greenwich, Conn., 1963.
430. GATLAND, K. W.  
 "New Frontiers," *Spaceflight*, vol. 12, no. 4, April 1970, p. 166
431. GATLAND, Kenneth, and LAWTON, Anthony T.  
 "Opening the Far Frontier," Subsection: "Opportunities for CETI," *Spaceflight*, vol. 17, no. 2, February 1975, p. 54.
432. GAUROY, I.  
 "Worlds of the Sky," Arthene Fayard, Paris, 1960 (in French).
433. GAUSER, Karoly  
 "Radiocommunication with Extraterrestrial Civilizations," *Vilagošsag*, vol. 7, no. 7-8, 1966, pp. 455-457 (in Hungarian).
434. GAZENKO, O. G.  
 "Life in Outer Space," *Priroda*, no. 10.70, 1970, pp. 80-82 (in Russian).
435. GEIGER, (Lt.) Richard  
 Correspondence in *Analog*, vol. 82, no. 4, December 1968, pp. 167-168.
436. General Dynamics Corporation, Astronautical Division  
*2063 A.D.: Prophecies by Distinguished Americans of Man's Employment of Space in 2063 A.D.*, 29 prophecies, 1963, 47 pages.
437. GENERALES, Constantine D. J., Jr.  
 "Human Habitation of the Cosmos - Apologia or Imperative?" *New York State Journal of Medicine*, vol. 70, no. 10, May 15, 1970, pp. 1152-1169.

438. GERRITSEN, Hendrik J., and McKENNA, Sean J.  
 "The Luneberg Lens and the Importance of Transmission in Establishing Contact with Extraterrestrial Civilizations," *Icarus*, vol. 26, no. 2, October 1975, pp. 250-256.
439. GILFILIAN, Edward S.  
*Migration to the Stars*, Robert B. Luce Co., Inc., Washington, D.C., 1975.
440. GILMORE, C. P.  
 "Decoding Messages from Outer Space," *Popular Science*, vol. 194, June 1969, pp. 72-77+.
441. GINDILIS, L. M.  
 "Problem of Extraterrestrial Civilizations," *Vestnik Akademii Nauk SSSR*, no. 9, 1964, pp. 118-120 (in Russian).
442. GINDILIS, L. M.  
 "On Probability of Contacting Extraterrestrial Civilizations," *Zemlya i Vseennaya*, no. 1, 1965, pp. 18-27 (in Russian).
443. GINDILIS, L. M.  
 "Extraterrestrial Civilizations - Subject of Explorations and Investigations," *Zemlya i Vseennaya*, no. 5, 1970, pp. 2-7 and 9 (in Russian).
444. GINDILIS, L. M.  
 "The Possibility of Radio Communication with Extraterrestrial Civilizations," in *Extraterrestrial Civilizations* (S. A. Kaplan, editor), NASA TT F-631, trans from Russian, 1971, Chapter III.
445. GINDILIS, L. M.  
 "Problems of Communication with Extraterrestrial Intelligence (CETI) - Symposium in Byurakan. *Vestnik Akademii Nauk SSSR*, vol. 1972, 1972, p. 82.
446. GINDILIS, L. M.  
 "Quest for Extraterrestrial Civilizations" in *Inhabited Cosmos* (B. P. Konstantinov and V. D. Pekelis, editors), Nauka, Moscow, 1972, pp. 283-305 (in Russian).
447. GINDILIS, L. M.  
 "Application of Pulses with Compensating Delays for CETI Call Signals," Vsesoiuznaia Konferentsiia po Radioastronomii, 7th, Gorki, USSR, June 19-24, 1972, *Radiofizika*, vol. 16, no. 9, 1973, pp. 1448-1451 (in Russian).
448. GINDILIS, L. M.  
 "Cosmic Civilizations," *Znanyie*, Moscow, 1973 (in Russian).
449. GINDILIS, L. M., KARDASHEV, N. S., MIROVSKY, V. G., SOGLASNOV, V. A., SPANGENBERG, E. E., and ETKIN, V. S.  
 "A Search for Signals from Extraterrestrial Civilization by the Method of Synchron Dispersion Receiving," Proc. 24th IAF Congress, Baku, USSR, October 7-13, 1973 (2nd International Review Meeting on Communication with Extraterrestrial Intelligence).
450. GINDILIS, L. M.  
 "Some Philosophical and Methodological Aspects of CETI," *Chloviyek i Sviatopoglad*, no. 2, 1974, pp. 139-162 (in Polish).

451. GINDILIS, L. M.  
 "Model of Contact, But Probe's Existence Not Proved," *Zemlya i Vselennaya*, no. 2, 1976, pp. 78–82 (in Russian).
452. GINGERICH, Owen  
 Review of *Mars and the Mind of Man*, Ray Bradbury, Arthur C. Clarke, Bruce Murray, Carl Sagan, and Walter Sullivan, *Icarus*, vol. 24, no. 2, February 1975, pp. 269–270.
453. GLADKII, A. V.  
 "Languages for Communication Between Different Civilizations (synopsis)," in *Extraterrestrial Civilizations* (G. M. Tovmasyan, editor), NASA Scientific and Technical Information Facility translation, pp. 95–96.
454. GLADKOV, K. A.  
 "Who Is There?" in *Nauka i Technika*, vol. 2, 1960, pp. 15–18 (in Russian).
455. GLASS, I. I.  
 "The Search for Extraterrestrial Life and Intelligence," in: "Aerospace in the Next Century," *Canadian Aeronautics and Space Journal*, vol. 19, no. 6, 1973, pp. 275–276.
456. GOLAY, M. J. E.  
 "Coherence in Interstellar Signals," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 192–198; *IRE, Proc.*, vol. 49, 1961, pp. 958–959; vol. 50, 1962, p. 223.
457. GOLD, Thomas  
 "Cosmic Garbage," *Air Force and Space Digest*, May 1960, p. 65.
458. GOLD, Thomas, AMBARTSUMIAN, V. A., MOROZ, V. I., and PARIISKY, Y. N.  
 "Extrasolar Planetary Systems," in *Communication with Extraterrestrial Intelligence* (Carl Sagan, editor), MIT Press, Cambridge, Mass., 1973, pp. 8–41.
459. GOLOMB, Solomon W.  
 "Extraterrestrial Linguistics," *Astronautics*, vol. 6, no. 5, May 1961, pp. 46–47 and 95.
460. GOLOMB, Solomon W.  
 "New Problems of Space Communications: Part 1 – Beware of the Tigers," *Astronautics*, vol. 7, no. 6, June 1962, p. 19.
461. GOMOLKA, B.  
 "Idea of Plurality of Inhabited Worlds in the Universe," *Urania (Poland)*, vol. 32, 1961, pp. 40–46 (in Polish).
462. GOOCH, P. S., BASZTYK, W. A., and SHARON, T. M.  
 "Will They Look Like Us?," correspondence in *Spaceflight*, vol. 15, no. 6, June 1973, pp. 238 and 240.
463. GOOD, I. J.  
 "Interstellar Communication for Chemical Research," in *The Scientist Speculates* (I. J. Good, editor), William Heinemann, Ltd., London, 1962, pp. 239–240.
464. GOOD, I. J.  
 "Life Outside the Earth," *The Listener*, June 3, 1965.
465. GOOD, I. J.  
 "The Human Preserve," *Spaceflight*, vol. 7, no. 5, September 1965, pp. 167–170.



466. GOOD, Ted  
 "Origin of Life," correspondence in *Spaceflight*, vol. 17, no. 11, November 1975, p. 408.
467. GORDON, M., and SNYDER, L. (editors)  
*Molecules in the Galactic Environment*, New York, John Wiley, 1973.
468. GOULD, Jack  
 Review of television show, "We Are Not Alone," *New York Times*, October 22, 1966, p. 63.
469. GRAF, E. R., FORD, F. A., FAHEY, M. D., and COLEMAN, R. J.  
 "A Proposed Experimental Method for Determining the Existence of Other Planetary Systems," in *Advances in the Astronautical Sciences*, vol. 24 (*Exploitation of Space for Experimental Research*, Harry Zuckerberg, editor), Proc. 14th Ann. American Astronautical Soc. Meeting, May 13–15, 1968, Dedham, Mass., pp. 89–94.
470. GRIFFIN, R. F.  
 Review of "Life Among the Stars," (by V. A. Firsoff), *Observatory*, vol. 95, no. 1009, 1975, p. 303.
471. GRIFFITH, J. S.  
 Review of *The Galactic Club – Intelligent Life in Outer Space* (by R. N. Bracewell), *JBIS*, vol. 28, no. 8, August 1975, p. 588.
472. GRYGAR, J.  
 "We Are Looking for Neighbouring Civilizations in the Universe," *Kosmicke Rozkhlady*, vol. 1, no. 1, 1963, pp. 1–5 (in Czechoslovakian).
473. GUALTIERI, Delvin M.  
 "Trace Elements and the Panspermia Hypothesis," *Icarus*, vol. 30, no. 1, January 1977, pp. 234–238.
474. GUDZENKO, L. I., and PANOVKIN, B. N.  
 "Reception of Signals Transmitted by Extraterrestrial Civilizations," in *Extraterrestrial Civilizations* (G. M. Tovmasyan, editor), NASA Scientific and Technical Information Facility translation, N67-30335, pp. 43–45.
475. GUILLEMIN, A. V.  
 "Communication With the Planets," *Popular Science*, vol. 40, January 1892, pp. 361–363.
476. GULKIS, S., JANSSEN, J., JUIPER, T., and EDELSON, R.  
 "An All-Sky Search for Narrow-Band Radiation in the Frequency Range 1–25 GHz," *Proceedings of the 1976 Meeting: U.S. National Commission, International Union of Radio Science*.
477. GUNKEL, Pat  
 "The Future of Space – An Encyclopedic Prospect," Hudson Institute report HI-2353-P, October 1975.
478. GUNN, James E.  
*The Listeners*, Charles Scribner's Sons, New York, 1972.
479. GUTCHIN, I. B.  
 "Cybernetics about the Life and Intelligence in the Universe," in *Cybernetics and Cosmical Ships*, Znaniye, Moscow, 1965, pp. 22–32 (in Russian).

480. HAAS, Ward J.  
 "The Biological Significance of the Space Effort," *Annals of the New York Acad. of Sci.*, vol. 140, 1966; pp. 659–666.
481. HABER, H.  
 "Living Universe," Blüchert Verlag, Hamburg, 1959 (in German).
482. HABER, H.  
*Brothers in the Universe, Possibilities of Life on Other Worlds*, Deutsche Verlagsanstalt, Stuttgart, 1971 (in German).
483. HAFNER, E. M.  
 "Galactic Signals," *Bulletin of the Atomic Scientists*, vol. 23, June 1967, pp. 50–52.
484. HAFNER, Everett M.  
 "Techniques of Interstellar Communication," in *Exobiology*, vol. 19 of AAS Science and Technology Series (M. M. Freundlich and B. M. Wagner, editors), Proc. of an AAS/AAAS Symposium in New York, December 30, 1967, pp. 37–62.
485. HALDANE, J. B. S.  
 "The Origins of Life," *New Biology*, vol. 16, 1954, p. 12.
486. HALEY, Andrew G.  
 "Metalaw — Reassessment in the Light of Certain Views Expressed by the Chief Justice of the United States," AIAA preprint No. 63-279, AIAA Summer Meeting, June 17–20, 1963, Los Angeles, Calif.
487. HALL, T.  
*Manniskan Inför Kosmos*, Wahlström and Widstrand, Stockholm, 1966 (in Swedish).
488. HAMILTON, William  
 "The Discovery of Extraterrestrial Intelligence: A Religious Response," in *Extraterrestrial Intelligence: The First Encounter* (James Christian, editor), Prometheus Books, Buffalo, New York, 1976, pp. 99–114.
489. HAMMERTON, M.  
 Review of *Life Among the Stars* (by V. A. Firsoff), *JBIS*, vol. 27, no. 9, September 1974, pp. 707–708.
490. HANDELSMAN, Morris  
 "Considerations on Communication with Intelligent Life in Outer Space," 1962 WESCON Convention Record, Part 5, Paper 4.4, Los Angeles, California, August 21–24, 1962.
491. HARFORD, J.  
 "Rational Beings in Other Worlds," *Jubilee*, May 1962, pp. 17–21.
492. HART, Michael H.  
 "An Explanation for the Absence of Extraterrestrials on Earth," *Q. Jl. R. Astr. Soc.*, vol. 16, 1975, pp. 128–135.
493. HARTLAUB, G. F.  
*Bewusstsein auf Anderen Sternen? Ein Kleiner Leitfaden Durch die Menschheitsträume von den Planetenbewohnern*, Ernst Reinhardt Verlag, Munich, 1951, 65 p.

494. HARWIT, Martin  
 "Infrared Observations and Dyson Civilizations," Appendix E. of *Communication with Extraterrestrial Intelligence* (Carl Sagan, editor), MIT Press, Cambridge, Mass., 1973, pp. 390–392.
495. HARWIT, Martin  
 "Tachyon Bit Rates," Appendix G of *Communication with Extraterrestrial Intelligence* (Carl Sagan, editor), MIT Press, Cambridge, Mass., 1973, pp. 395–397.
496. HAVILAND, R. P.  
 "On the Search for Extra-Solar Intelligence," *Spaceflight*, vol. 14, no. 6, June 1972, pp. 217–219 and 223.
497. HAVILAND, R. P.  
 "On Communications with Extraterrestrial or Alien Intelligences," *JBIS*, vol. 28, no. 3, March 1975, pp. 161–167.
498. HEESCHEN, David S.  
 "The Very-Large Array," *Sky and Telescope*, vol. 49, no. 6, June 1975, pp. 344–351.
499. HEINLEIN, Robert, and WOOSTER, Harold  
 "Xenobiology," correspondence in *Science*, vol. 134, July 21, 1961, pp. 223 and 225.
500. HELLIWELL, R. A.  
*Whistlers and Related Ionospheric Phenomena*, Stanford University Press, Stanford, California, 1960.
501. HENNES, John P., DESPAIN, L. Gail, and ARCHER, Jack L.  
 "Scientific Goals of Missions Beyond the Solar System," Proc. of AAS 17th Annual Meeting, Preprint No. AAS-71-163, June 28–30, 1971; *Advances in the Astronautical Sciences – The Outer Solar System* (Juris Vagners, editor) vol. 29, Part II, 1971, pp. 597–616.
502. HÉNON, M.  
 "Communications Interstellaires," review of book *Interstellar Communication* (A. G. W. Cameron, editor), *L'Astronomie, Paris*, vol. 78, n<sup>o</sup>. 5, May 1964, pp. 169–180.
503. HEPPENHEIMER, T. A.  
 "Outline of a Theory of Planet Formation in Binary Systems," *Icarus*, vol. 22, no. 4, 1974, pp. 436–447.
504. HERBERT, John D.  
 "Man and Amoeba," correspondence in *New York Times*, January 21, 1962, Section VI, p. 4.
505. HERBIG, G. H.  
 "A Universe Teeming with Planetary Systems – Perhaps," *Mercury*, vol. 5, March-April 1976, pp. 2–7 and 31.
506. HERBST, Eric, and KLEMPERER, William  
 "The Formation of Interstellar Molecules," *Physics Today*, vol. 29, no. 6, June 1976, pp. 32–39.
507. HERMANN, J.  
*Leben auf Anderen Sternen? (Life On Other Stars?)*, C. Bertelsmann, Gütersloh, 1963, 190 p. (in German).
508. HERRMANN, J.  
 "Life on Other Stars?" *Kosmos*, vol. 62, no. 12, 1966, p. 522 (in German).

509. HERRISMAN, L.  
 "Extraterrestrial Language," *Science et Vie*, vol. 120, no. 649, 1971, pp. 38–45 (in French).
510. HESSELBACH, G.  
 "Life on Other Worlds," *El Universo*, vol. 19, 1965, pp. 152–154 (in Spanish).
511. HEUER, K.  
 "Men of Other Planets," *Science Digest*, vol. 30, July 1951, pp. 9–13.
512. HEUER, Kenneth  
*Men of Other Planets*, Collier Books, New York, 1963; Viking Press, New York, 1964.
513. HEY, J. S.  
 "Interstellar Radio Communication," Appendix of *The Evolution of Radio Astronomy*, Neale Watson Academic Publications, Inc., New York, 1973, pp. 188–189.
514. HICKS, Clifford B.  
 "We're Listening for Other Worlds," *Popular Mechanics*, vol. 114, no. 3, September 1960, pp. 81–85, 220, 222, 224, and 226.
515. HILLMAN, James D.  
 "Amateur CETI Project," correspondence in *Spaceflight*, vol. 18, no. 3, March 1976, pp. 114–115.
516. HILLS, Jack G.  
 Review of *Interstellar Communication: Scientific Perspectives* (by Cyril Ponnampuruma), *Physics Today*, vol. 28, no. 9, September 1975, pp. 58.
517. HILTON, W. F.  
 "Conference Report" on the Second International Review Meeting on C.E.T.I., *JBIS*, vol. 27, no. 4, April 1974, pp. 318–319.
518. HINTON, H. E.  
 Correspondence in *Analog* in response to Ben Bova's "Galactic Geopolitics," vol. 89, no. 4, May 1972, p. 171.
519. von HOERNER, Sebastian  
 "The Search for Signals from Other Civilisations," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 272–286; *Science*, vol. 134, December 1961, pp. 1839–1843.
520. von HOERNER, Sebastian  
 "The Search for Other Civilizations," *Science*, vol. 135, no. 3507, March 16, 1962, pp. 992 and 994.
521. von HOERNER, S.  
 "Are We Alone in Cosmos?" *Naturwiss. und Med.*, vol. 2, no. 10, 1965, pp. 41–55 (in German).
522. von HOERNER, S.  
 "Are We Alone in the Universe?" *Natur*, vol. 75, no. 3, 1967, pp. 138–147 (in German).
523. von HOERNER, Sebastian  
 "Population Explosion and Interstellar Expansion," in *Einheit und Vielheit* (Scheibe and Sussmann, editors), Vandenhoeck and Ruprecht, Göttingen, 1972.

524. von HOERNER, Sebastian  
 "Astronomical Aspects of Interstellar Communication," *Astronautica Acta*, vol. 18, no. 6, December 1973, pp. 421–430.
525. von HOERNER, Sebastian  
 "Population Explosion and Interstellar Expansion," *JBIS*, vol. 28, no. 11, November 1975, pp. 691–712.
526. HOFFLEIT, Dorrit  
 "Communication with Other Planets!" in *Sky and Telescope*, March 1950; also in *The Origin of the Solar System*, Thornton Page and Lou Williams Page, Macmillan Co., New York, 1966, pp. 293–294.
527. HOFFMAN, Banesh  
 "Ads From Space?" *New York Times*, April 14, 1968, p. 17.
528. HOGBEN, L.  
 "Astraglossa or First Steps in Celestial Syntax," *JBIS*, vol. 11, no. 6, November 1952, pp. 258–274.
529. HOGBEN, Lancelot  
 "Cosmical Language," (a review of Hans Freudenthal's *Lincos: Design of a Language for Cosmic Intercourse*), *Nature*, vol. 192, no. 4805, December 2, 1961, pp. 826–827.
530. HOLMES, D. C.  
*The Search for Life on Other Worlds*, Sterling, New York, 1966.
531. HOLMES, J. Fred, and ISHIMARU, Akira  
 "Relativistic Communications Effects Associated with Moving Space Antennas," *IEEE Transactions on Antennas and Propagation*, vol. AP-17, no. 4, July 1969, pp. 484–488.
532. HOPSON, Janet L.  
 "Martian Life: The Odds and the Oddities," *Science News*, vol. 109, June 5, 1976, pp. 374–377.
533. HORNE, R. A.  
 "On the Unlikelihood of Non-Aqueous Biosystems," *Space Life Sciences*, vol. 3, no. 1, August 1971, pp. 34–41.
534. HOROWITZ, Norman H.  
 "The Biological Significance of the Search for Extraterrestrial Life," in *The Search for Extraterrestrial Life*, vol. 22 of *Advances in the Astronautical Sciences* (J. S. Hanrahan, editor), 1967, American Astronautical Society, pp. 3–13.
535. HOROWITZ, N. H., DRAKE, F. D., MILLER, S. L., ORGEL, L. E., and SAGAN, C.  
 "The Origins of Life," in *Biology and the Future of Man* (P. Handler, editor), Oxford Univ. Press, New York, 1970 (contains the results of a world survey of directors of radio observatories on their interest in searches for extraterrestrial intelligence).
536. HOWELLS, William  
 "Would Other 'Humans' Look Like Us?" *Science Digest*, vol. 47, no. 1, January 1960, pp. 53–58.
537. HOWELLS, William  
 "The Evolution of 'Humans' on Other Planets," *Discovery*, vol. 22, no. 6, June 1961, pp. 237–241.

538. HOYLE, Fred, and ELLIOTT, John  
*A For Andromeda*, Harper, New York, 1962 (a novel).
539. HOYLE, Fred  
*Of Men and Galaxies*, University of Washington Press, Seattle, 1964.
540. HOYLE, Fred  
*Astronomy and Cosmology: A Modern Course*, W. H. Freeman and Co., San Francisco, 1975.
541. HOYLE, Fred  
*Astronomy Today*, Chapter, "Life in the Universe," Heinemann Educational Books, London, 1975.
542. HRIC, L.  
 "Possibilities of the Communication with Extraterrestrial Civilizations," *Rishe Hvezd*, vol. 57, no. 4, 1976, pp. 66–67 (in Czechoslovakian).
543. HUANG, Su-Shu  
 "Occurrence of Life in the Universe," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 82–88; *Am. Scientist*, vol. 47, 1959, pp. 397–402.
544. HUANG, Su-Shu  
 "The Problem of Life in the Universe and the Mode of Star Formation," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 89–92; *Publ. Astronomical Soc. Pacific*, vol. 71, 1959, pp. 421–424; *Am. Scientist*, vol. 47, no. 3, September 1959, pp. 397–402.
545. HUANG, Su-Shu  
 "The Sizes of Habitable Planets," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 102–106; "The Limiting Sizes of the Habitable Planets," *Publ. Astron. Soc. Pacific*, vol. 72, 1960, pp. 489–493, NASA TN D-499.
546. HUANG, Su-Shu  
 "Life Supporting Regions in the Vicinity of Binary Systems," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 93–101; *Publ. Astron. Soc. Pacific*, vol. 72, 1960, pp. 106–114.
547. HUANG, Su-Shu  
 "Life Outside the Solar System," *Scientific American*, vol. 202, no. 4, April 1960, pp. 55–63.
548. HUANG, Su-Shu  
 "Some Astronomical Aspects of Life in the Universe," *Sky and Telescope*, vol. 21, no. 6, June 1961, pp. 312–316.
549. HUANG, Su-Shu  
 "Problem of Transmission in Interstellar Communication," 1962, NASA report available to U.S. government agencies and contractors only, X63-11603.
550. HUANG, Su-Shu  
 "Problem of Transmission in Interstellar Communication," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 201–206.

551. HUANG, Su-Shu, and WILSON, R. H.  
 "Astronomical Aspects of the Emergence of Intelligence," IAS Paper no. 63-48, presented at Institute of the Aerospace Sciences 31st Annual Meeting, New York City, January 21-23, 1963.
552. HUANG, S. S.  
 "Life in Space and Humanity on the Earth. A Joint Review of Five Books," NASA TM X-56,136, 1964.
553. HUANG, S. S.  
 "Rotational Behaviour of the Main-Sequence Stars and its Plausible Consequences Concerning Formation of Planetary Systems," Part 1: *Astrophysical Journal*, vol. 141, no. 3, 1965, pp. 985-992; Part 2: *Astrophysical Journal*, vol. 150, 1967, pp. 229-238.
554. HUANG, Su-Shu  
 "Occurrence of Planetary Systems in the Universe as a Problem in Stellar Astronomy," in *Vistas in Astronomy*, vol. 11 (A. Beer, editor), Pergamon Press, New York, 1969, pp. 217-263.
555. HUANG, Su-Shu  
 "Extrasolar Planetary Systems," *Icarus*, vol. 18, March 1973, pp. 339-376.
556. HUBEL, D., and STENT, G.  
 "The Evolution of Intelligence," in *Communication with Extraterrestrial Intelligence* (Carl Sagan, editor), MIT Press, Cambridge, Mass., 1973, pp. 68-84.
557. HUCHTMEIER, W.  
 "Stars with Planets?" *Nachr. Bl. Vereinig. Sternfreunde Dtsch.*, vol. 13, no. 8-9, 1964, pp. 113-115 (in German).
558. HULLEY, J.  
 "Dynamics of Life in the Universe," *Space Journal*, vol. 1, no. 5, 1959, pp. 33-41.
559. HUNTER, A.  
 "Non-Solar Planets," *Nature*, vol. 152, no. 3846, July 17, 1943, pp. 66-67.
560. HUNTINGTON, Ronald  
 "Mything the Point: ETI's in a Hindu/Buddhist Context," in *Extraterrestrial Intelligence: The First Encounter* (James Christian, editor), Prometheus Books, Buffalo, New York, 1976, pp. 115-128.
561. HUTIN, Serge  
*Alien Races and Fantastic Civilizations*, Berkley Medallion Books, New York, 1975.
562. HUYGENS, C.  
*The Celestial Worlds Discovered; or Conjectures Concerning the Inhabitants, Plants, and Productions of the Worlds in the Planets*, 2nd Edition, corrected and enlarged, printed for James Knapton, at the Crown in St. Paul's Church-Yard, London, 1722, 162 p.
563. *Icarus*  
 "First Soviet-American Conference on Communication with Extraterrestrial Intelligence (CETI)," *Icarus*, vol. 16, 1972, pp. 412-414.
564. *Impact of Science on Society*  
 "Ezekiel Makes His Own Wheel," *Impact of Science on Society*, vol. 24, no. 4, 1974, pp. 337-338.

565. IMSHENETSKIY, A. A.  
 "Cosmos and Life," *Vestnik an SSSR*, no. 9, 1963, pp. 23–29 (in Russian).
566. IMSHENETSKIY, A. A.  
 "Extraterrestrial Life and its Detection Methods," Nauka Press, Moscow, 1970, NASA TT F-710 (English translation).
567. *Industrial Research*  
 "From Earth to the Stars: 'Hello . . . We're Here,'" *Industrial Research*, January 1975, pp. 15–16.
568. INGEL, L. Kh.  
 "Note on Gravitational Focusing," *Astronomicheskij Zhurnal*, vol. 50, no. 6, 1973, pp. 1331–1332 (in Russian).
569. ISRAEL, F.  
 "Life in the Universe – Possible or Not?" *Hemel en Dampkring*, vol. 64, no. 6, 1966, pp. 143–161 (in Dutch).
570. ISRAEL, F.  
 "Planetary Systems – Distinctive Mark of Dwarf Stars," *Hemel en Dampkring*, vol. 66, no. 2, 1968, pp. 37–38 (in Dutch).
571. IVANOV, I. D.  
 "Interplanetary Belt of Life," *Bolgarskaia Akademiia Nauk Doklady*, vol. 26, no. 10, 1973, pp. 1391–1394 (in Russian).
572. IVSHIN, V. P.  
 "Interlinguistic Ideas of K. E. Tsiolkovsky," *Trudy Vosmykh Chtiyeniy Posviyashchennykh Razrabotkiye Nauchnovo Naslediya I Razvitiyu Ideiy K. E. Tsiolkovskovo*, Kaluga, 1973, sekciya *Issledovaniy Nauchnovo Tvorchestva K. E. Tsiolkovskovo*, Moscow, 1974, pp. 99–106 (in Russian).
573. JACKSON, A. A.  
 Correspondence in *Analog* concerning signs of extraterrestrial civilization, vol. 83, no. 6, August 1969, p. 175.
574. JACKSON, C. D., and HOHMANN, R. E.  
 "An Historic Report on Life in Space: Tesla, Marconi, Todd," American Rocket Society, 17th Annual Meeting and Space Flight Exposition, Los Angeles, Calif., November 13–18, 1962, Paper 2730-62.
575. JACKSON, F., and MOORE, P.  
 "Life in the Universe," Norton, New York, 1962.
576. JAKI, S. L.  
 "Is Any Communication Between Worlds in Space Possible?" *Nachrichten Olbers-Gesellschaft Bremen*, no. 79, 1970, pp. 21–26 (in German).
577. JARNAGIN, William S.  
 "Intragalactic Communication," correspondence in *Science*, vol. 131, no. 3408, April 22, 1960, pp. 1262–1263.
578. JASTROW, Robert  
 "A Message," Chapter 12 of *Red Giants and White Dwarfs: The Evolution of Stars, Planets, and Life*, Harper and Row, New York, 1967, pp. 138–140.



579. JEANS, James  
 "Is There Life on the Other Worlds?" *Science*, vol. 95, no. 2476, June 12, 1942, pp. 589–592.
580. JEANS, H. H.  
 "Non-Solar Planetary Systems," *Nature*, vol. 152, no. 3868, December 18, 1943, p. 721.
581. JENSEN, Oliver G., and ULRYCH, Tadeusz  
 "An Analysis of the Perturbations on Barnard's Star," *Astronomical Journal*, vol. 78, no. 10, December 1973, pp. 1104–1114.
582. JETHON, Zb  
 "Intelligent Beings Beyond Earth," *Astronautyka*, vol. 9, no. 1, 1966, p. 18 (in Polish).
583. JONES, Eric M.  
 "Colonization of the Galaxy," *Icarus*, vol. 28, no. 3, July 1976, pp. 421–422.
584. JONES, Sir Harold Spencer  
 "Beyond the Solar System," in *Life on Other Worlds*, a Mentor Book by the New American Library of World Literature, Inc., New York, 1956.
585. JORDAN, P.  
 "Discussion and Remarks on Exobiological Hypothesis," *Abhandlungen Akademie der Wissenschaften und Literatur – Mathematische und Naturwissenschaftliche Klasse*, no. 1, 1971 (in German).
586. *Journal of the British Interplanetary Society*  
 "New Results on Barnard's Star Planetary System," *JBIS*, vol. 27, no. 9, September 1974, p. 702.
587. *Journal of the British Interplanetary Society*  
 "New Search for Intelligent Radio Signals," *JBIS*, vol. 27, no. 9, September 1974, p. 704.
588. *Journal of the British Interplanetary Society*  
 "Message to Messier 13," *JBIS*, vol. 28, no. 6, June 1975, pp. 437–439.
589. *Journal of the British Interplanetary Society*  
 "Satellite Searching Stars for Signals," *JBIS*, vol. 28, no. 8, August 1975, p. 586.
590. JUKES, T. H.  
 "Sea Water and The Origins of Life," *Icarus*, vol. 21, 1974, p. 516.
591. K. S.  
 "Alone in Universe," *Problemy*, vol. 32, no. 9, 1976, p. 65 (in Polish).
592. KAHN, David  
 "Messages from Outer Space," Ch. 26 of *The Codebreakers* by David Kahn, Macmillan Company, New York, 1967, pp. 938–965.
593. KAHN, F. D.  
 "Life in the Universe," in *The Emerging Universe: Essays on Contemporary Astronomy*, University Press of Virginia, Charlottesville, 1972, pp. 71–89.
594. KALUZHININ, L. A.  
*About Freudenthal's Book "Lincos"*, Kiev, 1963 (in Russian).

595. van de KAMP, Peter  
 "Stars Nearer than Five Parsecs," *Sky and Telescope*, vol. 14, no. 12, October 1955, pp. 498–499.
596. van de KAMP, Peter  
 "Planetary Companions of Stars," in *Vistas in Astronomy*, vol. 2 (A. Beer, editor), Pergamon Press, New York, 1956, pp. 1040–1048.
597. van de KAMP, Peter  
 "Barnard's Star as an Astrometric Binary," *Sky and Telescope*, vol. 26, no. 1, July 1963, p. 8.
598. van de KAMP, Peter  
 "Astrometric Study of Barnard's Star from Plates Taken with the 24 in. Sproul Refractor," *Astronomical Journal*, vol. 68, no. 7, September 1963, pp. 515–521.
599. van de KAMP, Peter  
 "The Discovery of Planetary Companions of Stars," *Yale Scientific Magazine*, vol. 38, no. 3, December 1963, pp. 6–8.
600. van de KAMP, P.  
 "The Astrometric Discovery of Companions of Very Small Mass," *Mem. Soc. R. Sci. Liege*, vol. 9, 1964, p. 501.
601. van de KAMP, Peter  
 "Stars or Planets?" *Sky and Telescope*, December 1944; also in *The Origin of the Solar System*, Thornton Page and Lou Williams Page, MacMillan Co., New York, 1966, pp. 176–180.
602. van de KAMP, Peter  
 "The Search for Perturbations in Stellar Proper Motions," in *Vistas in Astronomy*, vol. 8 (A. Beer and K. Strand, editors), Pergamon, 1966, pp. 215–218.
603. van de KAMP, Peter  
 "Stars Nearer Than Five Parsecs," *Publications of the Astronomical Society of the Pacific*, vol. 81, no. 478, February 1969, pp. 5–10.
604. van de KAMP, Peter  
 "Parallax, Proper Motion, Acceleration, and Orbital Motion of Barnard's Star," *Astronomical Journal*, vol. 74, no. 2, March 1969, pp. 238–240.
605. van de KAMP, Peter  
 "Alternate Dynamical Analysis of Barnard's Star," *Astronomical Journal*, vol. 74, no. 6, August 1969, pp. 757–759.
606. van de KAMP, Peter  
 "Extrasolar Planetary Systems," *Advances in Space Science and Technology*, vol. 11, 1972, pp. 437–441.
607. van de KAMP, Peter  
 "A Study of Barnard's Star," *Bulletin of the American Astronomical Society*, vol. 6, 1974, p. 306.
608. van de KAMP, Peter, and LIPPINCOTT, Sarah Lee  
 "Our Stellar Neighborhood," in *Vistas in Astronomy*, vol. 19, part 3, 1975.

609. van de KAMP, Peter  
 "Unseen Astrometric Companions of Stars," in *Annual Review of Astronomy and Astrophysics* (G. R. Burbridge, D. Layzer, and J. G. Phillips, editors), vol. 13, August 1975.
610. KAPLAN, S. A.  
*Extra-Terrestrial Civilizations* – 2, Russian edition 1969, Glavnaya Redaktsiya Fiziko-Matematicheskoi Literatury, Moskva; English edition 1971, Keter Publishers.
611. KAPLAN, S. A.  
*Extraterrestrial Civilizations – Problems of Interstellar Communication* (S. A. Kaplan, editor), NASA TT F-631, trans. from Russian, 1971.
612. KAPLAN, S. A.  
 "Exosociology – The Search for Signals from Extraterrestrial Civilizations," in *Extraterrestrial Civilizations* (S. A. Kaplan, editor), NASA TT F-631, trans. from Russian, 1971, pp. 1–12.
613. KAPLAN, S. A. (editor)  
 "The CETI problem," Mir Publishers, Moscow, 1975 (Russian version of "Communication with Extraterrestrial Civilizations" – C. Sagan, editor, MIT Press, Cambridge, 1973).
614. KAPUSTSINSKI, V.  
 "Search for Life in the Universe," *Problemy*, vol. 2, no. 2, 1946, pp. 16–26, reprinted in vol. 31, no. 11, 1975, pp. 14–25 (in Polish).
615. KARACHENTSEV, I. D.  
 "Do We Occupy an Ordinary Place in the Universe?" *Priroda*, no. 10, 1974, pp. 92–95 (in Russian).
616. KARDASHEV, N. S.  
 "Transmission of Information by Extraterrestrial Civilizations," in *Extraterrestrial Civilizations* (G. M. Tovmasyan, editor) NASA Scientific and Technical Information Facility translation, N67-30332, pp. 19–29; *Soviet Astronomy*, vol. 8, no. 2, September-October 1964, pp. 217–221.
617. KARDASHEV, N. S.  
 "The Astrophysical Aspects of the Search for Signals from Extraterrestrial Civilizations," in *Extraterrestrial Civilizations* (S. A. Kaplan, editor), NASA TT F-631, trans. from Russian, 1971, pp. 12–59.
618. KAVALER, Lucy  
 "Can Life Begin on a Cold Planet?" Ch. 20 in *Freezing Point: Cold as a Matter of Life and Death*, John Day Company, New York, 1970, pp. 345–362.
619. KEILIN, D.  
 "Anabiosis and Its Bearing on Problems of the Origin and the Continuity of Life on the Earth," *Proc. of the Royal Society of London, Series B*, vol. 150, 1959, pp. 180–181 in "The Problem of Anabiosis or Latent Life: History and Current Concept," same reference, pp. 149–191.
620. KELLER, Eugenia  
 "Origin of Life: Part III On Other Planets?" *Chemistry*, vol. 42, no. 4, April 1969, pp. 8–13.
621. KELLER, H. U.  
 "The Search for Stellar Ecospheres in Solar Neighbourhood," *Astron. Mitt. Urania-Sternwarte Wien*, vol. 4, no. 1-3, 1961, pp. 120–121 (in German).

622. KHAIKIN, S. E.  
 "Communication with Extraterrestrial Civilizations," in *Extraterrestrial Civilizations* (G. M. Tovmasyan, editor), NASA Scientific and Technical Information Facility translation, N67-30336, pp. 53–59.
623. KHOVANOV, G. M.  
 "Rates of Development of Civilizations and their Forecasting," in *Extraterrestrial Civilizations* (S. A. Kaplan, editor), NASA-TT-F-631, trans. from-Russian, 1971, pp. 213–238.
624. von KHUON, Ernst  
*Waren die Götter Astronauten? (Were the Gods Astronauts?)*, Econ Verlag, Düsseldorf, 1970, a collection of 16 essays concerning Erich von Däniken's thesis (in German).
625. KIESS, C. C.  
 "Is There Life on Other Worlds?" *Georgetown Observatory Reprints*, no. 37, 1966, 17 p.
626. KIESS, C. C. and RICE, F. O.  
 "Life, Extraterrestrial," Georgetown Observatory reprint no. 28; also in "The New Catholic Encyclopaedia," pp. 744–745.
627. KIND, S. S.  
 "Energy Fixation and Intelligent Life," *JBIS*, vol. 11, no. 4, July 1952, pp. 168–172.
628. KLECZEK, J.  
 "Evolution of Stars and Life in the Universe," *Vesmír*, vol. 40, 1961, pp. 103–106 (in Czechoslovakian).
629. KLECZEK, Josip  
 "Life on the Planets of Other Suns," in *To the Near and Distant Universe*, translation from Czech., July 16, 1963, pp. 411–427, Air Force Sys. Comm., Wright-Patterson AFB, Ohio, Foreign Tech. Div., FTD-TT-62/7-1 + 2 + 3 + 4, AD-413009.
630. KLECZEK, J.  
 "Life in the Universe," *Rishe Hvezd*, vol. 51, no. 9, 1970, pp. 161–165 (in Czechoslovakian).
631. KLEINZ, J. P.  
 "Theology of Outer Space," *Columbia*, vol. 40, October 1960, pp. 27–28.
632. KOENIG, Peter W.  
 "Our Cosmic Relationship," correspondence in *Spaceflight*, vol. 17, no. 1, January 1975, p. 40.
633. KOESTLER, Arthur  
 "Trying to Talk with Other Planets," *Science Digest*, vol. 47, June 1960, p. 69.
634. KOHLER, H. W.  
 "Earthmen Receive No Answer from the Universe," *VDI Nachrichten*, vol. 29, no. 26, 1975, p. 1 (in German).
635. KOLCHENKO, I. A.  
 "Some of K. E. Tsiolkovsky's Ideas on Other Civilizations in the Cosmos," *Trudy Vosmykh Chtenii Posviyashchennykh Razrabotkiye Nauchnovo Naslediya i Razvitiyu Ideiy K. E. Tsiolkovskovo*, Kaluga, 1973, sekciya *Issledovaniye Nauchnovo Tvorchestva K. E. Tsiolkovskovo*, Moscow, 1974, pp. 55–62 (in Russian).

636. KOMAROV, V.  
 "The Universe and Life," *Aviatsiya I Kosmonavtika*, no. 8, 1965, pp. 70–74 (in Russian).
637. KOMAROV, V. N.  
 "Cosmical Civilizations," in *The Man and the Mysteries of the Universe*, Moscow, 1966, pp. 146–175 (in Russian).
638. KONDRATOV, A. M.  
 "Cosmical Linguistics," in *Brothers-in-Mind*, Sovetskaya Rossiya, Moscow, 1964, pp. 49–66 (in Russian).
639. KONSTANTINOV, B. P., and PEKELIS, V. D. (editors)  
*Inhabited Cosmos*, Nauka, Moscow, 1972 (in Russian).
640. KONSTANTINOV, B. P., and PEKELIS, V. D.  
*Inhabited Space – Part 1*, Nauka Press, Moscow, 1973, NASA TT F-819, 1974.
641. KONSTANTINOV, B. P., and PEKELIS, V. D.  
*Inhabited Space – Part 2*, Nauka Press, Moscow, 1973, also NASA Translation TT F-820, 1974.
642. KOOY, J. M. J.  
 "Remarks on Communication with Extra-Terrestrial Intelligence," *Acta Astronautica*, vol. 1, nos. 5-6, May-June 1974, pp. xix–xx.
643. KOPAL, Zdenek  
 "Life in the Universe?" in *Man and His Universe*, William Morrow and Co., New York, 1972, pp. 300–308.
644. KORNER, U.  
 "Life in the Universe," *Urania (GDR)*, vol. 48, no. 2, 1972, pp. 50–55 (in German).
645. KOSTYUK, N. T.  
 "Cosmos and Life," *Voprosy Filosofii*, no. 8, 1964, pp. 107–116 (in Russian).
646. KOTIYELNIKOV, V. A.  
 "Radio Communication with Extraterrestrial Civilizations," in *Extraterrestrial Civilizations* (G. M. Tovmasyan, editor), NASA Scientific and Technical Information Facility translation, N67-30339, pp. 72–77.
647. KOTIYELNIKOV, V. A.  
 "Radio Communication with Extraterrestrial Civilizations," in *Inhabited Cosmos* (B. P. Konstantinov and V. D. Pekelis, editors), Nauka, Moscow, 1972, pp. 280–282 (in Russian).
648. KOTSAKIS, D.  
 "Does Life Exist on Other Worlds?" *Publication of the Laboratory of Astronomy of the University of Athens*, no. 21, Athens, 1963 (in Greek).
649. KRASKE, Robert  
*Is There Life in Outer Space?* Harcourt Brace Jovanovich, New York, 1976.
650. KRASOVSKIY, V. I.  
*Space-Collection of Articles* (V. I. Krasovskiy, editor), trans. from Russian *Kosmos* (Moscow), no. 1, 1963, pp. 1–96; Air Force Sys. Comm., Wright-Patterson AFB, Ohio, Foreign Tech. Div., FTD-MT-64-239, AD-608184.

651. KRASOVSKIY, V. I.  
 "Astronautics and Extraterrestrial Civilizations," in *Space* (V. I. Krasovskiy, editor), translated from Russian *Kosmos*, Moscow, no. 1, 1963, pp. 56–77.
652. KRAUS, John  
*Big Ear*, Cygnus-Quasar Books, Powell, Ohio, 1976.
653. KREIFELDT, J. G.  
 "A Formulation for the Number of Communicative Civilizations in the Galaxy," *Icarus*, vol. 14, June 1971, pp. 419–430.
654. KRETSCH, Jeffrey L.  
 "The Age of Nearby Stars," *Astronomy*, vol. 3, no. 7, July 1975, pp. 22–27.
655. KRISTIYEV, K.  
 "Life in the Cosmos," *Priroda* (Bulgaria), vol. 14, no. 1, 1965, pp. 55–56 (in Bulgarian).
656. KRISTOFFERSON, Karl E.  
 "First Voyage to the Stars" (concerning Pioneer 10), *Reader's Digest*, September 1972, pp. 83–87.
657. KROSHKIN, M. G.  
 "Extraterrestrial Civilizations," in: *The Great Soviet Encyclopaedia*, Soviet Encyclopaedia Publishing House, Moscow, vol. 5, 1971, pp. 155–156 (in Russian).
658. KROSS, Robert D.  
 "Space Messengers," correspondence in *Science*, vol. 136, no. 3519, June 8, 1962, pp. 913–914.
659. KRSTIYEV, K.  
 "Life in the Cosmos," *Priroda* (Bulgaria), vol. 14, no. 1, 1965, pp. 55–56 (in Bulgarian).
660. KUBIS, J. F., and McLAUGHLIN, E. J.  
 "Psychological Aspects of Space Flight," *Transactions of the New York Academy of Sciences*, vol. 30, 1967, pp. 320–330.
661. KUDRIN, V. B.  
 "Gravitational Waves: A Means of Communicating with Highly Developed Civilizations," *Priroda*, no. 6, 1973, pp. 98–99 (in Russian); NASA TT-F-15060, August 1973.
662. KUIPER, Gerard P.  
 "The Nearest Stars," *Astrophysical Journal*, vol. 95, January-May 1942, pp. 201–212.
663. KUKHOVICH, B.  
 "Organic Molecules in Space and Possibilities of the Origin of Life," *Urania (Poland)*, vol. 42, no. 4, 1971, pp. 103–109 (in Polish).
664. KULIN, D.  
 "How Man Might Communicate with Other Planets," in *Problems of Space Research Investigated*, trans. from Russian, *Nauk i Zhizn*, no. 3, 1968, Joint Publications Research Service, JPRS-46446, pp. 13–18.
665. KUMAR, S. S.  
 "On the Nature of the Planetary Companions of Stars," *Zeitschrift fur Astrophysik*, vol. 58, 1964, pp. 248–252 (in German).

666. KUMAR, S. S.  
 "On Planets and Black Dwarfs," *Icarus*, vol. 6, 1967, pp. 136–137.
667. KUMAR, S. S.  
 "Planetary Systems," in *The Emerging Universe: Essays on Contemporary Astronomy*, University Press of Virginia, Charlottesville, 1972, pp. 25–34.
668. KUMAR, S. S.  
 "Hidden Mass in the Solar Neighborhood," *Astrophysics and Space Science*, vol. 17, 1972, p. 219.
669. KUMAR, S. S.  
 "Planetary Systems and Extraterrestrial Life," *Origins of Life*, vol. 5, no. 3-4, 1974, pp. 491–495.
670. KUZNETSOV, Yu.  
 "Signals of Extraterrestrial Civilizations," *Trudy Moskovskovo Instituta Radiotekhniki, Elektroniki I Avtomatiki*, vol. 40, 1970, pp. 85–95 (in Russian).
671. KUZNETSOV, Yu.  
 "Signals of Extraterrestrial Civilizations," *RZh-Radiotekhnika*, January 1971, USSR Scientific Abstracts: Electronics and Electrical Engineering, no. 133, (Microfilm Reel R357, Microfiche no. R11047).
672. KUZNETSOV, Yu. P.  
 "Signals of Extraterrestrial Civilizations – Of What Kind Can They Be? *Zemlya i Vseennaya*, no. 1, 1972, pp. 30–33 (in Russian).
673. LAFLEUR, Laurence J.  
 "Astrobiology," *Astronomical Society of the Pacific Leaflet*, no. 143, January 1941, pp. 333–340.
674. LAFLEUR, L. J.  
 "Surface Gravity and Behavior," *Popular Astronomy*, vol. 51, April 1943, pp. 197–202.
675. LANDSBURG, Alan and Sally  
*In Search of Ancient Mysteries*, Bantam Books Inc., New York, 1974.
676. LANGER, R. M., and STIMSON, T. E.  
 "Is There Life Among the Stars?" *Popular Mechanics*, vol. 78, July 1942, pp. 82–85.
677. LANGTON, N. H.  
 "The Probability of Contact with Extraterrestrial Life," *JBIS*, vol. 29, nos. 7 and 8, July-August 1976, pp. 465–468.
678. LAPP, Ralph E.  
 "How to Talk to People, If Any, on Other Planets," *Harper's Magazine*, vol. 222, March 1961, pp. 58–63.
679. LARSON, Carl A.  
 "Strong Poison 2," *Analog*, vol. 89, no. 4, June 1972, pp. 73–84.
680. LAURENCE, William L.  
 "Radio Astronomers Listen for Signs of Life in Distant Solar Systems," *New York Times*, November 22, 1959, Section IV, p. 11.

681. LAURENCE, William L.  
 "Experts Hold Probability of Life Elsewhere in the Universe is Great," *New York Times*, March 5, 1961, Section IV, p. 9.
682. LAURENCE, William L.  
 "Beings Elsewhere – The Creatures on Other Planets Might Look Like Centaurs," *New York Times*, July 9, 1961, Section IV, p. 8.
683. LAURENCE, William L.  
 "Tests Show Primitive Atmosphere Can Create Living Systems," *New York Times*, September 9, 1962, Section IV, p. 11.
684. LAVROVA, N. B.  
 "Cosmic Civilizations – Literature Published in the Years 1973–1974," in: *The CETI Problem* (S. A. Kaplan, editor), Mir Publishers, Moscow, 1975, pp. 336–348 (in Russian).
685. LAWRENCE, L. George  
 "Interstellar Communications – What are the Prospects?" *Electronics World*, vol. 86, no. 4, October 1971, pp. 34–35 and 56.
686. LAWTON, A. T.  
 "The Nearest Other Solar System," *Spaceflight*, vol. 12, no. 4, April 1970, pp. 170–173.
687. LAWTON, A. T.  
 "Photometric Observation of Planets at Interstellar Distances," *Spaceflight*, vol. 12, no. 9, September 1970, pp. 365–373.
688. LAWTON, A. T.  
 "Infrared Interstellar Communication," *Spaceflight*, vol. 13, no. 3, March 1971, p. 83.
689. LAWTON, A. T.  
 "Startalk – The Problems of Interstellar Communication," *Spaceflight*, vol. 13, no. 7, July 1971, pp. 241–244.
690. LAWTON, A. T.  
 Review of the book *Challenge of the Stars* (by Patrick Moore and David A. Hardy), *Spaceflight*, vol. 14, no. 10, October 1972, p. 397.
691. LAWTON, A. T.  
 "The Interpretation of Signals from Space," *Spaceflight*, vol. 15, no. 4, April 1973, pp. 132–137.
692. LAWTON, A. T.  
 "Interstellar Communication – Antenna or Artifact," *JBIS*, vol. 27, no. 4, April 1974, pp. 286–294.
693. LAWTON, A. T., and NEWTON, S. J.  
 "Long Delayed Echoes: The Search for a Solution," *Spaceflight*, vol. 16, no. 5, May 1974, pp. 181–187 and 195.
694. LAWTON, A. T.  
 "'Stray' Planets, Their Formation and the Possibilities of CETI," *Spaceflight*, vol. 16, no. 5, May 1974, pp. 188–189.



695. LAWTON, A. T.  
 "Star Trekking: Whose Sun Are You?" *Spaceflight*, vol. 16, no. 7, July 1974, pp. 255–257 and 280.
696. LAWTON, A. T.  
 Review of *The Cosmic Connection* (by Carl Sagan), *Spaceflight*, vol. 16, no. 10, October 1974, p. 397.
697. LAWTON, A. T., and NEWTON, S. J.  
 "Long Delayed Echoes – The Trojan Ionosphere," *JBIS*, vol. 27, no. 12, December 1974, pp. 907–920.
698. LAWTON, A. T.  
 Conference Report on "International CETI Review Meeting 1974," *JBIS*, vol. 28, no. 3, March 1975, pp. 220–222.
699. LAWTON, A. T.  
 "CETI from Copernicus," *Spaceflight*, vol. 17, nos. 8 and 9, August-September 1975, pp. 328–330.
700. LAWTON, A. T.  
 "Calling M 13 on 12.6 cm – Do You Read?" *Spaceflight*, vol. 18, no. 1, January 1976, pp. 10–12.
701. LAWTON, Anthony T., and GATLAND, Kenneth W.  
 "A 'Red Giant' Opens Its Eyes," *Spaceflight*, vol. 18, nos. 7 and 8, August 1976, pp. 268–272.
702. LEAR, John  
 "The Search for Intelligent Life on Other Planets," *Saturday Review*, vol. 43, January 2, 1960, pp. 39–43.
703. LEAR, John  
 "The Search for Man's Relatives Among the Stars," *Saturday Review*, June 10, 1972, pp. 29–37.
704. LEDERBERG, Joshua  
 "Exobiology: Approaches to Life Beyond the Earth," *Science*, vol. 132, August 12, 1961, pp. 393–400.
705. LEDERBERG, Joshua  
 "Exobiology," correspondence in *Science*, vol. 142, no. 3596, November 29, 1963, p. 1126.
706. LEDERBERG, Joshua  
 "Searching for GODot," Appendix F of *Communication with Extraterrestrial Intelligence* (Carl Sagan, editor), MIT Press, Cambridge, Mass., 1973, pp. 393–394.
707. LEE, R. B., FLANNERY, K., and MARKARIAN, E. S.  
 "The Evolution of Technical Civilizations," in *Communication with Extraterrestrial Intelligence* (Carl Sagan, editor), MIT Press, Cambridge, Mass., 1973, pp. 85–111.
708. LEHMANN, J.  
 "On the Use of Pictorial Communications in CETI," *Sterne*, vol. 51, no. 2, 1975, pp. 102–109 (in German).
709. LEIBER, Fritz  
 "Homes for Men in the Stars," *Science Digest*, vol. 58, September 1965, pp. 53–57.
710. LEINWOLL, Stanley  
 "Which Stars Have Planets?" *Analog*, vol. 71, no. 2, April 1963, pp. 9–16 and 91–93.

711. LEM, St.  
 "Cosmic Civilizations," Chapter III in *Summa Technologiae*, Wydawnictwo Literackiye, Cracow, 1967, pp. 58–101 (in Polish).
712. EEM, St.  
 "Terrestrial Science and Cosmic Civilizations," *Problemy*, no. 11, 1970, pp. 680–688, and no. 12, p. 768 (in Polish).
713. LEM, St.  
 "Master's Voice," *Tchytelnik*, Warsaw, 1970 (novel on deciphering interstellar message, in Polish).
714. LEM, St.  
 "On the Question of Extraterrestrial Civilizations," in: *The CETI Problem* (S. A. Kaplan, editor), Mir Publishers, Moscow, 1975, pp. 329–335 (in Russian).
715. LEMMON, Richard M.  
 "Molecules of Life," *Astronomy*, vol. 4, no. 5, May 1976, pp. 31–34.
716. LEMOZI, C.  
 "Plurality of Inhabited Worlds," *Bulletin Mens. Societé Astronomie Populaire de Toulouse*, vol. 49, no. 404, 1958, pp. 119–131 (in French).
717. LETHBRIDGE, Thomas Charles  
*The Legend of the Sons of God: A Fantasy?* Routledge and K. Paul, London, 1972.
718. LEWIS, C. A.  
*Perelandra*, The MacMillan Company, New York, 1944.
719. LEWIS, C. S.  
*That Hideous Strength*, The MacMillan Company, New York, 1946.
720. LEWIS, C. S.  
 "Onward Christian Spacemen," *Catholic Digest*, vol. 27, August 1963, pp. 90–95.
721. LEWIS, C. S.  
*Out of the Silent Planet*, MacMillan Publishing Co., Inc., New York, 1965.
722. LEY, Willy, and von BRAUN, Wernher  
*The Exploration of Mars*, Viking Press, New York, 1956, pp. 6 and 7 on the Prix Pierre Guzman.
723. LEY, Willy  
 "What Will Space People Look Like?" *Science Digest*, vol. 43, February 1958, pp. 61–64.
724. LEY, Willy  
 "The Stars in Their Courses," review of *Alone in the Universe* (by John W. Macvey), *New York Times*, Section VII, December 8, 1963, p. 34.
725. LEY, Willy  
 "Life in the Universe and the Concept of the Ecosphere," *Watchers of the Skies*, Ch. 22, Viking Press, New York, 1963, pp. 478–500.

726. LEY, Willy  
 "Epilogue: The Search for Other Civilizations," in *Watchers of the Skies*, Viking Press, New York, 1963, pp. 501–504.
727. LEY, Willy  
*Beyond the Solar System*, Viking Press, New York, 1964.
728. LEY, Willy  
 "The Planets of Other Stars," Ch. 19 in *Missiles, Moonprobes, and Megaparsecs*, New American Library, 1964, New York, pp. 165–175.
729. LEY, Willy  
 "Is Anybody Listening," review of *We Are Not Alone* (by Walter Sullivan), *New York Times*, Section VII, December 20, 1964, p. 10.
730. LEY, Willy  
 "Things That Might Be," review of *Intelligent Life in the Universe* (by I. S. Shklovskii and Carl Sagan), *New York Times*, Section VII, December 18, 1966, p. 23.
731. LEY, Willy  
 "Let's Build an Extraterrestrial," in *Another Look at Atlantis and Fifteen Other Essays*, Doubleday and Company Inc., Garden City, New York, 1969, pp. 140–154.
732. LIBBY, W. F.  
 "Life in Space," *Space Life Sciences*, vol. 1, 1968, pp. 5–9.
733. *Life*  
 "A Fanciful Preview to New Facts," *Life*, vol. 41, no. 13, September 24, 1956, pp. 40–41.
734. *Life*  
 "Other Beings on Other Planets?" *Life*, vol. 44, no. 1, January 6, 1958, p. 6.
735. LIGHTHALL, W. D.  
 "The Law of Cosmic Evolutionary Adaptations: An Interpretation of Recent Thought," *Transactions of the Royal Society of Canada*, series 3, no. 34, section 2, 1940, pp. 135–141.
736. LILLY, John C.  
*Man and Dolphin*, Doubleday, Garden City, New York, 1961.
737. LILLY, John C.  
 "Interspecies Communication," *Yearbook of Science and Technology*, McGraw-Hill, New York, 1962, pp. 279–281.
738. LILLY, J. C.  
 "Vocal Behaviour of the Bottlenose Dolphin," *Proceedings of the American Philosophical Society*, vol. 106, no. 6, 1962, pp. 520–529.
739. LILLY, John C.  
 "Problems in Inter-Species Communication," talk given at AAS Symposium on Extraterrestrial Life, May 23–25, 1966 (unpublished).

740. LILLY, John C.  
*The Mind of the Dolphin*, Doubleday and Co., New York, 1967.
741. LINDNER, K.  
 "Extraterrestrial Life?" *Astronomie in der Schule*, vol. 11, no. 5, 1974, pp. 102–106 (in German).
742. LINGEMAN, Richard R.  
 "Erich von Däniken's Genesis," *New York Times Book Review*, Sunday, March 31, 1974, p. 6.
743. LIPNICKI, R.  
 "Cosmic Civilization – Unavoidable Stage of Technological Civilization's Development," *Astronautyka*, vol. 18, no. 3, 1975, pp. 21–23 (in Polish).
744. LIPNICKI, R.  
 "Cosmic Role of Mankind and the CETI Problem," *Astronautyka*, no. 4, 1976, pp. 21–25 (in Polish).
745. LITYNSKI, Zygmunt  
 "Life on Other Planets: Views of a Polish Scientist," *Science Digest*, vol. 50, August 1961, pp. 71–75.
746. LOB, H.  
 "Habitable Planets – Habitable Worlds," *Astronautik*, vol. 13, May-June 1976, pp. 31–33 (in German).
747. LOMONACO, T.  
 "The Life in the Universe," *Minerva Med*, vol. 61, April 7, 1970, pp. 1395–1400 (in Italian).
748. LOMONACO, T.  
 "Answers Given by Scientists to the Question Whether Life Exists in Extraterrestrial Space," *Minerva Medica*, vol. 65, no. 81, 1974, pp. 4249–4254 (in Italian).
749. LORANTH, G.  
 "Contacts With Other Worlds," *Elet Es Tudomány*, vol. 23, no. 21, 1968, pp. 963–967 (in Hungarian).
750. LOVELL, Bernard  
 "Search for Voices from Other Worlds," *New York Times*, Section VI, December 24, 1961, pp. 10 and 29–31.
751. LOVELL, Sir Bernard  
 "Some Reflections on Ethics and the Cosmos," in *The Exploration of Outer Space*, Harper and Row, New York, 1962, pp. 68–82.
752. LOVELL, B.  
 "Problem of Life in the Universe – As Seen in Modern Science," *Universitas*, vol. 22, no. 6, 1967, p. 629 (in German).
753. LOVELL, Sir Bernard  
 "Whence We Are What We Know About Where We Came From," *New York Times Magazine*, Section 6, November 16, 1975, p. 27+.
754. LUBERTOWICZ, St.  
 "Problem of Communication with Extraterrestrial Civilizations," *Urania* (Poland), no. 5, 1976, pp. 130–142 (in Polish).

755. LUBKIN, Gloria B.  
 "Searches for Intelligence Beyond Earth Continue," *Physics Today*, vol. 29, no. 5, May 1976, pp. 18–19.
756. LUNAN, D.  
 "Space Probe from Epsilon Boötis," *Spaceflight*, vol. 15, no. 4, April 1973, pp. 122–131.
757. LUNAN, Duncan, LAWTON, Anthony, MILLBURN, John R., WARD, Raymond, and EDWARDS, Ross A.  
 "Space Probe from Epsilon Boötis," correspondence in *Spaceflight*, vol. 15, no. 7, July 1973, pp. 278–280.
758. LUNAN, Duncan  
 "Space Probe from Epsilon Bootis," *Analog*, vol. 92, no. 5, January 1974, pp. 66–84.
759. LUNAN, Duncan  
*Interstellar Contact*, Henry Regnery Company, Chicago, 1974.
760. LUYTEN, W. J., and von HOERNER, Sebastian  
 "The Search for Other Civilizations," correspondence in *Science*, vol. 135, no. 3507, March 16, 1962, pp. 991–992 and 994.
761. LUYTEN, Willem J.  
 "Astrofantasies and Contracts," correspondence in *Science*, vol. 145, no. 3629, July 17, 1964, p. 231.
762. L'VOV, V.  
 "The Great Ring" (Search and Perspectives) in *The Hour of Cosmos*, Molodaya Gvardiya, Moscow, 1962; pp. 135–206 (in Russian).
763. LYNCH, J. J.  
 "Christians on Other Planets?" *Friar*, vol. 19, January 1963, pp. 26–29.
764. LYNCH, J. J.  
 "What Kind of Beings Would We Expect Our Extraterrestrial Neighbours to Be?" AAS Preprint 66-82, 1966.
765. LYNGA, G.  
 "Interstellar Communication," *Cassiopeia*, vol. 21, 1966, pp. 50–53 (in Swedish).
766. van MAANEN, A.  
 "The Nearer Stars," *Astronomical Society of the Pacific Leaflet*, no. 107, January 1938, pp. 62–69.
767. McCARTHY, John  
 "Possible Forms of Intelligence: Natural and Artificial," Ch. 5 of *Interstellar Communication: Scientific Perspectives*, by Cyril Ponnampereuma and A. G. W. Cameron, Houghton Mifflin Co., Boston, 1974, pp. 79–87.
768. McCREA, W. H.  
 "Astronomer's Luck," *Quarterly Journal of the Royal Astronomical Society*, vol. 13, 1972, p. 506.
769. McDONOUGH, Thomas R.  
 "They're Trying to Tell Us Something," *Analog*, vol. 83, no. 1, March 1969 (Part I), pp. 62–79; and vol. 83, no. 2, April 1969 (Part II), pp. 74–86.
770. MacGOWAN, Roger A.  
 "On the Possibilities of the Existence of Extraterrestrial Intelligence," in *Space Science and Technology*, vol. 4 (Frederick I. Ordway, III, editor), Academic Press, New York, 1962, pp. 39–110.

771. MacGOWAN, Roger A., and ORDWAY, Frederick I., III  
*Intelligence in the Universe*, Prentice-Hall Inc., Englewood Cliffs, New Jersey, 1966.
772. MACHOL, R. E., van VLECK, E., and EVANS, L. C.  
 "Interstellar Communication," *Applied Communication Technology*, Proceedings of the Region Six/Western USA Conference, Salt Lake City, Utah, May 7–9, 1975, pp. 17–20.
773. MACHOL, R. E.  
 "An Ear to the Universe," *IEEE Spectrum*, vol. 13, March 1976, pp. 42–47.
774. MACHOL, R. E.  
 "Two Systems Analyses of SETI," Proceedings of the 27th International Astronautical Federation Meeting, Anaheim, Calif., October 10–16, 1976, IAF Paper IAF-A-76-31.
775. McHUGH, L.  
 "Others Out Yonder," *America*, vol. 104, November 26, 1960, pp. 295–297.
776. McHUGH, L.  
 "Life in Outer Space," *Sign*, vol. 41, December 1961, pp. 26–29.
777. McNEILL, William H.  
 Personal Account of 1971 CETI Conference, USSR, *Chicago Magazine*, May-June 1972.
778. MacVEY, John W.  
 "Alone in the Universe?" *Spaceflight*, vol. 4, no. 4, July 1962, pp. 125–127.
779. MacVEY, John W.  
*Alone in the Universe?* MacMillan Company, New York, 1963.
780. MacVEY, John W.  
*How We Will Reach the Stars*, Collier–MacMillan Limited, London, 1969; *Journey to Alpha Centauri*, the MacMillan Company, 1965.
781. MacVEY, John W.  
 "Planets of Other Stars," *Planetarium*, vol. 1, June 1968, pp. 116–118.
782. MacVEY, John W.  
 "Interstellar Beacons," *Spaceflight*, vol. 14, no. 1, January 1972, pp. 14–16 and 25.
783. MacVEY, John W.  
*Whispers from Space*, MacMillan Publishing Co. Inc., New York, 1973.
784. MacVEY, John W.  
 Review of *Worlds Beyond* (by Ian Ridpath), in *Spaceflight*, vol. 18, no. 1, January 1976, p. 35.
785. McVITTIE, G. C.  
 "Space Probe from Epsilon Boötis," correspondence in *Spaceflight*, vol. 15, no. 7, July 1973, p. 277.
786. MADDOX, John  
 "Artificial Biosphere," correspondence in *Science*, vol. 132, July 22, 1960, pp. 250–251.

787. MAIRET, G.  
 "Little Green Men," *Missiles*, no. 50, 1967, pp. 26–36 (in French).
788. MAKOVETSKII, P. V.  
 "Structure of Call Signals from Extraterrestrial Civilizations," *Astronomicheskii Zhurnal*, vol. 53, no. 1, 1976, pp. 221–224.
789. MALLOVE, Eugene F., and FORWARD, Robert L.  
 "Bibliography of Interstellar Travel and Communication – I," *JBIS*, vol. 27, no. 12, December 1974, pp. 921–943.
790. MALLOVE, Eugene F., and FORWARD, Robert L.  
 "Bibliography of Interstellar Travel and Communication – II," *JBIS*, vol. 28, no. 3, March 1975, pp. 191–219.
791. MALLOVE, Eugene F.  
 Review of *Interstellar Communication: Scientific Perspectives* (by Cyril Ponnampereuma and A. G. W. Cameron), *JBIS*, vol. 28, no. 3, March 1975, pp. 223–224.
792. MALLOVE, Eugene F., and FORWARD, Robert L.  
 "Bibliography of Interstellar Travel and Communication – III," *JBIS*, vol. 28, no. 6, June 1975, pp. 405–434.
793. MALLOVE, E. F., FORWARD, R. L., and PAPROTNY, Z.  
 "Bibliography of Interstellar Travel and Communication – August 1975 Update," *JBIS*, vol. 29, nos. 7 and 8, July-August 1976, pp. 494–517.
794. MAMIKUNIAN, G., and BRIGGS, M. H. (Editors)  
*Current Aspects of Exobiology*, Pergamon Press, New York, 1965.
795. MANN, Angus D.  
 "CETI and Religion," *Spaceflight*, vol. 18, no. 10, October 1976, p. 378.
796. MANN, Martin  
 "The Man-Horse From Outer Space," *Popular Science*, vol. 179, no. 4, October 1961, pp. 19–20.
797. MAR, James W., and LIEBOWITZ, Harold (editors)  
*Structures Technology for Large Radio and Radio Telescope Systems*, MIT Press, Cambridge, Massachusetts, 1969.
798. MARGARIA, Rodolfo  
 "On the Possible Existence of Intelligent Living Beings on Other Planets," in *Proc. 12th Int. Astronautical Congress*, Washington, D.C., 1961, Academic Press Inc., New York, 1963, pp. 556–563; *Revi. Med. Aeron. Spaziale (Roma)*, vol. 25, no. 1, 1962, pp. 24–35.
799. MARGARIAS, R.  
 "Do Intelligent Beings Exist on Other Planets?" *Tekhnika Khronika Geniki Ekdosis*, no. 229, 1963, pp. 27–30 (in Greek).
800. MARKARYAN, E. S.  
 "On the Conception of 'Extraterrestrial Civilization'," *Chloviyek i Sviyatopoglad*, no. 2, 1974, pp. 163–168 (in Polish).

801. MARSDEN, B. G.  
*Astronomical Telegrams*, Transactions of the International Astronomical Union, vol. 14A, Reidel Publishing Company, Dordrecht-Holland, 1970.
802. MARTIN, Anthony R.  
 "Life and Further Life in Space," (Leben und Weiterleben im Weltraum), *DGLR Mitteilungen*, vol. 6, November 1973, pp. 3–6 (in German).
803. MARTIN, Anthony R.  
 "Editorial" in first issue of *JBIS – Journal of Interstellar Studies*, vol. 27, no. 4, April 1974, pp. 241–242.
804. MARTIN, Anthony R.  
 Review of *Life Beyond Earth and the Mind of Man* (R. Berendzen, Editor), *JBIS*, vol. 27, no. 4, April 1974, pp. 310–311.
805. MARTIN, Anthony R.  
 Review of *Communication with Extra-Terrestrial Intelligence*, (Carl Sagan, Editor), *JBIS*, vol. 27, no. 4, April 1974, pp. 312–313.
806. MARTIN, Anthony R.  
 Review of *The Cosmic Connection – An Extraterrestrial Perspective* (by Carl Sagan), *JBIS*, vol. 27, no. 4, April 1974, pp. 313–314.
807. MARTIN, Anthony R.  
 Conference Report on the Royal Society Meeting on "The Recognition of Alien Life," May 2, 1974, *JBIS*, vol. 27, no. 9, September 1974, pp. 714–716.
808. MARTIN, Anthony R.  
 "The Detection of Extrasolar Planetary Systems: Part I: Methods of Detection," *JBIS*, vol. 27, no. 9, September 1974, pp. 643–659.
809. MARTIN, Anthony R.  
 Review of *The Next Ten Thousand Years* (by Adrian Berry), *JBIS*, vol. 27, no. 9, September 1974, p. 709.
810. MARTIN, Anthony R.  
 "The Detection of Extrasolar Planetary Systems: Part II: Discussion of Astrometric Results," *JBIS*, vol. 27, no. 12, December 1974, pp. 881–906.
811. MARTIN, Anthony R.  
 "The Detection of Extrasolar Planetary Systems: Part III: Review of Recent Developments," *JBIS*, vol. 28, no. 3, March 1975, pp. 182–190.
812. MARTIN, Anthony R.  
 "Project Daedalus: The Ranking of Nearby Stellar Systems for Exploration," *JBIS*, vol. 29, no. 2, February 1976, pp. 94–100.
813. MARUYAMA, Magoroh, and HARKINS, Arthur (editors)  
*Cultures Beyond Earth: The Role of Anthropology in Outer Space*, Vintage Books, New York, 1975.
814. MARUYAMA, Magoroh  
 "Cultural Fiction Group to Discuss Extraterrestrial Communities," *L-5 News*, no. 5, January 1976.



815. MARX, G.  
 "Messages from Outer Space," ASTIA Report No. AD270779 (translation from *Tizikai Szemele*, vol. 10, no. 11, 1960, p. 335), Defense Documentation Center, Washington, D.C.
816. MARX, G.  
 "Waiting for Tau Cetanians," *Uf Iras*, vol. 7, no. 9, 1967, pp. 22–34 (in Hungarian).
817. MASTERS, P. L.  
 "Life in the Universe," *Journal of the Astronomical Society of Western Australia*, vol. 18, March 1967, pp. 5–8, and April 1967, pp. 2–3.
818. MATLOFF, G. L.  
 "Photometric Colour Indices of Extrasolar Planets," *Icarus*, vol. 15, 1971, pp. 341–342.
819. MATLOFF, G. L., and FENNELLY, A. J.  
 "Technique for Photometric Detection of Extrasolar Planets," *Journal of the Optical Society of America*, vol. 62, 1972, p. 738 (Abstract).
820. MATLOFF, G. L., and FENNELLY, A. J.  
 "Wavelength Optimization of Signal/Noise for Extrasolar Planet Detection," *Journal of the Optical Society of America*, vol. 63, 1973, p. 1287 (Abstract).
821. MATLOFF, G. L., and FENNELLY, A. J.  
 "Use of the Moon and the Large Space Telescope as an Extrasolar Planet Detection System," paper given at Optical Society of America, Spring Meeting, April 21–25, 1974.
822. MATLOFF, Gregory L., and FENNELLY, Alphonsus J.  
 "Optical Techniques for the Detection of Extrasolar Planets: A Critical Review," *JBIS*, vol. 29, nos. 7 and 8, July-August, 1976, pp. 471–481.
823. MATSUSHIMA, S.  
 "Astronomical Limitations on Detecting Habitable Planets Beyond the Solar System," *Proceedings of the Iowa Academy of Sciences*, vol. 71, 1964, pp. 401–412.
824. MATTINSON, H. R.  
 "Project Daedalus: Astronomical Data on Nearby Stellar Systems," *JBIS*, vol. 29, no. 2, February 1976, pp. 76–93.
825. MAUDE, A. D.  
 "Life in the Sun," in *The Scientist Speculates* (I. J. Good, editor), William Heinemann Ltd., London, 1962, pp. 240–247.
826. *Medical Journal of Australia*  
 "Life on Other Worlds," *Medical J. of Australia*, vol. 1, 1954, pp. 183–184.
827. MENDILLO, Michael, and HART, Richard  
 Note on the rarity of solar eclipses and the existence of extraterrestrial life, *Physics Today*, vol. 27, no. 2, February 1974, p. 73.
828. MENZEL, D. H.  
 "Is There or Isn't There Life in the Universe?" *Graduate Journal*, vol. 7, no. 1, 1965, pp. 195–219, also Harvard Reprint no. 713.

829. MENZEL, Donald H.  
 "Life in the Universe," Ch. 19 of *Astronomy*, Random House, New York, 1970, pp. 274–278.
830. MENZEL, Donald H., WHIPPLE, Fred L., and de VAUCOULEURS, Gerard  
 "Extraterrestrial Life," Ch. 18 of *Survey of the Universe*, Prentice-Hall Inc., Englewood-Cliffs, N.J., 1970, pp. 412–427.
831. MERCER, D. M. A.  
 "Messages to the Stars," *UNESCO Courier*, vol. 19, January 1966, pp. 4–7+.
832. MERGENTALER, J.  
 "Are We Alone in the Universe?" *Vshekhs'vyat*, no. 4, 1972, pp. 93–94 (in Polish).
833. MERLE, Robert  
*The Day of the Dolphin*, translated from the French by Helen Weaver, Simon and Schuster, Inc., New York, 1969.
834. MICHAUD, Michael A. G.  
 "Interstellar Negotiation," *Foreign Service Journal*, vol. 49, no. 12, December 1972, pp. 10–14 and 29–30.
835. MICHAUD, Michael A. G.  
 "Negotiating with Other Worlds," *The Futurist*, vol. 7, no. 2, April 1973, pp. 71–77.
836. MICHAUD, Michael A. G.  
 "After Apollo," *Spaceflight*, vol. 15, no. 10, October 1973, pp. 362–367.
837. MICHAUD, Michael A. G.  
 "On Communicating with Aliens," *Foreign Service Journal*, vol. 51, no. 6, June 1974, pp. 33–34 and 40.
838. MICHAUD, Michael A., and GATLAND, Kenneth  
 "Signal to Messier 13," correspondence in *Spaceflight*, vol. 17, no. 3, March 1975, p. 119.
839. MIGLIAVACCA, R.  
 "Extraterrestrial Life," *Coelum*, vol. 37, 1969, pp. 121–124 (in Italian).
840. MILLER, E. C.  
 "Ethics and Space Travel," correspondence in *Spaceflight*, vol. 4, July 1962, p. 139.
841. MILLER, James R.  
 "The Speeded-Up Search for Life in Space," *Reader's Digest*, May 1973, pp. 255–264.
842. MILLER, S. L., and ORGEL, L. E.  
*The Origins of Life on Earth*, Prentice-Hall, Inc., New York, 1974.
843. MIRO QUESADA, C. F.  
 "Lincos – Cosmic Language," *Bild. Wiss.*, vol. 8, no. 1, 1971, pp. 40–49 (in German).
844. MOFFAT, Samuel, and SHNEOUR, Elie A.  
*Life Beyond the Earth*, The Four Winds Press, New York, 1965.

845. MOLL, H. M.  
 "Bioastronautics and Extraterrestrial Life," NASA TT F-13467, March 1971; translated into English from *Rev. de Aeron. Y Astronautica* (Madrid), vol. 30, no. 358, September 1970, pp. 663–673.
846. MOLSKI, J.  
 "Visits from Space," *Astronautyka*, no. 2, 1976, pp. 10–16 (in Polish).
847. MOLTON, P. M.  
 "Exobiology, Jupiter and Life," *Spaceflight*, vol. 14, no. 6, June 1972, pp. 220–223.
848. MOLTON, P. M.  
 "Extraterrestrial Biology," correspondence in *Spaceflight*, vol. 14, no. 10, October 1972, p. 398.
849. MOLTON, P.  
 "Limitations of Terrestrial Life," *Spaceflight*, vol. 15, no. 1, January 1973, pp. 27–30.
850. MOLTON, P. M.  
 "Terrestrial Biochemistry in Perspective: Some Other Possibilities," *Spaceflight*, vol. 15, no. 4, April 1973, pp. 139–144.
851. MOLTON, P. M.  
 "Is Anyone Out There?" *Spaceflight*, vol. 15, no. 7, July 1973, pp. 246–252.
852. MOLTON, Peter M.  
 "Non-Aqueous Biosystems: The Case for Liquid Ammonia as a Solvent," *JBIS*, vol. 27, no. 4, April 1974, pp. 243–262.
853. MOLTON, P. M.  
 Review of "Human Habitation of the Cosmos" (by Constantine D. J. Generales), *JBIS*, vol. 27, no. 9, September 1974, p. 706.
854. MOLTON, Peter M.  
 "The Multiplicity of Potential Living Systems Based on C.H.O.N.," *JBIS*, vol. 28, no. 6, June 1975, pp. 392–398.
855. MOLTON, P. M.  
 Report on the 4th International Conference on the Origin of Life, Barcelona, Spain, June 25–28, 1973, *JBIS*, vol. 29, no. 2, February 1976, pp. 143–144.
856. MONAD, Jacques  
*Change and Necessity: An Essay on the Natural Philosophy of Modern Biology*, Alfred A. Knopf, New York, 1971 (trans. from the French).
857. MOORE, Aidan  
 "New Frontiers for Man," correspondence in *Spaceflight*, vol. 13, no. 12, December 1971, pp. 478–479.
858. MOORE, Aidan M. G.  
 "The Coup Against Entropy," *Spaceflight*, vol. 18, no. 4, April 1976, pp. 126–129.
859. MOORE, Patrick, and JACKSON, Francis  
 "Planets of Other Stars," in *Life in the Universe*, W. W. Norton Co., Inc., New York, 1962, pp. 106–114.

860. MOORE, Patrick, and JACKSON, Francis  
 "Alien Life," Ch. 9, and "Summary of Present Position," Ch. 10, in *Life in the Universe*, W. W. Norton Co., Inc., New York, 1962, pp. 115–128.
861. MOORE, P., and JACKSON, F.  
*Is the Universe Habitable?* Union gen. eds., Paris, 1963 (in French).
862. MOORE, Patrick, and HARDY, David A.  
*Challenge of the Stars*, Mitchell Beazley, London, and Rand McNally, New York, 1972.
863. MOORE, Patrick  
 "Beyond the Solar System," Ch. 10 in *The Next Fifty Years in Space*, Taplinger Publishing Co., New York, 1976.
864. MORGAN, Michael A., and SILVER, Samuel  
 "Transformation of the Spectrum of a Signal in Communication Between Relativistically Moving Inertial Frames," *IEEE Transactions on Aerospace and Electronic Systems*, AES-10, 1974, pp. 82–93.
865. MORRISON, Philip  
 "Interstellar Communication," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 249–271; *Bull. Phil. Soc. Washington*, vol. 16, 1962, p. 58.
866. MORRISON, Philip  
 "Extraterrestrial Contact," Ch. 16 of *Space Flight Report to the Nation* (Jerry Grey and Vivian Grey, editors), Basic Books, Inc., New York, 1962, pp. 144–158.
867. MORRISON, Philip  
 "Outlook Regarding Interstellar Communication," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 316–317.
868. MORRISON, Philip  
 "Listening for Life on Other Worlds," *Boston Evening Globe*, Wednesday, September 29, 1971; "But It Was No Science Fiction Convention," *Tech. Talk*, published at MIT, vol. 16, no. 12, September 22, 1971.
869. MORRISON, Philip, and McNEILL, W. H.  
 "The Consequences of Contact," in *Communication with Extraterrestrial Intelligence* (Carl Sagan, editor), MIT Press, Cambridge, Mass., 1973, pp. 333–349.
870. MORRISON, Philip  
 "Conclusion: Entropy, Life and Communication," Ch. 10 of *Interstellar Communication: Scientific Perspectives*, by Cyril Ponnampetuma and A. G. W. Cameron, Houghton Mifflin Co., Boston, 1974, pp. 168–186.
871. MORRISON, Philip  
 Review of *The Galactic Club: Intelligent Life in Outer Space* (by Ronald L. Bracewell), *Scientific American*, vol. 232, no. 5, May 1975, p. 117.
872. MORRISON, Philip  
 "Viking, Life, and a Search for Signals from the Stars," *Astronautics and Aeronautics*, vol. 14, July-August 1976, pp. 65–67.
873. MORRISON, Philip and Phylis  
 Review of *The Ancient Visitors* (by Daniel Cohen), *Scientific American*, vol. 235, no. 6, December 1976, p. 141.

874. MOSELEY, E. L.  
 "Are There Creatures Like Ourselves in Other Worlds?" *Scientific American*, vol. 145, November 1931, pp. 308–310.
875. MOTZ, Lloyd  
 "Extra-terrestrial Intelligence and Stellar Evolution," *Institute of the Aerospace Sciences Paper*, no. 63-49, presented at IAS 31st Annual Meeting, New York City, January 21–23, 1963.
876. MOTZ, L.  
 "Intelligent Life Beyond the Solar System," *Signal*, vol. 17, no. 5, 1963, p. 75.
877. MOWBRAY, L.  
 "Communication with the Universe and the Universal Language," *Nature-Science Progress*, no. 3334, 1963, pp. 79–86 (in French).
878. MUKHIN, L. M.  
 "Current Position on CETI from the Viewpoint of Biology," International Astronautical Federation, International Astronautical Congress, 23rd, Vienna, Austria, October 8–15, 1972 (in Russian).
879. MUKHIN, L. M.  
 "Status of Biological Aspects of the Modern CETI Problem," *Astronautica Acta*, vol. 18, no. 6, 1973, pp. 451–454.
880. MUKHIN, L. M.  
 "On the Universal Pattern of the Chemical Basis of Living Systems," *Kosmicheskaya Biologiya i Aviakosmicheskaya Medicina*, no. 4, 1974, pp. 78–80 (in Russian).
881. MULLER, H. J.  
 "Life Forms to be Expected Elsewhere Than on Earth," *Spaceflight*, vol. 5, no. 3, May 1963, pp. 74–85.
882. *Mundo Hisp.*  
 "The Stars Are Not Dead," *Mundo Hisp.*, vol. 24, no. 277, 1971, pp. 13–17 (in Spanish).
883. MURCHLAND, Bernard  
 Review of *Persons* (by Roland Puccetti), *Commonweal*, vol. 91, no. 21, February 27, 1970, pp. 592–594.
884. MURRAY, Bruce, and DAVIES, Merton E.  
 "Détente in Space," note on possible U.S.-Soviet joint CETI effort, *Science*, vol. 192, no. 4244, June 11, 1976, p. 1073.
885. MUTSCHALL, Vladimir  
 "Interstellar Communications," *Foreign Science Bulletin*, vol. 1, no. 9, Library of Congress, Washington, D.C., Aerospace Technology Div., September 1965, pp. 56–63 (Soviet approaches to interstellar communication).
886. MUTSCHALL, Vladimir E.  
 "Soviet Long-Range Space-Exploration Programme (Analytical Survey)," Aerospace Technology Div., Library of Congress Report (ATD 66-57), May 13, 1966.
887. MÜÜRSEPP, P.  
 "Our Prospects of Picking-Up Signals from Extra-Terrestrial Beings," *Eesti Loodus*, vol. 10, no. 8, 1967, p. 464 (in Estonian).

888. NASA  
*Extraterrestrial Life: A Bibliography*, Part I: Report Literature (1952–1964), Part II: Published Literature (1900–1964), NASA SP-7015, September 1964 and December 1965.
889. NASA  
 “Is There Life in Outer Space?” NASA TM X-68-82191; Air Force Sys. Comm., Wright-Patterson AFB, Ohio, Foreign Tech. Div.; in its *Aviation and Cosmonautics*, 1966, pp. 129–131.
890. NASA  
 “The Origin and Future of Life,” Theme 12, “Outlook for Space: Report to the NASA Administrator by the Outlook for Space Study Group,” NASA SP-386, 1976, pp. 145–149.
891. National Academy of Sciences Astronomy Survey Committee  
 “Astronomy and Astrophysics for the 1970’s,” 1972, 140 pages.
892. National Astronomy and Ionosphere Center (USA), the staff  
 “The Arecibo Message of November 1974,” *Icarus*, vol. 26, no. 4, December 1975, pp. 462–466.
893. National Space Institute Newsletter  
 “Intelligence . . . Where?” *NSI Newsletter*, vol. 1, no. 3, March 1976, p. 2.
894. National Space Institute Newsletter  
 “Extraterrestrials Accepted by Clergy,” *NSI Newsletter*, vol. 1, no. 12, December 1976, p. 8.
895. *Nature*  
 “Who Watches Whom?” *Nature*, vol. 233, no. 5318, 1971, pp. 295–296.
896. NEURATH, P. W.  
 “Biospheres,” *Annals of the New York Academy of Sciences*, vol. 140, no. 1, 1966, p. 149.
897. NEWBAUER, John  
 “The Way with Astronomy,” *Astronautics and Aeronautics*, vol. 10, no. 7, July 1972, pp. 41 and 55.
898. NEWMAN, James R.  
 Review of *Interstellar Communication* (A. G. W. Cameron, editor), *Scientific American*, vol. 210, February 1964, pp. 141–146.
899. *Newsweek*  
 “Did Life Reach Earth on a Comet’s Bright Trail?” *Newsweek*, vol. 6, December 14, 1935, p. 39.
900. *Newsweek*  
 “Other-Worldly Faith,” *Newsweek*, vol. 51, March 24, 1958, p. 64.
901. *Newsweek*  
 “Do Other ‘Humans’ Live?” *Newsweek*, vol. 52, November 17, 1958, p. 56.
902. *Newsweek*  
 “Missionaries to Space,” *Newsweek*, Vol. 55, February 15, 1960, p. 90.
903. *Newsweek*  
 “The Strange Intruder,” *Newsweek*, vol. 56, July 4, 1960, p. 83.

904. *Newsweek*  
 "Animal, Vegetable, or . . .," *Newsweek*, vol. 56, November 28, 1960, p. 78.
905. *Newsweek*  
 "Other Worlds, Other Beings?" *Newsweek*, October 8, 1962, vol. 60, no. 15, pp. 112–113 and 114–115.
906. *Newsweek*  
 "Me Earthman, You Gasbag," *Newsweek*, vol. 68, August 22, 1966, pp. 88–89.
907. *Newsweek*  
 "Maser Here. Hello, There!" *Newsweek*, vol. 70, September 11, 1967, p. 84.
908. *Newsweek*  
 "Who's Calling, Please?" *Newsweek*, vol. 71, April 15, 1968.
909. *Newsweek*  
 "Nobody There," *Newsweek*, vol. 71, April 22, 1968, p. 63.
910. *Newsweek*  
 "Life Out There," *Newsweek*, vol. 76, December 14, 1970, p. 118.
911. *Newsweek*  
 "Goldmine in the Sky," *Newsweek*, vol. 77, April 26, 1971, p. 56.
912. *New Yorker*  
 "Metalaw," *New Yorker*, Vol. 32, December 29, 1956, p. 19.
913. *New York Times*  
 "Life on Other Planets," *New York Times*, Section IV, July 12, 1959, p. 9.
914. *New York Times*  
 "Soyiet Is Told Planets Have Beings Who Think," *New York Times*, February 21, 1960, p. 7.
915. *New York Times*  
 "Earth to 'Listen' for Other World," *New York Times*, April 3, 1960, p. 30.
916. *New York Times*  
 "Big Radio Ear Listens for Planets' Signals," *New York Times*, April 5, 1960, p. 13.
917. *New York Times*  
 "'Ear' Toward Space," *New York Times*, Section IV, April 17, 1960, p. 7.
918. *New York Times*  
 "Habitable Shells Pictured in Stars," *New York Times*, June 3, 1960, p. 11.
919. *New York Times*  
 "Mankind is Warned to Prepare for Discovery of Life in Space," *New York Times*, December 15, 1960, p. 16.
920. *New York Times*  
 "Life Beyond Our Planet," *New York Times*, editorial, December 16, 1960, p. 32.
921. *New York Times*  
 "Listening for Life on Other Worlds," *New York Times*, Section XII, October 8, 1961, p. 9.

922. *New York Times*  
 "Life Elsewhere?" *New York Times*, Section IV, October 15, 1961, p. 7.
923. *New York Times*  
 "A New Look at Space and Time," *New York Times*, editorial, February 5, 1962.
924. *New York Times*  
 "Prize Offered for Talk with Another Planet," *New York Times*, October 9, 1963, p. 11.
925. *New York Times*  
 "Soviet Writers Say Earth has Received Signals from Space," *New York Times*, March 21, 1964, p. 4.
926. *New York Times*  
 "Signal from Space?" *New York Times*, editorial, April 13, 1965, p. 36.
927. *New York Times*  
 "Briton Asserts Man May Steer Planets," *New York Times*, June 5, 1965, p. 12.
928. *New York Times*  
 "Soviet Scientists Propose an International Programme," *New York Times*, February 3, 1966, p. 2.
929. *New York Times*  
 "A \$3-Billion Radio Telescope Urged for Exploration of Space," *New York Times*, March 23, 1966, p. 33.
930. *New York Times*  
 "Life On Other Planets Is Called Compatible with Jewish Ideas," *New York Times*, April 10, 1966, p. 36.
931. *New York Times*  
 "World Poll Finds Wide Belief in Life on Other Planets," *New York Times*, Section 1, June 13, 1971.
932. NICOLSON, Iain K. M.  
 "Aspects of Some Problems Concerned with the Construction of Dyson Spheres," Appendix 3 in *The Next Ten Thousand Years* (by Adrian Berry), New American Library, New York, 1974, pp. 173–181.
933. NIEMAN, H. W., and NIEMAN, C. W.  
 "What Shall We Say to Mars?" *Scientific American*, vol. 122, no. 12, March 20, 1920, pp. 298 and 312.
934. NIMOY, Leonard  
 "Conversations with Mr. Spock," in *Extraterrestrial Intelligence: The First Encounter* (James Christian, editor), Prometheus Books, Buffalo, New York, 1976, pp. 87–98.
935. NOE, Stephen  
 Correspondence in *Analog*, vol. 86, no. 3, November 1970, pp. 171–172.
936. OAKLEY, C. O.  
 "Math — Our Link to Space People," *Science Digest*, vol. 49, June 1961, pp. 7–13.
937. OBERG, James E.  
 Review of *The Next Ten Thousand Years* (by Adrian Berry), *Astronomy*, vol. 3, no. 12, December 1975, p. 40.
938. O'BRIEN, Katharine  
 "Hello Out There (Project Ozma)," poem in *Science*, vol. 131, no. 3408, April 22, 1960, p. 1263.



939. O'BRIEN, Robert  
 "Somebody Up There Like Us," *Esquire*, vol. 60, December 1963, pp. 185-187 and 232.
940. OEFNER, George  
 "Lucky Number?" correspondence in *Spaceflight*, vol. 18, no. 4, April 1976, p. iii; vol. 18, no. 3, p. iii.
941. O'LEARY, B. T.  
 "On the Occurrence and Nature of Planets Outside the Solar System," *Icarus*, vol. 5, 1966, pp. 419-436.
942. OLIVER, B. M.  
 "Interstellar Communication," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 294-305; *1962 IRE International Convention Record*, vol. 10, part 8, March 26-29, 1962, pp. 34-39.
943. OLIVER, B. M.  
 "First Picture from Another Planet," *Student Quarterly and EE Digest*, September 1962, pp. 48-53.
944. OLIVER, B. M.  
 "Radio Search for Distant Races," *International Science and Technology*, October 1962, pp. 55-60 and 96.
945. OLIVER, B. M.  
 "Some Potentialities of Optical Masers," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 207-222; *Proc. IRE*, vol. 50, 1962, pp. 135-141.
946. OLIVER, B. M., and BILLINGHAM, John (Project Co-Directors)  
*Project Cyclops: A Design Study of a System for Detecting Extraterrestrial Intelligent Life*, prepared under Stanford/NASA/Ames Research Center 1971 Summer Faculty Fellowship Programme in Engineering Systems Design, NASA CR 114445.
947. OLIVER, B. M.  
 "The Search for Extraterrestrial Intelligence," *Mercury*, vol. 2, no. 2, 1973, pp. 11-12.
948. OLIVER, B. M.  
 "Project Cyclops Study: Conclusions and Recommendations," *Icarus*, vol. 19, no. 3, 1973, pp. 425-428.
949. OLIVER, B. M.  
 "State of the Art in the Detection of Intelligent Extraterrestrial Signals," *Astronautica Acta*, vol. 18, no. 6, December 1973, pp. 431-439.
950. OLIVER, Bernard M.  
 "Technical Considerations in Interstellar Communication," Ch. 9 of *Interstellar Communication: Scientific Perspectives*, by Cyril Ponnamperna and A. G. W. Cameron, Houghton Mifflin Co., Boston, 1974, pp. 141-167.
951. OLIVER, Bernard M.  
 "The Search for Extraterrestrial Intelligence," *Engineering and Science* (California Institute of Technology), vol. 28, no. 2, December 1974-January 1975, pp. 7-11.
952. OLIVER, B. M.  
 "Proximity of Galactic Civilizations," *Icarus*, vol. 25, no. 2, June 1975, pp. 360-367.

953. OLIVER, B. M.  
Review of *The Galactic Club* (by R. N. Bracewell), *American Scientist*, vol. 63, no. 6, November-December 1975, p. 698.
954. OLIVER, B. M.  
"The Rationale for the Water Hole," Proceedings of the 27th International Astronautical Federation Meeting, Anaheim, California, October 10-16, 1976, IAF Paper IAF-A-76-32.
955. OPARIN, A. I.  
*Life: Its Nature, Origin and Development*, Oliver and Boyd, London, 1961.
956. OPARIN, A., and FESENKOV, V.  
*Life in the Universe*, Twayne Publishers, New York, 1961.
957. OPARIN, A.  
"Universe and Life," *Priroda*, no. 7, 1961, pp. 5-12 (in Russian).
958. OPARIN, A. I.  
"The Life in the Universe," in *Nauka i Technika*, vol. 5, 1962, pp. 38-40 (in Russian).
959. OPARIN, A. I.  
"Life in the Universe," *Priroda*, no. 2, 1963, pp. 14-21 (in Russian).
960. OPARIN, A.  
"The Origin of Life in Space," *Space Science Reviews*, vol. 3, no. 1, 1964, pp. 5-26.
961. OPARIN, A. I.  
"Genesis of Life on and Beyond the Earth," in *Extraterrestrial Life and Its Detection Methods* (A. A. Imshenetskii, editor), 1970, pp. 16-27.
962. OPARIN, A.  
"Did Life Come From Outer Space?" *Spaceflight*, vol. 17, no. 6, June 1975, p. 214.
963. OPARIN, A. I.  
"Evolution of the Concepts of the Origin of Life," *Origins of Life*, vol. 7, no. 1, January 1976, pp. 3-8.
964. ÖPIK, E. J.  
"Life and Its Evolution from an Astronomical Viewpoint," *Irish Astronomical Journal*, vol. 2, no. 1, 1952, pp. 9-20.
965. ÖPIK, E. J.  
"Stellar Planets and Little Dark Stars as Possible Seats of Life," *Irish Astronomical Journal*, vol. 6, 1964, p. 290.
966. ÖPIK, E. J.  
"Is the Sun Habitable?" *Irish Astronomical Journal*, vol. 7, no. 2-3, 1965, pp. 87-90.
967. ÖPIK, E. J.  
"Life and Intelligence in the Universe: Bottomless Speculations," *Irish Astronomical Journal*, vol. 8, 1967, p. 128.

968. OPIK, E. J.  
 "Our Cosmic Destiny," *Irish Astronomical Journal*, vol. 11, no. 4, 1973, pp. 113–124.
969. ORDWAY, Frederick I., III, GARDNER, James P., and SHARPE, Mitchell R., Jr.  
 "Life Outside the Solar System," in *Basic Astronautics*, Prentice-Hall Inc., Englewood Cliffs, N.J., 1962.
970. ORDWAY, Frederick I., III, GARDNER, James P., SHARPE, Mitchell R., Jr., and WAKEFORD, Ronald C.  
 "Beyond the Solar System," Ch. 8 of *Applied Astronautics*, Prentice-Hall, Inc., Englewood Cliffs, N.J., 1963.
971. ORDWAY, Frederick I., III  
*Life in Other Solar Systems*, E. P. Dutton and Co., Inc., New York, 1965.
972. ORDWAY, Frederick I., III  
 "Some Implications of Extrasolar Intelligence," *Annals of the New York Acad. of Sciences (Planetology and Space Mission Planning)*, vol. 140, art. 1, December 16, 1966, pp. 653–658.
973. ORGEL, L. E.  
 "Reply: Comments on 'Directed Panspermia' and 'Sea Water and the Origins of Life'," *Icarus*, vol. 21, 1974, p. 518.
974. ORHAUG, T.  
 "Interstellar Communication," *Popul. Astr. T.*, vol. 46, no. 3-4, 1965, pp. 135–145 (in Swedish).
975. ORO, J., MILLER, S. L., PONNAMPERUMA, C., and YOUNG, R. S. (editors)  
*Cosmochemical Evolution and the Origin of Life*, vols. 1 and 2, Proceedings of the 4th International Conference on the Origin of Life, Barcelona, Spain, June 25–28, 1973, D. Reidel Publishing Co., 1974.
976. OSMUNDTSEN, John A.  
 "Space-Bug Origin of Life Ruled Out," *New York Times*, December 28, 1961, p. 31.
977. OSTRICKER, Alicia  
 "What If We're Still Scared, Bored and Broke?" *Esquire*, vol. 80, no. 6, December 1973, pp. 238–240, 328, and 330.
978. OVENDEN, Michael W.  
 "Extra-Solar Planets," in "Recent Development in Astronomy," *JBIS* vol. 7, no. 2, March 1948, pp. 78–80.
979. OVENDEN, Michael W.  
*Life in the Universe: A Scientific Discussion*, Doubleday, New York, 1962, 160 p.
980. OZICK, C.  
 "If You Can Read This, You Are Too Far Out," *Esquire*, vol. 79, January 1973, pp. 74 and 78.
981. PACE, G. W., and WALKER, J. C. G.  
 "Time Markers in Interstellar Communication," *Nature*, vol. 254, April 3, 1975, pp. 400–401.
982. PAGE, Thornton, and PAGE, Lou Williams  
 "Signaling the Inhabitants of Other Planets," in *The Origin of the Solar System*, Macmillan Company, New York, 1966, pp. 292–293 (concerning Nikola Tesla in *The Sky*, October 1937).

983. PAGE, Thornton, and PAGE, Lou Williams  
 "Life in the Universe," in *The Origin of the Solar System*, Macmillan Co., New York, 1966, p. 176 (Edwin P. Hubble's viewpoint originally in *The Sky*, May 1939).
984. PAGE, Thornton  
 Review of *Flight to the Stars*, (by James Strong), *American Scientist*, vol. 34, no. 8, August 1966, p. 715.
985. PALMER, B., and ZUCKERMAN, B.  
 "OZMA Revisited," *NRAO Observer*, vol. 13, no. 6, December 1972, pp. 26–27.
986. PALUZIE, Borrell A.  
 "Plurality of Inhabited Worlds," *Urania (Spain)*, vol. 54, no. 269-270, 1969, pp. 155–163 (in Spanish).
987. PANOVKIN, B. N.  
 "Extraterrestrial Civilizations and Cybernetics," *Zemlya i Vseennaya*, no. 6, 1969, pp. 2–5 (in Russian).
988. PANOVKIN, B. N.  
 "Extraterrestrial Civilizations – Problems and Considerations," *Priroda*, no. 7, 1971, pp. 56–61 (in Russian).
989. PANOVKIN, B. N.  
 "The Effect of the Space Medium on the Propagation of Radio Signals," in *Extraterrestrial Civilizations* (S. A. Kaplan, editor), NASA TT F-631, trans. from Russian, 1971, pp. 59–68.
990. PANOVKIN, B. N.  
 "Possibility of Using Cybernetic Methods to Search for Highly Organized Systems in the Universe," Vsesoiuzhaia Konferentsiia po Radioastronomii, 7th, Gorki, USSR, June 19–24, 1972, *Radiofizika*, vol. 16, no. 9, 1973, pp. 1452–1454 (in Russian).
991. PANOVKIN, B. I., KUZNETZOV, Y. I., SUKHOTIN, B. V., and MINSKY, M.  
 "Message Contents," in *Communication with Extraterrestrial Intelligence* (Carl Sagan, editor), MIT Press, Cambridge, Mass., 1973, pp. 316–332.
992. PANOVKIN, B. N.  
 "Visitors from Space – Scientific Hypothesis?" *Zemlya i Vseennaya*, no. 6, 1973, pp. 59–62 (in Russian).
993. PANOVKIN, B. N.  
 "On the Methodological Justification of the Extraterrestrial Civilizations Problem," *Chloviyek i Sviyatopoglad*, no. 2, 1974, pp. 169–174 (in Polish).
994. PANOVKIN, B. N.  
 "CETI Seminar," *Zemlya i Vseennaya*, no. 4, 1976, pp. 69–71 (in Russian).
995. PAPROTNY, Zb.  
 "The Radio Search for Extraterrestrial Civilizations," *Problemy*, vol. 26, no. 3, 1970, pp. 167–171 (in Polish).
996. PAPROTNY, Z.  
 "Radioechoes and Lunan's and Shpilevskiy's Probes," *Urania (Poland)*, vol. 46, no. 7, 1975, pp. 206–210 (in Polish).
997. PAPROTNY, Zb.  
 "Few Remarks on the Future of CETI Investigations," *Astronautyka*, no. 5, 1976, pp. 23–24 (in Polish).

998. PARIISKII, Yu. N.  
 "Observations of the Peculiar Radio Sources CTA 21 and CTA 102 at Pulkovo," in *Extraterrestrial Civilizations* (G. M. Tovmasyan, editor), NASA Scientific and Technical Information Facility translation, N67-30333, pp. 30–37.
999. PARKES, A. S., and SMITH, Audrey U.  
 "Space Transport of Life in the Dried or Frozen State," *Brit. Interplanetary Soc. Journal*, vol. 17, part 9, June 1960, pp. 319–320.
1000. PARKS, Louise  
 "Astronautics in Amsterdam: The 25th I.A.F. Congress Reviewed," Subsection: "CETI," *Spaceflight*, vol. 17, no. 2, February 1975, p. 50.
1001. PASCARU, I.  
 "Life in Cosmos," Ed. Tineretului, Bucharest, 1966 (in Romanian).
1002. PAYNE, William T.  
 Review of *Interstellar Communication* (A. G. W. Cameron, editor), *American Journal of Physics*, vol. 32, no. 7, July 1964, p. 573.
1003. PEARMAN, J. P. T.  
 "Extraterrestrial Intelligent Life and Interstellar Communication: An Informal Discussion," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 287–293.
1004. PECKER, J. C.  
 "Planetary Systems in the Universe," *Astronomie*, vol. 72, February 1958, pp. 61–65 (in French).
1005. PEREGO, A.  
 "Rational Life Beyond the Earth," *Theology Digest*, vol. 7, Fall, 1959, pp. 177–178.
1006. PERELMAN, R. G.  
*Goals and Means in the Conquest of Space*, NASA TT F-595, trans. from Russian, 1970, 178 p.
1007. PESEK, R.  
 "Communication with Extraterrestrial Intelligences?" *Vesmir*, vol. 3, 1972, pp. 83–84 (in Czechoslovakian).
1008. PESEK, Rudolf  
 "Survey of CETI Activities up to Present," *Astronautica Acta*, vol. 18, no. 6, December 1973, pp. 411–419.
1009. PESEK, R.  
 "Activity of the IAA CETI Committee in the Period 1965–1976 and CETI Outlook," Proceedings of the 27th International Astronautical Federation Meeting, Anaheim, Calif., October 10–16, 1976, IAF Paper IAF-A-76-28.
1010. PESEK, Rudolf  
 "La Communication avec les Intelligences Extra-Terrestres (CETI), Passé, Présent et Avenir," *L'Aéronautique et L'Astronautique*, no. 59, 1976, pp. 21–24.
1011. PETRAS, E.  
 "Studies on the Problem of Panspermia," *Arbeitsagung über Extraterrestrische Biophysik und Biologie und Raumfahrtmedizin*, 2, October 9–10, 1967, Marburg. Tagungsbericht (H. Bückler, editor), Bundesministerium für Wissenschaftliche Forschung, pp. 135–142 (in German).

1012. PETROVICH, N.  
*Who Are You?* Molodaiya Cavardiya, Moscow, 1970 (in Russian).
1013. PFEIFFER, John, BLUM, Harold F., HALASZ, Michael, ORNSTEIN, Leonard, and SIMPSON, George Gaylord  
 "Life on Other Planets: Some Exponential Speculations," *Science*, vol. 144, no. 3619, May 8, 1964, pp. 613–615.
1014. PHILLIFENT, John T.  
 Correspondence in *Analog*, vol. 85, no. 2, April 1970, pp. 171–174 (concerning evolution to unique 'Man').
1015. PILSKI, A.  
 "Planetary Systems in the Universe," *Urania* (Poland), vol. 45, no. 11, 1974, pp. 322–332 (in Polish).
1016. PIMENTEL, G. C., ATWOOD, K. C., GAFFRON, Hans, HARTLINE, H. K., JUKES, T. H., POLLARD, E. C., and SAGAN, Carl  
 "Exotic Biochemistry in Exobiology," in *Biology and The Exploration of Mars* (C. S. Pittendrigh, Wolf Vishniac, and J. P. T. Pearman, editors), Printing and Publishing Office, National Academy of Sciences, Washington, D.C., 1966, pp. 243–251.
1017. PINNOCK, T. W.  
 Correspondence on "The Challenge of the Spaceship" by Arthur C. Clarke, *JBIS*, vol. 6, no. 4, March 1947, p. 126.
1018. PIRIE, N. W.  
 "A Discussion on Anomalous Aspects of Biochemistry of Possible Significance in Discussing the Origins and Distribution of Life. Introduction," *Proc. of the Royal Society (Biology)*, vol. 171, August 13, 1968, pp. 3–4.
1019. PIRIE, N. W.  
 "Introductory Remarks in A Discussion on the Recognition of Alien Life," *Proceedings of the Royal Society of London Series B*, vol. 189, 1975, pp. 137–274.
1020. PISHI, A.  
 "Planetary Systems in the Universe," *Urania* (Poland), vol. 45, no. 11, 1974, pp. 322–332 (in Polish).
1021. PITTENGER, Norman W.  
 "Christianity and the Man on Mars," *Christian Century*, vol. 73, June 20, 1956, pp. 747–748.
1022. *Playboy*  
 "Stanley Kubrick – A Candid Conversation with the Pioneering Creator of '2001: A Space Odyssey'," *Playboy*, September 1968, pp. 85–96, 158, 180–186, and 190–195.
1023. POHL, Frederik  
 "The Uses of Star Flight," *Annals of the New York Academy of Sciences*, vol. 140, 1966, pp. 667–669.
1024. POKROVSKY, Georgi  
 "Where Should Space Neighbours Be Looked For?" *Space World*, vol. I-7-103, July 1972, pp. 46–47.

1025. POKROVSKY, G. I.  
 "On the Question of Real Existence of Orbital Rings Surrounding Stars in Cosmos," *Trudy Sedmykh Chteniy Posviyashchennykh Razrabotkiye Nauchnovo Naslediya i Razvitiyu Ideiy K.E. Tsiolkovskovo*, Kaluga, 1972, Sekciya "Problemy raketnoy i kosmicheskoy tekhniki," Moscow, 1974, pp. 73–77 (in Russian).
1026. POKROVSKY, G. I.  
 "Two Possible Objects in the Search for Highly Developed Civilizations," *Priroda*, no. 6, 1973, pp. 97–98 (in Russian).
1027. POKSHIVNITSKY, J.  
 "Panspermia and Contemporary Astronomy and Meteoritics," *Postepy Astronomii*, vol. 11, 1963, pp. 221–223 (in Polish).
1028. van der POL, Balth  
 "Short Wave Echoes and the Aurora Borealis," *Nature*, vol. 122, no. 3084, December 8, 1928, pp. 878–879.
1029. PONNAMPERUMA, Cyril  
 "Life in the Universe – Intimations and Implications for Space Science," *Astronautics and Aeronautics*, vol. 3, no. 10, October 1965, pp. 66–69.
1030. PONNAMPERUMA, Cyril  
*Exobiology*, North Holland Publishing Co., Amsterdam, 1972.
1031. PONNAMPERUMA, Cyril  
*The Origins of Life*, Thames and Hudson, London, 1972.
1032. PONNAMPERUMA, Cyril  
 "In the Search for Extraterrestrial Life," *Sciences (Paris)*, vol. 12, January-February 1972, pp. 48–55 (in French).
1033. PONNAMPERUMA, Cyril  
 "Intelligent Life Beyond the Earth," Chapter 16 of *The Origins of Life*, Thames and Hudson, London, 1972, pp. 187–197.
1034. PONNAMPERUMA, Cyril, and CAMERON, A. G. W.  
*Interstellar Communication: Scientific Perspectives*, Houghton Mifflin Co., Boston, Mass., 1974 (a collection of papers by 10 authors).
1035. PONNAMPERUMA, Cyril  
 "The Chemical Basis of Extraterrestrial Life," Ch. 3, of *Interstellar Communication: Scientific Perspectives*, by Cyril Ponnampereuma and A. G. W. Cameron, Houghton Mifflin Co., Boston, 1974, pp. 45–58.
1036. PONS, W.  
 "Life – Terrestrial or Cosmic Principle?" *Weltraumfahrt*, vol. 11, no. 4, 1960, pp. 109–110 (in German).
1037. POSIN, Dan Q.  
 "Other Suns Other Planets – But Is There Other Life?" *Today's Health*, November 1964, pp. 56–59.
1038. POSTGATE, J.  
 "Carbon Monoxide as a Basis for Primitive Life on Other Planets," *Nature*, vol. 226, 1970, p. 978.

1039. POWELL, Conley  
 "Interstellar Flight and Intelligence in the Universe," *Spaceflight*, vol. 14, no. 12, December 1972, pp. 442–447.
1040. PREHODA, Robert W.  
*Designing the Future – The Role of Technological Forecasting*, Chilton Book Company, Philadelphia and New York, 1967.
1041. PREMACK, David  
 "Language in Chimpanzee?" *Science*, vol. 172, 1970, pp. 808–822.
1042. PREMACK, David  
*Intelligence in Ape and Man*, Lawrence Erlbaum Associates, New York, 1976.
1043. PREMACK, David  
 "Language and Intelligence in Ape and Man," *American Scientist*, vol. 64, no. 6, November-December 1976, pp. 674–683.
1044. PRICE, George R.  
 "U.S. Begins Search for Beings in Other Worlds," *Popular Science*, vol. 176, April 1960, pp. 66–69 and 209.
1045. *Priroda*  
 "How Many Inhabited Worlds?" *Priroda*, no. 12, 1963, pp. 80–88 (in Russian).
1046. *Priroda*  
 "Philosophical Speculations Concerning Life on Earth and in Outer Space," trans. from Russian, *Priroda*, no. 11, 1965, pp. 88–101, Joint Publications Research Service, Washington, D.C., JPRS-34259, TT-66-30700.
1047. PROELL, Wayne  
 "A New Map of Solar Space – Part I," *The Journal of Space Flight*, vol. 5, no. 8, Chicago Rocket Society, October 1953.
1048. PROELL, Wayne  
 "The Probability of Planets in Solar Space," *The Journal of Space Flight*, vol. 5, no. 9, Chicago Rocket Society, November 1953, pp. 1–7.
1049. PROELL, Wayne, and BOWMAN, N. J.  
*A Handbook of Space Flight*, Perastadion Press, Chicago, 1958. Characteristics of stars within 5 parsecs of the sun, pp. 156–165 and 179–187.
1050. PRYOR, H.  
 "Earthmen Are the Only Men," *Science Digest*, vol. 55, May 1964, p. 42.
1051. PRYOR, Hubert  
 "Can You Decipher This Interplanetary Message?" *Science Digest*, vol. 60, no. 2, August 1966, pp. 37–38.
1052. PRYOR, Hubert  
 "The Search for Extraterrestrial Life," *Science Digest*, vol. 60, no. 2, August 1966, pp. 28–36 and 39–41.
1053. PUC CETTI, Roland  
*Persons: The Possibility of Intelligent Life in the Universe*, Macmillan, London, 1968.



1054. PURCELL, Edward M.  
 "Radioastronomy and Communication Through Space," in *Brookhaven National Laboratory Lectures in Science – Vistas in Research*, vol. 1, November 1960, pp. 3–13; *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 121–143; USAEC Report BNL-658.
1055. RAIBLE, Daniel C.  
 "Rational Life in Outer Space?" *America*, vol. 103, August 13, 1960, pp. 532–535.
1056. RAIBLE, Daniel C.  
 "Men from Other Planets?" *Catholic Digest*, vol. 25, December 1960, pp. 104–108.
1057. RALL, Y. M.  
 "The Intelligent Inhabitants of the Universe," in *Nauka i Technika*, vol. 2, 1961, pp. 37–40 (in Russian).
1058. RALL, Y. M.  
 "Other Planet's Inhabitants – Look They Like Us?" in *Inhabited Cosmos* (B. P. Konstantinov, and V. D. Pekelis, editors), Nauka, Moscow, 1972, pp. 103–104 (in Russian).
1059. REBANE, K. K.  
 "On the Question of Environment's Protection and of Extraterrestrial Civilizations' Detection," *Publikacii Tartuskoy Astroficheskoy Observatorii*, vol. 40, 1973, pp. 107–111 (in Russian).
1060. RENSAW, C. C. Jr., and DRAKE, F. D.  
 "Is There Life Out There?" interview in *National Wildlife*, vol. 10, October 1972, pp. 50–53.
1061. REUYL, Dirk, and HOLMBERG, Erik  
 "On the Existence of a Third Component in the System 70 Ophiuchi," *Astrophysical Journal*, vol. 97, no. 1, January 1943.
1062. del REY, Lester  
 "Let There be Life," Ch. 18 in *The Mysterious Sky*, Chilton Books, Philadelphia and New York, 1964, pp. 171–177.
1063. del REY, Lester, TENN, William, ANDERSON, Poul, and van VOGT, A. E.  
 "Eight Eyes on Strange New Worlds," *Esquire*, January 1966, pp. 56–59.
1064. RIBERA, A.  
 "Possibility of Life in the Universe," *Metallurgia y Electrica*, vol. 33, no. 379, 1969, pp. 193–198 (in Spanish).
1065. RIBES, J. C., and BIRAUD, F.  
 "Extraterrestrial Civilizations," *Proc. of the Astronomical Society of Australia*, vol. 2, no. 1, July 1971, pp. 11–13.
1066. RICHARDS, G. R.  
 "Planetary Detection from an Interstellar Probe," *JBIS*, vol. 28, no. 8, August 1975, pp. 579–585; also errata in *JBIS*, vol. 29, no. 2, February 1976, p. 144.
1067. RICHARDS, I. R.  
 "A Note on the Evolution of Extraterrestrial Civilizations," *JBIS*, vol. 29, no. 12, December 1976, pp. 823–824.

1068. RIDPATH, Ian  
 "Message to the Stars," *Nature*, vol. 253, no. 5489, January 24, 1975, p. 230.
1069. RIDPATH, Ian  
 "Solar Systems and Life," *Spaceflight*, vol. 17, nos. 8 and 9, August-September 1975, pp. 323–327.
1070. RIDPATH, Ian  
 "Arecibo Message," correspondence in *Spaceflight*, vol. 17, nos. 8 and 9, August-September 1975, p. 343.
1071. RIDPATH, Ian  
*Worlds Beyond: A Report on the Search for Life in Space*, Harper and Row, New York, 1976.
1072. RIGHINI, G.  
 "Communication with Other Worlds," *Bibliogr. Naz. Ital.*, vol. 5, no. 9, 1962, p. 546 (in Italian).
1073. RITNER, Peter  
*The Society of Space*, Macmillan Company, New York, 1961, Chapters 7 and 8.
1074. RIZZO, Patrick V.  
 Review of *Interstellar Communication* (by Cyril Ponnampereuma and A. G. W. Cameron), *Sky and Telescope*, vol. 48, no. 5, November 1974, pp. 319–321.
1075. RIZZO, Patrick  
 Review of *The Galactic Club* (by Ronald Bracewell), *Sky and Telescope*, vol. 50, no. 4, October 1975, pp. 249–251.
1076. ROACH, Franklin  
 "Astronomers' Views on UFO's," Chapter 3 in *UFO's – A Scientific Debate* (Carl Sagan and Thornton Page, editors), W. W. Norton and Company, Inc., New York, pp. 23–33.
1077. ROBERTS, A. W.  
 "Are the Stars Inhabited?" *Scientific American Supplement*, vol. 59, January 14, 1905, pp. 24282–24283.
1078. ROBINSON, G. S.  
 "Ecological Foundations of Haley's Metalaw," *JBIS*, vol. 22, no. 4, August 1969, pp. 266–274.
1079. ROBINSON, L.  
 "Are There Men In Other Worlds?" *Current Literature*, vol. 44, June 1908, pp. 672–677.
1080. ROMAN, Nancy Grace  
 "Planets of Other Suns," *The Astronomical Journal*, vol. 64, no. 1273, October 1959, pp. 344–345.
1081. ROMANA, A.  
 "The Problem of Life Outside the Earth," *Publ. Observ. Ebro. Misc.*, no. 25, 1969, 63 p. (in Spanish).
1082. RORVIK, D. M.  
 "Present Shock," *Esquire*, vol. 78, December 1972, pp. 134, 136, and 138.

1083. ROSENBERG, Paul  
 "Communication with Extraterrestrial Intelligence," *Aerospace Engineering*, vol. 21, no. 8, August 1962, pp. 68–69 and 111.
1084. ROSENBLATT, Frank  
 "A Two-Colour Photometric Method for Detection of Extrasolar Planetary Systems," *Icarus*, vol. 14, no. 1, February 1971, pp. 71–93.
1085. ROSENFELD, Albert  
 "Did Someone 'Out There' Put Us Here?" *Saturday Review/World*, November 20, 1973, p. 59.
1086. ROSS, H. E.  
 "A Contribution to Astrosociology," *Spaceflight*, vol. 6, no. 4, July 1964, pp. 120–124.
1087. ROSS, H. E.  
 "Guidelines to Astrosociology," *Spaceflight*, vol. 18, no. 4, April 1976, p. 135.
1088. ROSS, Monte  
 "Search *via* Laser Receivers for Interstellar Communications," *Proc. IEEE*, vol. 53, November 1965, p. 1780.
1089. ROSS, Monte  
 "Interstellar Communication with Others," in *Laser Receivers* by Monte Ross, John Wiley and Sons Inc., New York, 1966, pp. 383–385.
1090. ROY, A. E.  
 "Baby's First Steps," *Philosophical Journal (U.K.)*, vol. 7, no. 2, 1970, pp. 171–175.
1091. ROYCE, Joseph  
 "Consciousness and the Cosmos," in *Extraterrestrial Intelligence: The First Encounter* (James Christian, editor), Prometheus Books, Buffalo, New York, 1976, pp. 177–196.
1092. RUBLOWSKY, John  
 "Project Ozma," in *Is Anybody Out There?* Walker and Company, New York, 1962.
1093. RUBLOWSKY, J.  
*Life on Other Worlds*, Constable, London, 1964.
1094. RUEDA, A.  
 "Thermodynamics of Thermal Radiation from Stars Photoautotrophs and Biospheres," 6th International Congress on Photobiology, Bochum, West Germany, August 21–25, 1972, *Spcae Life Sciences*, vol. 4, September-December, 1973, pp. 469–489.
1095. RUSSEL, H. N.  
 "Are There Other Habitable Worlds?" *Scientific American*, vol. 132, May 1925, p. 315.
1096. RUSSEL, H. N.  
 "Fading Belief in Life on Other Planets," *Scientific American*, vol. 150, June 1934, pp. 296–297.
1097. RUSSELL, Henry Norris  
 "Anthropocentrism's Demise," *Scientific American*, vol. 169, no. 1, July 1943, pp. 18–19.

1098. RUZIC, Neil P.  
*Where the Winds Sleep* Doubleday and Co., New York, 1970; pertinent section serialized as "The Planets, the Stars," in *Industrial Research*, May 1970, pp. 76–78.
1099. RUZIC, Neil P.  
*Where the Winds Sleep*, Doubleday and Company, New York, 1970; pertinent section serialized as "Friends and Monsters," in *Industrial Research*, May 1970, pp. 79–80.
1100. RYNIN, N. A.  
*Interplanetary Flight and Communication*, vol. 1, no. 2, *Spacecraft in Science Fiction* (fictional account of interplanetary flight and communication), Israel Programme for Scientific Translations Ltd., Jerusalem. Avail. NTIS, sponsored by NASA and NSF. Translation into English of *Mezhplanetnye Soobshcheniya*, vol. 1, no. 2, *Kosmicheskie Korabli*, Leningrad, 1928; NASA TT-F-640.
1101. SABLE, Martin H.  
*UFO Guide: 1947–1967*, Rainbow Press Company, Beverly Hills, California, 1967, containing bibliographies: Flying Saucers, pp. 9–24, Life on Other Planets, pp. 25–65.
1102. SAGAN, Carl  
 "On the Origin and Planetary Distribution of Life," *Radiation Research*, vol. 15, no. 2, 1961, pp. 174–192.
1103. SAGAN, Carl  
 "Direct Contact Among Galactic Civilizations by Relativistic Interstellar Spaceflight," *Planetary Space Science*, vol. 11, 1963, pp. 485–498; reprinted in part in *The Coming of the Space Age* (Arthur C. Clarke, editor), Meredith Press, New York, 1967.
1104. SAGAN, Carl  
 Review of *Interstellar Communication* (A. G. W. Cameron, editor), New York, W. H. Benjamin, Inc., 1963; *Planetary and Space Science*, vol. 12, 1964, p. 259.
1105. SAGAN, C.  
 "Exobiology: a Critical Review," in *Life Sciences and Space Research II*, North-Holland Publ. Company, Amsterdam, 1964, pp. 35–53 (A session of the IV International Space Science Symp. in Warsaw).
1106. SAGAN, Carl  
 "The Quest for Life Beyond the Earth," *Harvard Alumni Bulletin*, vol. 66, 1964, p. 508; *Smithsonian Inst. Ann. Report for 1964, 1965*, p. 279; *Nar en Techniek* (Holland), vol. 36, 1968, p. 204 (in Dutch).
1107. SAGAN, Carl  
 Review of *Habitable Planets for Man* (by Stephen Dole), *Trans. Amer. Geophys. Union*, vol. 45, 1964, p. 666.
1108. SAGAN, Carl, and WALKER, Russell G.  
 "The Infrared Detectability of Dyson Civilizations," *Astrophysical Journal*, vol. 144, no. 3, 1966, pp. 1216–1218.
1109. SAGAN, Carl, and LEONARD, Norton  
 "The Solar System and Beyond," Ch. 8 of *Planets: Life Science Library*, Time, Incorporated, New York, 1966, pp. 176–191.
1110. SAGAN, Carl  
 Review of *Intelligence in the Universe* (by Roger A. McGowan and Frederick I. Ordway, III), *Planetary and Space Science*, vol. 15, 1967, p. 1095.

1111. SAGAN, Carl  
Review of *Man On Another World* (by Gösta Ehrensvar), *Q. Rev. Biol.*, vol. 42, 1967, p. 101.
1112. SAGAN, Carl  
"OH Emission Regions and Extraterrestrial Intelligence," *Astrophysics and Space Science*, vol. 1, 1968, p. 273.
1113. SAGAN, Carl  
"Life on Other Planets," in *International Dictionary of Geophysics* (S. K. Runcorn, editor-in-chief, H. C. Urey, section editor), Pergamon Press, London, 1968.
1114. SAGAN, Carl  
"The Search for Extraterrestrial Intelligence," in *Exobiology* (C. Ponnampereuma, editor), North Holland Publishing Co., Amsterdam, 1970.
1115. SAGAN, Carl, SAGAN, Linda Salzman, and DRAKE, Frank  
"A Message from Earth," *Science*, vol. 175, February 25, 1972, pp. 881–884.
1116. SAGAN, Carl  
"Interstellar Organic Chemistry," *Nature*, vol. 238, July 14, 1972, pp. 77–80.
1117. SAGAN, Carl  
"Life Beyond the Solar System," in *Exobiology*, by Cyril Ponnampereuma, North Holland Publishing Co., Amsterdam, 1972.
1118. SAGAN, Carl  
"UFO's: The Extraterrestrial and Other Hypotheses," in *UFO's: A Scientific Debate* (Carl Sagan and Thornton Page, editors), W. W. Norton and Company, Inc., New York, 1972, pp. 265–275.
1119. SAGAN, Carl  
*Communication with Extraterrestrial Intelligence* (Carl Sagan, editor), MIT Press, Cambridge, Mass., 1973.
1120. SAGAN, Carl, CRICK, F. H. C., and MUKHIN, L. M.  
"Extraterrestrial Life," in *Communication with Extraterrestrial Intelligence* (Carl Sagan, editor), MIT Press, Cambridge, Mass., 1973, pp. 42–67.
1121. SAGAN, Carl, MAROV, M. Y., LEE, R. B., von HOERNER, S., KARDASHEV, N. S., and IDLIS, G. M.  
"The Number of Advanced Galactic Civilizations," in *Communication with Extraterrestrial Intelligence* (Carl Sagan, editor), MIT Press, Cambridge, Mass., 1973, pp. 164–187.
1122. SAGAN, Carl  
"On the Detectivity of Advanced Galactic Civilizations," *Icarus*, vol. 19, no. 3, July 1973, pp. 350–352; *Communication with Extraterrestrial Intelligence* (Carl Sagan, editor), MIT Press, Cambridge, Mass., 1973, pp. 365–370.
1123. SAGAN, Carl  
*The Cosmic Connection: An Extraterrestrial Perspective*, Doubleday, New York, 1973.
1124. SAGAN, Carl  
"Organic Chemistry and Biology of the Interstellar Medium," in *Molecules in the Galactic Environment* (M. Gordon and L. Snyder, editors), New York, John Wiley, 1973, pp. 451–466.

1125. SAGAN, Carl, and KHARE, B.  
 "Experimental Interstellar Organic Chemistry," in *Molecules in the Galactic Environment* (M. Gordon and L. Snyder, editors), John Wiley, New York, 1973, pp. 451-466.
1126. SAGAN, Carl  
 "Hooking Up With the Universe," *Intellectual Digest*, vol. 3, May 1973, pp. 36-37.
1127. SAGAN, Carl  
 "The Ancient and Legendary Gods of Old," *Natural History*, vol. 82, no. 6, June-July 1973, pp. 92-93.
1128. SAGAN, Carl  
 "Experiments in Utopias," *Analog*, vol. 92, no. 2, October 1973, pp. 5-8 and 177-178.
1129. SAGAN, Carl  
 "The Starfolk," *Science News*, vol. 104, no. 18, November 3, 1973, pp. 282-284.
1130. SAGAN, Carl  
 "A Message from Earth," *Astronomy*, vol. 1, no. 5, December 1973, pp. 4-8.
1131. SAGAN, Carl  
 "The Galactic Telephone," *Harpers*, vol. 247, no. 1483, December 1973, p. 7.
1132. SAGAN, Carl  
 "An Introduction to the Problem of Interstellar Communication," Ch. 1 of *Interstellar Communication: Scientific Perspectives*, by Cyril Ponnampertuma and A. G. W. Cameron, Houghton Mifflin Co., Boston, 1974, pp. 1-24.
1133. SAGAN, Carl  
 "The Origin of Life in a Cosmic Context," *Origins of Life*, vol. 5, July-October 1974, pp. 497-505.
1134. SAGAN, Carl  
 "Funny, You Don't Look Human," *Boston Globe Sunday Magazine*, January 6, 1974, pp. 16-18.
1135. SAGAN, Carl  
 "Someone Out There is Listening," *T.V. Guide*, June 1, 1974, pp. 4-5.
1136. SAGAN, Carl  
 "Extraterrestrial Life: An Idea Whose Time Has Come," *Science Digest*, vol. 76, no. 1, July 1974, pp. 54-58.
1137. SAGAN, Carl  
*Other Worlds*, Bantam, New York, 1975.
1138. SAGAN, Carl  
 "The Recognition of Extraterrestrial Intelligence," *Proceedings of the Royal Society of London Series B*, vol. 189, 1975, pp. 143-153.
1139. SAGAN, Carl  
 Announcement and review of JBIS Interstellar Studies Issues, *Icarus*, vol. 24, no. 1, January 1975, p. 140.

1140. SAGAN, Carl, and DRAKE, Frank  
 "The Search for Extraterrestrial Intelligence," *Scientific American*, vol. 232, no. 5, May 1975, pp. 80–89.
1141. SAGAN, Carl, McCONNELL, J. V., SOFFEN, G., and CHRISTIAN, J.  
 "Life on Mars: What Could It Mean?" *Science News*, vol. 109, June 5, 1976, pp. 378–379.
1142. SAGAN, Carl, and LEDERBERG, J.  
 "The Prospects for Life on Mars: A Pre-Viking Assessment," *Icarus*, vol. 28, July 1976.
1143. SAGAN, Carl  
 An Interview conducted by Joseph F. Goodavage, *Analog*, vol. 96, no. 8, August 1976, pp. 92–101.
1144. SAKLAD, James R.  
 "Alien Beasts," correspondence in *Spaceflight*, vol. 17, no. 11, November 1975, p. 408.
1145. SALISBURY, F. D.  
 "Quest for Life in the Universe," *Universitas*, vol. 22, no. 2, 1967, p. 161 (in German).
1146. SANDAGE, Allan  
 "The Stars Within 15 Parsecs of the Sun," in *Stellar Populations* (D. J. K. O'Connell, editor), Interscience Publishers, Inc., New York, 1958, pp. 287–302.
1147. SASSOON, George  
 "A Correlation of Long-Delay Radio Echoes and the Moon's Orbit," *Spaceflight*, vol. 16, no. 7, July 1974, pp. 258–264.
1148. SASSOON, G. T.  
 "Artifact Hypothesis Not Disproved," correspondence in *Spaceflight*, vol. 16, no. 10, October 1974, p. 398.
1149. *Savremena tehnika*  
 "Signals from the Universe," *Savremena tehnika*, vol. 16, no. 2, 1965, pp. 72–73 (in Serbo-Croatian).
1150. SCHEFFLER, H.  
 "Are We Alone in the Universe? Problem of Life on Other Worlds," *El Universo*, no. 32, pp. 75–122 (in Spanish).
1151. SCHIFFMANN, M. W.  
 "OZMA Revisited," *Asterisks* (bulletin of the Amateur Astronomers Association, New York City), no. 19, 1974, pp. 10–11.
1152. SCHLESINGER, Frank  
 "Photographic Determinations of Stellar Parallax Made with the Yerkes Refractor," three articles in *Astrophysical Journal*, vol. 32, 1910, pp. 372–387; vol. 33, 1911, pp. 8–27; vol. 33, 1911, pp. 161–173.
1153. SCHMECK, Harold M. Jr.  
 "Life Held Likely on Other Worlds," *New York Times*, March 2, 1961, p. 29.
1154. SCHMECK, Harold M. Jr.  
 "Space 'Centaur' Thought to Exist," *New York Times*, July 4, 1961, p. 21.
1155. SCHMIDT, K. H.  
 "Life on Distant Planets?" *Urania (GDR)*, vol. 24, no. 12, 1961, pp. 462–466 (in German).

1156. SCHMIDT, K. H.  
 "Extraterrestrial Life from the Astrophysical Point of View," *Sterne*, vol. 51, no. 2, 1975, pp. 82–90 (in German).
1157. SCHMUCKER, R. H.  
 "Extraterrestrial Intelligence – Considerations Regarding Its Existence and the Establishment of Contact," *Astronautik*, vol. 13, May-June 1976, pp. 34–36 (in German).
1158. SCHWARTZ, Mortimer  
 "Ethics and Extraterrestrial Life," correspondence in *Spaceflight*, vol. 5, no. 1, January 1963, p. 36.
1159. SCHWARTZ, R. N., and TOWNES, C. H.  
 "Interstellar and Interplanetary Communication by Optical Masers," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 223–231; *Nature*, vol. 190, 1961, pp. 205–208.
1160. *Science*  
 "Soviet-American Conference Urges Search for Other Worlds," *Science*, vol. 174, no. 4005, October 8, 1971, pp. 130–131.
1161. *Science Digest*  
 "Are There Spores in Space?" *Science Digest*, vol. 48, August 1960, inside back cover.
1162. *Science Digest*  
 "New Evidence of Intelligent Life on Other Worlds," *Science Digest*, vol. 57, February 1965, pp. 8–10.
1163. *Science Digest*  
 "Life Beyond The Earth?" *Science Digest*, vol. 69, March 1971, p. 31.
1164. *Science Digest*  
 "More Evidence for Life in Space," *Science Digest*, vol. 70, September 1971, pp. 30–31.
1165. *Science et Avenir*  
 "New Wavelength for Finding Extra-Terrestrials," *Science et Avenir*, no. 341, 1975, p. 629 (in French).
1166. *Science News*  
 "Lust for Life," *Science News*, vol. 93, no. 2, January 13, 1968, p. 29.
1167. *Science News*  
 "Is Anybody Out There Sending?" *Science News*, vol. 100, no. 14, October 2, 1971, pp. 223–224.
1168. *Science News*  
 "Pioneer F's Interstellar Message to the Future," *Science News*, vol. 101, no. 9, February 26, 1972, p. 135.
1169. *Science News*  
 "Did the Seeds of Life Come From Space?" *Science News*, vol. 101, April 8, 1972, p. 231.
1170. *Science News*  
 "Chances of Contacting Extraterrestrial Civilizations Seem Poor," *Science News*, vol. 103, February 24, 1973, p. 118.
1171. *Science News*  
 "Search for Laser Signals from Elsewhere," *Science News*, vol. 107, no. 20, May 17, 1975, p. 318.



1172. *Science News*  
 "Six Searches for Extraterrestrial Civilizations," *Science News*, vol. 109, no. 9, February 28, 1976, pp. 132–133.
1173. *Science News Letter*  
 "Many Habitable Worlds," *Science News Letter*, vol. 47, no. 26, June 30, 1945, p. 402.
1174. *Science News Letter*  
 "Man Not Alone in Cosmos," *Science News Letter*, vol. 70, no. 11, September 15, 1956, p. 163.
1175. *Science News Letter*  
 "Meeting Extraterrestrials," *Science News Letter*, vol. 70, no. 24, December 15, 1956, p. 382.
1176. *Science News Letter*  
 "Life Supporting Planets," *Science News Letter*, vol. 73, no. 21, May 24, 1958, p. 322.
1177. *Science News Letter*  
 "Suspect 'Human' Life on Millions of Planets," *Science News Letter*, vol. 74, no. 21, November 22, 1958, p. 328.
1178. *Science News Letter*  
 "Spontaneous Life Theory Advanced by Biologist," *Science News Letter*, vol. 77, no. 10, March 5, 1960, p. 150.
1179. *Science News Letter*  
 "Shells Around Suns May Have Been Built," *Science News Letter*, vol. 77, no. 25, June 18, 1960, p. 389.
1180. *Science News Letter*  
 "Universal Decoding Plan for Interstellar Messages," *Science News Letter*, vol. 78, no. 17, October 22, 1960, p. 265.
1181. *Science News Letter*  
 "Silicon-Based Life Possible," *Science News Letter*, vol. 78, no. 22, November 26, 1960, p. 342.
1182. *Science News Letter*  
 "Signals from Space," *Science News Letter*, vol. 79, no. 19, May 13, 1961, p. 295.
1183. *Science News Letter*  
 "Space Men Predicted," *Science News Letter*, vol. 80, no. 3, July 15, 1961, p. 35.
1184. *Science News Letter*  
 "Man Not in Space," *Science News Letter*, vol. 80, no. 16, October 14, 1961, pp. 251–252.
1185. *Science News Letter*  
 "Ecosphere May Shape Life on Distant Planets," *Science News Letter*, vol. 80, no. 17, October 21, 1961, p. 272.
1186. *Science News Letter*  
 "Search for Civilisations," *Science News Letter*, vol. 80, no. 26, December 23, 1961, p. 414.
1187. *Science News Letter*  
 "Earth Life Not from Space," *Science News Letter*, vol. 81, no. 1, January 6, 1962, p. 4.

1188. *Science News Letter*  
 "Life Beyond Earth Sought: Project Ozma," *Science News Letter*, vol. 84, no. 11, September 14, 1963, p. 166.
1189. *Scientific American*  
 "Spacious Talk," *Scientific American*, vol. 202, no. 1, 1960, pp. 74, 76, and 79.
1190. *Scientific American*  
 "Ozmology," *Scientific American*, vol. 203, no. 5, November 1960, pp. 97–98.
1191. *Scientific American*  
 "Two Planet Solar System," *Scientific American*, vol. 220, no. 6, June 1969, p. 58.
1192. *Scientific American*  
 "The Earth: Zoo or Petri Dish," *Scientific American*, vol. 229, no. 4, October 1973, p. 51.
1193. *Scientific American*  
 "The Water Hole," *Scientific American*, vol. 230, no. 1, January 1974, p. 52.
1194. SCIENTIFIC COUNCIL ON THE PROBLEM AREA OF RADIO ASTRONOMY, ACADEMY OF SCIENCES OF THE USSR  
 "USSR Research Programme on the Problem of Communication with Extraterrestrial Civilizations," *JBIS*, vol. 28, no. 11, November 1975, pp. 751–760; *Soviet Astronomy*, vol. 18, no. 5, March-April 1975, pp. 669–675.
1195. SEAGRAM, Joseph E., & Sons Inc.  
*Life in Other Worlds: A Symposium*, sponsored by Joseph E. Seagram & Sons Inc., on the 10th Anniversary of the Samuel Bronfman Foundation, 1961, including J. R. Killian, Jr., G. B. Kistiakowsky, D. N. Michael, Harlow Shapley, Otto Struve, Arnold Toynbee, Walter Cronkite, Chet Huntley, and William L. Laurence.
1196. SEARLE, G. M.  
 "Is There a Companion World to Our Own?" *Catholic World*, vol. 55, September 1892, pp. 860–878.
1197. SEE, T. J. J.  
 "Recent Discoveries Respecting the Origin of the Universe," *Atlantic Monthly*, vol. 80, no. 480, Oct. 1897, pp. 484–491.
1198. SEGAL, G.  
 "Cosmical ESPERANTO," in *Technika Molodyozhi*, vol. 1, 1964, pp. 2–3 (in Russian).
1199. SEKANINA, Zd.  
 "Communication with Intelligent Beings on Other Planets," *Rishe Huezd*, vol. 45, no. 3, 1964, pp. 41–42 (in Czechoslovakian).
1200. SEN, H. K.  
 "Non-Solar Planetary Systems," *Nature*, vol. 152, no. 3864, November 20, 1943, pp. 601–602.
1201. SENDY, Jean  
*Those Gods Who Made Heaven and Earth*, Biblical evidence for alien visitors to Earth, before the dawn of history, Berkley Publishing Corporation, New York, 1972, translated by Lowell Blair.
1202. *Senior Scholastic*  
 "Project Ozma Off," *Senior Scholastic* (teacher's edition), vol. 78, April 26, 1961, p. 20.

1203. SERDOBOLSKII, V. I.  
 "The Problem of the Distribution of Intelligent Life in the Universe," in *Physics, Mathematics, Mechanics; Proc. of the 1st Moscow Conference of Young Scientists* (A. In. Ishlinskii and V. A. Petukov, editors), 1968, pp. 145–154 (in Russian).
1204. SERKOWSKI, K.  
 "Preparation to a Search for Planets Around Solar-Type Stars Using a Polarimetric Radial Velocity Meter," *Bulletin of the American Astronomical Society*, vol. 5, 1973, p. 418.
1205. SERKOWSKI, K.  
 "Feasibility of a Search for Planets Around Solar-Type Stars with a Polarimetric Radial Velocity Meter," *Icarus*, vol. 27, no. 1, January 1976, pp. 13–24.
1206. SERKOWSKI, K.  
 "New Methods for Measuring Radial Velocities — Redshifts of Clusters of Galaxies and Search of Planets Around Stars," *Postepy Astronomii*, vol. 24, January-March 1976, pp. 3–13 (in Polish).
1207. SERVISS, G. P.  
 "Are There Planets Among the Stars?" *Popular Science*, vol. 52, December 1897, pp. 171–177.
1208. SEYBOLD, P. G.  
 "A Survey of Exobiology," Rand Corporation RM-3178-PR, Santa Monica, Calif., 1963, 48 p. (N63-13966).
1209. SHAPLEY, H.  
*Of Stars and Men*, Beacon Press, Boston, 1958.
1210. SHAPLEY, Harlow  
 "Extraterrestrial Life," *Astronautics*, vol. 5, April 1960, pp. 32–33 and 50.
1211. SHAPLEY, Harlow  
 "Life on Unseen Planets," *Science Digest*, vol. 53, February 1963, pp. 59–64; *The American Scholar*, United Chapters of Phi Beta Kappa, 1962.
1212. SHAPLEY, H.  
 "Crusted Stars and Self-heating Planets," *Matematica Y Fisica Teorica*, Ser. A, vol. 14, no. 1-2, 1962, pp. 69–75.
1213. SHAPLEY, Harlow  
 "Concerning Life on Stellar Surfaces," in *The Scientist Speculates* (I. J. Good, editor), William Heinemann, Ltd., London, 1962, pp. 225–233.
1214. SHAPLEY, Harlow  
*The View from a Distant Star*, Dell Publishing Co., Inc., New York, 1967.
1215. SHATTOCK, S. G., and DUDGEON, L. S.  
 "Certain Results of Drying Non-Sporing Bacteria in a Charcoal Liquid Air Vacuum," *Proceedings of the Royal Society of London Series B*, vol. 85, no. B577, May 9, 1912, pp. 127–138.
1216. SHEAFFER, Robert  
 "Project Ozma II," *Spaceflight*, vol. 17, no. 12, December 1975, pp. 421–423.

1217. SHEAFFER, Robert  
 "NASA Contemplates Radio Search for Extra-Terrestrial Intelligence," *Spaceflight*, vol. 18, no. 10, October 1976, pp. 343–347.
1218. SHKLOVSKII, I. S.  
 "Is Communication Possible with Intelligent Beings on Other Planets?" in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 5–16; *Priroda*, no. 7, 1960, p. 21; translated from Russian and issued as Report M-MS-IS-61-2 by the George C. Marshall Space Flight Center, Huntsville, Ala.
1219. SHKLOVSKII, I. S.  
 "Multiplicity of Inhabited Worlds and the Problem of Interstellar Communications," in *Extraterrestrial Civilizations* (G. M. Tovmasyan, editor), Proceedings of the First All-Union Conference on Extraterrestrial Civilizations and Interstellar Communication (Byurakan, USSR, May 20–23, 1964), NASA Scientific and Tech. Information Facility translation, N67-30331, pp. 5–13.
1220. SHKLOVSKII, I. S., and SAGAN, Carl  
*Intelligent Life in the Universe*, Holden-Day, Inc., San Francisco, 1966.
1221. SHKLOVSKII, I. S.  
 "Reflections on Astronomy, Its Correlation with Physics and Technology and Its Influence on Contemporary Science," *Voprosy Filosofii*, no. 5, 1969, pp. 52–62 (in Russian).
1222. SHKLOVSKII, I. S., PLATT, J. R., STENT, G., MINSKY, M., and GOLD, T.  
 "The Lifetimes of Technical Civilisations," in *Communication with Extraterrestrial Intelligence* (Carl Sagan, editor), MIT Press, Cambridge, Mass., 1973, pp. 147–163.
1223. SHKLOVSKII, I. S.  
*Universe – Life – Mind*, Nauka, Moscow, 1973, 3rd edition (in Russian).
1224. SHKLOVSKII, I. S.  
 "Problem of Extraterrestrial Civilizations and Its Philosophical Aspects," *Chloviyek i Sviatopoglad*, no. 2, 1974, pp. 109–138, translated into Polish from *Voprosy Filosofii*, no. 2, 1973, pp. 76–93 (in Russian).
1225. SHKLOVSKII, I. S.  
*The Universe, Life, Reason*, 4th edition, Izdatel'stvo Nauka, Moscow, 1976 (in Russian).
1226. SHKLOVSKII, I. S.  
 "On Possible Uniqueness of Intelligent Life in the Universe," Moscow, 1976, *Institute of Cosmic Research* Preprint no. 262, 31 p. (in Russian); also in *Voprosy Filosofii*, no. 9, 1976, pp. 80–93 (in Russian).
1227. SHNEOUR, Elie A., and OTTESEN, Eric A.  
*Extraterrestrial Life: An Anthology and Bibliography* (Supplementary to *Biology and the Exploration of Mars*) (C. S. Pittendrigh, editor), Printing and Publishing Office, National Acad. of Sci., Washington, D.C., 1965 (includes 1,965 entry bibliography on extraterrestrial life and related subjects).
1228. SHPILEVSKIY, A. V.  
 "New Interpretation of Enigmatical Radio Echoes," *Urania (Poland)*, vol. 46, no. 4, 1975, pp. 108–116 (in Polish).

1229. SHUPP, Mike  
 "Space: 2001 and Beyond," subsection of "Viking Forays and Other Sagas," *Spaceflight*, vol. 19, no. 1, January 1977, pp. 14–15.
1230. SIEGEL, S. M.  
 "Life and the Outer Planets I – Performance of Terrestrial Organisms in Ammonia-Rich Systems," COSPAR Plenary Meeting, 19th, Philadelphia, Pa., June 8–19, 1976, paper.
1231. SIEGEL, S. M., and SPEITEL, T.  
 "Life and the Outer Planets II – Enzyme Activity in Ammonia-Water Systems and Other Exotic Media at Various Temperatures," COSPAR Plenary Meeting, 19th, Philadelphia, Pa., June 8–19, 1976, paper.
1232. SIFOROV, V. I.  
 "Some Aspects of the Search for Signals from Other Civilizations and Their Analysis," in *Extraterrestrial Civilizations* (G. M. Tovmasyan, editor), NASA Scientific and Technical Information Facility translation, N67-30340, pp. 78–83.
1233. *Sign*  
 "No Room for Christian Faith," *Sign*, vol. 36, November 1956, p. 14.
1234. SIMAK, Clifford D.  
 "Life and Intelligence in the Universe," Ch. 17 of *Wonder and Glory: The Story of the Universe*, St. Martin's Press, New York, 1969, pp. 209–232.
1235. SIMPSON, George Gaylord  
*This View of Life: The World of an Evolutionist*, Harcourt, Brace, and World Inc., New York, 1964.
1236. SIMPSON, G. G.  
 "The Nonprevalence of Humanoids," *Science*, vol. 143, no. 3608, February 21, 1964, pp. 769–775.
1237. SIMPSON, George Gaylord  
 "Space Flights and Biology," correspondence in *Science*, vol. 144, no. 3616, April 17, 1964, p. 246.
1238. SIMPSON, G. G.  
 "Cosmic Aspects of Organic Evolution," *Naturwissenschaftliche Rundschau*, vol. 21, no. 10, 1968, pp. 424–434 (in German).
1239. SIMPSON, G. G.  
 "Added Comments on 'The Nonprevalence of Humanoids'," Appendix B of *Communication with Extraterrestrial Intelligence* (Carl Sagan, editor), MIT Press, Cambridge, Mass., 1973, pp. 362–364.
1240. SKINNER, F. A.  
 "The Limits of Microbial Existence," *Proceedings of the Royal Society of London Series B*, vol. 171, 1968, pp. 77–89.
1241. *Sky and Telescope*  
 "Life's Spread Through the Universe," *Sky and Telescope*, vol. 23, no. 4, April 1962, pp. 183–197; *The Origin of the Solar System*, by Thornton Page and Lou Williams Page, Macmillan Company, New York, 1966, pp. 308–310.
1242. *Sky and Telescope*  
 "Communications Test," *Sky and Telescope*, vol. 47, no. 1, January 1974, p. 28.

1243. *Sky and Telescope*  
 "How Common Are Planetary Systems?" *Sky and Telescope*, vol. 50, no. 1, July 1975; pp. 10–11.
1244. *Sky and Telescope*  
 "The VLA Takes Shape," *Sky and Telescope*, vol. 52, no. 5, November 1976, pp. 320–322.
1245. SLATER, A. E.  
 "The Probability of Intelligent Life Evolving on a Planet," in *Proc. 8th Int. Astronautical Congress*, Barcelona, 1957, Vienna, Springer-Verlag, 1958, pp. 395–402.
1246. SLATER, A. E.  
 "Life in the Universe," *Spaceflight*, vol. 4, May 1962, p. 88.
1247. SLATER, A. E.  
 "Extra-terrestrial Life," correspondence in *Spaceflight*, vol. 5, no. 1, January 1963, p. 36.
1248. SLATER, A. E.  
 "Nucleic Acid and the Improbability of Life," in *Proc. 16th Int. Astronautical Congress: Life in Spacecraft*, Athens, 1965, Gordon and Breach, New York, 1966, pp. 165–170.
1249. SLOANE, Eugene  
 "Artificial Biosphere," correspondence in *Science*, vol. 132, July 22, 1960, p. 252..
1250. SLYSH, V. I.  
 "Radio-Astronomic Artificiality Criteria of Radio Sources," in *Extraterrestrial Civilizations* (G. M. Tovmasyan, editor), NASA Scientific and Technical Information Facility translation, N67-30334, pp. 38–42.
1251. SMIRNOVA, N. A., and KAIDANOVSKII, N. L.  
 "The Influence of the Space Environment and of the Earth's Atmosphere on the Apparent Angular Size of Radio Sources," in *Extraterrestrial Civilizations* (G. M. Tovmasyan, editor), NASA Scientific and Technical Information Facility translation, N67-30341, pp. 84–87.
1252. SMITH, Marcia S.  
 "The Possibility of Intelligent Life Elsewhere in the Universe," Report prepared for the Committee on Science and Technology of the U.S. House of Representatives, 94th Congress, by the Science Policy Research Division Congressional Research Service Library of Congress, November 1975, Washington, D.C., U.S. Government Printing Office, 78 p.
1253. SMITH, R. F. W.  
 "Linguistic Problems in Extraterrestrial Communication," presented at the 15th Annual Meeting of the Audio Engineering Society, October 14–18, 1963.
1254. SMITH, R. F. W.  
 "Communication with Extraterrestrial Beings Called Improbable Unless Man Can Signal in Two Systems of Thought," *Science Fortnightly*, October 30, 1963, p. 8.
1255. SMITH, Ronald  
 "The Abdication of Human Intelligence," in *Extraterrestrial Intelligence: The First Encounter* (James Christian, editor), Prometheus Books, Buffalo, New York, 1976, pp. 147–160.
1256. *Southern Review*  
 "Race of Flying Men," *Southern Review*, vol. 10, 1832, p. 272.

1257. *Spaceflight*  
"Call Signs from Space," *Spaceflight*, vol. 7, no. 5, September 1965, pp. 165–167.
1258. *Spaceflight*  
"Seeking Extra-Terrestrial Civilizations," *Spaceflight*, vol. 13, no. 12, December 1971, p. 464.
1259. *Spaceflight*  
"First Soviet-American Conference on Communication with Extraterrestrial Intelligence (CETI)," *Spaceflight*, vol. 14, no. 1, January 1972, pp. 18–19.
1260. *Spaceflight*  
"CETI Questionnaire," responses from Soviet specialists, *Spaceflight*, vol. 15, no. 4, April 1973, pp. 137–138, translated from the Russian, *Zemlya i Vselennaya*, 1972.
1261. *Spaceflight*  
Review of "Bibliography of Interstellar Travel and Communication" (by Eugene F. Mallove and Robert L. Forward), *Spaceflight*, vol. 14, no. 6, June 1972, p. 230.
1262. *Spaceflight*  
"Space Probe from Epsilon Boötis," *Spaceflight*, vol. 15, no. 7, July 1973, pp. 275–276.
1263. *Spaceflight*  
"CETI Signals," *Spaceflight*, vol. 16, no. 2, February 1974, p. 66.
1264. *Spaceflight*  
"A Galactic Sputnik?" *Spaceflight*, vol. 16, no. 3, March 1974, p. 105.
1265. *Spaceflight*  
"Probe from Barnard's Star," *Spaceflight*, vol. 16, no. 3, March 1974, pp. 105–106.
1266. *Spaceflight*  
"CETI Meeting in Copenhagen," *Spaceflight*, vol. 16, no. 4, April 1974, p. 150.
1267. *Spaceflight*  
"CETI Investigations in the U.S.S.R.," *Spaceflight*, vol. 16, no. 5, May 1974, p. 190.
1268. *Spaceflight*  
"CETI Signal to Messier 13," *Spaceflight*, vol. 17, no. 2, February 1975, pp. 54 and 76.
1269. *Spaceflight*  
"New CETI Committee," *Spaceflight*, vol. 17, no. 2, February 1975, pp. 63–64.
1270. *Spaceflight*  
"Canadian CETI Probe," *Spaceflight*, vol. 17, no. 2, February 1975, p. 64.
1271. *Spaceflight*  
"CETI in Amsterdam," *Spaceflight*, vol. 17, no. 3, March 1975, pp. 109–110.
1272. *Spaceflight*  
"Project Ozma II," *Spaceflight*, vol. 18, no. 6, June 1976, p. 221.

1273. *Space World*  
 "Possible Pattern for the Origin of Life," *Space World*, vol. H-9-93, September 1971, pp. 47–48.
1274. SPALL, N. J.  
 "Will 'They' Look Like Us?" Correspondence in *Spaceflight*, vol. 14, no. 11, November 1972, p. 437.
1275. SPALL, N. J.  
 "Extraterrestrial Contact," correspondence in *Spaceflight*, vol. 16, no. 5, May 1974, pp. 199–200.
1276. *Speculative Anthropology*  
 A newsletter which serves as "A Forum for Cultural Futuristics and Space Technology" (began publication in 1976).
1277. SPITZER, Lyman, Jr.  
 "The Beginnings and Future of Space Astronomy," *American Scientist*, vol. 50, September 1962, pp. 473–484.
1278. STAPLEDON, Olaf  
 "Interplanetary Man," *JBIS*, vol. 7, no. 6, November 1948, pp. 213–233.
1279. STEENO, Dan  
 "The Extraterrestrials – Who Are They? Where Are They?" *National Space Institute Newsletter*, vol. 1, no. 12, December 1976, pp. 1–3.
1280. STEIN, John W.  
 " $N = R_p n_e f_{ij} f_c L$ ," *Astronomy*, vol. 4, no. 4, April 1976, pp. 12–13.
1281. STETSON, Harlan True  
 "Has Life Any Cosmic Significance?" in *Man and the Stars*, Whittlesey House, McGraw-Hill Book Company Inc., New York, 1930, pp. 191–200.
1282. STOCKTON, Bill  
 "Calling All Stars," *Los Angeles Times West* magazine, September 10, 1972, pp. 9–12 and 14.
1283. STONELEY, Jack, and LAWTON, A. T.  
*Is Anyone Out There?*, Warner Books, New York, 1974.
1284. STONELEY, Jack, and LAWTON, A. T.  
*CETI: Communication with Extraterrestrial Intelligence*, Warner Books, Inc., New York, 1976.
1285. STORMER, Carl  
 "Short Wave Echoes and the Aurora Borealis," *Nature*, vol. 122, no. 3079, November 3, 1928, p. 681.
1286. STORY, R.  
*The Von Daniken Affair*, Owen Communications, Inc., Tucson, Arizona, 1975.
1287. STORY, R.  
*The Space-Gods Revealed: A Close Look at the Theories of Erich Von Daniken*, Owen Communications, Inc., Tucson, Arizona, 1976.
1288. STRICKLING, H. L.  
 "Any Survivors?" correspondence in *New York Times*, January 28, 1962, Section VI, p. 19.



1289. STRONG, James G.  
*Flight to the Stars*, Hart Publishing Company, Inc., New York, 1965.
1290. STRONG, James  
 "Which Highway to the Stars?" *Spaceflight*, vol. 12, no. 4, April 1970, pp. 174–177.
1291. STRONG, James  
 "How Many Planets Has Barnard's Star?" correspondence in *JBIS*, vol. 27, no. 9, September 1974, pp. 718–720.
1292. STRUGHOLD, H.  
 "The Ecosphere of the Sun," *Aviation Medicine*, vol. 26, no. 4, 1955, pp. 323–328.
1293. STRUGHOLD, H.  
 "The Ecosphere in the Solar Planetary System," in *Proc. 7th Int. Astronautical Congress*, Rome, September 17–22, 1956, pp. 277–288.
1294. STRUVE, Otto  
 "Proposal for a Project of High-Precision Stellar Radial Velocity Work." *Observatory*, vol. 72, no. 870, October 1952, pp. 199–200.
1295. STRUVE, Otto  
 "Life on Other Worlds," *Sky and Telescope*, vol. 14, no. 4, February 1955, pp. 137–140 and 146.
1296. STRUVE, Otto  
 "Detecting Radio Signals from Outside Solar System," correspondence in *New York Times*, December 6, 1959, Section IV, p. 10.
1297. STRUVE, Otto  
 "Project OZMA," in "Astronomers in Turmoil," *Physics Today*, vol. 13, no. 9, September 1960, pp. 22–23.
1298. STRUVE, Otto et al.  
 Correspondence concerning Ray Bradbury's "Search for Weird Worlds," *Life*, vol. 49, no. 20, November 14 1960, p. 22.
1299. STUHLINGER, Ernst  
 "Life on Other Stars: Parts I and II," *Space Journal*, vol. 1, no. 2, Spring 1958, pp. 10–16; vol. 1, no. 3, Summer 1958, pp. 21–30.
1300. SUBOTOWICZ, M.  
 "On Interstellar Flight – III: Interstellar Communication by Use of Electromagnetic and Neutrino Signals," *Astronautyka*, vol. 10, no. 2, 1967, pp. 19–24 (in Polish).
1301. SUBOTOWICZ, M.  
 "Neutrinos for Interstellar Communication," *Postepy Techniki Jadrowej*, vol. 11, 1967, pp. 475–479 (in Polish).
1302. SUBOTOWICZ, M.  
 "Symposium on CETI," *Astronautyka*, vol. 11, no. 4, 1968, p. 22 (in Polish).

1303. SUBOTOWICZ, M.  
 "Search for Extraterrestrial Scientific-Technical Civilizations," *Problemy*, vol. 24, no. 1, 1968, pp. 16–20 (in Polish).
1304. SUBOTOWICZ, M.  
 "The Stages of the Physical and Chemical Evolution of Matter," *Astronautyka*, vol. 11, no. 3, 1968, pp. 18–20 (in Polish).
1305. SUBOTOWICZ, M.  
 "Water – The Basic Biological Solvent and Carbon – The Basic Bioelement," *Astronautyka*, vol. 11, no. 4, 1968, pp. 15–17 (in Polish).
1306. SUBOTOWICZ, M.  
 "In Search of Extraterrestrial Civilizations. I – The Background, Propositions for Realization, and Goals of the Cyclops Programme," *Astronautyka*, no. 4, 1973, pp. 2–4 (in Polish).
1307. SUBOTOWICZ, M.  
 "In Search of Extraterrestrial Civilizations. II – The Cyclops Programme for Establishing Interstellar Contact," *Astronautyka*, no. 5, 1973, pp. 2–6 (in Polish).
1308. SUBOTOWICZ, M.  
 "Conditions for the Development and the Danger of Collapse of Scientific-Technical Civilizations (STC)," *Proc. Conf. on Problems of Protection of the Environment*, UMCS, Lublin, 1974, pp. 21–46 (in Polish).
1309. SUBOTOWICZ, M.  
 "Near and Far Future of Astronautics," *Astronautyka*, vol. 17, no. 2-3, 1974, pp. 35–41 (in Polish).
1310. SUCHOWSKI, Zb.  
 "Mathematical Interpretation of Delayed Echoes Series," unpublished paper, April 1976 (in Polish).
1311. SUKHOTIN, B. V.  
 "Methods of Message Decoding," in *Extraterrestrial Civilizations* (S. A. Kaplan, editor), NASA TT F-631, trans. from Russian, 1971, pp. 133–213.
1312. SUKHOTIN, B. V.  
 "Problems of Decoding," International Astronautical Federation, International Astronautical Congress, 23rd, Vienna, Austria, October 8–15, 1972, Paper.
1313. SUKHOTIN, B. V.  
 "Methods of Deciphering of a Message from Extraterrestrial Intelligences," *Astronautica Acta*, vol. 18, no. 6, December 1973, pp. 441–450 (English and Russian).
1314. SULLIVAN, Walter  
 "A Satellite From Another World May Be in Orbit, Scientist Says," *New York Times*, June 20, 1960, pp. 1 and 4.
1315. SULLIVAN, Walter  
 "Contact with Worlds in Space Explored By Leading Scientists," *New York Times*, February 4, 1962, pp. 1 and 44.
1316. SULLIVAN, Walter  
 "Search for Life in Nebula Urged," *New York Times*, December 3, 1962, p. 36.

1317. SULLIVAN, Walter  
 "Gravity Machine Called Possible," *New York Times*, June 9, 1963, p. 20.
1318. SULLIVAN, Walter  
*We Are Not Alone*, McGraw-Hill Book Company, New York, 1964.
1319. SULLIVAN, Walter  
 "Space Signals Said to Hint Life Afar," *New York Times*, October 26, 1964, pp. 1 and 36.
1320. SULLIVAN, Walter  
 "Communication with Other Planets," *Saturday Review*, vol. 47, December 5, 1964, pp. 78–79.
1321. SULLIVAN, Walter  
 "Television from Other Worlds Called Detectable," *New York Times*, January 2, 1966, p. 14.
1322. SULLIVAN, Walter  
 "Biologist Says: 'Without Our Like, the Universe Might Be, But Not Be Known'," *New York Times*, March 8, 1966, p. 19.
1323. SULLIVAN, Walter  
 "Soviet Urges Search for Signals from Space," *New York Times*, May 10, 1966, p. 19.
1324. SULLIVAN, Walter  
 "Space Waves Spur Search for Signals," *New York Times*, August 26, 1967, pp. 1 and 10.
1325. SULLIVAN, Walter  
 "Astronomers Hear Signals from Space," *New York Times*, March 10, 1968, pp. 1 and 92.
1326. SULLIVAN, Walter  
 "'Spooky' Signals from Space," *New York Times*, March 17, 1968, Section IV, p. 11.
1327. SULLIVAN, Walter  
 "British Astronomer Describes 3 More Sources of Radio Signals in Space," *New York Times*, March 29, 1968, p. 19.
1328. SULLIVAN, Walter  
 "Listening to Signals in Space," *New York Times*, April 4, 1968, pp. 49 and 51.
1329. SULLIVAN, Walter  
 "Neutron Stars May be the Origin of Signals," *New York Times*, April 12, 1968, p. 16.
1330. SULLIVAN, Walter  
 "Pulsations from Space," *New York Times*, April 14, 1968, Section IV, p. 18.
1331. SULLIVAN, Walter  
 "Message of the Pulsars," *New York Times*, Section IV, May 26, 1968, p. 12.
1332. SULLIVAN, Walter  
 "The Universe is Not Ours Alone," *New York Times Magazine*, September 29, 1968, pp. 40–41, + pages up to 143.

1333. SULLIVAN, Walter  
 "Milky Way Yields a Clue About Life," *New York Times*, March 21, 1969, p. 43.
1334. SULLIVAN, Walter  
 "Scientists Find Alcohol Cloud Near Center of the Milky Way," *New York Times*, November 6, 1970, p. 57.
1335. SULLIVAN, Walter  
 "Origin of Life: It May Have Been Far Out in Space," *New York Times*, November 8, 1970, Section IV, p. 14.
1336. SULLIVAN, Walter  
 "NASA Seeks 'Ear' to Distant Civilization," *New York Times*, Wednesday, June 16, 1971, p. 13.
1337. SULLIVAN, Walter  
 "Man Listens for Life on Worlds Afar," *New York Times*, Monday, September 13, 1971, p. 1.
1338. SULLIVAN, Walter  
 "Is Someone Out There Trying to Tell Us Something?" *New York Times*, September 19, 1971, News of the Week in Review, p. 8.
1339. SULLIVAN, Walter  
 "To Let Others Know We Are Here," *New York Times*, February 27, 1972, News of the Week in Review, p. 10.
1340. SULLIVAN, Walter  
 "NASA to Focus on Radio Emissions in Hunt for Civilizations in Space," *New York Times*, November 2, 1976, p. 16.
1341. SVOREN', R.  
 "Communications by Lasers," in *Nauka i Zhizn'*, vol. 4, 1966, pp. 59–65 (in Russian).
1342. SWEDENBORG, E.  
*The Earths in Our Solar System, Which Are Called Planets, and the Earths in the Starry Heavens, Their Inhabitants and Angels Thence, from Things Heard and Seen*, Originally in Latin published in London (1758), B. A. Whittemore, Boston, 1928, 124 p.
1343. SYLVESTER-BRADLEY, P. S.  
 "Environmental Parameters for the Origin of Life," *Proceedings of the Geological Association*, vol. 82, no. 1, 1971, pp. 87–135.
1344. TAKACS, S.  
 "Searching Living Creatures in Space," *Termeszettudományi Közönlony*, vol. 11, no. 11, 1967, pp. 491–494 (in Hungarian).
1345. TANG, T. B.  
 "Supernovae as Time Markers in Interstellar Communication," *JBIS*, vol. 29, nos. 7 and 8, July-August 1976, pp. 469–470.
1346. TANNER, Henry, and SULLIVAN, Walter  
 "Russians Say A Cosmic Emission May Come from Rational Beings," *New York Times*, April 13, 1965, pp. 1 and 29.

1347. TANNER, Henry  
 "Russians Temper Report on Space," *New York Times*, April 14, 1965, p. 3.
1348. Techtran Corp., Glen Burnie, Md.  
 "Life in Space — New Advances in Space Biology," translated from the German, NASA TT F-11540, February 1968.
1349. *Tekhnika molodiozhy*  
 "A Message from the Constellation Leo," *Tekhnika molodiozhy*, no. 4, 1974, pp. 54–56 (in Russian).
1350. *Tekhnika molodiozhy*  
 "Where Are You Intelligent Brothers?" *Tekhnika molodiozhy*, no. 4, 1976, pp. 52–55 (in Russian).
1351. *Telecommunication Journal*  
 "Satellite Searching Stars for Signals," *Telecommunication Journal*, vol. 42, no. 8, 1975, p. 496.
1352. TELLER, Edward  
 "Outer Space Travel — What Is and Is Not Possible?" Chapter 12 of *Peacetime Uses of Outer Space* (Simon Ramo, editor), McGraw-Hill Book Co., Inc., New York, 1961, pp. 259–271.
1353. TENNESSEN, Herman  
 "Homo Telluris: The Conscious Cosmic Cadis Fly," in *Extraterrestrial Intelligence: The First Encounter* (James Christian, editor), Prometheus Books, Buffalo, New York, 1976, pp. 229–278.
1354. *Termeszt Vilaga*  
 "Are There Civilizations Besides on Our Globe?" *Termeszt Vilaga*, vol. 12, no. 5, 1968, pp. 225–228 (in Hungarian).
1355. TESLA, N.  
 "Nicola Tesla and His Talk With Other Worlds," *Colorado Springs Gazette*, January 9, 1901.
1356. TESLA, N.  
 "Tesla Has a Message from the Stars," *Western Electrician*, January 12, 1901.
1357. TESLA, Nikola  
 "Talking with the Planets," *Current Literature*, March 1901, p. 359.
1358. TESLA, N.  
 "Talking with the Planets," *Collier's Weekly*, vol. 26, no. 19, 1901, pp. 4–5.
1359. THOMAS, L.  
 "CETI," *New England Journal of Medicine*, vol. 286, February 10, 1972, pp. 306–307.
1360. THOMSEN, Dietrick E.  
 "Extraterrestrial Life (If There Is Any) and Us," *Science News*, vol. 104, no. 2, July 14, 1973, pp. 29–31.
1361. THOMSEN, Dietrick E.  
 "Tuning in on Other Worlds; CETI Plans of Soviet Academy of Sciences," *Science News*, vol. 108, Nov. 15, 1975, p. 316.
1362. THOMSEN, Dietrick E.  
 "Looking for LGM's," *Science News*, vol. 110, no. 21, November 20, 1976, pp. 332–333.

1363. THOMSON, Sir George  
*The Foreseeable Future*, Cambridge University Press, London, 1955.
1364. *Time*  
 "Dark Companions," *Time*, vol. 42, no. 5, August 2, 1943, pp. 46–47.
1365. *Time*  
 "Space Theology," *Time*, vol. 66, no. 12, September 19, 1955, p. 81.
1366. *Time*  
 "Life On a Billion Planets?" *Time*, vol. 71, no. 9, March 3, 1958, pp. 42–43.
1367. *Time*  
 "Faith and Outer Space," *Time*, vol. 71, no. 13, March 31, 1958, p. 37.
1368. *Time*  
 "Little Inhabited Stars," *Time*, vol. 73, no. 17, April 27, 1959, p. 65.
1369. *Time*  
 "Anybody Out There?" *Time*, vol. 74, no. 21, November 23, 1959, pp. 84–85.
1370. *Time*  
 "Life Without End," *Time*, vol. 75, no. 1, January 4, 1960, p. 54.
1371. *Time*  
 "Enoch and Other Cosmonauts," *Time*, vol. 75, no. 8, February 22, 1960, p. 26.
1372. *Time*  
 "Project Ozma," *Time*, vol. 75, no. 16, April 18, 1960, p. 53.
1373. *Time*  
 "The Prevalence of Planets and the Probability of Life," *Time* vol. 84, no. 13, September 25, 1964, pp. 49–50.
1374. *Time*  
 "The Mysterious Companions of Barnard's Star," *Time*, vol. 93, no. 17, April 25, 1969, pp. 93–94.
1375. *Time*  
 "Nature's Way," *Time*, vol. 98, no. 22, November 29, 1971, pp. 64–65.
1376. *Time*  
 "Waterless Life," *Time*, vol. 98, no. 22, November 29, 1971, p. 65.
1377. *Time*  
 "Is There Life on Mars – or Beyond?" by John Wilhelm and Fred Golden, *Time*, vol. 98, no. 24, December 13, 1971, pp. 50–58.
1378. *Time*  
 "Rorschach in Space," *Time*, vol. 99, no. 23, June 5, 1972, p. 60.
1379. *Time*  
 "Message from a Star," *Time*, vol. 101, no. 15, April 9, 1973, pp. 59–62.

1380. *Time*  
 "And a Message from Earth . . .," *Time*, vol. 101, no. 15, April 9, 1973, p. 62.
1381. *Time*  
 "Were We Planted Here?" *Time*, vol. 102, no. 11, September 10, 1973, p. 53.
1382. TODD, D.  
 "Radio Messages from Mars," *Literary Digest*, vol. 82, no. 10, September 6, 1924, p. 28.
1383. TOOLEY, Michael  
 "Would ETI's Be Persons?" in *Extraterrestrial Intelligence: The First Encounter* (James Christian, editor), Prometheus Books, Buffalo, New York, 1976, pp. 129–146.
1384. TORKILDSEN, Inge Bjart  
 "Ad Astra," *Nova*, no. 4, 1973, pp. 41–43, a science fiction magazine published in Norway.
1385. TOVMASYAN, G. M. (Editor)  
*Extraterrestrial Civilizations*, Proceedings of the First All-Union Conference on Extraterrestrial Civilizations and Interstellar Communication (Byurakan, USSR, May 20–23, 1964), NASA Scientific and Tech. Information Facility translation, N67-30330 through N67-30342.
1386. TOVMASYAN, G. M.  
 "A Ring Telescope for Communication with Extraterrestrial Civilizations," in *Extraterrestrial Civilizations* (G. M. Tovmasyan, editor), NASA Scientific and Technical Information Facility translation, N67-30337, pp. 60–61.
1387. TOWNES, Charles H.  
 Jansky Lecture at the National Radio Astronomy Observatory, Charlottesville, Virginia, October 4, 1971.
1388. TREFZGER, C., and HEIDELBERG, Z.  
 "Origin of Life in Interstellar Space," *Orion*, vol. 31, no. 137, 1973, pp. 105–107 (in German).
1389. TRENCH, Walter  
 Correspondence in *Analog*, vol. 82, no. 4, December 1968, pp. 168–169.
1390. TREPKA, A.  
 "Life in the Universe," Slask Publishing House, Katowice, 1976 (in Polish).
1391. TROITSKII, V. S.  
 "Some Considerations on the Search for Intelligent Signals from Space," in *Extraterrestrial Civilizations* (G. M. Tovmasyan, editor), NASA Scientific and Technical Information Facility translation, N67-30338, pp. 62–71.
1392. TROITSKII, V.  
 "The Search for Signals of Extraterrestrial Life," Army Foreign Science and Technology Center, Washington, D.C., FSTC-HT-23-009-70; translation of *Aviatsiya i Kosmonavtika* (USSR), no. 8, 1968, pp. 77–80.
1393. TROITSKII, V. S.  
 "Search for Monochromatic 927 MHz Radio Emission From Nearby Stars," *Astronomicheskii Zhurnal*, vol. 48, no. 3, 1971, pp. 645–647 (in Russian); *Soviet Astronomy*, vol. 15, 1971, p. 508.

1394. TROITSKY, V. S.  
 "Scanning of Sporadic Radiation Resulting from Technical Activity of Extraterrestrial Civilization," Proc. 24th IAF Congress, Baku, USSR, October 7–13, 1973 (2nd International Review Meeting on Communication with Extraterrestrial Intelligence).
1395. TROITSKIY, V. S., BONDAR, L. N., and STARODUBTSEV, A. M.  
 "The Search for Sporadic Radiation from the Cosmos," *Uspekhi Fizicheskikh Nauk*, vol. 113, no. 4, 1974; pp. 719–723 (in Russian).
1396. TROITSKIY, V. S.  
 "Search for Extraterrestrial Civilizations," in: *Future of the Science*, Znaniye Publishers, Moscow, 1974, pp. 127–138 (in Russian); English translation, NASA TT-F-16990.
1397. TROSHIN, D. M.  
 "Life in the Universe," *Priroda*, no. 12, 1963, pp. 89–91 (in Russian).
1398. TSIOLKOVSKIY, K. E.  
 "Life in Interstellar Space," Nauka Publishing House, Moscow, 1964 (in Russian).
1399. TSITSIN, F. A.  
 "Cosmos and Intelligent Beings," *Priroda*, no. 11, 1965, pp. 94–101 (in Russian); English translation: Joint Publications Research Service, Washington, D.C., JPRS-34259, TT-66-30700.
1400. TSITSIN, F. A.  
 "Expansion of Life and Weight of Intelligence in the Universe," in *Inhabited Cosmos* (B. P. Konstantinov and V. D. Peçelis, editors), Nauka, Moscow, 1972, pp. 76–90 (in Russian).
1401. TSVETIKOV, Alexis N.  
 "'Next Question' and K. E. Tsiolkovsky," correspondence concerning Tsiolkovsky's opinions about extraterrestrial Societies, *Science*, vol. 131, no. 3403, March 18, 1960, pp. 872–873.
1402. TURNER, B. E.  
 "Interstellar Molecules," *Scientific American*, vol. 228, March 1973, pp. 50–62 and 67–69.
1403. ULUGBEKOV, A. T.  
 "Thermal Conditions of 'Ethereal Towns' on Various Distances to the Sun," *Trudy Sedmykh Chtenii Posviyashchennykh Razrabotkiye Nauchnovo Naslediya i Razvityu Ideiy K. E. Tsiolkovskovo*, Kaluga, 1973, sekciya "Problemy Rakiyetnoy i Kosmicheskoy Teckhniki," Moscow, 1974, pp. 32–41 (in Russian).
1404. UNDERWOOD, R. S.  
 "Are We Alone In the Universe?" *Scientific Monthly*, vol. 49, August 1939, pp. 155–159.
1405. UNDERWOOD, R. S.  
 "Are We Alone in the Universe?" *Navigator*, vol. 9, no. 1, 1963, pp. 16–22.
1406. UPGREN, A. R., and WEIS, E. W.  
 "A New Nearby Subdwarf M Star," *Astrophysical Journal*, vol. 197, 1975, pp. L53–L54.
1407. UPHOF, J. C. T.  
 "The Dynamics of the Distribution of Life in the Universe," *Scientia*, vol. 58, July 1935, pp. 30–38.



1408. *Urania (GDR)*  
 "Are We Alone in the Universe?" *Urania (GDR)*, vol. 50, no. 12, 1974, pp. 41–45 (in German).
1409. URSUL, A. D.  
 "Conquest of Cosmos — Philosophical, Methodological and Sociological Problems," Nauka-Publishing House, Moscow, 1967 (in Russian).
1410. USSR ACADEMY OF SCIENCES  
 "The Soviet CETI Program," *Icarus*, vol. 26, no. 3, November 1975, pp. 377–385; *Astron. Zh.*, vol. 51, Sept.-Oct. 1974, pp. 1125–1132 (in Russian).
1411. VAGER, J.  
 "Current Opinions on Probability of Life in the Universe," *Rishe Hvezd*, vol. 45, no. 4, 1964, pp. 70–72 (in Czechoslovakian).
1412. VALE, W. H.  
 "The Existence of Life in the Universe," *Journal of the Astronomical Society of Victoria*, vol. 13, no. 3, 1960, pp. 39–43.
1413. VALVERDE, T. F.  
*Life on Other Worlds*, Bruguera, Barcelona, 1963 (in Spanish).
1414. VARKONYI, T.  
 "Cosmic Forms of Life," *Termesztet Vilaga*, vol. 12, no. 3, 1968, pp. 98–101 and 111 (in Hungarian).
1415. VARSAVSKY, C. M.  
 "Possibility of Extraterrestrial Life," *Revista Astron.*, vol. 41, no. 169, 1969, pp. 5–9 (in Spanish).
1416. VEINFIELD, S.  
*Looking for Other Worlds*, Wydawnictwo MON, Warsaw, 1969 (in Polish).
1417. VENKATAVARADAN, V. S.  
 "Cosmic Life?" *Nucl. India*, vol. 13, no. 5, 1975, pp. 4–8.
1418. VERPLAETSE, Juliaan  
 "Magnified Analogy of Terrestrial Law in Outer Space?" *Zeitschrift fur Luftrecht und Weltraumrechtsfragen*, vol. 19, January 1, 1970, pp. 140–145 (in German).
1419. VERSCHUUR, G. L.  
 "A Search for Narrow Band 21-cm Wavelength Signals from Ten Nearby Stars," *Icarus*, vol. 19, no. 3, July 1973, pp. 329–340.
1420. VERSCHUUR, Gerrit L.  
 Review of *Communication with Extraterrestrial Intelligence* (by Carl Sagan), in *Sky and Telescope*, vol. 47, no. 5; May 1974, pp. 325–326.
1421. VERSCHUUR, Gerrit L.  
 "The Search for Intelligence 'Out There'," *Astronomy*, vol. 2, no. 8, August 1974, pp. 20–23.
1422. VERSCHUUR, Gerrit L.  
 "We Are Alone!" *Astronomy*, vol. 3, no. 12, December 1975, pp. 46–49.

1423. VERTREGT, M.  
 "Cosmic Squeak and Gibber," *Spaceflight*, vol. 7, no. 4, July 1965, pp. 122–128.
1424. VIEWING, David  
 "Directly Interacting Extra-Terrestrial Technological Communities," *JBIS*, vol. 18, no. 11, November 1975, pp. 735–744.
1425. VILLARD, O. G., Jr.  
 "Long Delayed Echoes – Radio's Flying Saucer Effect," *QST*, May 1969.
1426. VILLARD, O. G., Jr.  
 "There Is No Such Thing As a Long Delayed Echo," *QST*, February 1970.
1427. VILLARD, O. G., Jr., FRASER-SMITH, A. C., and CASSAN, R. P.  
 "LDE's, Hoaxes, and the Cosmic Repeater Hypothesis," *QST*, vol. 55, no. 5, May 1971, pp. 54–58.
1428. VISHNIAC, Wolf  
 "Space Flights and Biology," correspondence in *Science*, vol. 144, no. 3616, April 17, 1964, pp. 245–246.
1429. *Vokrug sveta*  
 "Life and Intelligence in Other Worlds," *Vokrug sveta*, no. 1, 1972, pp. 10–15 and 60–61 (in Russian).
1430. VOLCHEK, O.  
 "Life Beyond the Earth," *Astronautyka*, no. 1, 1961, pp. 11–14 (in Polish).
1431. VORONIN, M. A.  
 "In Quest of Signs of Civilization in Other Worlds," trans from Russian, *Priroda*, no. 11, 1962, pp. 78–83, NASA TT-F-8590.
1432. VORONOV, G. S.  
 "Tom-Toms of the Universe," *Khimiya i Zhizn*, no. 4, 1975, pp. 15–23 (in Russian).
1433. VORONTSOV-VELYAMINOV, B. A.  
 "'Living Beings' Migrations from One Galaxy to Another," *Zemlya i Vselennaya*, no. 4, 1966, p. 17 (in Russian).
1434. VRIES, T. E.  
 "An American Program of Inhabited Planets Detection," *Hemel en Dampkring*, vol. 64, no. 7/8, 1966, pp. 169–185 (in Dutch).
1435. VROBLEVSKY, A.  
 "Search for Intelligent Communities in the Universe," *Urania (Poland)*, vol. 31, no. 3, 1960, pp. 78–79 (in Polish).
1436. WADDINGTON, C. H.  
 "The Recognition of Alien Life at the Level of Macroscopic Morphology," *Proceedings of the Royal Society of London Series B*, vol. 189, 1975, pp. 155–159.
1437. WAGNER, Bernard M.  
 "Sociological Aspects of Exobiology," in *Exobiology*, vol. 19 of AAS Science and Technology Series, December 1967, pp. 117–130.

1438. WALD, George  
 "The Origin of Life," *Scientific American*, vol. 191, no. 2, August 1954, pp. 45–53.
1439. WALD, George  
 "Fitness in the Universe – Choices and Necessities," *Origins of Life*, vol. 5, January-April 1974; pp. 7–27.
1440. WALD, George, JASTROW, Robert, PONNAMPERUMA, Cyril, and MORRISON, Philip  
 "Origins: Speculations and Facts on the Sources of Planets, Earth, and Life," a four cassette tape album by the American Association for the Advancement of Science, 1976.
1441. WALKER, J. C. G.  
 "The Search for Signals from Extraterrestrial Civilizations," *Nature*, vol. 241, February 9, 1973, pp. 379–381.
1442. WEBB, Gerald M.  
 Review of *The Next Ten Thousand Years* (by Adrian Berry), *Spaceflight*, vol. 17, no. 4, April 1975, p. 158.
1443. WEBB, Gerald M.  
 Review of *Interstellar Communication: Scientific Perspectives* (by Cyril Ponnampereuma and A. G. W. Cameron), *Spaceflight*, vol. 17, no. 4, April 1975, p. 158.
1444. WEBB, J. A.  
 "Detection of Intelligent Signals from Space," in *Interstellar Communication* (A. G. W. Cameron, editor), W. A. Benjamin, New York, 1963, pp. 178–191; IRE Professional Group on Communications Systems, *Seventh National Communications Symposium Record*, 1961, pp. 10–15.
1445. WEBSTER, Gary  
 "Is There Life on Other Worlds?" *Natural History*, vol. 65, December 1956, pp. 526–531.
1446. WEISS, P. A.  
 "Life on Earth (By a Martian)," in *A Random Walk in Science, The Rockefeller University Review*, Rockefeller University Press, vol. 2, 1964.
1447. WELLS, Ernest H.  
*Search for Life in Space*, Murfreesboro, Tennessee, DeHoff Publications, 1975, 106 pages.
1448. WERTZ, James R.  
 "The Human Analogy and the Evolution of Extraterrestrial Civilizations," *JBIS*, vol. 29, nos. 7 and 8, July-August 1976, pp. 445–464.
1449. WEST, Martha W., and PONNAMPERUMA, Cyril  
 "Chemical Evolution and the Origin of Life: A Comprehensive Bibliography," *Space Life Sciences*, vol. 2, no. 2, September 1970, pp. 225–295; and *Space Life Sciences*, vol. 3, no. 3, June 1972, pp. 293–304 (1800 references).
1450. WEST, Martha W., GILL, Elizabeth D., and SHERWOOD, Betty R.  
 "Chemical Evolution and the Origin of Life," Supplement to earlier 1800 entry bibliography, *Space Life Sciences*, vol. 4, no. 2, April 1973, pp. 309–328.
1451. WEST, Martha W., and KOCH, Rowena A.  
 "Chemical Evolution and the Origin of Life – Bibliography Supplement 1976," *Origins of Life*, vol. 7, no. 1, January 1976, pp. 75–85.

1452. van WIJK, C. G.  
 "Life in the Universe is Possible or Not?" *Hemel en Dampkring*, vol. 64, no. 12, 1966, pp. 339–350 (in Dutch).
1453. WHITMIRE, Daniel P., and WRIGHT, David P.  
 "A Possible Observational Property of Technological Extraterrestrial Civilizations," 1976, unpublished paper.
1454. WHITROW, G. J.  
 "Mutation Rates and Stellar Explosions," in *The Scientist Speculates* (I. J. Good, editor), William Heinemann Ltd., London, 1962, pp. 233–235.
1455. WILCOX, E. J.  
 "Psychological Consequences of Space Travel," *JBIS*, vol. 16, no. 1, 1957, pp. 7–10 (Correspondence: Bradney, P. J., *JBIS*, vol. 16, no. 3, 1957, p. 173, and Slater, E. T. O., *JBIS*, vol. 16, no. 3, 1957, p. 176).
1456. WILEY, J. P., Jr.  
 "Is Anybody Out There?" *Natural History*, vol. 80, December 1971, pp. 42–43.
1457. WILEY, John P., Jr.  
 "Intelligent Life in the Universe," 'Sky Reporter' section of *Natural History*, vol. 81, no. 2, February 1972, pp. 50–53.
1458. WILEY, J. P., Jr.  
 "Postscript to the Jupiter Mission," 'Sky Reporter' section of *Natural History*, vol. 81, no. 4, April 1972, pp. 44–45.
1459. WILFORD, John N.  
 Review of *Worlds Beyond* (by Ian Ridpath), *American Scientist*, vol. 64, no. 5, September-October, 1976, pp. 568–569.
1460. WILHELM, John  
 Review of *The Cosmic Connection* (by Carl Sagan), *Time*, vol. 103, no. 3, January 21, 1974, p. 74.
1461. WILLARD, Dennis  
 Correspondence in *Analog* concerning pulsars as intelligent beacons, vol. 84, no. 1, September 1969, p. 168.
1462. WILLIAMS, I. P.  
*The Origin of the Planets*, Adam Hilger, Ltd., London, 1975.
1463. WILLIAMS, I. P.  
 "Solar Systems Other than Ours," *Modern Astronomy*, vol. 5, no. 6, 1975, pp. 102–104.
1464. WILLIAMSON, A. A.  
 "Speculation on the Cosmic Function of Life," *Journal of the Washington Academy of Sciences*, vol. 43, no. 10, October 1953, pp. 305–311.
1465. WILLIAMSON, R. E.  
 "History and Problems of Coding and Decoding Interstellar Communications," *Mast. Abstr.*, vol. 5, no. 1, 1967, pp. 1–2.
1466. WIMMEL, H. K.  
 "Tachyon and Cerenkov Radiation," *Nature*, (Physical Science), vol. 236, no. 66, April 3, 1972, pp. 79–80.

1467. WOLCZEK, O.  
 "The Problem of the Existence of Life in the Solar System Outside of the Earth," *Postepy Astronautyki*, vol. 8, no. 2, 1975, pp. 7–49 (in Polish).
1468. WOLFERT, I.  
 "They Listen to the Language of the Universe," *Reader's Digest*, vol. 94, February 1969, pp. 95–99.
1469. WOOLEY, R., EPPS, E. A., and PENSTON, N. J.  
 "Catalogue of Stars Within Twenty-five Parsecs of the Sun," *Royal Observatory Annals*, no. 5, 1970.
1470. WOOLF, N.  
 "Mira Variables as Black Clouds," in: *Molecules in the Galactic Environment* (M. A. Gordon and L. E. Snyder, editors), Wiley, New York, 1973, pp. 443–450.
1471. WOOSTER, Harold, GARVIN, Paul L., CALLIMAHOS, Lambros D., LILLY, John C., DAVIS, William O., and HEYDEN, Francis J.  
 "Communication with Extraterrestrial Intelligence," *IEEE Spectrum*, vol. 3, no. 3, March 1966, pp. 153–163.
1472. WOYNARSKI, R.  
 "Border-lines for Photosynthesis in Planetary Systems of Stars," *Urania (Poland)*, vol. 33, no. 10, 1962, pp. 66–72 (in Polish).
1473. WUNDER, Charles  
*Life into Space*, F. A. Davis Co., Philadelphia, 1966.
1474. YOUNG, Andrew T.  
 "The Occurrence of Planets," *Science*, vol. 148, no. 3669, April 23, 1965, p. 532.
1475. YOUNG, Richard S.  
*Extraterrestrial Biology*, Holt, Rinehart and Winston, Inc., New York, 1966.
1476. YOUNGHUSBAND, Sir Francis  
*Life in the Stars*, John Murray, London, 1927.
1477. YUR'EV, M.  
 "The Interstellar Formula of a Man," in *Technika Molodyozhii*, vol. 4, 1968, p. 1 (in Russian).
1478. ZAROWITZ, W.  
 "Are We Alone?" *Cornell Eng.*, vol. 37, no. 5, 1972, pp. 6–9.
1479. *Zemlya i Vselennaya*  
 "Language of Interstellar Communication," *Zemlya i Vselennaya*, no. 3, 1965, pp. 75 and 79 (in Russian).
1480. *Zemlya i Vselennaya*  
 "Cosmic Probe from Epsilon Boötis?" *Zemlya i Vselennaya*, no. 6, 1973, pp. 68–70 (in Russian).
1481. *Zemlya i Vselennaya*  
 Review of "The CETI Problem" (S. A. Kaplan, editor), *Zemlya i Vselennaya*, no. 2, 1976, p. 82 (in Russian).

1482. ZERWICK, Chloe, and BROWN, Harrison  
*The Cassiopeia Affair*, Doubleday, Garden City, New York, 1968..
1483. ZIGEL, F. J. M.  
*Inhabited Worlds*, Znaniye, Moscow 1962 (in Russian).
- 1484..ZIGEL, F. J. M.  
*Life in Cosmos*, Nauka i Tyekhnika, Kiyev, 1966 (in Russian).
1485. ZIGEL, F.  
 "It Is Not So Simple," *Tekhnika Molodiozhy*, no. 4, 1974, pp. 56–57 (in Russian).
1486. ZONN, V.  
 "Side-Notes on Extraterrestrial Civilizations," *Chloviyek i Sviyatopoglad*, no. 2, 1974, pp. 104–108 (in Polish).
1487. ZUBEK, T. J.  
 "Theological Questions on Space Creatures," *American Ecclesiastical Review*, vol. 145, December 1961, pp. 393–399.
1488. ZUCKERMAN, B.  
 "Interstellar Molecules and Interstellar Life," *New York State Journal of Medicine*, vol. 70, 1970, p. 50.

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