

Extraterrestrial Intelligence: An International Petition

Carl Sagan (and 68 signatories) – Source: [Science, Vol. 218, p. 426, 1982](#)

The human species is now able to communicate with other civilizations in space, if such exist. Using current radioastronomical technology, it is possible for us to receive signals from civilizations no more advanced than we are over a distance of at least many thousands of light years. The cost of a systematic international research effort, using existing radio telescopes, is as low as a few million dollars per year for one or two decades. The program would be more than a million times more thorough than all previous searches, by all nations, put together. The results – whether positive or negative – would have profound implications for our view of our universe and ourselves.

We believe such a coordinated search program is well justified on its scientific merits. It will also have important subsidiary benefits for radioastronomy in general. It is a scientific activity that seems likely to garner substantial public support. In addition, because of the growing problem of radiofrequency interference by civilian and military transmitters, the search program will become more difficult the longer we wait. This is the time to begin.

It has been suggested that the apparent absence of a major reworking of the Galaxy by very advanced beings, or the apparent absence of extraterrestrial colonists in the solar system, demonstrates that there are no extraterrestrial intelligent beings anywhere. At the very least, this argument depends on a major extrapolation from the circumstances on Earth, here and now. The radio search, on the other hand, assumes nothing about other civilizations that has not transpired in ours.

The undersigned* are scientists from a variety of disciplines and nations who have considered the problem of extraterrestrial intelligence – some of us for more than 20 years. We represent a wide variety of opinion on the abundance of extraterrestrials, on the ease of establishing contact, and on the validity of arguments of the sort summarized in the first sentence of the previous paragraph. But we are unanimous in our conviction that the only significant test of the existence of extraterrestrial intelligence is an experimental one. No a priori arguments on this subject can be compelling or should be used as a substitute for an observational program. We urge the organization of a coordinated, worldwide, and systematic search for extraterrestrial intelligence.

Carl Sagan, Center for Radiophysics and Space Research, Cornell University, Ithaca, New York 14853

*Carl Sagan, Cornell University;

David Baltimore, Massachusetts Institute of Technology;

Richard Berendzen, American University;

John Billingham, NASA Ames Research Center;

Melvin Calvin, University of California, Berkeley;

A. G. W. Cameron, Harvard University;

M. S. Chadha, Bhabha Atomic Research Centre, Bombay, India;

S. Chandrasekhar, University of Chicago;

Francis Crick, Salk Institute;

Robert S. Dixon, Ohio State University;

T. M. Donahue, University of Michigan;

Frank D. Drake, Cornell University;

Lee A. DuBridge, California Institute of Technology;

Freeman J. Dyson, Institute for Advanced Study;

Manfred Eigen, Max Planck Institute, Gottingen, Federal Republic of Germany;

Thomas Eisner, Cornell University;
James Elliott, Massachusetts Institute of Technology;
George B. Field, Harvard University;
Vitaly L. Ginzburg, Lebedev Physical Institute, Moscow;
Thomas Gold, Cornell University;
Leo Goldberg, Kitt Peak National Observatory;
Peter Goldreich, California Institute of Technology;
J. Richard Gott III, Princeton University;
Stephen Jay Gould, Harvard University;
Tor Hagfors, National Astronomy and Ionosphere Center;
Stephen W. Hawking, Cambridge University, Cambridge, United Kingdom;
David S. Heeschen, National Radio Astronomy Observatory;
Jean Heidmann, University of Paris;
Gerhard Herzberg, National Research Council of Canada;
Theodore Hesburgh, University of Notre Dame;
Paul Horowitz, Harvard University;
Fred Hoyle, Cambridge University, Cambridge, United Kingdom;
Eric M. Jones, Los Alamos Scientific Laboratory;
Jun Jugaku, University of Tokyo;
N. S. Kardashev, Institute for Cosmic Research, Soviet Academy of Sciences, Moscow;
Kenneth I. Kellerman, National Radio Astronomy Observatory;
Michael J. Klein, Jet Propulsion Laboratory;
Richard B. Lee, University of Toronto;
Per-Olof Lindblad, Stockholm Observatory;
Paul D. MacLean, National Institute of Mental Health;
Matthew Meselson, Harvard University;
Marvin L. Minsky, Massachusetts Institute of Technology;
Masaki Morimoto, Nobeyama Radio Observatory, Tokyo;
Philip Morrison, Massachusetts Institute of Technology;
Bruce Murray, California Institute of Technology;
William I. Newman, University of California, Los Angeles;
Bernard M. Oliver, Hewlett-Packard Corporation;
J. H. Oort, Leiden University, Leiden, The Netherlands;
Ernst J. Öpik, Armagh Observatory, Northern Ireland;
Leslie Orgel, Salk Institute;
Franco Pacini, Arcetri Observatory, Florence, Italy;
Michael D. Papagiannis, Boston University;
Linus Pauling, Linus Pauling Institute for Science and Medicine;
Rudolf Pešek, Czechoslovak Academy of Sciences, Prague;
W. H. Pickering, California Institute of Technology;
Cyril Ponnampertuma, University of Maryland;
Edward M. Purcell, Harvard University;
David M. Raup, University of Chicago;
Grote Reber, Tasmania;
Martin J. Rees, Institute of Astronomy, Cambridge University, Cambridge, United Kingdom;
Dale A. Russell, National Museums of Canada, Ottawa, Canada;
Roald Z. Sagdeev, Institute for Cosmic Research, Soviet Academy of Sciences, Moscow;
I. S. Shklovskii, Institute for Cosmic Research, Soviet Academy of Sciences, Moscow;
Jill C. Tarter, University of California, Berkeley;
Lewis Thomas, Memorial Sloan-Kettering Cancer Center;
Kip S. Thorne, California Institute of Technology;
Sebastian von Hoerner, National Radio Astronomy Observatory;
Edward O. Wilson, Harvard University;
Benjamin Zuckerman, University of Maryland.