



North American AstroPhysical Observatory (NAAPO)



Cosmic Search: Issue 4 (Volume 1 Number 4; Fall (Oct., Nov., Dec.) 1979) [Article in magazine started on page 48]

SETI Meetings

By: Editors

The great interest in SETI is evidenced by the many meetings and conferences held on this subject. In this and future issues of **COSMIC SEARCH** we will report on all of the conferences of which we are aware and, wherever possible, to list the titles of papers given and the authors presenting them. Many of these papers have been and will be reported in more detail in individual SEnTinel items.

1. International Scientific Radio Union (URSI) Conference on SETI at Helsinki, Finland, August 2, 1978, K. I. Kellerman and N. S. Kardashev, Organizers. See below for paper listings.



2. Congress of the International Astronautical Federation (IAF) at Dubrovnik, Yugoslavia, October 1978. Rudolph Pesek and John Billingham, Organizers. Three papers from this meeting have been summarized in the SENInel section of COSMIC SEARCH for Summer 1979 (Vol. 1, No. 3, pages 26 and 27).



3. National Aeronautics and Space Administration (NASA) Ames Research Center Conference on "Life in the Universe" at Moffett Field, California, June 19 and 20, 1979, John Billingham, NASA Ames, General Chairman.

In his speech of introduction Robert Frosch, Administrator of NASA, emphasized the profound philosophical and scientific importance of SETI.

Frosch pointed out that if our logic is correct, we *must* search for others and, if it turns out that there are no others, then we must explain why and plan the future carefully. He noted further that those who say we should postpone the search until after we save the human race are incorrect for how can we save the race unless we first understand its place in the universe. Regarding "golden fleeces", Frosch said,

"The idea that searches, gropings for knowledge whose purpose we don't understand are silly and some kind of a ripoff, results from sheer lack of understanding, lack of imagination and lack of perception of the meaning of the history of the human race."

In his remarks which concluded the two-day conference, pioneer SETI-scientist Philip Morrison said that the meeting was the largest and most wide-ranging SETI conference ever held.

The purpose of the conference was to lay the foundation for comprehensive, multidisciplinary research into the problem of the nature and distribution of life in the universe. Papers presented at the conference dealt with two complementary

approaches to this problem: (1) an attempt to directly identify and study extraterrestrial life-sites by astronomical techniques and (2) an attempt to formulate a theory of the origin and evolution of life in terms of environmental phenomena responsible for them. See below for paper listings.



4. International Astronomical Union (IAU) Conference on "Strategies for the Search for Life in the Universe" at Montreal, Canada, August 15, 1979, Michael Pappagiannis, Boston University, Organizer. This conference involves a joint session of three commissions of the IAU: Commission 16 on Planets and Satellites, Commission 40 on Radio Astronomy and Commission 44 on Astronomy from Space. See page 49 (i.e., below) for paper listings.



5. Conference on "Where Are They? A Symposium on the Implications of Our Failure to Observe Extraterrestrials" at College Park, Maryland, November 2 and 3, 1979, Michael H. Hart, Trinity University, Ben Zuckerman, University of Maryland, and Michael Pappagiannis, Boston University, Organizers. See page 49 (i.e., below) for paper listings.

Meeting Details: Papers and Authors

1. URSI Helsinki Meeting, August 2, 1978

B. M. Oliver, "Review of SETI and Current Ames Proposals"

S. Gulkis, "The JPL All-Sky Search"

J. Tarter, "SETI Observations of 201 Nearby Stars Using a 100,000-channel Spectrum Analyzer"

F. Drake, "SETI Programs at the Arecibo Observatory"

F. Biraud, "Wide-Band Signals as Call Signals for Interstellar Communication"

R. Wielebinski and J. Seiradakis, "Observations of Some Nearby Stars for

Pulsed Signals". (For details see this issue's SEnTInel).

M. Morimoto, "Preferred Frequencies for Interstellar Communications"

W. Sullivan III, "Eavesdropping: The Radio Signature of the Earth"

S. Gorgolewski, "SETI at Very Low Frequencies"

B. F. Burke, "A Skeptic's View"

2. AF Dubrovnik Meeting, October 1978. See **COSMIC SEARCH**, Summer 1979, Vol. 1, No. 3, pages 26 and 27, for reports on three papers.

3. NASA Ames Meeting, June 19 and 20, 1979.

Opening Session

Welcome by **A. Thomas Young**, *Deputy Director NASA Ames Research Center*

Introduction by **Robert Frosch**, *NASA Administrator*

"An Overview of Cosmic Evolution" by **Eric Chaisson**, *Harvard University*

Session I: The Origin of Life

Sherwood Chang, *NASA Ames Research Center*, "Organic Chemical Evolution"

Benton C. Clark, *Martin Marietta Aerospace Corp.*, "Sulfur: Fountainhead of Life in the Universe"

Duwayne M. Anderson, *State University of New York at Buffalo*, "The Role of Interfacial Water and Water in Thin Films in the Origin of Life"

Session II: Life Supporting Environments

Lynn Margulis, *Boston University*, "Evolution of the Biosphere"

Karl Turekian, *Yale University*, "The Origin and Evolution of Continents and Oceans"

Donald Huntten, *University of Arizona*, "Climatological Stability"

Martin Cohen, *University of California at Berkeley*, "Stellar Influences"

Robert Harrington, *U.S. Naval Observatory*, "Planetary Orbits in

Multiple Stars"

Gustaf Arrhenius, *Scripps Institution of Oceanography*, "Constraints on Early Life by Earth's Accretional and Pre-Accretional Development"

Stephen Schneider, *National Center for Atmospheric Research*, and **Starley Thompson**, *University of Washington*, "Cosmic Conclusions from Climatic Models: Can They be Justified?"

James Kasting and **Thomas Donahue**, *University of Michigan*, "Evolution of Oxygen and Ozone in the Earth's Atmosphere"

David Black, *NASA Ames Research Center*, "A Review of Prospects for Detecting Other Planetary Systems"

Simon P. Worden, *Sacramento Peak Observatory*, "Detecting Planets in Binary Systems with Single Aperture Interferometry"

J. William Schopf, *University of California at Los Angeles*, "Biogeocosmopoetry: Major Events in the Evolution of Life on Earth and Speculations Regarding their Possible Relevance to Extraterrestrial Evolution"

Panel Discussion

Session III: The Evolution of Complex Life in the Galaxy

Alexander Rich, *Massachusetts Institute of Technology*, "The Origins of the Protein Synthetic System"

James Valentine, *University of California at Santa Barbara*, "The Emergence and Radiation of Multicellular Organisms"

Dale Russell, *National Museums of Canada*, "Speculations on the Evolution of Intelligence in Multicellular Organisms"

Bernard Campbell, *L. S. B. Leakey Foundation*, "Evolution of Technological Species"

Wallace Tucker, *Harvard-Smithsonian and U.S. International University*, "Astrophysical Crises in the Evolution of Life in the Galaxy"

Kenneth Towe, *Smithsonian Institution*, "Biochemical Keys to the Emergence of Complex Life."

Sanford Siegel and **B. Z. Siegel**, *University of Hawaii*, "Gravity, Liquification and Land Plant Evolution: A Study of Chemo-Mechanical Adaptation and Its Concomitants"

Owen Lovejoy, *Kent State University*, "The Evolution of Man and Its Implications for General Principles of the Evolution of Intelligent Life"

Session IV: The Detectability of Technological Civilizations

Kenneth Janes, *Boston University*, "The Identifiability of Suitable Stars"

Ronald Bracewell, *Stanford University*, "Manifestations of Advanced Civilizations"

Bernard Oliver, *Hewlett-Packard Corporation*, "Search Strategies"

Woodruff Sullivan III, *University of Washington*, "The Radio Signature of Earth"

Robert Edelson, *Jet Propulsion Laboratory*, "A Sky and Frequency SETI Survey: Plans, Rationale and Status"

John Wolfe, *NASA Ames Research Center*, "High Sensitivity Observations"

Philip Morrison, *Massachusetts Institute of Technology*, "Reflections"

4. IAU Montreal Meeting, August 15, 1979.

Session I: Strategies for the Search for Planetary Systems

G. Gatewood, "Astrometric Methods"

D. Currie, "Interferometric Methods"

Session II: Strategies for the Search for Early Life Forms

C. Sagan, "Search in Our Solar System"

J. Ribes, "Search in Other Solar Systems"

Session III: Alternative Views on the Number (N) of Civilizations

M. Hart, "N Is Very Small"

T. Kuiper, "N Is Very Large"

F. Drake, "N is *Neither* Very Small Nor Very Large"

M. Papagiannis, "N Is *Either* Very Small or Very Large"

Session IV: Strategies for the Search for ETI Through Radio Waves

B. Zuckerman, "Programs in the U.S. and Canada"
V. Troitsky, "Programs in the U.S.S.R."
S. Gulkis, "Large and Small Alternatives for the Future"

Session V: Manifestations and Achievements of Cosmic Technologies

N. Kardashev, "Astroengineering"
F. Dyson, "Interstellar Travel and Energy Sources"
C. Townes, "Search for Ultra-violet and Infra-red Lasar Signals"

Session VI: Open Forum

Presentation of new ideas and panel discussion.

Session VII: Summary of Discussions and Conclusions from the Joint Session

F. Drake and M. Papagiannis, "Review"

5. College Park, Maryland, Meeting, November 2 and 3, 1979.

Session I: Overview

Session II: Possible Sites for Development of Life

Session III: Biological Considerations

Session IV: Feasibility of Interstellar Travel and Colonization

[HOME](#)

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Designed by Jerry Ehman.

Last modified: December 28, 2005.