AAAS Symposia

Annual Meeting: San Francisco

24 February–1 March 1974

27 February

Emerging Portrait of the Planets

Man's curiosity about the nature and origin of the universe and the possibility of extraterrestrial life has resulted in innumerable scientific studies and theories.

In the past 4 years, man's knowledge of other planets and satellites in the solar system has undergone a fundamental change, largely due to advances in space science and technology. The moon has been explored by men, and hundreds of kilograms of samples returned to Earth. Spacecraft have successfully landed on the surface of Venus and have orbited Mars. Unexpected new data have emerged on Titan, the largest satellite of Saturn.

In the months just preceding the AAAS annual meeting, the first scientific flyby of Jupiter will have taken place, and the first photographic information from a Venus flyby and a Mars lander may be returned to Earth.

The symposium, entitled "The Emerging Portrait of the Planets," arranged by Carl Sagan of Cornell University and S. I. Rasool of NASA Headquarters, aims to present these new developments to an interdisciplinary audience.

26 February

Cosmic Evolution

The discovery of interstellar organic molecules, the finding of amino acids in meteorites, and the results of laboratorgy simulation experiments have turned the study of life in the universe into an interdisciplinary enterprise.

An evolutionary model of the universe will be discussed in a symposium entitled "Cosmic Evolution," arranged by George Field of Harvard University.

Astronomical studies are converging on a model in which matter, including the primitive chemical element, hydrogen, is created in a relativistic explosion ("big bang") with the Milky Way Galaxy condensing from this material some 100 million years later.

The chemical elements which formed both the planets and the materials of living organisms found in the solar system appear to have been formed in stellar explosions occurring during the first 10 billion years in the life of the Milky Way Galaxy. The sun and its planets were formed from the hydrogen and stellar-produced heavy elements in interstellar space caused by the collapse of a cloud approximately 4.7 billion years ago.

This symposium will systematically develop the above evolutionary scheme and conclude with a discussion of the possibility of intelligent life in the universe and methods for communicating with it.

25 February

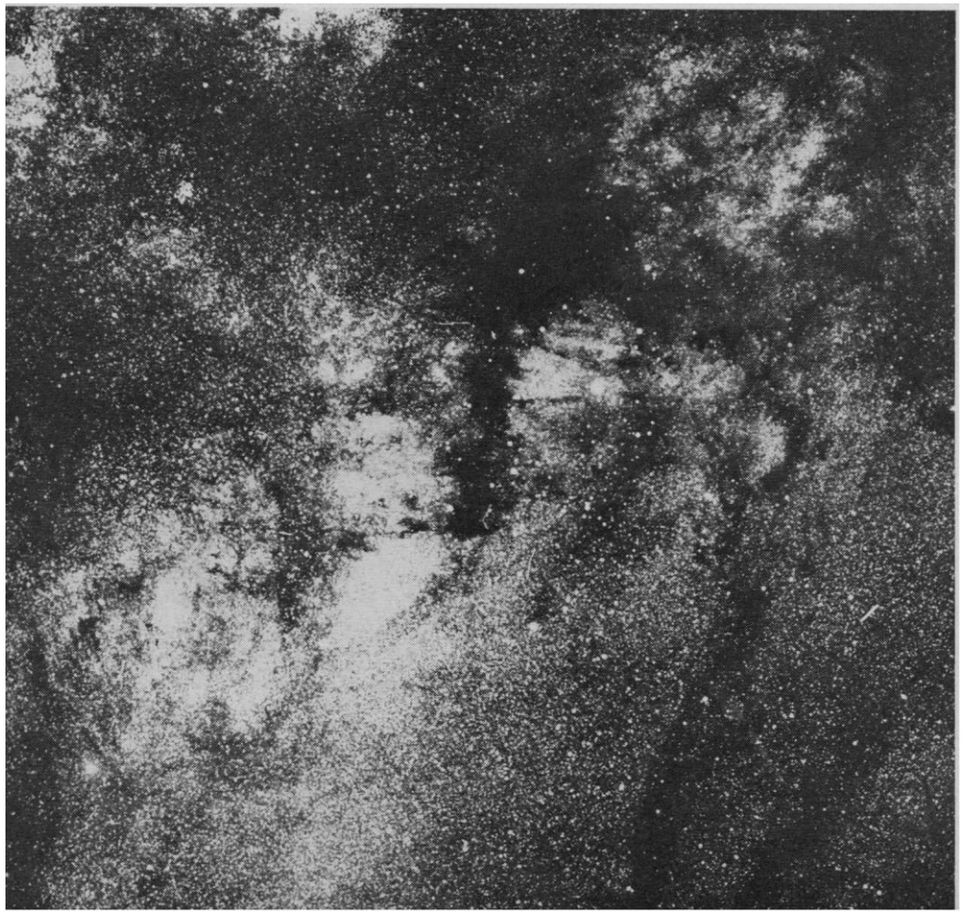
Velikovsky's Challenge to Science

More than 20 years ago Immanual Velikovsky concluded, from his studies of historical and archeological records, that close encounters between Earth and the planets Venus and Mars occurred near 1500 B.C. and 775 B.C.

Velikovsky's suggestions differed greatly from the generally accepted view of the solar system, and many astronomers and historians considered his conception to be fallacious.

Although an attempt was made to suppress Velikovsky's writings, public interest in his ideas continued, and in recent years has increased. This renewed interest arises in part from the progress of space exploration. Velikovsky claims that the results of space research support his views; however, many astronomers flatly disagree.

An AAAS meeting symposium entitled "Velikovsky's Challenge to Science," arranged by Donald Goldsmith of the State University of New York at Stony Brook, Owen Gingerich of Harvard University, and Ivan King of the University of California at Berkeley, will present speakers both in favor of and opposed to Velikovsky's ideas. The symposium will deal with



Serpens-Ophiuchus, Milky Way.

theories proposed by Velikovsky, focusing on questions of the nature and origin of the planets, and will include, among other speakers, Velikovsky himself.

26 February

Search for Extraterrestrial Life

In the 1920's the Russian biochemist A. I. Oparin and the English physicist J. B. S. Haldane independently proposed a theory of chemical evolution which offered a scientifically plausible explanation for the processes that led to life on Earth.

A consequence of this theory is that the occurrence of life on Earth may not be unique and that there may be many inhabited planets elsewhere in the universe.

Mankind now has the chance to discover if life exists or has existed on the surface of Mars through the Viking Mission. In the future there may also be an opportunity to share in our galactic heritage through communication with extraterrestrial civilizations.

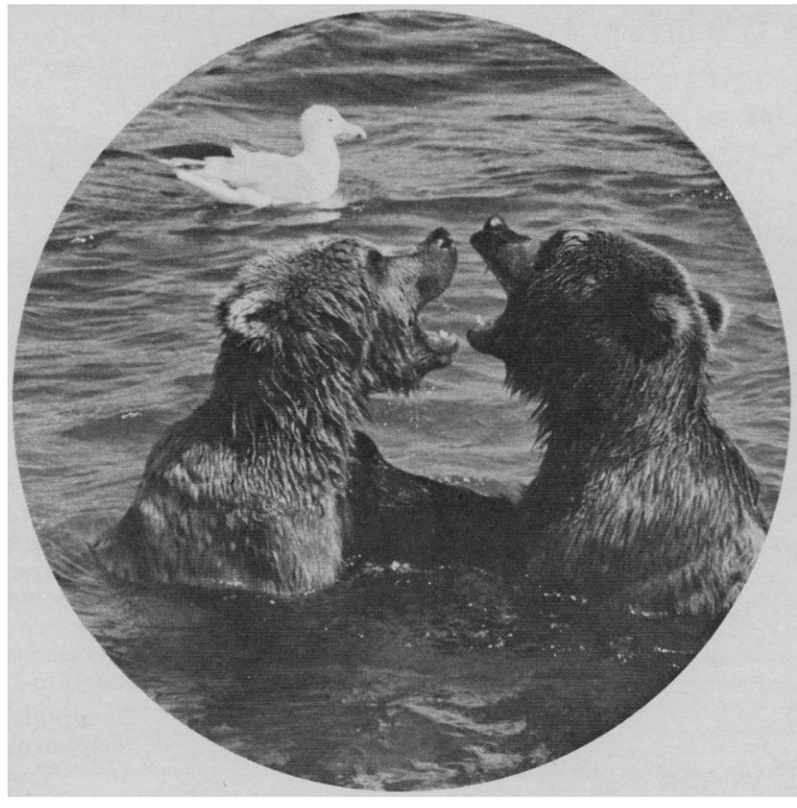
In a symposium entitled "The Search for Extraterrestrial Life," arranged by Keith A. Kvenvolden and Harold P. Klein, both of NASA's Ames Research Center, extraterrestrial life will be approached from a different vantage point than Velikovsky's. The emphasis will be placed on remote life detection experiments on the surface of Mars and feasibility studies for communicating with extraterrestrial civilizations.

26–27 February

Animal Behavior Research and Zoological Parks

In recent years there has been an acceleration of interest in animal behavior, ecological problems, and animal conservation. However, relatively little is known about the basic biology and behavior of most wild animal species and a great deal of information remains to be recorded.

As research with animals is carried on most effectively wherever animals are abundant, zoological parks become ready resources for such research. The existence of a facility, though, does not automatically lead to its use. One needs to know how to use the zoos in order to utilize them effectively as research tools.



Alaskan brown bear cubs at play (Allan L. Egbert).

A symposium, entitled "Animal Behavior Research and Zoological Parks," has been arranged by Gary Greenberg of Wichita State University and Sedgewick County Zoo, to explore the relationship between zoos, zoo staffs, and researchers. It will attempt to provide the outside researcher with "instructions" to assure him of maximum and most efficient use of zoological parks. This symposium, sponsored by the Animal Behavior Society, will cover three main topics in two half-day sessions: research methods appropriate to the zoo environment, zoo research with different species, and problems peculiar to the zoo environment.

28 February

Invertebrate Transplantation

Animal research has provided scientists with knowledge that has lead, in many instances, to important discoveries.

Historically, invertebrate transplantation has been important to several disciplines, notably endocrinology, development and genetics. Its impact keeps pace with the moving trends in biological research, thus there is renewed interest in invertebrate transplantation as an approach to the phylogeny of cellular immunity, and for information on transplantation and the reproductive system.

The purpose of the symposium, entitled "Invertebrate Transplantation," arranged by E. L. Cooper of the University of California at Los Angeles, is to draw together a select, but not exhaustive, group of investigators active in the field of invertebrate transplantation. The evolution of cellular immunity as revealed by the fate of cell or tissue grafts will be emphasized. Most of the results will be particularly important to those deeply oriented to evolutionary events underlying cellular immunity. However, there will be a session on the transplantation of ovaries for those interested in endocrinology. Finally, the symposium will center on the pressing problem of controlling normal and abnormal growth.

See 26 October issue of **Science** for Registration and Housing Forms for San Francisco