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Cosmic Search: Issue 5
(Volume 2 Number 1; Winter (Jan. Feb., Mar.) 1980)
[Miscellaneous items found throughout the magazine]

Miscellaneous Items

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Information About the Publication
(Editorial Board, Editors, Table of Contents)

COSMIC SEARCH

A magazine about Space, the Future and the Search for Intelligent Life beyond the Earth presented in a popular, responsible manner

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[This statement was found on page 27 of the magazine.]

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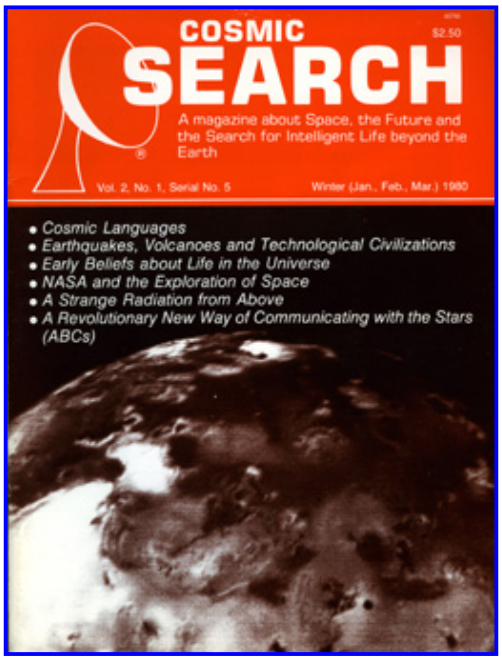
Front Cover



Jupiter's moon to as viewed from Voyager I during its close approach last spring. See article by Virginia Trimble. Photo courtesy NASA and Jet Propulsion Laboratory.

Table of Contents (in magazine)

THANK YOU!

COSMIC SEARCH expresses sincere thanks to the following donors who are helping to make sure that the story of SETI and mankind's future continue to be told in an interesting and factual way.

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Coming in COSMIC SEARCH

- "Chief Entities" by **I. J. Good**
- "Space Travel and Life" by **E. J. Öpik**
- "Marconi" by **George H. Brown**
- "Not as We Know It" by **Isaac Asimov**
- "In the Time Machine" by **Don Lago**
- "Gravity Waves for Interstellar Communication" by **David H. Douglass**
- "Strategies of Searching for Extraterrestrial Civilizations" by **Nikolai Kardashev**
- **FORUM:** Discussion with **Patrick Palmer** and **Lee Rickart** on "SETI Perspectives"
- **ABCs of Space** will explain in simple terms:
  - Signals versus Noise. How to hear what you want amid a lot of noise.
  - The Electromagnetic Spectrum. Light, x-rays and radio waves are all the same except for wavelength.
- More **SEnTlnel** news reports, highlights of meetings, "Off the Shelf" books on Space, the Future and SETI, and many other special features.

Glossary

Anthropocentric:
Man-centered.

Astronomical Unit:
A unit of length equal to the distance of the earth from the sun, about 150 million kilometers.

Bandwidth:
The wavelength or frequency range to which a receiver responds. Bandwidths can be described as narrow or wide, according to their range.

Big Bang:
The beginning event in the Universe. The explosion of this primordial fireball some 15 billion years ago caused the initial outward expansion of gas and dust which formed the universe.

Black Hole:
An end state of matter of a massive star. Once trapped within the gravitational field of a black hole, nothing can escape.

CETI:
An acronym for Communication with Extra-Terrestrial Intelligence.

Continental drift:
The geological theory that says continental land masses are moving slowly.

Cosmology:
The study of the origin of the universe and how it has developed and what its future will be.

Electromagnetic radiation:
Energy which is propagated by changing magnetic and electric fields, and in a vacuum, moving at the speed of light. Electromagnetic radiation covers the entire spectrum from long-wavelength radio radiation to short-wave gamma radiation.

Galaxy:
A large system of stars. Our galaxy, the Milky Way, is a spiral galaxy containing some 100,000 million stars, 100,000 light years in diameter and 10,000 light years thick.

Gigahertz:
A unit of frequency equal to 1,000 million hertz.

Hertz:
A unit of frequency equal to one cycle per second.

Hydrogen:
The most abundant element in the universe. It radiates naturally at a wavelength of 21 centimeters.

Kelvin degrees:
Absolute temperature measured in the celsius scale. Ten degrees kelvin equals ten degrees celsius above absolute zero.

Light-Year:
The distance traveled by light in one year, about 10 trillion kilometers.

Light (speed of):
In empty space: 300,000 kilometers per second.

Macrocosm:
The entire universe

Malthusian:
Pertaining to political economist Thomas R. Malthus' (1766-1834) contention that population tends to outdistance its means of support. Eventually population will be held in check by disaster, unless otherwise constrained.

Megahertz:
A unit of frequency equal to one million hertz.

Microcosm:
The universe in miniature

Nanosecond:
One billionth of a second.

Plate tectonics:
In geology, relating to the structure of the earth's crust or plates.

Pulsar:
A relatively small, rapidly rotating radio source which is believed to have a neutron star at its center.

Radio Astronomy:
The science of making astronomical observations using instruments sensitive to radio wavelengths.

Redshift:
A shift toward the longer wavelengths of the optical spectrum due to recessional velocity (Doppler effect).

SETI:
An acronym for Search for Extra-Terrestrial Intelligence.

Universe:
The amalgam of Time, Space, Matter and Energy.

COSMIC SEARCH AWARDS

For best papers on SETI

Category 1. Undergraduate students
Category 2. Graduate students
Category 3. Anyone else under 30 years of age

Papers may be on any aspect of the Search for Extra-Terrestrial Intelligence (SETI). Papers must be double-spaced typewritten with one inch margins on 8 1/2 by 11 inch bond paper and less than 2000 words in length. Any illustrations must be clearly executed.

Authors of best papers will be given a **COSMIC SEARCH AWARD** of $100 and the paper will be published in **COSMIC SEARCH**. Authors should include their full address and telephone number. Authors should enclose a self-addressed stamped envelope if they wish to have their manuscripts returned.

Manuscripts may be submitted at any time. Their review is a continuous, on-going process. Each article received is reviewed by a special committee and if judged worthy, either in its original form or after revisions, will be given a **COSMIC SEARCH AWARD**. The opinion of the committee is final.

A contestant may submit and have under review only one manuscript at a time and be eligible for only one **COSMIC SEARCH AWARD** in one category. However, it is possible for one person to achieve **COSMIC SEARCH AWARDS** sequentially in each of the three categories.

Address **COSMIC SEARCH AWARD** Committee, Radio Observatory, P.O. Box 293, Delaware, Ohio 43015.

Cosmic Calendar

15 billion BC	Universe began (BIG BANG)
10 billion BC	Our galaxy formed
5 billion BC	Solar system (sun, earth and other planets) formed
2 million BC	Homo sapiens emerged
5000 BC	Writing invented
1888 AD	Hertz produced radio waves
1903 AD	Letter "S" sent by radio waves across Atlantic Ocean by Marconi
1959 AD	Cocconi and Morrison proposed SETI
1960 AD	First attempt to detect extraterrestrial civilizations by Drake
1979 AD	First issue of COSMIC SEARCH

Distance Table

Distances in light travel time (approx.)

Earth to moon	1 second
Earth to sun	500 seconds (8 min.)
Sun to Mars	12.5 minutes
Sun to Jupiter	40 minutes
Sun to Pluto	5.5 hours
Solar system diameter (at orbit of Pluto)	11 hours
Sun to nearest star	4 years
Sun to center of galaxy	30,000 years
Diameter of galaxy	100,000 years
Distance of Andromeda galaxy	2 million years
Distance to "edge" of universe	15 billion years

To convert light travel time to kilometers multiply travel time in seconds by velocity of light (300,000 kilometers per second).

Miscellaneous Quotes

The following quotes are not directly associated with any article. They are listed here in the order in which they appear in the magazine; page numbers are given. Uncredited quotes should be credited to the Editors of **COSMIC SEARCH** magazine.

Quote on page 10

Evolution

A billion years is a long time in evolution; one billion years ago, the highest form of life on the earth was a worm. The intelligent life in other, older solar systems must be as different from us as we are from creatures wriggling in the ooze.

— Robert Jastrow

Quote on page 16

Piano Tops

"I am enthusiastic over humanity's extraordinary and sometimes very timely ingenuities. If you are in a shipwreck and all the boats are gone, a piano top that comes along may make a fortuitous life preserver. But this is not to say that the best way to design a life preserver is in the form of a piano top. I think that we are clinging to a great many piano tops in accepting yesterday's fortuitous contrivings as constituting the only means for solving a given problem."

— Buckminster Fuller in "Operating Manual for Spaceship Earth", E. P. Dutton, 1978.

Quotes on page 32

We Are a Spacefaring People

Our spacefaring could make all the difference. We have been feeling constricted and almost paranoid. But in spacefaring we have found new realms for the human imagination. In the exploration and exploitation of space we may be making the greatest discoveries of all — seeing where we are, appreciating our earthly frailties and finiteness for the first time, and sensing a future that may not be infinite but at least will never again be bound entirely to the cosmic frog pond of Earth. We are a spacefaring people. — John Noble Wilford

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Homo Sap

We have now eliminated a large part of the world's wild life habitats to accommodate our agriculture, our housing, our industries and transportation networks. Is this to continue until no wild species are left? Is this to become virtually a "one-crop" planet — the single crop being Homo Sapiens, exposed to all the epidemic threats that endanger one-crop regimes?

Walter Sullivan in "Continents in Motion"

Quote on page 34

Technology and Thought

So long as we can negotiate the triumph of technology successfully, we are unconcerned to ask what the presuppositions of the technical world are and how they bind us to its framework. Already these presuppositions are so much the invisible medium of our actual life that we have become unconscious of them. We may eventually become so enclosed in them that we cannot even imagine any other way of thought but technical thinking.

William Barrett in *The Illusion of Technique: A Search for Meaning in a Technological Civilization*

Quotes on page 45

The Nebular Hypothesis

The stars are as thick as flowers in the sky;
Tonight is a night for lovers to kiss;
But we are arguing, you and I,
On the nebular hypothesis.

Mary Burwell

The Best People

The fact that space exploration and space habitation may involve difficulties will constitute a particularly strong challenge to the best nations and the best people.

— Wernher von Braun

Our Technological Civilization

Never have so many people understood so little about so much.
James Burke in "Connections"

Humanism versus Materialism

The humanistic values stated at the founding of our society and the materialistic ones which have predominated throughout our history have often been in conflict. The outcome of the revolution will depend on how that conflict is resolved.
John D. Rockefeller, 3rd, in *The Second American Revolution*

Quote on page 47

Birds and Stars

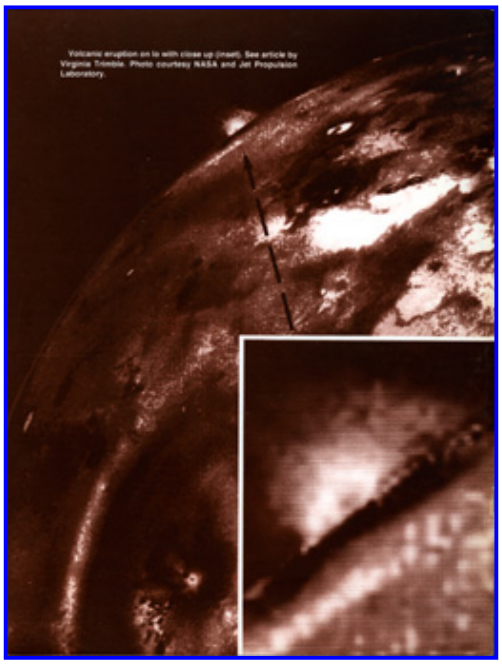
If birds among us on this planet
can use the stars to give
direction to their flight,
then maybe birds on planets
very far away use our raging sun
– but only as a tiny hint of light –
to guide their way to home in midst of night.
— Don Lago

Miscellaneous Photos

The following two photos are shown on this webpage at a relatively small size; click on each one to obtain a larger size version.

Photo on Inside Front Cover

Photo on Outside Back Cover



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