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Cosmic Search: Issue 4
(Volume 1 Number 4; Fall (Oct., Nov., Dec.) 1979)
[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

FALL (Oct., Nov., Dec.) 1979

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About COSMIC SEARCH

Cosmic Quest, Inc., is a non-profit educational-scientific (tax-exempt) organization dedicated to the promotion and support

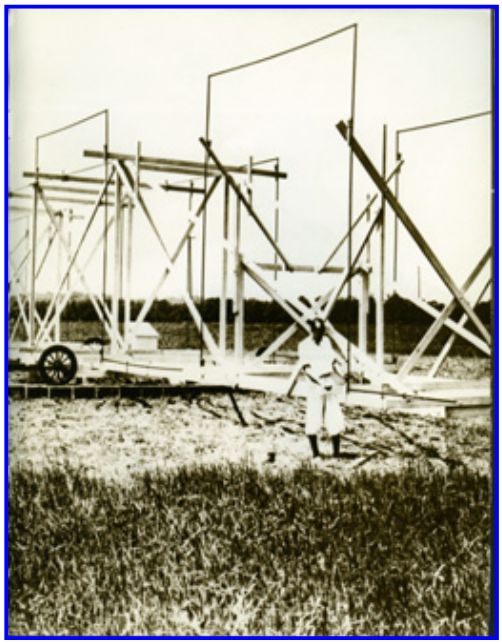
of SETI endeavors.

Subscription price: $10 for 4 issues in U.S. (and possessions), $13 elsewhere. Single copies: $2.50 in U.S. (and possessions), $3 elsewhere.

Address subscriptions and all other correspondence to: Radio Observatory, Box 293, Delaware, Ohio 43015.

Application to mail at second-class postage rates is pending at Delaware, Ohio, and at additional mailing offices.

The Covers (front and inside back):



The Covers: Grote Reber's dish antenna at Wheaton, Illinois, in 1938, the prototype of the modern radio telescope with which he made the first maps of the radio sky (Front cover). See article by Louis Berman.

Karl Jansky and his rotating antenna at Holmdel, New Jersey, with which he discovered radio waves from beyond the earth in 1932 (Inside back cover). See articles by C. M. Jansky, Jr.

Table of Contents (in magazine)

Berendzen New President of American University

Dr. Richard Berendzen, Provost of American University and a member of the **COSMIC SEARCH** Editorial Board, has been elected President of the university to become effective in January 1980, succeeding Dr. Joseph Sisco, who becomes University Chancellor.

When Berendzen's new appointment becomes effective, there will be two university presidents on the **COSMIC SEARCH** Editorial Board: Berendzen and The Reverend Theodore M. Hesburgh, President of the University of Notre Dame.

COSMIC SEARCH now a Quarterly

With this Fall (October, November, December) 1979 issue, **COSMIC SEARCH** becomes a quarterly magazine. Since there are four rather than the six issues originally planned for 1979, current subscriptions will automatically be extended so that 6 issues will be received for a one-year subscription and 12 issues for a two-year subscription.

Volume 2 of **COSMIC SEARCH** will begin with the Winter (January, February, March) 1980 issue. The index for Volume 1 (nos. 1, 2, 3 and 4) begins on page 50 of this issue.

How You Can Help

Although **COSMIC SEARCH** has over 3000 subscribers in over 50 countries, its largest circulation is via stores and newsstands. However, this distribution is spotty.

If there is a store or outlet in your area that you think should sell **COSMIC SEARCH**, show the manager your copy. Advise the manager that **COSMIC SEARCH** can be supplied on consignment at $1 off the cover price (40 percent discount). Consignment means the store pays only for copies sold. We also pay the shipping charges. If the manager is interested, then please write to:

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Sylvia Raub will take it from there.

We need more outlets not only in the U.S. but world wide. Your help will be greatly appreciated.

We Are Tax Exempt

Cosmic-Quest, Inc., the non-profit scientific-educational organization publishing COSMIC SEARCH, has been granted tax-

exempt status by the U.S. Internal Revenue Service. Accordingly, donations or contributions are tax deductible. Subscriptions and renewals are not tax deductible.

On a combination donation-subscription or donation-renewal, the amount over and above the magazine cost is tax deductible. For example, if a donor sends $30 which includes an 8 issue subscription or renewal at $18, the $12 difference is tax deductible. Contributions will be gratefully accepted in any amount.

Coming in COSMIC SEARCH

- "Gravity Waves for Interstellar Communication" by **David H. Douglass**
- "The Grand Analogy: History of the Idea of Extraterrestrial Life" by **Trudy Bell**
- "Cosmic Languages" by **Hans Freudenthal**
- "Strategies of Searching for Extraterrestrial Civilizations" by **Nikolai Kardashev**
- "Space Travel and Life" by **E. J. Öpik**
- "Chief Entities" by **I. J. Good**
- "Not as We Know It" by **Isaac Asimov**
- **FORUM:**
  - Interview with NASA's SETI Director **John Billingham** on "SETI"
  - Discussion with **Patrick Palmer** and **Lee Rickart** on "SETI Perspectives"
- **ABCs of Space** will explain in simple terms:
  - Gravity Waves. A revolutionary new way of communicating with the stars?
  - The Solar System Signature. How our solar system would appear to a distant star.
  - 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. "Off the Shelf" highlights more literature 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.

Big Crunch:
The end of a closed-model universe collapsing in on itself.

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.

Closed-model universe:
A theoretical model of the universe which dictates that one day the universe will stop expanding and begin falling back on itself.

Cosmic Background Radiation:
The residual, all pervading radiation remaining from the Big Bang. Proposed by George Gamov as a consequence of the Big Bang, this energy is present at a reduced level because of the expansion of the universe. Experimentally confirmed by Penzias and Wilson to have a value of about 3 degrees (kelvin).

Cosmological Principle:
The assumption that the universe is essentially the same everywhere. Observers see galaxies in all directions in space and find them receding from one another as a result of the expansion of the universe.

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.

Event Horizon:
The boundary of a black hole. Matter inside the event horizon can never escape.

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.

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

Nanosecond:
One billionth of a second.

Nucleon:
A proton or a neutron, especially in the nucleus of an atom.

Open-model universe:
A theoretical model of the universe in which the universe is destined to expand forever.

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 **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.

Solution to Summer 1979 Puzzle

SETI Puzzle (Summer 1979, page 30) answer: Sent by C3PO.

Solution to Summer 1979 Puzzle.

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.

Quotes on page 11

"The invariable mark of wisdom is to see the miraculous in the common."
Ralph Waldo Emerson

Murphy's law: "If something can go wrong, it will."
O'Brien's corollary: "Murphy was an optimist."

"Lo," quoth he, "cast up thine eye, See yonder, lo! the galaxie."
Geoffrey Chaucer (1340-1400)

On first reading Chapman's (translation of) Homer:
"Then I felt like some watcher of the skies,
When a new planet swims into his ken." John Keats (1795-1821).

Astronomy and SETI

One thing we have in common with alien civilizations, if such exist, is our universe. The more we know about it through astronomy, the better are our chances of finding such a civilization. If you're looking for a needle in a haystack, it helps to know more about the haystack.
Sedgewick Seti

Quotes on page 16

It requires a very unusual mind to undertake the analysis of the obvious.
—Alfred North Whitehead

Although the myriad things are many, their order is one.
—Chuang-Tzu

"The complexity and diversity of life on the earth, the awesome vastness, mystery and grandeur of the cosmos inspire the greatest wonder and contemplation."
Sedgewick Seti

Now, my suspicion is that the universe is not only queerer than, we suppose, but queerer than we can suppose.
—J. B. S. Haldane

Quotes on page 20

"The effort to understand the universe is one of the very few things that lifts human life a little above the level of farce, and gives it some of the grace of tragedy."
—Steven Weinberg

"So deep is the conviction that there must be life out there beyond the dark, one thinks that if they are more advanced than ourselves they may come across space at any moment, perhaps in our generation. Later, contemplating the infinity of time, one wonders if perchance their messages came long ago, hurtling into the swamp muck of the steaming coal forests, the bright projectile clambered over by hissing reptiles, and the delicate instruments running mindlessly down with no report."
—Loren Eiseley

Quotes on page 29

What led me to my science and from my youth filled me with enthusiasm, is the fact—not at all self-evident—that our laws of thinking conform with the lawfulness in the passage of impressions which we receive from the other world, thus making it possible for man to gain information about that lawfulness by mere thinking.
—Max Planck

Infinity Divinity

There was a young fellow from Trinity
Who took the square root of infinity,
But the number of digits
Gave him the fidgits;
He dropped Math and took up Divinity.
George Gamow

Quote on page 35

SETI Yeti

A young man, a student of SETI,
Said, I've heard them, I know, and then bet he

Could unscramble their chatter,
But the fact of the matter,
Was he'd tuned his dipole on a yeti.
W. R. C. Shedenhelm

Quote on page 40

A poll of persons coming to planetariums reveals that they are mostly interested in three things: extraterrestrial intelligence, UFOs and astrology.

Quote on page 46

Seek simplicity, and distrust it.
—Alfred North Whitehead

Miscellaneous Photos

The following photo is not directly associated with any article. It is shown on this webpage at a relatively small size; click on it to obtain a larger size version.

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