

# OMNI

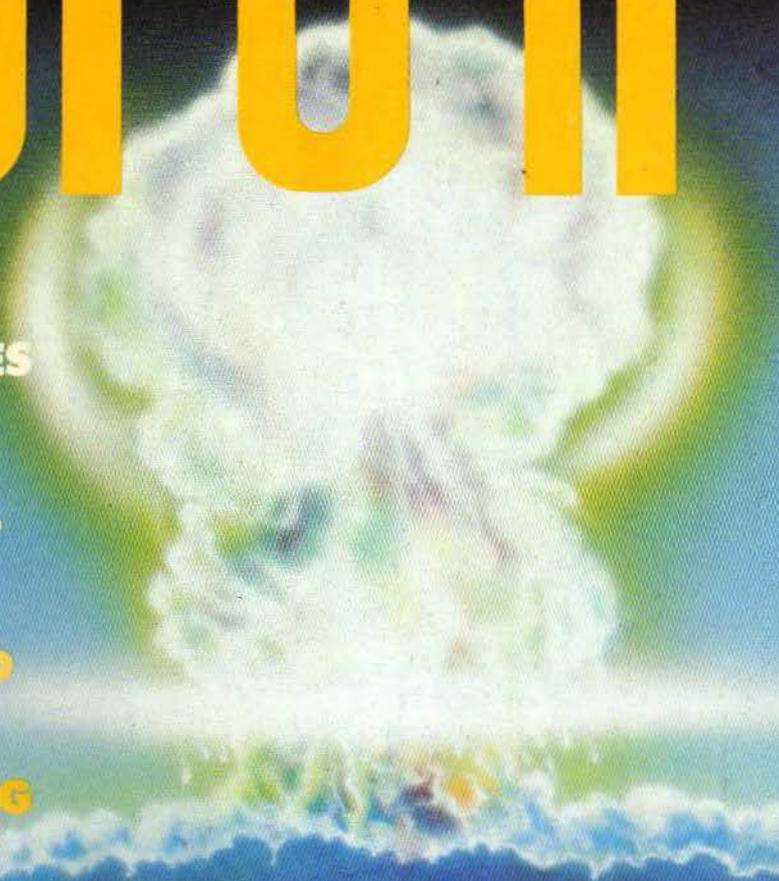
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# OMNI

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APRIL

# LETTERS

# COMMUNICATIONS

## British Support

I wish to express my support for *Omni's* stand against a trend in the United States. I refer to the Moral Majority, of course.

From this side of the Atlantic Ocean, it seems America is becoming polarized, religious fascists at one end and virtually everyone else at the other. If the Moral Majority has its un-American way, America will become a nation of imbeciles. Having experienced your warm hospitality and high standards, I see this as a very troublesome development.

Surely America's role is to lead this planet toward the exploitation of outer space—a feat beyond every other nation on Earth. This ideal may indeed be endangered by the ramblings of an absolutely ludicrous organization.

Unless Americans are careful, they will become the laughingstock of this planet.

Tony Norden  
Redbridge, England

## Fact or Fiction?

In *Continuum* [February 1982] you published an item about Dr. Peter Lewin's attempt to prove that sounds have been recorded on ancient plates, pottery, and other artifacts.

This theory was also proposed by Gregory Benford in his science-fiction story "Time Shards," reprinted in the anthology *The Best Science Fiction of the Year #9* (Ballantine Books, 1980).

In the story by Benford, the feat was accomplished by integrating a turntable, a stylus, and a computer.

Robert G. Mest  
Tennessee Colony, Tex.

There has been some debate in the past in your Letters columns about "Soft Ions" [October 1981]. I would like to clarify the story's categorization: It was not science fiction; it was science fiction come true.

Steven Colnek  
San Francisco, Calif.

## Semen Collectors

In "Laurels (and Hardys)" [January 1982], a topic headlined "One-Upmanship Cup" describes MEGS, or Male Electronic

Genital Stimulator, as uniquely appropriate for certain uses. This kind of device was being used at least 25 years ago by veterinarians. Its name is Electro Ejaculator, and it was used to collect semen from animals.

Wes Buller  
Brookshire, Tex.

## Here Come the UFOs

"UFO investigators have had a slow year, but things should pick up once Terry Gudgeon starts selling his illuminated frisbees..." [Antimatter, December 1981].

Most interesting, especially since so many UFO investigators, including Dr. J. Allen Hynek, tell us that there are as many as 100 reports of UFO sightings per day.

Come April 25 and August 25 (give or take a week or two), UFO sightings should reach peaks. According to Jeff Hecht, author of the *Antimatter* article, areas of the world likely to experience good to excellent encounters (including abductions) will follow these routes:

Across 40 degrees latitude in Turkey, Greece, Italy, Portugal, and Spain and into the northern New England States, across the U.S.-Canadian border, and up toward Alaska.

From 60 degrees latitude in the USSR and southward toward China, the UFO paths will continue through the northern portion of India and on to the southern tip of the Arabian peninsula.

The first really good sighting is likely to be in Spain or Portugal.

Janina Leeds  
San Francisco, Calif.

## First Earth Nihilism

Lieutenant Colonel Jim Channon's concept of a so-called First Earth Battalion [Continuum, February 1982] seems to be nothing more than an elite paramilitary force. Such a vigilante group, if allowed to purge the world of evil, would only become an autonomous, nihilistic strike force bent on imposing its own sense of morals on others. Hitler's SS might seem like Boy Scouts in comparison.

Timothy Theophilakos  
Perth Amboy, N.J. 



## FACE IN SPACE

BY VINCENT DIPIETRO AND GREGORY MOLENAAR

Is there intelligent life on Mars? It was 1977 when I (DiPietro) first saw the picture at right. (The larger photograph covering both these pages is a color-enhanced close-up of the same image.) The photo had been made by the Viking Orbiter spacecraft as it circled around Mars. At least that's how the caption read in the magazine where I



found the picture. The quality of the magazine was such that I readily thought the photo could have been a hoax. And whoever had written the article knew nothing about interpreting the data being beamed to Earth from Mars. Another photo, for example, was accompanied by a caption that claimed to show tire tracks across

One Viking photo  
(below) shows something resembling  
a column of steam.

the Martian surface. As an experienced student of space images, I recognized the tracks as nothing more than radio-transmission errors, technically known as line losses, streaking across the picture. I soon forgot about what I had seen.

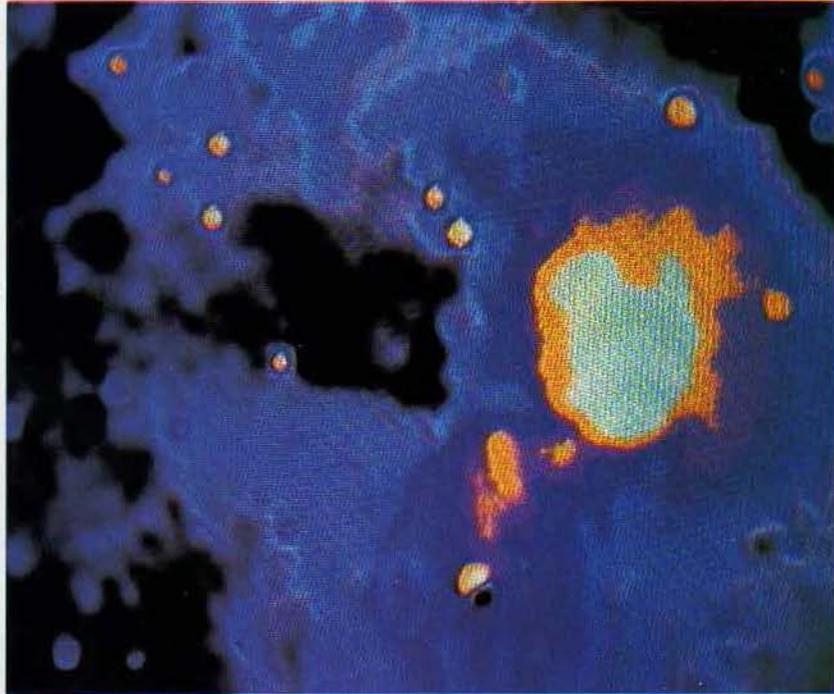
Two years later, while thumbing through the photo archives of the National Space Science Data Center, at the Goddard Space Center, in Greenbelt, Maryland, I came across a familiar image: this same serene, humanlike face rising up from the Martian land surface. NASA's title left no room for doubt as to what appeared here. It read simply: HEAD. At least

now I knew this was not a hoax. Captivated by my discovery, I wrote down the photo identification numbers and requested a copy from NASA to keep in my files.

The photograph had also interested one of my colleagues, computer scientist Greg Molenaar. We had done work for NASA before; I had handled and processed satellite images beamed to Earth, and Greg had worked on the special computer programs needed to translate computer data into pictures. Greg suggested we combine our expertise and try to improve this picture's quality, something no one else had ever attempted. We planned to do this by using the original Viking data tapes.

We knew the photo number and the date on which it was filed, and we also had a "picnell" number: 35A72. This meant the picture was taken during orbit 35 of Viking satellite "A" and that it was the seventy-second frame of image data recorded during that orbit. With this we were able to get more information, namely, the altitude of the satellite and the latitude and longitude at which the image was recorded. We now had enough data to request the original digital image tapes from the Jet Propulsion Laboratory, in California.

We began processing the tapes on our photo-recording equipment in January 1980. The first image that came out was poor. It had too many transmission errors that played out as black-and-white flecks of



pixels, or picture elements, across the photo. A pixel is the smallest unit of information discernible by a spacecraft camera. It is generated from an eight-bit computer "word" that displays that piece of the image in one of 256 shades of gray, from almost white to almost solid black. A photo composed of pixels looks like a mosaic of small squares. We found we could improve the image by stretching the contrast range of gray shades so that they represented the full band of the spectrum.

By using this contrast stretch and by filling in some of the transmission-error pixels, we got a clearer picture. We then decided to enlarge the mile-wide "face" by using digital computer techniques instead of conventional photographic enlargers, which produce grainy photographs. The first photo had huge pixels with ragged edges. We designed a way to smooth the ragged edges by dividing each large pixel into nine smaller units. We call the process Starburst Pixel Interleaving Technique, or SPIT, because of the way the white flecks of the transmission errors appear like starbursts. (The acronym SPIT could also stand for the spitting image.)

Not surprisingly there was a nagging suspicion that even this clearer photo was merely some trick of light on the Martian landscape. David Chandler's book *Life on Mars* quotes Dr. Gerald Soffen, Viking image chief, as saying that a few hours

after it took the first picture the spacecraft took another picture of the area where the face was found. And this second photo showed a faceless Martian mesa. When we looked through the Viking data library, we found no pictures that had been taken a few hours later. We did, however, find a second photo made 35 days later. The scene was labeled 70A13—meaning it was made during orbit 70 and was registered on frame number 13 of pictures taken by that same satellite.

The conditions under which this second picture was taken were very different from those the first time. The camera angle, the angle of the

sunlight, the altitude of the satellite, and the angle of inclination of the satellite's orbit were all quite different. After we got the data tape for this second photo, we ran the image through our SPIT process. What we found was that, even with all the new variables, the face was still clearly visible. It was obviously not a trick of lighting.

We continued to investigate the data for the two images of the face and began to apply other image-enhancing techniques. Since each photo was so poor in contrast, we decided to improve on the limited range of grays by replacing each gray value with a color. One result is the image on the previous two pages, color-enhanced with the assistance of German photographer/artist Manfred Kage. In each picture, 35A72 and 70A13, we detected similar features. Most prominent was an object in the eye cavity that resembles an eyeball with a pupil. The hairline, mouth, eye cavity, eyeball, and a "teardrop" under one eye were all confirmed by the second camera angle.

Natural facelike formations can be found on Earth, and it is plausible that the face we saw on Mars was created by natural forces. But the natural faces found here on Earth are invariably profiles and not nearly as sophisticated as the face seen on Mars. It is a frontal view, complete with bilateral symmetry and amazing detail. If this object was the result of natural formation, it indicates nature is a highly intelligent force.

CONTINUED ON PAGE 107

# FACE IN SPACE

CONTINUED FROM PAGE 56

This of course raises the question of whether intelligent life could ever have existed on Mars. With its lack of water in plentiful amounts and its thin atmosphere, Mars certainly cannot support life as we know it. The Martian environment of today, however, is not the same as it was millions of years ago. As Bevan French points out in *Mars—The Viking Discoveries*, "the atmosphere of Mars is more Earthlike than the chemical composition alone would suggest." The ratio of isotope combinations of certain Earth elements is the same on Mars, and there have also been discoveries suggesting that water can still be found on the planet.

Scientists also believe that the atmospheric pressure of Mars was once much greater than it is now and would have allowed "enough water to form a layer several meters deep over the whole surface of the planet," French says. Photographs of many areas on the planet show evidence of dried-up riverbeds, and Dr. Leonard Martin, of Lowell Observatory, in Flagstaff, Arizona, has reported that two successive Viking Orbiter pictures show something resembling a column of steam, perhaps rising up from a Martian volcano. The pictures were taken just 4.5 seconds apart just north of an area called Solis Lacus. The size difference between the first and the second images indicates that the cloud was rising at a velocity of more than 200 feet per second. A color-enhanced version of one of these appears on page 56.

With so much evidence of water, or at least water vapor, on Mars, it is worthwhile to speculate that some living things might have evolved and may still exist on Mars. The only way to find out for sure is to return to Mars and take a closer look.

Since the Viking satellite cannot reveal details smaller than 150 feet across, the next step should be to orbit a satellite that could resolve small objects, ones less than two feet across. The satellite should fly a polar orbit, from 100 to 300 miles above the Martian surface, and carry a battery of ten cameras to scan an area slightly over one square mile. With this high resolution, much less of the planet could be recorded, but only areas targeted from current Viking imagery need to be photographed.

The satellite would look at a landscape 277 miles wide, but it would record only one twentieth of this path on each polar pass during each half-hour orbit.

It is impractical to map the entire planet at this resolution. In every year of operation, however, nearly 9,000 target areas could be displayed with enough resolution to detect evidence of life and to pick landing areas so that someday *Homo technologicus* may colonize Mars. **DO**

A book describing the author's work on the Mars data is available for \$9 from: Mars Research, P.O. Box 284, Glenn Dale, MD 20769.



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