



You may want to have your students consider an article that appeared in the February 8, 2000 *New York Times* national Science/Health section entitled “Maybe We Are Alone in the Universe, After All.” This summarizes the arguments contained in a book entitled *Rare Earth* (published by Springer-Verlag in January 2000) by Peter D. Ward and Donald C. Brownlee to the effect that the Earth’s composition and stability are exceedingly rare and that in most other places the combination of radiation, lack of certain chemical elements, lack of hospitable planets, and other destructive factors make the likelihood of extraterrestrial life forms much less likely than many scientists have previously assumed. The authors do not oppose further scientific investigation and in fact propose a number of searches to further evaluate their hypothesis, including continuation of radio searches for intelligent life and closer examination of Mars, Europa, Ganymede, and Titan for signs of microbes. Commenting on the book *Dr. Frank Drake of the SETI Institute told the Times, “the basic flaw in all these arguments is that they don’t allow for the opportunistic nature of life, its ability to accommodate or alter itself to cope with environmental change.”* The questions raised in the article are very interesting and would involve your students in considering many aspects of the sciences, including chemistry, plate tectonics, and evolution.

It is 26 trillion miles to the **nearest** star (aside from the Sun) and it takes four years for light, traveling at 186,000 miles per second, to travel that distance.

tists” in the other tabloid-style articles are fictitious, as are the names of all of the article authors.)

2. You may want to assign the articles as homework and have a class discussion the next day. Ask students to decide which articles are serious and which are not—that is, which seem to be based on scientific thinking, and which are sensationalized fictions. While the distinction between the two is quite obvious upon a first reading, the idea here is less to pose a challenge than to help students see that with even a small amount of care, they should be able to recognize sensationalized fiction when they see it! **The unfortunate fact is that, as many surveys show, a large proportion of the population do not make this distinction.**

3. During the class discussion, here are some suggested questions to help elicit student reasoning about the articles:

- In analyzing the articles what “red flags” did you look for?
- What did you have a hard time believing. Why?
- What made an article believable to you? Why?
- Is information readily available in the article? Or does it state that information can’t be revealed for one reason or another?
- Is the article vague or illogical?
- Is there credible confirmation offered for claims in the article?
- What about the writing style? Does it provide clues to the article’s validity?

4. If students don’t mention it, remind them of the vast distances involved and how unlikely it is that extraterrestrials could travel to Earth. As appropriate, point out that skepticism is an important element in science—scientists question their own work constantly and are skeptical about all claims unless they can be proven. Despite the multitude of claims of sightings and abductions, not one has ever been proven or confirmed.

The following articles are adapted and modified from real articles, some of which appeared in big city daily newspapers and others in tabloid-style publications. Which articles are serious, and which are not? Read them with a critical eye.

Is There Anybody Out There?

Radio Telescopes Seek Signals from Other Planets

By Vivian Milligan

There have been many “false alarms,” but so far scientists say that they have not found any signs of extraterrestrial life. “It is, of course, only a start,” said Peter Backus, of the Phoenix Project.

The Phoenix Project is a search organized by the SETI Institute. Using radio telescopes around the world, they are searching the skies for radio signals from intelligent extraterrestrials.

Although some scientists argue that the search is foolish, many serious astronomers say that detecting messages from intelligent extraterrestrials is very possible.

They argue that there probably is life on an Earth-like planet circling a star like our Sun. No one knows how many Earth-like planets there are, but because there are

so many stars like our Sun, even in our own galaxy, these scientists say that the odds are that there might be many such planets.

The search is focused on stars that are like our Sun, and that are relatively nearby. In this case, “nearby” means within 200 light years distance, or, in other words, one quadrillion 200 trillion (1,200,000,000,000,000) miles away!

Radio signals can travel huge distances in space, although it can take hundreds of years for them to travel that far. On Earth, we’ve only had the technology to send radio signals for about one hundred years. In a few hundred years though, our radio and television signals could be picked up by an extraterrestrial listener many light years away.



Jill Tarter, Director of the SETI Institute, said, “It is the most important question the human species has asked itself...are we alone or are we not?”

For more information about Project Phoenix, see:

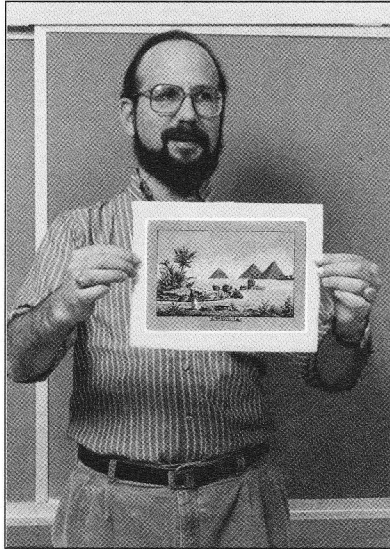
phoenix info@seti-inst.edu
<http://www.seti.org>

Aliens came here in a spaceship— and may have built the Pyramids!

Jungle Find! 15,000-year-old UFO!

Expert says ETs started a colony on Earth

By Kevin Erickson



Dr. Ivan Bergman would not reveal the exact location of the UFO.

MOSCOW - Russian scientists say they have found a 15,000-year-old spaceship in an African jungle—but that's not all. They also found strange metal documents at the site which claim the ETs later built a colony. This means that their descendants may be walking among us today!

Dr. Ivan Bergman says that the spaceship proves the ETs had the technology to reach our planet thousands of years before the Pyramids were built. He reported that the spaceship was found in the jungles of Kenya on October 27, but he would not pinpoint the exact location for "security reasons."

He also said the spaceship had been taken apart and shipped to Moscow for study. "It's in amazingly good condition, considering it's 15,000 years old!"

The documents have not been translated, but they include pictures of aliens living in pyramid-shaped huts. Bergman said, "We think that the fact that they built pyramid-shaped huts may mean that they also built the Pyramids thousands of years later."

In an exciting prediction, Dr. Bergman told reporters, "We may someday be able to make a copy of their spaceship, and travel to other parts of the galaxy too."

Scientists Discover a Solar System Like Ours

New Finding Makes Extraterrestrial Life More Likely

By Felicia Cort

Astronomers have found a distant planetary system much like our own. The system has a sun-like star orbited by three planets. The discovery was made by astronomers from San Francisco State University, Harvard, Colorado, and Australia.

Up until now, the only planetary systems found with stars like our Sun had just one planet. This discovery proves that there are other systems like ours out there, with more than one planet. Astronomers think that there are many, but this is the first time they've actually been able to find one.

The discovery "implies that planets can form more easily than we ever imagined, and that our Milky Way is teeming with planetary systems," said Dr. Debra Fischer, one of the astronomers. It's thought that extraterrestrial life is most likely to be found around stars that are similar to our Sun.

The star is called Upsilon Andromedae, and it is 44 light-years away. A light year is the distance light travels in a year, which is 6 trillion miles. It is orbited by three planets the size of Jupiter.

Since they are so far away, the planets are too small to be seen, even with our most powerful telescopes.

They were discovered by studying "wobbling" in the way Upsilon Andromedae moved. As they orbit the star, the gravitational pull of the three planets tugs on it, and make the star "wobble" slightly.

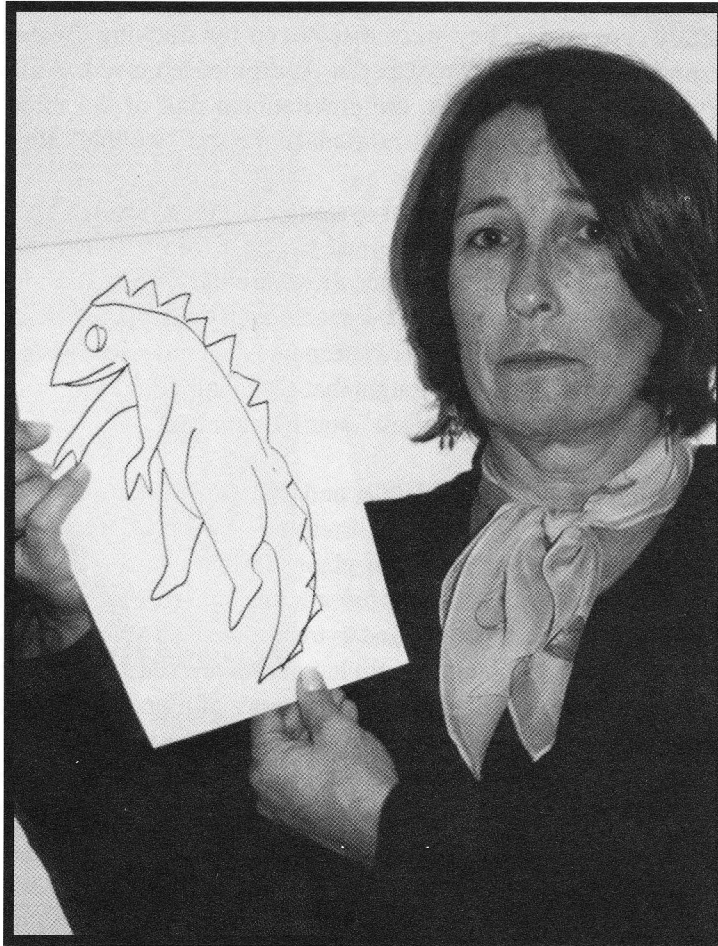
In our solar system, gas giants, such as Jupiter, Saturn, Uranus, and Neptune, formed much farther from the Sun than those around Upsilon Andromedae. Because until recently the only planets that could be studied have been our own nine, scientists had generally thought that gas giants could not form so close to a "yellow" star like our Sun.

R. Paul Butler and Geoffrey Marcy have been studying Upsilon Andromedae for 11 years. They discovered one planet in the system in 1996, before Fischer discovered the other two. Marcy said, "I am mystified as to how such a system of Jupiter-like planets might have been created." He added, "This will shake up the theory of planetary formation."

A map of the orbits of Upsilon Andromedae's three planets can be seen at www.physics.sfsu.edu/planetsearch.

Texas Woman Has Terrifying Encounter

'My Dog was Eaten by a Space Alien!'



Alien dog-eater! Jaine Barber holds up a picture of the alien that ate her poodle Fluffy, as drawn by an artist.

UFO researcher Len Willard

By
Dwight Duwigahut
Global News Agency

A 34-year-old Texas woman says she watched in horror as a space alien ate her dog Fluffy. Although her story may sound ridiculous, reports of other animal devourings have been coming in from certain areas of the world for

months. These same spots have also had many recent UFO sightings.

“People may not believe me, but I swear it’s true,” said Miss Barber. “I heard a whirring sound, and the bushes in my backyard started blowing around. The next thing I knew, a flying saucer appeared overhead, and a lizard-like alien was lowered down.

“I started to run away, but it stared at me with glowing eyes, and I couldn’t move. Just then Fluffy ran up to the alien wagging her tail. I was horrified that I couldn’t move to help stop it from eating my little Fluffy.”

Miss Barber described the alien as being about the size of a man, with green scales, a large tail, and a lizard-like head.

“After the alien ate Fluffy, it disappeared. The spaceship then started whirring, and then it disappeared too.”

Miss Barber then called Huntsville-based UFO researcher Matthew Stone. Stone said “recently there have been dozens of sightings like this in Brazil, Florida, New Mexico, and Argentina.”

Europa May Have Ingredients for Life

Water, energy and organic matter likely!

By Kimi Tucker

Instruments on the Galileo spacecraft, which is orbiting Jupiter, have discovered organic chemicals (the building blocks of life) on the moons Callisto and Ganymede, which are neighbors of Europa.

The chemicals are thought to have come from comets and meteorites. Although the chemicals have not yet been found on Europa, it is close by and could very well have them too.

It was already known that Europa has water and heat. If it also has

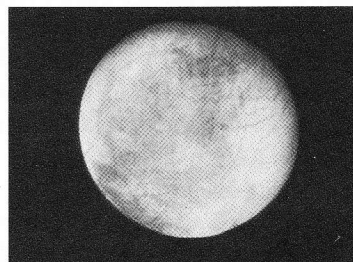
organic chemicals, it is a strong candidate for life of some kind to have evolved.

“This doesn’t mean there is life on Europa,” said Dr. McCord, lead author of a study published in the journal *Science*. “The exciting thing now is the evidence that Europa may have all three of the ingredients.”

To see if life could exist in icy conditions like those on Europa, scientists have been looking for places on Earth with similar conditions. In studying ice a mile

deep in Antarctica, they have found primitive life forms 100,000 years old.

No organic chemicals have been found on Europa, but scientists think there may be a rich organic soup under its thick layer of ice. This could be a warm, liquid place where life could have evolved.



Flying Saucer Crash Site

34 Alien Corpses Found in Alien Spaceship in Siberia

By Lynn Sneider

YAKUTSK, Siberia - An alien spaceship was discovered in a huge block of ice in Siberia. This is already being hailed as the most important discovery in the history of the world!

According to Dr. Yuri Logoff, "Over the years there have been many UFO sightings and alien abductions reported—but now we finally have concrete evidence. This find is the first proof of life on other planets."

The strange-shaped flying saucer is made of a type of metal unlike anything found on Earth. It has a 60-foot diameter, and has strange bumps along the outside.

Most interesting of all, scientists used scanners to explore inside the craft, and found at least 34 alien bodies. Dr. Logoff says that it will take until mid-November 2003 to thaw them out.

Since the spacecraft seems unharmed, Dr. Logoff says that he thinks that the extraterrestrials may have run out of fuel, landed, and then starved to death, stranded in the ice.

He predicted, "When we've finished thawing out these aliens, we will shock the world!"

