

Open Forum 3

Web Site Transcript

Chapter 11

A = Host

A: Hi everyone and thanks for downloading *The Personal Computer* podcast. My name is Josh Lewis from Berkley, California, and every week I post an MP3 about a new trend in home computing, which you can listen to on your computer or portable music player. I'm not a journalist, I'm not a professional computer scientist; I just want to share what I've learned.

This week, we go from cyberspace into outer space. I'm talking about aliens, creatures from another planet, life outside the solar system. No, no, no—don't delete this file yet. I'm serious, and so are the 1.3 million people worldwide who take part in a project called SETI@home that is based right here at the University of California at Berkley, one of America's top universities. It's no joke.

Here's the story. SETI, S-E-T-I, is an acronym and it stands for the Search for Extra-Terrestrial Life; that's life on other planets. SETI is a field of scientific study that has been trying to answer the question: "are we alone?" for the last 50 years.

NASA, the national space agency, funded SETI projects until 1992. Yes, our government was putting money into the search for aliens! Today, there are SETI centers all around the world all trying to make contact with life from other planets.

How are they going to find extra-terrestrial life? They're listening to the radio. The most popular form of SETI research is called radio SETI. The idea is that the best way to find proof of life on another planet would be to overhear their radio signals. But scientists need some pretty powerful equipment to listen for radio waves out in space. So, they use large radio telescopes. A radio telescope looks like an enormous dish with a very sensitive antenna that can pick up radio signals from very far away.

The largest radio telescope in the world is on the island of Puerto Rico at the Arecibo Observatory. Go to my website and you'll see a link to a photograph of the telescope—it's amazing. The telescope consists of a massive dish that's 1,000 feet, 305 meters, across. Hanging 400 feet, or 130 meters, above the dish is a bridge that holds the actual antennas. Because the dish is so large and the technology is so complicated, the antennas can pick up radio signals from as close as the earth's atmosphere, and

as far away as 100 million light years. A light year, remember, is the distance light travels in one year. 100 million light years takes us to the very farthest parts of our universe. If aliens are out there sending radio signals, there's a good chance that the Arecibo telescope will hear them.

But who's listening? That's where we come in. Let me explain. The Arecibo telescope and other SETI projects around the world, produce a huge amount of data, far more than any one computer could process. These telescopes are constantly scanning the skies, each one looking at a small area of space. Eventually, data will be available for all radio signals found in any direction. Now, not every radio signal is an alien broadcast, of course. Planets, stars, and galaxies emit radio signals, which other scientists at Arecibo are studying. To separate the signals that might possibly be signs of extra-terrestrial life requires huge computing power.

So, a group of SETI researchers and computing experts in Berkley had the idea of borrowing millions of personal computers to do the processing work. They started a project called SETI@home. SETI@home is an example of distributed computing. Most scientific computer programs work on one large computer. But in distributed computing, the work is distributed, or shared, between many smaller computers. SETI@home sends a small amount of data to your personal computer. You download a piece of software to process the data, and while you're not using the computer—for example, at night or when you go to class, the SETI software works in the background. When it's finished, your computer sends the results back to the headquarters in California, and you get a new data packet. And the cool part of it is that you're helping the search for alien life just by leaving your computer switched on! No evidence has yet been found of life on other planets, but the search goes on.

Your computer can join my PC and over 1,300,000 other computers that run the SETI@home software in 245 countries. The link is on my website, and I hope you'll join me as we wait for news from other planets. Who knows? Maybe someone out in deep space is even listening to this podcast. I'm Josh Lewis and this is *The Personal Computer*.