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DR. SETI'S STARSHIP

Searching For The Ultimate DX

A Marriage Made in Heaven

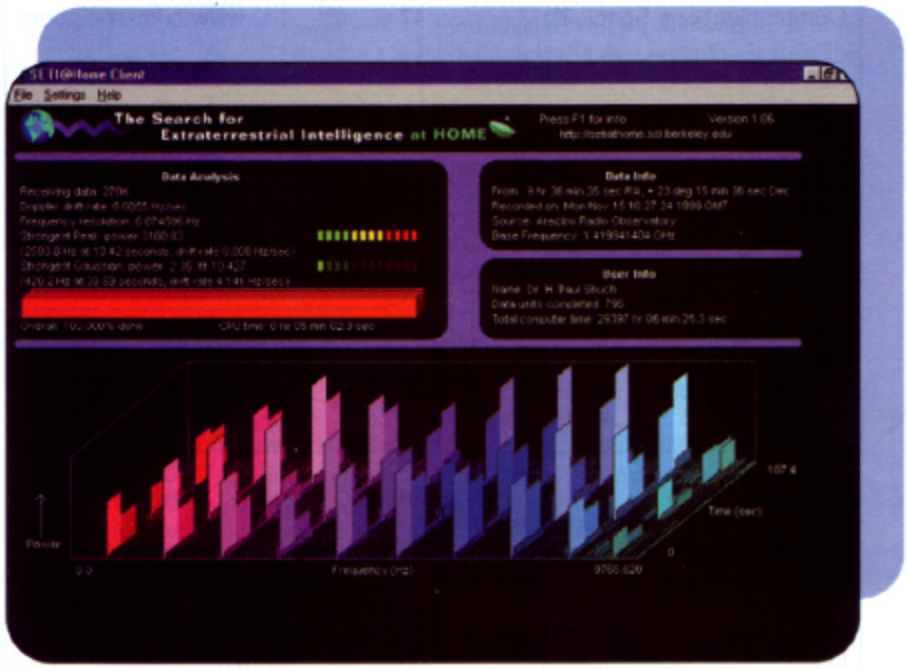
Dishes, or computers: which level of SETI involvement is right for you? The SETI League's Project Argus is an effort of tech-savvy experimenters to build up a global network of small radio telescopes and monitor the entire sky. It's ambitious, and quite frankly, beyond almost everyone's reach. If you're a microwave ham with a technical bent, I encourage you to participate. If you aren't quite ready to build your own radio telescope, but you still want to support SETI, one alternative is to put your money where your *math* is. Join somebody's team and help professional astronomers finance "real SETI."

Now along comes SETI@home, a most appealing middle ground. Those who are not ready to build a mini-Arecibo in the back garden, but feel that SETI is too important to be left to the professionals, have in SETI@home a low-cost opportunity to make a difference. Working together is certainly working! Today, over three million home computers are devouring data from the world's largest radio telescope at a rate of MegaBytes per minute.

While the screen saver churns away in the background, the appetite for involvement remains. "I'm no rocket scientist," I hear you saying, "but I want to do more than wait for my Pentium to claim the prize. Where can I go from here?"

Fortunately, it doesn't take a rocket scientist. Before we can propose a meaningful path, however, we need to take a close look at SETI@home's strengths and weaknesses. The public involvement benefits are obvious and have already resulted in the creation of the world's most powerful supercomputer. The software is fully capable of discovering that elusive needle, only where do we find the haystack?

The SETI@home packet that your personal computer is processing came from Arecibo, the world's largest radio dish; so did everybody else's. This means that three million PCs are being serviced by a single data source, which is a powerful source to be sure. With lotteries all over the world, should we all be buying our tickets from the same machine?



SETI@home screen displays the ongoing analysis of Arecibo radio telescope data.

Arecibo achieves its sensitivity by scanning a slim slice of the celestial sphere—perhaps only a millionth of the sky at a time. That means if it's turned on and tuned exactly to the right frequency at exactly the instant *the call* comes in, there's still a 99.9999% chance it will be pointed the wrong way. No software in the world is going to find photons that didn't hit the fan, no matter how many computers are running it.

Perhaps that's where the eyes of Argus (The SETI League's all-sky survey, conducted by amateur radio telescopes scattered across the globe) can really shine. Imagine a global network of thousands of amateur radio telescopes scanning the entire sky in real time. Now imagine something akin to SETI@home, software that will let you scan that data via the Internet. Only instead of archival data recorded weeks ago, we're talking live data, which your computer can capture in real time. You need not wait for the evening news to hear the winning numbers.

ARGUS@home won't happen overnight, any more than SETI@home did. Project Argus went online six years ago with only five telescopes. Today we're counting the telescopes at well over a hundred. It's going to take us a few more years before the Argus network grows to truly global proportions. Until then, there's always Arecibo.

The distributed computing concept pioneered by SETI@home is very adept at finding needles. The global network of Argus telescopes will be ideal for finding haystacks. (Seems to me that it's a marriage made in heaven.)

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