PLANETARY.ORG

Optical SETI
Are We Alone?



credit: left and center, The Planetary Society. Right, Kelly Beatty for *Sky & Telescope* (Ribbon-cutting by Vida Kazemi, her husband, Harvard's Paul Horowitz, Planetary Society's Louis Friedman, Harvard Smithsonian Center for Astrophysics' Charles Alcock.)

We built the world's first OSETI Telescope dedicated to finding out.

Whatever form an alien signal might take -- the faintest radio transmission, or a split-second pulse of light -- The Planetary Society is committed to discovering it. You can help us keep watch.

In 2006, The Planetary Society unveiled the first All-Sky Optical SETI (OSETI) telescope. Funded by Planetary Society Members – with major seed funding from Mark Gelfand – and operated by a Harvard University team, it's completely dedicated to capturing that one pulse of light that might be a communication.

With its 72-inch primary mirror, the OSETI Telescope is not only the only largest telescope in North America devoted to SETI; it is also the largest optical telescope in the U.S. east of the Mississippi. And, with cutting-edge processors, in just one second, it crunches more data than what is stored in all books in print.

To date, the Optical SETI Telescope has completed over a thousand sets of observations. It takes 200 clear nights to cover the entire sky once and complete a snapshot. Then it starts again. Although dozens of triggers (pulses) have so far been sighted, all have been ruled out as communications. But vigilance is key: one signal from light-years away could prove we're not alone in the vastness of space -- and alter humanity's view of our place in the universe.

We're keeping close watch -- and making great strides -- but there is much more work to be done. We are in the process of installing amplifier boards to double the sensitivity of the OSETI Telescope. We are also working to completely automate the telescope to capture continuous data every possible minute of every night.

Visible light is thought to be a likely form of interstellar communication because visible light travels easily through space and suffers little interference. A tightly focused light beam, such as a laser, can be 10 times as bright as the Sun and be easily observed from enormous distances. Laser-like light signals are also unidirectional, making it possible to determine their source with great precision and -- because of their higher frequencies -- can be used to send vast amounts of information.

But in order to receive a light signal from an alien civilization, we must be looking for it. With the Society's dedicated Optical SETI Telescope, our eyes are open.

We don't know what we'll find. But we do know we'll find nothing if we don't keep searching.