

Subject: Status of the Allen Telescope Array
April 22, 2011
(email transmittal)



Dear SETI Institute Supporter,

As a significant supporter of the Allen Telescope Array (ATA), you are already familiar with its unique capabilities. Not only does the Array enable our SETI search, but it also has been used to make considerable strides in radio astronomy and, most recently, in the development of the ability to detect space debris. With leadership funding by Paul Allen and the significant contributions by you and many others, the array has achieved much. Perhaps most important, the ATA is the world's best instrument to search for possible signals from the thousands of planets being identified by NASA's [Kepler Mission](#).

However, the ATA faces some serious challenges. I am writing to personally alert you to them. We wanted you to hear this directly from us, rather than learn about it in the news or by other means.

Effective this week, the ATA has been placed into hibernation due to funding shortfalls for operations of the Hat Creek Radio Observatory (HCRO) where the ATA is located. As a long time participant in supporting our work, you know that the Array is a partnership between the SETI Institute and the Radio Astronomy Lab of the University of California, Berkeley (UCB). Consistent with the original partnership understandings, the SETI Institute raised the funds to construct the Array, while the operations of the Observatory have been the responsibility of UCB.

The UC Berkeley Radio Astronomy Lab has operated the Hat Creek Observatory for more than five decades, hosting several generations of radio astronomy instruments, the most recent being the ATA. Historically, the costs of HCRO operations were supported from two primary sources: 1) major "[University Radio Observatory](#)" grants from the National Science Foundation, and 2) supplemental budgetary support from the State of California via Berkeley's Radio Astronomy Lab.

Unfortunately, today's government budgetary environment is very difficult, and new solutions must be found. NSF University Radio Observatory funding for HCRO has been reduced to approximately one-tenth of its former level. This is compounded by growing State of California budget shortfalls that have severely reduced the amount of state funds available to the Radio Astronomy Lab. Combined, these factors have resulted in the current decision by UCB to reduce operations of the Hat Creek site to a hibernation mode, pending future funding or some alternative solution. Hibernation means that, starting this week, the equipment is unavailable for normal observations and is being maintained in a safe state by a significantly reduced staff.

More than two years ago, seeing the early effects of these funding difficulties, the SETI Institute began an effort to replace the lost funds by seeking a partnership with the [United States Air Force](#) to conduct experiments to see how the ATA could serve as a collaborating sensor to the USAF space surveillance network, helping track space debris. This effort is ongoing and showing much promise, but near term funding has been delayed due to the same, highly publicized large scale federal budget problems we all read about in the news.

Meanwhile, even though the array is in hibernation, the important work of our Center for SETI Research continues. There are a number of projects that are being worked on, including a software correlator, new detection algorithms, data storage capability direct to disk from individual antennas, and a new feed and receiver system capable of observing up to 15 GHz (the current feeds work to 10 GHz). We are also developing the rapidly-growing setiQuest open community for code and algorithm development, as well as citizen science. If you haven't already done so, check out setiQuest.org. Francis Potter from the Hathersage Group has developed [setiQuest Explorer](#), the first version of an application that allows citizen scientist volunteers to look for patterns in data from the ATA that might be missed by current algorithms, and help us explore frequency bands that are so full of signals that our detectors get confused. If you'd like to help beta test this, use the link above. We plan to expand on this significantly in a new partnership with Galaxy Zoo, to make a more enjoyable user experience that actually runs in real time so that discoveries can be followed up immediately. We also plan to develop new tools that will enable citizen scientists to help us identify the sources of radio frequency interference, and new avenues for application developers to add new visualizations and detection algorithms.

We are continuing discussions with the USAF and remain hopeful that this effort will help provide future operating funds. At the same time, we must strive to find other sources of funding to supplement operations costs and, very importantly, to support SETI science observations. We are preparing a coordinated campaign to ask for help, and you will be hearing more from us about this. The bottom line is that it takes approximately \$1.5M/year to operate the ATA, and at least an additional \$1M/year to cover the cost of our SETI science efforts. Thus, right now, we are trying to raise \$5M to cover a [two-year search of the Kepler Worlds](#) by Jill Tarter and her team. Assuming funding can be acquired, we plan to spend the next two years listening to the [1,235 exoplanet candidates](#) that the Kepler mission announced in February. This fabulous opportunity represents a fundamental shift to be able to point our instruments at known planetary systems, rather than at stars that might or might not host planets.

We are not only working strenuously to make sure the efforts of our Center for SETI Research succeed, but also to protect your investment in the Allen Telescope Array. Meanwhile, the work of the SETI Institute's other two Centers -- the Center for Education and Public Outreach, and the Carl Sagan Center for the Study of Life in the Universe -- remains strong.

Very best regards,

Tom Pierson
CEO, SETI Institute