http://www.seti.org/ata/

Allen Telescope Array Begins Scientific Observations

Microsoft co-founder and philanthropist Paul G. Allen joins UC Berkeley and the SETI Institute to launch the next phase of astronomical research using the Allen Telescope Array, an innovative telescope for radio astronomy

Hat Creek, Calif. – Oct. 11, 2007 – Today, the University of California, Berkeley and the SETI Institute announced that the first 42 radio dishes of the Allen Telescope Array (ATA) are activated and collecting scientific data from the far reaches of the universe. This is the first phase of a planned 350 radio dishes that will advance the capabilities of radio astronomy research. Paul G. Allen, Microsoft co-founder and philanthropist whose foundation donated seed money that started the project in 2001, joined representatives of UC Berkeley and the SETI Institute to launch the array.

“This is a great day for the science of radio astronomy and the study of the cosmos,” said Leo Blitz, UC Berkeley professor of astronomy and director of the university’s Radio Astronomy Laboratory, which is building the ATA with the SETI Institute. “Thanks to a unique intersection between the best in science, advanced, innovative technology and bold philanthropy, many secrets of the universe are a little closer to being revealed.”

"This project represents a potential breakthrough in building large arrays of radio telescopes that are extremely cost effective,” said Paul G. Allen, primary funder of the ATA. “As now deployed and with plenty of room for growth in the future, the telescope can fulfill a multitude of uses, including broad radio sky surveys and the search for evidence of extraterrestrial technology. I’m pleased to be able to contribute to such an important advancement and help build on the work this new telescope will do in the

future. My hat is off to the team that worked so hard these last seven years to accomplish this significant milestone."

Every object in space emits radio waves that can be collected and studied. From observation of these signals, radio astronomers can create a picture of astronomical bodies and events at great distances, revealing detail not discernable by telescopes operating at other wavelengths. The ATA will acquire data in a new way, imaging a large piece of the sky at once. What sets the ATA apart from earlier radio telescopes is its ability to collect and, analyze more information about celestial objects, and do this simultaneously for several projects. In addition, observational surveys can be made with greater speed than any previous or existing radio device.

"For SETI, the ATA's technical capabilities exponentially increase our ability to search for intelligent signals, and may lead to the discovery of thinking beings elsewhere in the universe," said astronomer Seth Shostak of the SETI Institute in Mountain View, Calif. "It is the first major telescope in the world built specifically for undertaking a search for extraterrestrial intelligence."

The ATA opens the doors to a new era of scientific progress. The telescope's potential discoveries include a better understanding of exploding stars (supernovas), black holes, and new, exotic astronomical objects that are predicted but not yet observed. It will also provide expanded search capabilities to determine if intelligent civilizations have evolved around other stars. The ATA is the first panchromatic, wide-angle, snapshot, radio camera ever built. It is the most effective tool to create radio images of a vast area of the sky ever placed in the hands of researchers.

Located in an arid valley near the town of Hat Creek, just north of Lassen Volcanic National Park in northern California, the new array is already collecting important data. The first test images, released today from data gathered by the 42 ATA telescopes, include a radio map of the nearby Andromeda Galaxy (M31) and the Triangulum Galaxy (M33).

Beyond its speed and ability to both garner and analyze data, the ATA is also the first centimeter wavelength radio telescope with the ability to multi-task. While making innovative observations for radio astronomy, it can simultaneously interrogate solar-type stars for artificially produced signals that would reveal the presence of extraterrestrial intelligence.

This new capability increases many-fold the time astronomers can devote to large-scale surveys of the stars, as well as expanding the radio frequency band over which they can search. For SETI, in particular, this means that

over the next two-dozen-years, the ATA will get a thousand times more data than has been accumulated in the past 45 years.

The ATA uses mass-produced, 20-foot diameter radio dishes and commercial telecommunications technologies combined with an innovative receiver design, and state-of-the-art digital signal processing technology. Working together, these small dishes create a telescope with a wide field of view ideally suited to rapidly surveying the sky. The layout of the 42 dishes was created by a computer model and is optimized to provide high quality radio imagery of the sky. The ATA can also filter out noise from man-made interference that in many radio telescopes would render much of the data unusable. The array can be easily upgraded as new advances in computer or telecommunications technology become available.

The total cost of the project to date, including research, development and construction costs for the array and the necessary radio astronomy and SETI signal detectors, is $50 million. The first phase of this project was funded through generous grants from the Paul G. Allen Family Foundation totaling $25 million. UC Berkeley, the SETI Institute, the National Science Foundation, Xilinx, Nathan Myhrvold, Greg Papadopoulos, and other corporations and individual donors contributed additional funding. Both UC Berkeley and the SETI Institute are engaging in additional fundraising efforts to complete the full 350-dish array.

The full 350-dish array, when completed in approximately three years, will have unprecedented research capabilities. Capitalizing on constant advancements in computer technology, the ATA will be manufactured at a fraction of the cost of traditional instruments. The ATA team is prepared to install more dishes as additional funding is secured.

About the SETI Institute

The not-for-profit SETI Institute (www.seti.org) founded in 1984, conducts a broad range of astrobiology research. Institute projects include the world's most comprehensive work in the search for extraterrestrial intelligence and a wide variety of research and education programs related to the search for life beyond Earth. The Institute employs over 90 scientists, in a variety of fields, including all science and technology aspects of astronomy and the planetary sciences, chemical evolution, the origin of life, and biological evolution. Among its staff and Board, the Institute counts two Nobel Prize winners.

About the Radio Astronomy Laboratory, University of California, Berkeley

Founded in 1958, UC Berkeley's Radio Astronomy Laboratory (RAL)

(http://ral.berkeley.edu) was established to foster research in radio astronomy, a discipline that naturally extends beyond the borders of traditional academic departments. The main activity of the RAL has been to build and maintain a radio astronomy observatory at Hat Creek, near Mt. Lassen, supported by on-campus laboratory facilities. Home to radio telescope arrays for more than 25 years, the Hat Creek Observatory supports the scientific research of Berkeley scientists and graduate students as well as visiting astronomers from around the world who come to study the structure and evolution of the solar system, the Milky Way, other distant galaxies, and the Universe through the techniques of radio astronomy.

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