

# CSC/SETI Institute Colloquium Series



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## The Allen Telescope Array: A Wide-angle, Panchromatic Radio Camera for SETI and Radio Astronomy

Wednesday, Jan. 16, 12:00pm  
The SETI Institute, Europa room

According to Jerry Ostriker (Plumian Professor, Cambridge; Professor of Astrophysics, Princeton; Provost, Princeton), "Surveys aren't just something that astronomers do, they are the only thing astronomers do." These words are understandable, given Prof. Ostriker's intimate association with the Sloan Digital Sky Survey that is presently transforming our view of the optical universe. The ability to systematically survey one quarter of the sky, with the dynamic range and spatial resolution to zoom in to study individual objects, is providing us with the first truly 3-dimensional map of the nearby cosmos. The optical portion of the spectrum unveils the moderately energetic and hot components of the universe, but the physics of the cool constituents is probed at radio wavelengths.

The Allen Telescope Array (ATA) of 350 telescopes, each 6.1 m in diameter, will do for the radio sky what the Sloan Digital Sky Survey has done for the optical sky. And it will do it so rapidly that it will also provide the first systematic look at the transient radio universe. The ATA provides simultaneous access to any frequency between 500 MHz and 11.2 GHz, with four separate frequency channels feeding a suite of signal processing backends that can produce wide-angle radio images of the sky in 1024 colors, and at the same time, study up to 32 point sources of interest within its large field of view. This new approach to commensally sharing the sky allows SETI (the Search for ExtraTerrestrial Intelligence) and traditional radio astronomical science to both use the telescope nearly all the time: our tools are beginning to be commensurate with the size of the vast explorations of the radio sky that we wish to undertake.

This talk will put the ATA into context with the rest of the SETI activities around the world and describe the initial SETI observations we intend to conduct.



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