

Harvard All-sky Optical SETI — Future Surveys

Curtis Mead

Paul Horowitz

Andrew W. Howard

Jason R. Gallicchio

Steve R. Howard

Pratheev Sreetharan

Charles M. Coldwell

Alan Sliski

Physics Department

Harvard University

USA

cmead@fas.harvard.edu

Joseph M. Zujac

Harvard-Smithsonian Center for Astrophysics

USA

Greater than two-thirds of the Northern sky has been surveyed for pulsed optical beacons by the Harvard/Planetary Society All-sky Optical SETI (Search for Extraterrestrial Intelligence) Telescope. We present an upgrade to this survey and a planned separate survey using an imaging atmospheric Čerenkov telescope - each provides a sensitivity improvement by a factor of five. The upgrade to the all-sky camera's pixel amplifiers (planned for summer 2007) will improve the system's pulse sensitivity from ~ 100 photons/m² to ~ 20 photons/m². Continuing observations with this added sensitivity will significantly increase search volumes within the galaxy and further constrain limits placed on galactic transmitter densities. A complementary all-sky survey, using the 10-meter imaging atmospheric Čerenkov telescope at the Whipple Observatory near Tucson, Arizona, will commence soon and contribute an order of magnitude faster scanning (15x the field of view), greater sensitivity (10 photons/m²), and near-uv wavelength coverage to the Harvard/Planetary Society all-sky survey dataset. This will be the first dedicated SETI survey conducted by a gamma-ray (Čerenkov) telescope.