

Optical SETI At Harvard-Smithsonian

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A high-intensity pulsed laser, teamed with a moderate sized transmitting telescope, forms an efficient interstellar beacon. To a distant observer in the direction of its slender beam, such a laser transmitter, built with “Earth 2000” technology only, would appear (during its brief pulse) a thousand times brighter than our sun in broadband visible light; even at ranges of 1000 parsecs a single nanosecond laser pulse would deliver roughly a hundred photons to a 10 meter receiving telescope. We have built a photometer to search for such unresolved pulses, and are using it in a piggyback targeted search of some 2500 nearby solar-type stars. The photometer receives about 25% of the light focused by the 1.5 meter optical reflector, otherwise unused by the primary experiment (a stellar radial-velocity survey). A beamsplitter followed by a pair of fast hybrid avalanche detectors is triggered in coincidence to record the time and intensity profile of large pulses. In the first three months of operation the system has made over 2000 observations of some 1000 separate stellar candidates. We review those observations, and suggest follow-on experiments.