

The Catalina Sky Survey for Near-Earth Objects

*Eric Christensen
The University of Arizona*

Abstract

The Catalina Sky Survey (CSS) specializes in the detection of the closest transients in our transient universe: near-Earth objects (NEOs). CSS is the leading NEO survey program since 2005, with a discovery rate of 500-600 NEOs per year. This rate is set to substantially increase starting in 2014 with the deployment of wider FOV cameras at both survey telescopes, while a proposed 3-telescope system in Chile would provide a new and significant capability in the Southern Hemisphere beginning as early as 2015. Elements contributing to the success of CSS may be applied to other surveys, and include 1) Real-time processing, identification, and reporting of interesting transients; 2) Human-assisted validation to ensure a clean transient stream that is efficient to the limits of the system ($\sim 1\sigma$); 3) an integrated follow-up capability to ensure threshold or high-priority transients are properly confirmed and followed up. Additionally, the open-source nature of the CSS data enables considerable secondary science (i.e. CRTS), and CSS continues to pursue collaborations to maximize the utility of the data.