ODYSSEUS: a coordinated campaign to study accretion onto pre-main sequence stars

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In anticipation of the eventual loss of the ultraviolet spectroscopic capabilities of the Hubble Space Telescope (HST), the Space Telescope Science Institute is undertaking a two-year program called ULLYSES (Ultraviolet Legacy Library of Young Stars as Essential Standards). Many of the targets have been scheduled simultaneously with TESS observations. Part of the ULLYSES program is focused on low mass pre-main sequence stars (the T Tauri stars). ODYSSEUS (Outflows and Disks around Young Stars: Synergies for the Exploration of ULLYSES Spectra) is a program designed to obtain supporting observations needed to properly interpret the HST UV spectra of the T Tauri stars. An important part of this program is photometry supplied by AAVSO observers, and through the AAVSOnet robotic telescopes.

Four T Tauri stars are being monitored extensively with HST; there are single HST observations of another 60 targets to sample a wide range of stellar masses and accretion rates. Because T Tauri stars are highly variable, contemporaneous optical photometry is crucial to knowing the state of the system at the time of the HST observations (is it brightening or fading? is it in a deep absorption dip, or flaring?). Calibrated photometric colors are useful for interpreting the variations in the single-band TESS light curves.

I shall describe the goals of this program, and provide some early results, with emphasis on the optical photometry from AAVSO observers.