OBSERVATIONS OF INACTIVE PRE-MAIN-SEQUENCE STARS: ARE THEY POST-T TAURI?

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I present optical, ultraviolet, and X-ray observations of inactive pre-main sequence stars which may be post-T Tauri stars. There are three distinct types of these stars. The best studied is a group of five K7-M0 IV-V stars in the Taurus T association (Mundt *et al.* 1983). These have weak ($W_\lambda \sim$ 2-5 Å) Hα emission, strong Ca II H and K emission, and emission in the upper Balmer lines. Photometric rotation periods are 3-7 days (Rydgren, this meeting). The ratio of the Hε emission flux to that in H and K is similar to that in dMe stars in three cases; the others have enhanced Balmer emission. One star, the only one with an IR excess, has the largest and most variable Hα emission, and may well be a T Tauri star. The others appear significantly more evolved, but are not older in an absolute sense, than the T Tauri stars, and may be considered to be super-dMe stars.

The second group consists of seven G-K IV-V stars in Tau, Oph, and CrA with Ca II and Hα emission with surface fluxes less than those of HD 283447 and V 410 Tau. These may be higher mass, post-T Tauri stars. The final star, BD+27°657, is a G0 III-IV near RY Tau. Optical and *UV* spectra show that it has strong chromospheric emission, Li absorption, and V sin i $\sim$50 km s^{-1}. It does not appear to have IR excess (Rydgren, private communication). This star may be evolving into an A or early F dwarf, and represent an advanced evolutionary state of a star like SU Aur.

These stars appear distinct from the T Tauri stars chiefly in their absence of IR excesses and weak or absent Hα emission. Chromospheric and coronal surface fluxes, as well as radii, ages, and rotation rates, are indistinguishable from those of the T Tauri stars. Perhaps the T Tauri phase ceases when the star dissipates its circumstellar shell, unveiling a "post-T Tauri" star.

PHOTOMETRIC AND SPECTROSCOPIC MONITORING OF T TAURI STARS AND RELATED OBJECTS AT VAN VLECK OBSERVATORY

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A program of monitoring Orion population variables with the Perkin telescope at Van Vleck Observatory will be described. Results from the first year of operation (1981-1982) have been published in *The Astrophysical Journal* (December,1982) and will be reviewed. During this observing season we are continuing to obtain *UBVRI* and Hα (30 Å and 150 Å) band pass data for several T Tauri stars (CO Ori, SU Aur, T Tauri, GW Ori, HH Aur, VY Tau, RY Tau, etc.) and three variable Ae stars (WW Vul, BF Ori, and UX Ori). We are also obtaining image tube spectra at 120 Å/mm of the brighter active stars SU Aur and CO Ori. Results from this year's program will be discussed.