

## AN INVESTIGATION OF T TAURI VARIABILITY

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Three mechanisms for the production of the variability in T Tauri stars are investigated with the use of color-color diagrams, color-magnitude diagrams and energy distribution plots. These mechanisms are: 1) changes in the effective spectral type; 2) changes in the optical thickness of the dust shell; and, 3) changes in the optical thickness of the chromosphere. All the stars studied here are located in the Taurus-Auriga dark cloud complex. A relationship between a strong chromosphere and chromospheric variability was found as well as a similar relationship between a thick dust shell and dust shell variability. There is some evidence that the stellar photosphere becomes more stable with increasing age during the T Tauri phase.

## A LARGE AMPLITUDE PHOTOMETRIC PERIODICITY ON A T TAURI STAR

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A T Tauri star, SY Chamaeleontis, was observed to undergo strictly periodic brightness oscillations with a  $1^m6$  B amplitude and a period of  $6^d129$ . This paper presents B, V, and R light curves for the years 1970-1972, during which these oscillations were seen. For most of its history since 1901, SY Cha showed small amplitude irregular variability with  $m_B \sim 14.2$ . In 1970, SY Cha exhibited a roughly sinusoidal shape light curve with a range of  $13^m4 < m_B < 14^m2$ . During 1971 and 1972, the range had increased to  $12^m76 < m_B < 14^m34$ , whereas the range of  $m_V$  and  $m_R$  remained constant. Sometime between 1973 and 1978, the star resumed its old behavior pattern. The most likely hypothesis is that a localized bright spot formed on or near the surface of SY Cha, and that stellar rotation caused the spot to appear and disappear as viewed from Earth.