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ShaO observations T-Tauri and methods for the photometry

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In this report we have presented some results of analysis of the light variation of the star DG Tau, based on 582 nights UBVR photometric observations. We have shown that both the average annual and seasonal values of the star's brightness varies for all photometric bands. The amplitude of the seasonal change in the V band is at 1 mag, and in 50 years, it is nearly 2 mag. Color-dependent brightness diagrams show that the main process driving its brightness variation is the radiation of the disk around the star.

Fourier analysis of the light variation analysis did not detect stable periodic processes in the brightness variability. For the first time, a spectral energy distribution (SED) curve was constructed in the 0.36-100 μm range. For the star SED curve we have used a blackbody approximation. We find a spectrophotometric temperature of the star 3000K, i.e. 1000K less than the effective temperature of the star, due to the partial absorption and scattering of stellar radiation by the disk. The radiation also indicates a strong excess in the near- and far-infrared, again, due to the presence of a disk of gas and dust formed around the central star. We determined a maximal gas temperature at the SED peak of nearly 1500 K, and for the cool dust on the periphery of the disc ~100-200K.

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