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The search of rotational modulation of the T Tauri-type stars in the ophiuchus dark clouds

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THE SEARCH OF ROTATIONAL MODULATION OF THE T TAURI-TYPE STARS IN THE OPHIUCHUS DARK CLOUDS

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We present some results of the long-term photometric program ROTOR being carried out at the Mt. Maidanak observatory. The program seeks for a periodic components in the emission of the non-stationary T Tauri-type stars (TTS), HAEBE, FUORs and related objects. In this paper we analyse the results concerning TTS in Rho Oph dark clouds and vicinity. Our sample of stars includes 6 weak-emission TTS (WTTS) and 11 classical TTS (CTTS).

KEY WORDS T Tauri type stars, star rotations, star formations

All the WTTS investigated have significant rotational photometric periods which are due to the spotness of star photospheres and if only two stars (S-R 9 and S-R 12) conserved their periods and initial epochs almost invariable during the whole observational time. We interpret the phenomenon of the stability of rotational photometric periods and phases within the scope of magnetic sun-like stellar activity. Spots concentration on the so-called active longitudes can explain this phenomenon.

Among the CTTS in our sample are one eclipsing binary (Do-Ar 9) and one proto-argol candidate (Haro 1-14). The CTTS V853 Oph demonstrates continuous elevation of its brightness (like EX Lup) since 1989. Very active CTTS V866 Sco shows quick irregular brightness changes, with cyclic wave superimposed. The CTTS remaining have smaller lightcurve amplitudes (typically 0.5 mag). We have found periodicities which is due to a spots (cool and hot) on the surfaces of some investigated CTTS. The full text of the paper was sent to *Astron. and Astrophys. Suppl. Ser.*