RADIAL VELOCITIES OF CH CYGNI JUST AS THE JETS APPEARED

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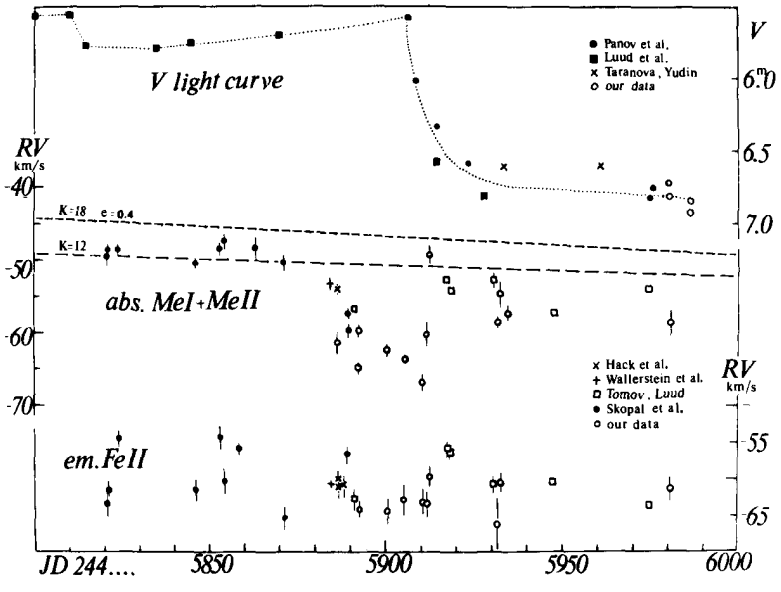
The period of maximum brightness of CH Cygni which started in mid 1981 finished at the end of July 1984, when sudden drop by about 1 mag was observed (Fig.1). At the same time a radio outburst has occured and the jet structure has developed (Taylor et al.1986). The Toruń Observatory has recorded the spectra of CH Cygni just at this moment. Significant spectral variations, especially development of wide wings in Balmer emission lines have been found (Mikołajewski and Tomov 1985).

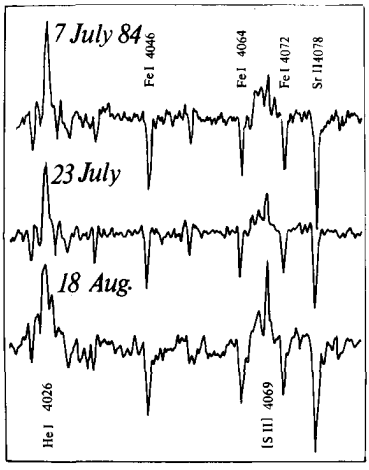
Mikołajewski et al. (1987) showed that the "shell" absorption lines roughly reflect the orbital motion of a hot companion of the M giant. Figure 1 presents radial velocities of these absorption lines of ionized and neutral metals (mainly TiII, FeI) together with the v.rad. followed from possible orbital solution suggested by Mikołajewski et al. About

Fig.1



J. Mikolajewska et al. (eds.), The Symbiotic Phenomenon, 225–226.

Figure 2.



3-4 days after the drop started the RVs of the "shell" absorption lines very quickly (during 3 days) got out of a deep local minimum ($\Delta V_r \sim 15$-20 km/s) preceding the drop by a mounth. The FeII emission lines, which are formed in the outer regions, do not show so large radial velocity variations (Fig.1). Simultaneously, we have not found any changes of the absorption line's profiles (Fig.2) which could account for the minimum of RVs, although they seem to be symmetrical only just before the drop (i.e. on July 23). There is also worth noticing the appearance of wide structure and red component of the HeI 4026 emission line.

The drop in brightness was not accompanied with any changes of B-V and U-B colours. Simultaneously, the "shell" absorption spectrum observed after the drop indicates similar excitation temperature. This suggest that the drop was due to a contraction of the emitting surface at nearly constant effective temperature. The increase of RVs observed at the time of drop of brightness seems qualitatively support this hypothesis. However, it is necessary to emphasize that the values of RVs during the minimum are always below the values followed from the orbital solution (Fig.1). This rather suggest a gradual expansion of the pseudophotosphere untill the time of drop, and then an ejection of the expanding matter perpendicularly to the line of sight.

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