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RENEWED ACTIVITY ON CH Cyg

Since 1962 CH Cyg exhibited a series of major outbursts - in 1963, 1965, 1967-70, and in 1977-86 (see Mikolajewski et al., 1990). The last outburst of CH Cyg ended in 1986. Photometry shows a pronounced minimum in 1988 and this is consistent with our observations. From our data, the mean values for the magnitude and the colours of CH Cyg in July, 1988, are: $V=8.50$, $B-V=1.39$, and $U-B=1.48$. The emission lines and the rapid light variability (flickering), which were very pronounced during the active phase in 1977-1984, also disappeared in 1988 (Skopal, 1988). According to the binary model of CH Cyg (M7 giant and a compact companion), the rate of the mass flow of the M7 stellar wind onto the compact star decreased during 1985-88, and in 1988 only the M7 star was observed.

Table 1
 Photometry of CH Cyg in August, 1992

JD= 2400000+	V	B-V	U-B
48837.430	8.09	0.65	-0.74
48837.460	7.87	0.76	-0.71
48845.414	8.35	1.07	-0.59
48847.349	8.35	1.03	-0.64
48855.357	8.16	0.94	-0.63
48857.365	8.22	0.96	-0.67
48860.465	8.28	1.17	-0.46
48861.328	8.19	1.03	-0.63
48862.327	8.17	1.03	-0.54
48862.480	8.29	1.12	-0.55
48863.327	8.14	0.93	-0.58
48863.459	8.12	0.95	-0.54
48864.456	8.06	0.91	-0.54
48865.302	8.20	1.06	-0.60
48865.320	8.15	1.04	-0.51

During the last years, photometric UBV observations of CH Cyg were obtained at the Bulgarian National Astronomical Observatory, using the 60 cm telescope and the computer controlled photometer. This report (Table 1) contains UBV photometry of CH Cyg, obtained in August, 1992. The comparison star was HD 182691 ($V=6.52$, $B-V=-0.08$, $U-B=-0.23$). The observational procedure and the reductions will be described elsewhere. From Table 1, it is apparent that CH Cyg exhibited a strong ultraviolet continuum again. The $U-B$ colour is comparable with the respective colour observed during

the active phase in 1982–84 and the U mag of CH Cyg brightened by some 2.7 mag with respect to its 1988 value. Pronounced rapid light variations were observed in the U filter during the same period. In Fig 1 is shown the CH Cyg flickering on August 29, 1992, with an amplitude of $\Delta U \approx 0.4$ mag. (the integration time was 1 s). Again, this amplitude is comparable with the flickering during the active phase. From our data, the average U–B colour of CH Cyg in Sept.–Oct., 1990, was: -0.10 mag, and in Sept., 1991: $+0.24$ mag. Our data also show that the 1992 B–V colour is some 0.7 mag bluer than in 1991. Therefore, the U–B colour shows the presence of the blue continuum again in 1990–91, which has also been reported by Leedjarv (1990). Flickering was observed in Sept., 1990, and Sept., 1991, but it was definitely absent on 9/10 July, 1991. The V mag of CH Cyg, however, remained in the range 8.8–8.1 during 1990–92.

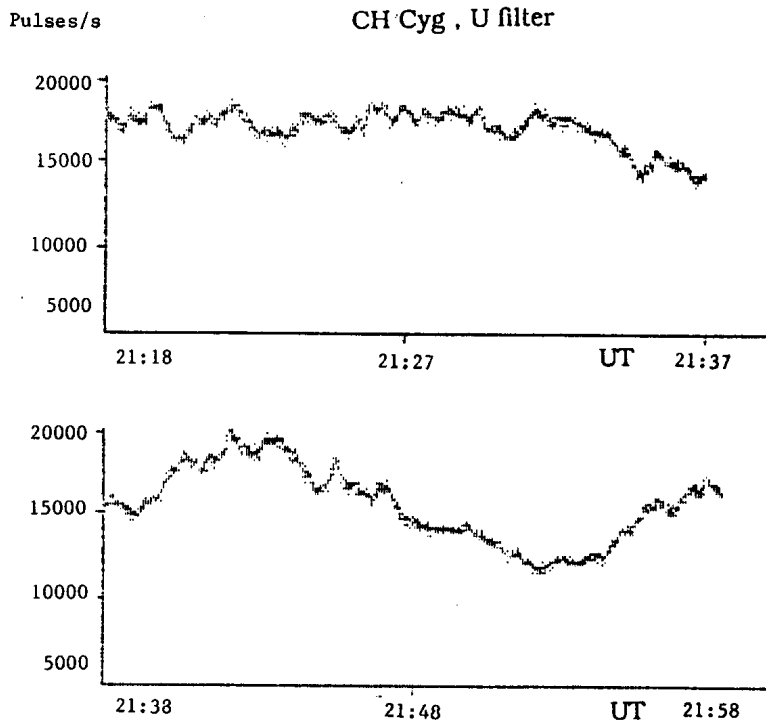


Figure 1

H_{α} spectroscopy of CH Cyg in 1989–90 shows H_{α} in emission again (Bopp, 1990). Thus evidence from the 1990–92 observations of CH Cyg suggests that there is a renewed activity, especially the strong blue continuum in Aug., 1992. This could be another episode of activity, but it could also be an indication of the start of a new major outburst.

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References:

- Bopp, B. W., 1990, Inf. Bull. Var. Stars No. 3499
Leedjarv, L., 1990, Inf. Bull. Var. Stars No. 3474
Mikolajewski, M., Mikolajewska, J., and Khudyakova, T. N., *Astron. Astrophys.*, **235**,
219
Skopal, A., 1988, Inf. Bull. Var. Stars No. 3245