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LONG-TERM LIGHT-CURVE OF THE CATAclySMIC  
BINARY V 425 CASSIOPEIAE

The variability of V 425 Cas = S 9712 was detected by Hoffmeister (1966, 1967). The discoverer and later on Platejs and Rozenbush (1980) considered the star as a probable R Coronae Borealis variable, because the minima were rare and of rather long duration. No further photometric observations are known to me.

The true nature of the object has been discovered spectroscopically by Shafter and Ulrich (1982): It is a cataclysmic binary with an orbital period of 0.14964 days. Therefore it seemed desirable to study the long-term photometric behaviour in more detail.

An investigation on 297 plates taken with the Sonneberg 400 and 170 mm astrographs yields the following picture of the light-curve. The star was bright ( $m_{pg} = 14.6^m$ , standard deviation =  $\pm 0.3$  mag,  $n = 248$ ) without exception from 1935 to 1951 and from 1956 to 1964 (no plates available 1952 to 1955). Slow, systematic fluctuations around the quoted mean brightness of this upper stage with an amplitude of perhaps 0.6 mag are indicated but may originate from instrumental effects. However, from 1965 to 1977 and probably also from 1983 to 1985 the star was very restless (no observations 1978 to 1982 and since 1986) - see figure. Several deep minima of a duration of some weeks at least, or even years, and a depth down to  $\geq 18.5^m$  occurred, interrupted by intervals of high state.

So the star amazingly resembles the "nova-like" cataclysmic binaries TT Ari, MV Lyr or KR Aur, which are characterized by ceasing mass transfer in low state. We suppose that there are more such objects among the purely photometrically classified so-called R Coronae Borealis stars.

Meaning of symbols in the figure is: filled circles - Sonneberg (small-single observations, large-night averages), crosses - Riga (approximate), arrows - upper limits. Magnitude system of Mt. Wilson Selected Area 42.

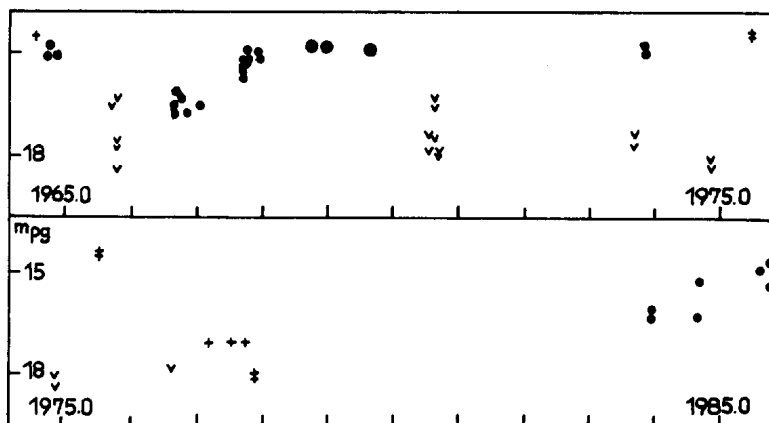


Figure 1

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