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LIGHT VARIATION OF V 1294 Aq1 IN THE PAST 50 YEARS

V 1294 Aq1 (HD 184279, BD + 3^o4065, MWC 319, SAO 124788) is a known Be star with long record of spectroscopic and photometric data. Recently, Horn et al. (1982) discussed the correlation between the long-term photometric variations (derived from the photoelectric observations) of the star and the long-term spectral variations. (See also that paper for detailed bibliography of this star.)

In this report we present photometric data derived from visual estimates on 867 blue-sensitive photographic plates taken in the period 1929 to 1980. These plates are from the Sonnenberg plate collection and the brightness of V 1294 Aq1 was derived by one of us (R.H.).

The data were reduced and in order to limit the scatter, mean values over the intervals of 110 days were formed. They are presented together with available photoelectric measurements and the known history of the shell development in Figure 1.

The mean estimated photographic magnitudes of V 1294 Aq1 were analysed for possible periods. The overall trend of the brightness was removed and only the residuals were studied further. Reasonable fit was obtained for periods of about 2800 - 3000 days, but no strict long-term periodicity was found. This is also clearly seen from Figure 1.

We can also derive more information on the correlation between photometric and spectral variations. Apparently, the actual shell event (which has been lasting for more than 4000 days now) is accompanied by profound and complex light variations. It seems that the same type of correlation was observed at the end of another long-lasting shell from JD 2425000 to JD 2430000. On the other hand, the relatively short shell period around JD 2432000 passed without any remarkable light variation.

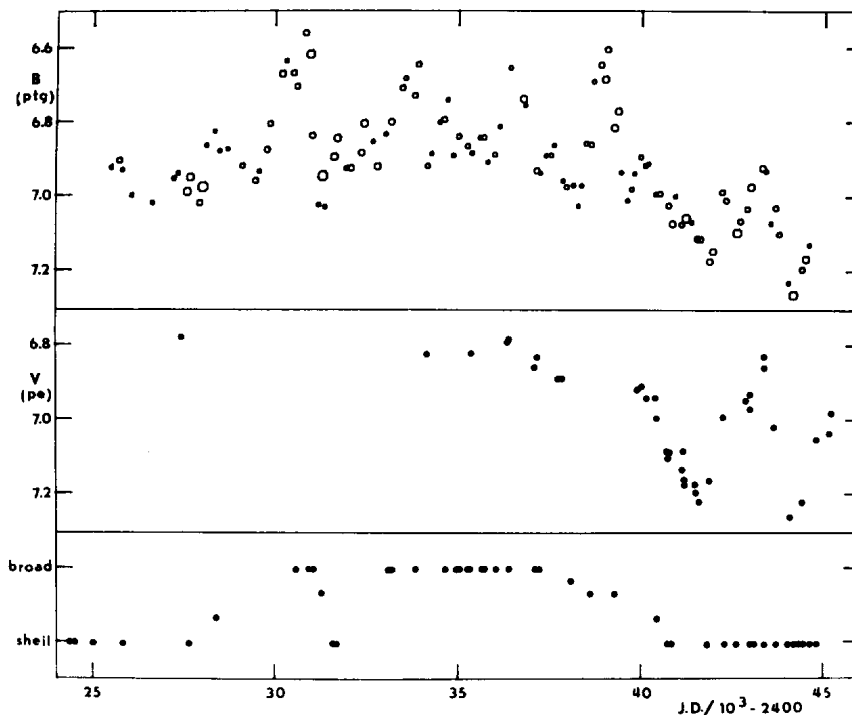


Figure 1

Long-term photometric and spectral variation of V 1294 Aql. Photographic magnitudes are in the upper panel, while the appearance and disappearance of shell lines are on the lowest panel. For comparison, V photoelectric magnitudes are presented in the middle part.

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Reference:

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