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PHOTOMETRIC VARIABILITY OF 10 LACERTAE

The star 10 Lac has been reported several times as a spectroscopic variable. Smith (1977), who included the star in the group of the so-called 53 Persei variables (see Sareyan et al, 1980, for the observational definition), tried to calculate a period for the variation of the line Si IV $\lambda 4654.1$ on the basis of non-radial pulsations. He obtained two possible values, 14.2 and 8 hours, the second being the most probable one. Otherwise, the star has never been detected as photometric variable.

We observed 10 Lac during the nights of September 24th and 25th, 1980. 2 And was used as comparison star. In view of the considerable difference in spectral type between 10 Lac and 2 And - O9 and A3, respectively - the atmospheric extinction is expected to be larger for the bluer star; by considering the part of the spectrum in which we observe - U and B filters of Johnson - this difference is not negligible. We estimate the corrections upon the light curve by assuming the extinction coefficient to depend on the wavelength in the form $E = \exp(-A\lambda^{-4})$ E being the ratio of the fluxes inside and outside the atmosphere and A a constant (Rayleigh scattering).

In Figures 1 and 2 are represented the light curves for the two days of observation. Crosses correspond to 2 And and circles to the magnitude difference 10 Lac - 2 And. Vertical bars represent the above mentioned corrections relative to the value, corresponding to which the star crosses the meridian. As we can see, the correction goes in the sense of increasing the amplitude of the variation. In other words, the variability found is real.

As we dispose of very few data, it is difficult to perform a period analysis with a certain confidence. We tried such an analysis and got a most probable period of 6.4 hours for

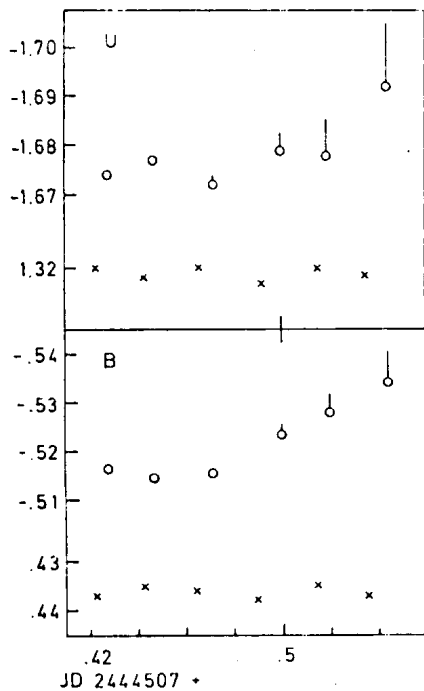


Figure 1.

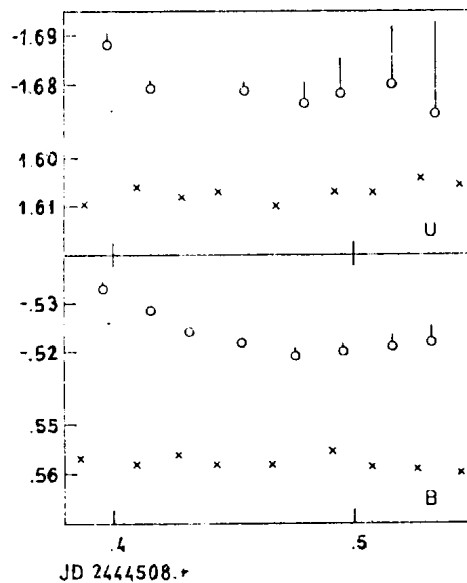


Figure 2.

both U and B filters, using the original and the corrected data. The amplitude should lie between $0^m.02$ and $0^m.03$. However, only an intensive photometric monitoring of the star will allow a more reliable determination of its characteristics.

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