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DRAMATIC CHANGES IN THE POLARIZATION OF AR Pup

AR Pup is supposed to be a carbon rich RV Tauri star of period around 75 days and it shows large infrared excess (Gehrz and Ney 1972). This star is included in our programme of polarization observations of carbon variables and has been observed on three different occasions with the PRL polarimeter (Deshpande et al., 1985) attached to the 40-inch telescope at Kavalur Observatory. Although on these occasions the visual magnitudes were roughly the same (~ 9.3 mag) there were dramatic changes in the wavelength dependence as well as in the amount of polarization. The position angles also showed large changes.

The observations along with their probable errors are shown in Figure 1. No recent photometric light curves seem to be available for this object for accurately knowing the photometric phases corresponding to these epochs. But from the old photometric data on the observed visual magnitudes, we guess that the polarimetric observations might be outside the minima. The infrared magnitudes of AR Pup are also variable. The JHKL magnitudes obtained with an InSb photometer with the 40-inch reflector in February 1981 are: $J=6.94$, $H=5.27$, $K=3.61$ and $L=1.31$. Gehrz and Ney (1972) give $K=4.37$ and $L=1.98$, quite different from the values observed. But the K-L colours obtained on both these occasions are essentially the same.

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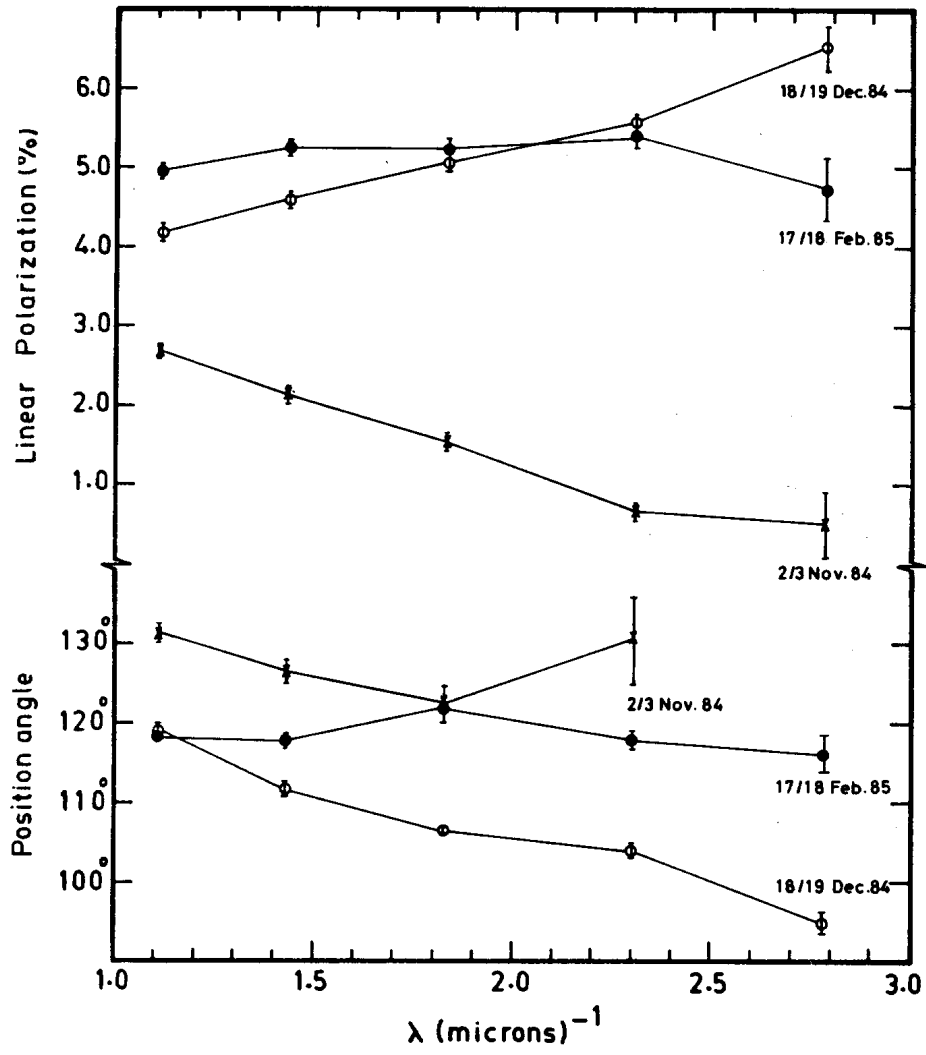


Figure 1