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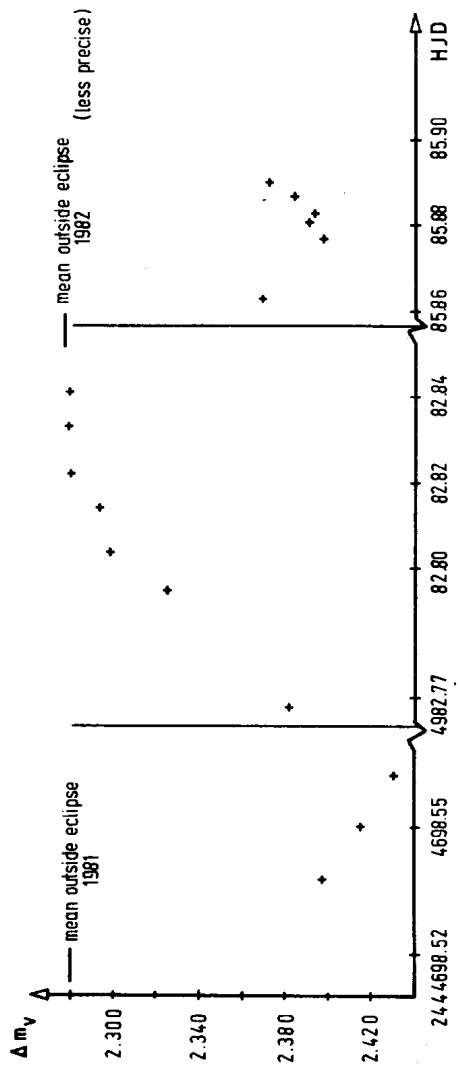
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PHOTOELECTRIC PHOTOMETRY OF Ap STARS IN THE  
GALACTIC CLUSTER NGC 2516: PRELIMINARY RESULTS

The galactic cluster NGC 2516 is known to contain many Ap stars of all peculiarities (Abt and Morgan 1969; Dachs 1972; Hartoog 1976; Maitzen 1981 etc.) and so is of particular interest for the study of the evolution of such stars. Four of these, which had a slightly greater dispersion than others in the Geneva photometric measures, were systematically checked for variability during the years 1981-82 at La Silla Observatory, with the 70cm Swiss telescope. These are Cox 15 (HD 65987), 24 (HD 66318), 38 (CpD-60° 00981) and Cox C (CpD-60° 00978). HD 65950, which is a Mn star, does not vary significantly and was used as a comparison star together with CpD-60° 00982.

Cox 15 (SiSr) has a peak-to-peak amplitude of no more than  $0^m.025$  in [U-B] and of  $0^m.017$  in V. Twenty-one measurements of this star have been made between February and April 1981, each one consisting in the sequence  $C_1-V-C_2-V-C_2-V-C_1$  ( $C_1$  and  $C_2$  are the above-mentioned comparison stars). The most likely period seems to be 1.41 days, with a double wave in [U-B], but the V lightcurve is very scattered and more measurements are being made to clarify this point.

Cox 24 (Si) shows no detectable variation: eight measurements show a standard deviation of only  $0^m.0024$  in V, which surely is close to their intrinsic scatter.



OBSERVED MAGNITUDE-V DIFFERENCE BETWEEN COX 38 AND CPD-60°982

Figure 1

Cox 38 has been measured nine times in 1981 and shows no intrinsic variation, the r.m.s. deviation being  $0^m.0026$  in V; however, one measurement yields a magnitude of 9.65 instead of 9.51, and the three magnitudes of the sequence are monotonically increasing, while the colours remain completely normal. This suggested an eclipse, and the star was observed again in December 1981 and January 1982 in order to find other minima. Two were indeed found (see the figure, where the magnitude differences between Cox 38 and CpD-60<sup>O</sup>982 are represented) and one of them may well be a secondary minimum; however, as it has been measured mainly during twilight, and although the sky was measured simultaneously with a double-beam photometer, this still has to be ascertained. A rough estimate of the half-period, or of the period itself can be made and lead to the following ephemeris:

$$\begin{aligned} \text{HJD (Min.)} &= 2444985.877 + 3.157 E \\ &\pm .005 \pm .007 \end{aligned}$$

More measures will be made in order to complete the lightcurve. The absence of intrinsic variation may imply that the magnetic and rotation axes are parallel, if the "spots" are located near the magnetic poles and if the rotation axis is normal to the orbital plane.

Cox C (Si) has a very significant variation of  $0^m.06$  in [U-B] and of  $0^m.03$  in V. Its most probable period is 1.81 days, and the V lightcurve is double-waved.

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