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u v b y PHOTOMETRY OF THE SUSPECTED VARIABLE  $\omega^2$  Sco

The star  $\omega^2$  Sco (HR 5997,  $V=4.31$ ) is classified as a suspected variable of spectral type gG2 in the Catalogue of Bright Stars (Hoffleit 1964). The star was listed by Crawford and Barnes (1970) as a standard star in the Strömrgren system, and recently Grønbech et al. (1976) used  $\omega^2$  Sco as a standard for ubvy photometry of bright O to G0 stars south of declination  $+10^\circ$ . The author used this star as a standard star for four-colour observations at La Silla, Chile in 1973. In view of its suspected character, however, measurements of the nearby bright stars  $\nu$  Sco (HR 6026-27, A0IV-B2IV,  $V=4.00$ ) and  $\omega^1$  Sco (HR 5993, B1V,  $V=3.95$ ) were made immediately before and after each measurement of  $\omega^2$  Sco. Although the spectral types of the suspected variable and the comparison stars differ more than one might like, all stars are very bright and one may expect high-precision differential photometry.

The measurements were corrected for atmospheric extinction and the indices  $b-y$ ,  $m_1$  and  $c_1$  were transformed to the standard system of Crawford and Barnes (1970). The  $y$  observations were transformed to the standard  $V$  magnitudes of the UBV system. Table 1 gives the mean values of the non-differential nightly means of  $b-y$ ,  $m_1$  and  $c_1$  calculated from measurements obtained during 7 nights in 1973. The mean error  $\sigma$  on one nightly mean value is given. The Table also contains the results of Grønbech et al. (1976) and those of Crawford and Barnes (1970).

Table 1

$\nu$ Sco=HR 6026-27			$\omega^1$ Sco=HR 5993			$\omega^2$ Sco=HR 5997				
	b-y	$m_1$	$c_1$	b-y	$m_1$	$c_1$	b-y	$m_1$	$c_1$	
$\bar{m}$	0.078	0.056	0.140	0.036	0.048	0.005	0.516	0.298	0.419	This
$\sigma$	0.001	0.004	0.004	0.001	0.004	0.005	0.004	0.006	0.007	work
$\bar{m}$	0.083	0.047	0.142	0.044	0.037	0.008	0.499	0.329	0.407	Grønbech
$\sigma$	0.003	0.004	0.004	0.003	0.004	0.003	0.003	0.004	0.004	et al. 1976
$\bar{m}$	0.072	0.059	0.150	0.033	0.041	0.022	0.521	0.284	0.448	Crawford et al. 1970

Table 2 gives the mean values of the differential results for  $\omega^2$  Sco relatively to  $\nu$  Sco and also for  $\nu$  Sco relatively to  $\omega^1$  Sco.

Table 2

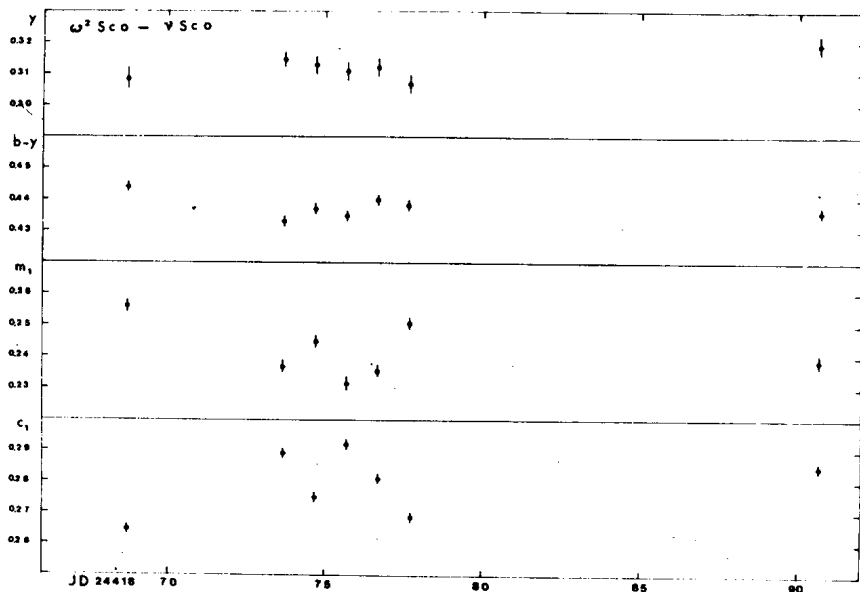
$\omega^2$ Sco - $\nu$ Sco				$\nu$ Sco - $\omega^1$ Sco				
	y	b-y	$m_1$	$c_1$	y	b-y	$m_1$	$c_1$
$\bar{m}$	0.312	0.438	0.242	0.279	0.052	0.043	0.007	0.135
$\sigma$	0.004	0.004	0.009	0.010	0.003	0.001	0.002	0.001

The standard deviations in y for the differences  $\omega^2$  Sco -  $\nu$  Sco and  $\nu$  Sco -  $\omega^1$  Sco are similar, but the mean errors in b-y, and especially in  $m_1$  and  $c_1$  are significantly different for both groups. Figure 1 gives a plot of the differential nightly mean values y, b-y,  $m_1$  and  $c_1$ . The Figure clearly indicates that  $\omega^2$  Sco shows significant variations in b-y,  $m_1$  and  $c_1$ , while more measurements are needed to conclude whether the y-fluctuations are significant or not. Further observations are planned.

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