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NEW RESEARCH FOR PERIODS OF Ap STARS OBSERVED AT THE ESO-III

A new series of six Ap stars has been observed in the uvby system with the photometer attached to the ESO 50-cm telescope. However the measurements are somewhat less accurate than for the previous series (see IBVS Nos. 1280, 1391, 1451) because less time has been devoted to the new stars in order to reobserve Ap stars previously measured. These new measurements have been made from the end of November to December 20, 1978. They have still been analysed with the same method (P. Renson, Astron. and Astrophys. 63, 125, 1978) to find periods. This gives the following results.

star	sp.type	period	range(mag.)
HD 24155=HR 1194	B9pSi	$2^d_{-53} \pm 0^d_{+03}$	from 0.06 in y to 0.1 in u
HD 27376=υ ⁴ Eri	B9pMn	$0^d_{-51} ?$	very small
HD 32549=11 Ori	B9pSi	$4^d_{-63} \pm 0^d_{+09}$	from 0.03 in y to 0.1 in u
HD 39317=137 Tau	B9pSiEuCr	$2^d_{-63} ?$	near O, except in u (0.05)
HD 42536=HR 2195	AOpSrCr	$(3^d_{-6} ?)$	small, mainly in y and b
HD 42657=HR 2202	B9pHgMn	$0^d_{-724} \pm 0^d_{+008}$	from 0.02 in y to 0.04 in u

Due to the lack of precision (one measurement for each comparison star instead of two, and two for the Ap star instead of three, for many individual values of $Ap - (C_1 + C_2)/2$) and the smallness of some ranges, several results are very uncertain. The periods given with a question-mark, especially for HR 2195, are probably spurious periods; these stars may have periods which are too long to show significant variations during our observations.

It is noteworthy that HR 2202, which is a Hg-Mn star, is clearly periodic; however the range of the variation is small. We think that the Hg-Mn stars may be periodic variables such as the other Ap stars, but that they are believed to exhibit no periodic variations, only because the variation range is generally very small.

P. RENSON and J. MANFROID
 Institut d'Astronomie de
 l'Université de Liège
 5, avenue de Cointe
 B-4200 Cointe-Ougrée (Belgium)