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TV Nor, ANOTHER ECLIPSING Ap STAR

In a previous paper (Renson and Mathys 1984) the attention of the spectroscopists has been drawn to a few Ap stars known as eclipsing variables. The study of the changes undergone by their spectra during the eclipses may establish the existence of inhomogeneous physical and chemical conditions over their surfaces, thus providing a valuable test of the oblique rotator model. Indeed according to this model the variations exhibited by an Ap star are explained by the presence of patches with various chemical abundances and different values of the physical parameters, which appear successively when the star rotates.

However there is an eclipsing Ap star that was not quoted in that paper (nor in Renson 1984), i.e. HD 143654. Its Ap nature has been discovered by N. Houk (1978), who gives for the observed spectral type (with quality 1) Ap Eu Cr Sr. But it was already known as an eclipsing binary long ago. Its variability has been discovered by H. van Gent (Kruytbosch 1930). Because its luminosity was almost always at its maximum value, it was immediately believed to be an eclipsing variable. By examining this object on hundreds of plates, E. Hertzsprung (1937) established that the period is $8.524406 \text{ d} \pm 0.000017 \text{ d}$.

The data are the following ones, in the same order as in I.B.V.S. 2522, i.e. HD number (A) and other identifications (B), variable star name (C), coordinates for the epoch 1950 (D and E), magnitude (F), spectral type (G), period in days (H), depth of the primary and secondary minima (I and J) :

A	B	C	D	E	F	G	H	I	J
143654	COD-51°9739	TV Nor	$16^{\text{h}}00^{\text{m}}4$	$-51^{\circ}24'$	8.9:	A0 EuCrSr	8.5244	0.6:	0.2:
	=cpD-51°8888								

This star is somewhat brighter than the other eclipsing binaries quoted by Renson and Mathys (1984) and Renson (1984) except 17 Aur. But 17 Aur belongs to the group of Mn-Hg stars, the spectral va-

riations of which are always very small, which implies that there are no large inhomogeneities over their surfaces. Thus TV Nor is probably the more suited star for the above mentioned purpose.

Therefore observers are called on to study in detail this star and especially the evolution of its spectrum during the eclipses.

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