

COMMISSION 27 OF THE I. A. U.  
 INFORMATION BULLETIN ON VARIABLE STARS

Number 1742

Konkoly Observatory  
 Budapest  
 1980 February 15

FURTHER NOTE ON HD 219018, COMPARISON STAR TO SZ Psc

Last year a small controversy arose over whether or not HD 219018 is variable. Jakate (1979) claimed that it is variable on a scale of about 0.1 mag, while I could find no such variability in observations made by me in Chile 1974 (Fernie, 1979). The result is important for much previous work done on SZ Psc itself, an interesting RS CVn binary, since HD 219018 has long been used as a comparison star for SZ Psc.

Jakate arrived at his result by using HD 219150 as a check star, and in my note I suggested that possibly it was this star that was variable. During the past season, therefore, I obtained sporadic differential observations over several months between each of these stars and a nearby bright star HR 8852. The results in B and V are shown in Table I, each entry being the mean of four pairs of observations.

Table I

J.D.	Differential Photometry			
	HD 219018-HR 8852		HD 219150-HR 8852	
	$\Delta V$	$\Delta B$	$\Delta V$	$\Delta B$
244 4121.697	4.062 $\pm$ .008	3.725 $\pm$ .010	3.539 $\pm$ .007	2.970 $\pm$ .008
4134.682	4.064 $\pm$ .005	3.739 $\pm$ .003	3.534 $\pm$ .003	2.990 $\pm$ .003
4163.610	4.064 $\pm$ .006	3.744 $\pm$ .006	3.534 $\pm$ .006	2.988 $\pm$ .010
4225.496	4.067 $\pm$ .005	3.741 $\pm$ .003	3.559 $\pm$ .004	2.986 $\pm$ .002
4237.464	4.060 $\pm$ .016	-	3.536 $\pm$ .010	-
4242.475	4.057 $\pm$ .018	3.742 $\pm$ .021	3.558 $\pm$ .011	2.988 $\pm$ .002
Weighted means:	4.064 $\pm$ .001	3.740 $\pm$ .002	3.541 $\pm$ .005	2.987 $\pm$ .002

It is clear that there is no variability of HD 219018 exceeding a few thousandths of a magnitude. The same is probably true of HD 219150, although the scatter is slightly larger in  $\Delta V$ , but quite comparable in  $\Delta B$ .

However, in the course of this work it was discovered that HD 219150 is a particularly interesting star with a massive uv excess, and more detailed photometry and spectroscopy of it will be reported elsewhere (Ferne and Bolton, in preparation). There is a suggestion that the star may be variable at times or variable on a much longer time-scale.

Meanwhile, it seems safe to continue to use HD 219018 as the primary comparison star for SZ Psc.

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References:

- Ferne, J.D. 1979, I.B.V.S. No. 1609  
Jakate, S.M. 1979, I.B.V.S. No. 1578