

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

Number 1963

Konkoly Observatory
 Budapest
 1981 May 8
 HU ISSN 0374-0676

IS AE Aur A VARIABLE STAR?

Among the 19 stars, listed by Blaauw (1961) as "runaway" stars, AE Aur is the only one for which photometric variability had been reported. Schneller concluded that the star has an amplitude of about $0^m.2$. Therefore, only photoelectrical measurements should be used to discuss the light changes.

Photoelectrical observations had been reported by Schneller (1936), Groeneveld (1944) and Kharitonov (1957). Eleven new observations by the authors during four evenings in the winter 1980/1981 have been made with the 75 cm telescope of the Wilhelm Foerster Observatory Berlin, an 1P21 photomultiplier behind GG13+BG12 filters for the B band and GG11 for the V band of the UBV system. As comparison stars served 16 Aur, 19 Aur, SAO 057884 (for these stars the magnitudes and colours have been adopted from Blanco et al. 1968), and SAO 057893 ($V=6^m.63$, $B-V=+0^m.22$). Schneller's 35 measurements were made in comparison to λ Aur in

Table

Author	Year	Result
Schneller	1936	$\overline{\Delta m} = 0^m.857 \pm 0^m.006$
Groeneveld	1944	$\overline{\Delta m}_1 = 0.026 \pm 0.015$ $\lambda_{eff} = 495 \text{ nm}$
		$\overline{\Delta m}_2 = -0.052 \pm 0.019$ $\lambda_{eff} = 412 \text{ nm}$
Kharitonov	1957	$\overline{\Delta V} = 0.921 \pm 0.005$
		$\overline{\Delta(P-V)} = -0.101 \pm 0.006$
this paper	1980 } 1981 }	$\overline{V} = 6.055 \pm 0.008$
		$\overline{(B-V)} = +0.248 \pm 0.006$

an instrumental system. Groeneveld's 4 observations were made in comparison to BD+31^o955 in a two colour instrumental system. Kharitonov used 19 Aur as comparison for his 14 PV observations. If we disregard only one of Schneller's observations, we find the mean values and mean square errors of the table. As the mean square errors of all reported observational runs are in the order or even less than the observational accuracy, we conclude that AE Aur is not a variable star.

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