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PHOTOMETRY OF CAPELLA

At the suggestion of Dr. D. Hall we decided to measure Capella (α Aur = BS 1708) for possible variability. We present here a small sample of photometric measurements, made differentially in the standard manner (Hall and Genet, 1982) with respect to 9 Aur (= BS 1637). For α Aur, $B-V = +0.80$, for 9 Aur, $V = 5.00$, $B-V = +0.34$ (see Table 9 of Johnson et al., 1966). The 1980 data were reduced with a standardization coefficient $\epsilon = -0.072$. These data were reduced from ammeter readings. Observations were also made on four other nights in 1980, but the differential magnitudes showed a range greater than 0.050 mag, indicating non-uniform sky conditions or problems with the equipment. The 1981 data were made with a different photomultiplier tube (for which $\epsilon = -0.047$), and were reduced from trip chart tracings. In all cases an atmospheric extinction coefficient of $k_v = 0.5$ mag/air mass was used. The differential extinction corrections in all cases amounted to less than 0.02 mag. The observations were made with a 6-inch $f/6$ reflector in San Jose, California, a standard V filter, and an uncooled RCA 931A tube operated at -1000 V.

Data in Table I includes date, Universal Time, geocentric Julian Date,

Table I

Photometry of α Aur vs. 9 Aur					
Date	UT	Julian Date (2440000 +)	$\Delta\bar{V}$		n
7/8 Feb 1980	0511	4277.7161	-4.998 \pm .008		4
9/10 Mar 1980	0446	4308.6986	-4.999 \pm .010		3
12/13 Mar 1980	0420	4311.6803	-5.034 \pm .006		3
21/22 Mar 1980	0359	4320.6662	-5.020 \pm .005		3
4/5 Jan 1981	0423	4609.6824	-5.004 \pm .006		3
21/22 Feb 1981	0410	4657.6738	-5.039 \pm .008		3
28/29 Mar 1981	0422	4692.6822	-5.009 \pm .011		2

nightly means, and number of measurements.

The average of all 21 differential measurements is $\Delta V = -5.014 \pm 0.004$ (standard deviation of the mean). There is no statistically significant difference between the 1980 and the 1981 data.

This small data set indicates that Capella exhibits no variability greater

than ± 0.02 mag in V. Given the standardized V magnitude of 9 Aur, Capella has $V = -0.01$. This is brighter than the value given by Johnson et al., ($V = +0.08$). Some of this discrepancy can be attributed to uncertainties in the calibration of gain settings.

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References:

- Hall, D.S. and Genet, R.M., 1932, Photoelectric Photometry of Variable Stars, chapters 11-13
Johnson, H.L. et al., 1966, Communic. Lunar and Planetary Lab. 4, 99