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Photometry of α Tauri (Dec 1987 to Mar 1992)

According to the 4th edition of the *General Catalogue of Variable Stars* (1985-1990) α Tau (= Aldebaran = HR 1457) is of spectral type K5 III and varies irregularly from visual magnitude 0.95 to 0.75. The 4th edition of the *Yale Bright Star Catalogue* (1982) gives $V = 0.85$, $B-V = 1.54$ for α Tau.

In Table I we give photometry of α Tau on 13 photometric nights. For the most part differential photometry was carried out, with transformation to the UBV system by means of transformation coefficients derived from differential

Table I

Photometry of α Tau*

Date	<UT>	Julian Date	V	comp
27/28 Dec 1987	0728	2447157.81	0.926 \pm 0.020	all sky
23/24 Jan 1988	0818	7184.84	0.887 0.013	β Ori
13/14 Feb 1988	0751	7205.83	0.892 0.015	β Ori
1/2 Mar 1988	0623	7222.77	0.869 0.022	all sky
13/14 Nov 1990	1009	8209.92	0.860 0.006	ϵ Tau
27/28 Dec 1990	0656	8253.79	0.875 0.008	"
3/4 Jan 1991	0617	8260.76	0.893 0.002	"
6/7 Mar 1991	0610	8322.76	0.875 0.015	"
12/13 Oct 1991	1127	8542.97	0.860 0.005	"
9/10 Nov 1991	0858	8570.87	0.893 0.018	"
29/30 Dec 1991	0651	8620.79	0.874 0.002	"
26/27 Jan 1992	0724	8648.81	0.886 0.005	"
22/23 Mar 1992	0604	8704.75	0.850 0.009	"

*From observations on 1/2 Mar 1988 and 3/4 Jan 1991, the mean B-V color was measured to be 1.549 ± 0.026 .

alpha Tauri (December 1987 to March 1992)

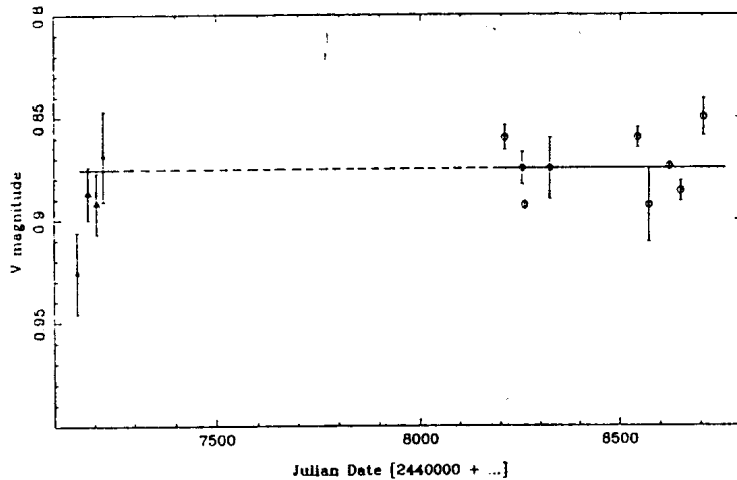


Figure 1 Data from Table I. Dots: V-band zero point derived from an average of 17 observations of standards per night. Triangles: β Ori used as comparison star. Open circles: ϵ Tau used as comparison star. The data were obtained at the 2800-m elevation of Mauna Kea, using a 6-inch reflector and a DC photoelectric system.

observations of the red-blue pair 27 and 28 LMi (Hall 1983). The comparison star β Ori has $V = 0.12$, $B-V = -0.03$ according to the *Bright Star Catalogue*, but Guinan et al. (1985) found it to be variable by as much as 0.16 mag. For the most part our data were reduced with respect to ϵ Tau ($V = 3.53$, $B-V = 1.01$). Typically 3 differential measures were made each night, but on some occasions up to 7 were made. The light curve is shown in Figure 1.

Since the night of 27/28 Dec 1987 α Tau seems to have been essentially constant in brightness at $V = 0.876 \pm 0.004$. Excluding 27/28 Dec 1987, when α Tau was definitely fainter, the standard deviation of the distribution of the other points is only ± 0.014 mag, consistent with no variations at all given the errors of the individual points. Of course, variations could have occurred during the 2 1/2 year gap in the light curve.

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