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NEW VARIABLE IN OPHIUCHUS

During the analysis of results from photometric monitoring of members of the open cluster IC 4665, a new variable star has been found near the center of the cluster. The variable's position is approximately; RA = $17^{\text{h}}43^{\text{m}}42^{\text{s}}.7$, DEC = $+5^{\circ}42' 04''$ (1950). The variable's mean magnitude is approximately $V \simeq 14.9$. The accompanying finding chart (north at top, east at left) in Figure 1 is approximately 4 arcminutes on a side and identifies the variable and the nearby solar-type cluster member P100 (Prosser 1993). The bright member K64, normally defined as the center of the cluster, is also indicated. A check of the GCVS and NSV catalogs did not reveal a previously known variable at the above position.

V-band CCD photometry of the region was obtained during May 1995 with the 0.9m telescope at CTIO. 36 observations over a 14 night period (JD: 2449845-2449859) provided relative photometry between the new variable and several stars of comparable brightness. Periodogram analysis was performed on the relative photometry using a program which incorporates the method outlined by Horne & Baliunas (1986) and Scargle (1982) for unevenly sampled data. A period of approximately 12.7 days was found, with an amplitude $\Delta V \simeq 0.2$ mag and a maximum occurring near JD = 2449856.5.

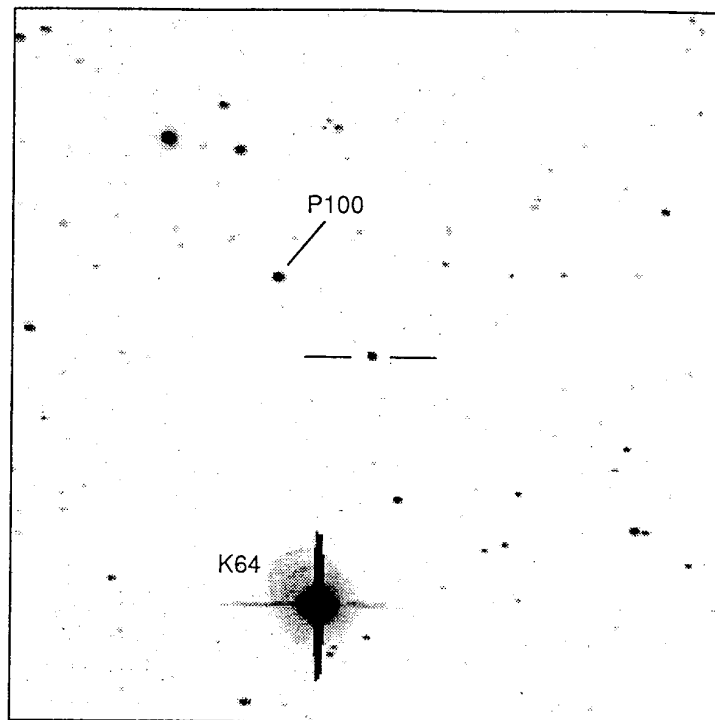


Figure 1

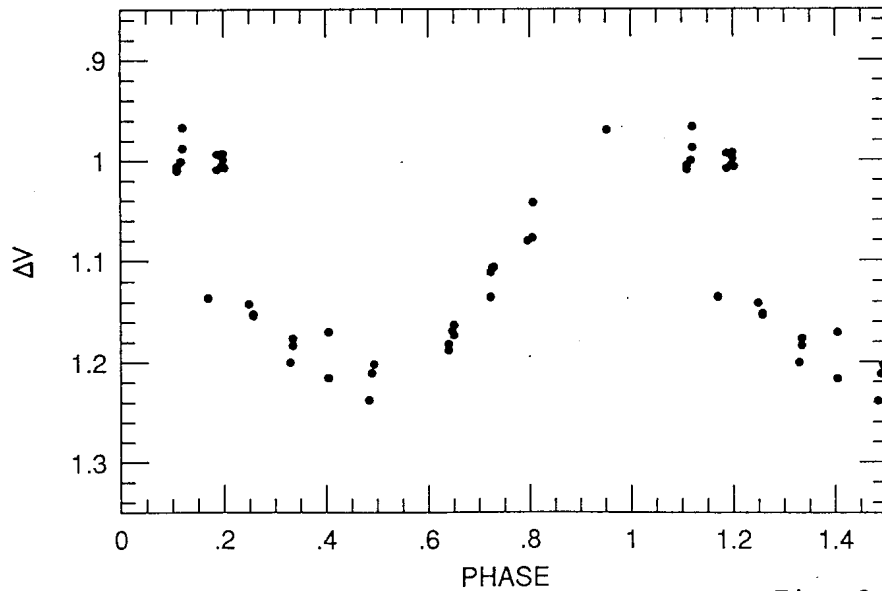


Figure 2

Figure 2 illustrates the resulting light curve for the new variable relative to an anonymous comparison star found to be constant. Further monitoring over longer time intervals should be able to refine this period estimate. It should be noted that the nearby cluster member P100 has been observed to undergo brightness variations due to rotational modulation by starspots with a period of 2.27 days and amplitude of 0.1 mag (Allain et al. 1995), making it unsuitable for use as a comparison star to the new variable. Although centrally located in the IC 4665 cluster, the variable is not a cluster member. The period is indicative of a Pop I or Pop II Cepheid at a large distance beyond the cluster; further observations are needed to conclusively determine the class, though the faint apparent magnitude together with the relatively high galactic latitude ($+17^\circ$) at which it is observed would appear to suggest that it is Pop II Cepheid or W Vir type variable.

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