

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

Number 2239

Konkoly Observatory
Budapest
1982 December 2
HU ISSN 0374-0676

PHOTOMETRIC OBSERVATIONS OF THE SECONDARY MINIMUM OF 1 Per

The variability of 1 Per = HD 11241 = V 436 Per was detected by Kurtz (1977), its eclipsing nature was demonstrated by visual estimates published by European Group GEOS that indicated exactly the period and the eccentricity of the orbit (Figer et al., 1979) as confirmed by further photoelectric observations carried out by North and Rufener (North et al., 1981). However photometric parameters are not yet known with good precision because few UBV measures have been obtained during the minima. Radial velocity fit is very uncertain, as North et al., (1981) emphasize. Possible orbital models were proposed by North et al. (1981) and Gaspani (1982).

Photoelectric observations with B,V standard filters have been carried out at Merate Observatory in the nights of 1981, November 10 and 12, 1981, December 9, 1982 January 29 and 30. HR 540 (6.442 V,A5m) and HD 12303 = 4 Per (5.007 V,B8V) were used as comparison and check star, respectively. The quoted magnitudes are given by Rufener (1976) in the Geneva Observatory seven colour system. No variation has been found for HR 540, in accordance with Kurtz's conclusions (1977). The measures in the nights of JD 2444948 and 2445000 have been obtained during ascending branch of secondary minimum, in accordance with the ephemeris:

$$\text{Min I (or short)} = \text{JD } 2443562.853 + 25.9359 \times E \quad (1)$$

that provides the min II (or long) at 0.4141 phase (North et al., 1981). Table I reports V observations: each ΔV is the mean of several measures. Phases are calculated from (1). In the night of JD 2444919 1 Per seems to be brighter than in the other nights: this feature has been already pointed out by Kurtz (1977). Runs performed each night by Rufener (1976) and Percy (1982) are not so long to confirm it, even if the r.m.s. of Geneva observations is quoted as 'reasonable' by North et al. (1981).

Table I				
Hel. J.D. 2440000 +	Phase	ΔV	σ	n
4919.279	0.2992	0.947	0.007	4
.286	0.2994	0.953	0.007	5
.312	0.3005	0.947	0.014	4
.321	0.3008	0.953	0.005	4
.327	0.3010	0.947	0.008	4
4921.253	0.3753	0.933	0.010	4
.260	0.3756	0.922	0.005	4
.271	0.3760	0.942	0.014	4
.293	0.3768	0.919	0.006	4
.307	0.3774	0.937	0.006	3
.335	0.3784	0.935	0.016	4
.339	0.3786	0.939	0.010	4
4948.228	0.4153	0.748	0.006	4
.233	0.4155	0.753	0.003	5
.250	0.4162	0.748	0.003	4
.255	0.4164	0.763	0.006	4
.276	0.4172	0.769	0.003	4
.284	0.4175	0.773	0.004	5
.307	0.4184	0.784	0.001	2
4999.288	0.3840	0.938	0.005	4
.291	0.3842	0.936	0.004	4
5000.238	0.4207	0.823	0.007	4
.248	0.4210	0.822	0.005	4
.293	0.4228	0.858	0.011	4
.302	0.4231	0.873	0.005	4
.351	0.4250	0.900	0.006	4
.368	0.4257	0.906	0.003	4
.408	0.4272	0.938	0.012	4

V observations of 1 Per. ΔV are in the sense
HR 540 minus 1 Per ; σ is the standard error.

So, it is necessary to observe 1 Per along the whole light curve.

Further details about my photoelectric observations (in the B colour) will be published elsewhere.

E. PORETTI

Osservatorio Astronomico di Brera
Via Bianchi, 46
22055 Merate
Italy

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