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PHOTOGRAPHIC OBSERVATIONS OF NSV 1671

Bradley et al. (1992) detected "a considerable and unexpected fade of brightness of the star HR 1469=49 Eri", which is also designated as NSV 1671 (Kukarkin et al., 1982). Cousins (1963) reported on possible variability of 0^m08 in V near a mean value $V=5^m31$. However, a fading to $V=6^m9$ (Bradley et al., 1992) was never observed before.

To search for such significant variations in the past, we studied the object on 125 photovisual (JD 2437583-2447917) and 40 photographic (JD 2437560-2439122) plates obtained with Odessa seven-camera astrograph. We used comparison stars from the Catalogue of Blanco et al. (1968). All observations were made in instrumental *pg* and *pv* systems because not all observations were obtained simultaneously in both photometric systems, and because photographic accuracy does not allow to make a good reduction to the standard system. Finding chart is shown in Figure 1.

For the photovisual system, we used instrumental magnitudes $m_{pv}=V-0.15(B-V)$, for the photographic system $m_{pg}=V+0.55(B-V)$. The last expression was obtained by minimizing the relative error of the slope of the mean characteristic curve for 8 standard stars (listed at the beginning of Table 1). One may note significant difference in the mean *pg* magnitudes of other "standard" stars HD 26462, HD 30211, HD 28978, HD 29634 from that obtained by the color equation mentioned above. However, their brightness lie outside an interval covered by our comparison stars, and we did not test them for possible variability.

For *pv* observations, we used a sequence of comparison stars *q*, *b*, *h*, *k* in a closest neighbourhood of the variable.

Only one possible fading down to $m_{pv}\approx 5^m80$ was detected on JD 2437672.335, whereas brightness estimates of NSV 1671 at other 124 plates varied between 5^m23 and 5^m55 with a mean $\langle m_{pv} \rangle = 5^m39$ and a r.m.s. deviation $\sigma_{pv} = 0^m065$. The range for photographic system is 5^m17-5^m42 , mean $\langle m_{pg} \rangle = 5^m33$ and $\sigma_{pg} = 0^m056$. An estimate at the date mentioned above is $m_{pg} = 5.36$, without any evidence for fade within the observational error. Thus it is surprising that the fade at the *pv* plate does not resemble a plate defect. Amplitudes and color index obtained for other plates are consistent with those of Cousins (1963).

Absence of major variations is in excellent agreement with Wenzel's (1992) result based on the more numerous Sonneberg plate collection.

Examination of the object at the other plate collections and new observations are needed to clarify nature of its fade(s).

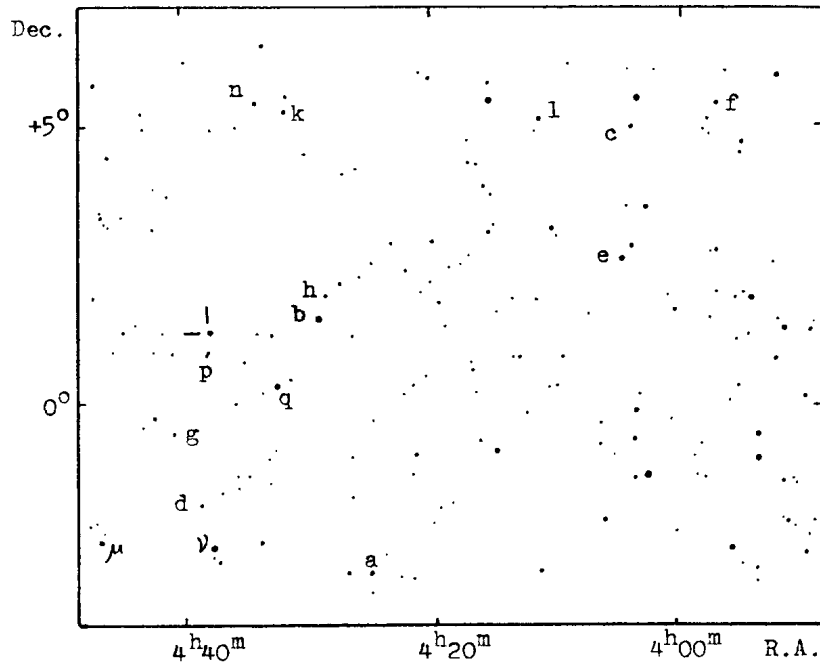


Figure 1. Finding chart for NSV 1671

Table 1. Brightness of the comparison stars for NSV 1671 in standard and instrumental photometric systems.

★	Star No.		V	B-V	m_{pg}	m_{pv}
	Blanco	HD				
a	4254	27861	5.17	0.08	5.00	± 0.09
b	4312	28375	5.54	-0.10	5.17	0.08
c	3977	25558	5.32	-0.08	5.32	0.07
d	4463	29391	5.20	0.29	5.48	0.06
e	3985	25621	5.35	0.50	5.79	0.05
f	3854	24817	6.08	0.06	6.12	0.05
g	4489	29610	6.10	0.94	6.57	0.07
h	4307	28322	6.14	1.02	6.58	0.07
k	4359	28736	6.38	0.42	6.64	0.07
l	4077	26462	5.73	0.35	7.32	0.12
μ	4561	30211	4.02	-0.15	5.75	0.05
n	4395	28978	5.68	0.05	6.33	0.06
p	4494	29634	8.57	0.08	6.71	0.08
ν			≈ 3.93		4.25	0.14
q	4360	28749	4.91	1.32		4.71

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L. L. CHINAROVA
I. L. ANDRONOV
Department of Astronomy
Odessa State University
T. G. Shevchenko Park,
Odessa 270014
Ukraine

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