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**PHOTOMETRIC SEQUENCES AND ASTROMETRIC POSITIONS
FOR NOVA Cyg 2007 AND NOVA Oph 2007**

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Nova Cyg 2007 (= V2467 Cyg) was discovered by A. Tago at ~ 7.4 mag on CCD images exposed on March 15.79 UT (cf. Nakano, 2007a). It was confirmed spectroscopically on March 16.8 UT by Ayani (2007) and Naito & Sakamoto (2007). A detailed quantitative description of the optical spectra of the nova for March 18.16 UT was given by Munari et al. (2007a). The nova belongs to the “FeII” class defined by Williams (1992). Steeghs et al. (2007) described the identification of the progenitor at $r' = 18.46(\pm 0.01)$ and $i' = 17.49(\pm 0.01)$ mag on IPHAS survey images obtained on August 8 and 9, 2004. According to AAVSO database, Nova Cyg 2007 was already declining when it was discovered and the true maximum occurred between the last negative observation ($V \geq 12$, cf. Nakano 2007a) on Mar 12.80 and the discovery one on Mar. 15.79 UT.

Nova Oph 2007 (= V2615 Oph) was discovered by H. Nishimura at ~ 10 mag on photographic film exposed on March 19.81 UT (cf. Nakano 2007b), and confirmed spectroscopically by Naito & Narusawa (2007) on March 20.84 UT as a FeII type of nova. Das et al. (2007) reported infrared spectroscopy showing strong CO molecular bands in emission on March 28.93 UT, and a detailed quantitative description of the optical spectra of the nova on Mar. 22.17 and 24.18 UT was provided by Munari et al. (2007b). According to AAVSO database, Nova Oph 2007 reached maximum around March 27.0 at $V \sim 9.0$.

In this note we present BVR_CI_C photometric sequences around both novae. All stars have been checked in SIMBAD for published previous reports on variability. To calibrate the sequences, we obtained CCD photometry with the Sonoita Research Observatory 0.35-m robotic telescope on four distinct photometric nights, using BVR_CI_C filters and an SBIG STL-1001E CCD camera. Pixel size is $1.25''/\text{pix}$ and the field of view is $20' \times 20'$. Observations on each photometric night included following an extinction star from low to high airmass, along with BVR_CI_C exposures of Landolt standard fields (Landolt 1983, 1992). The photometric sequences are presented in Figures 1 and 2.

Astrometry was performed using SLALIB (Wallace, 1994) linear plate transformation routines in conjunction with the UCAC2 reference catalog. Errors in coordinates were typically under 0.1 arcsec in both coordinates, referred to the mean coordinate zero point of the reference stars in each field. The coordinates we derived for Nova Cyg 2007 are:

$$\alpha_{J2000} = 20\ 28\ 12.492 (\pm 0''.058) \quad \delta_{J2000} = +41\ 48\ 36.33 (\pm 0''.044),$$

Nova Cyg 2007 $\alpha_{J2000} = 20\ 28\ 12.492$ $\delta_{J2000} = +41\ 48\ 36.33$

	α_{J2000} (\pm'')	δ_{J2000} (\pm'')	N	V (\pm)	B-V (\pm)	V-R _C (\pm)	R-I _C (\pm)						
a	307.085679	0.074	41.828942	0.049	4	11.292	0.014	0.507	0.020	0.329	0.043	0.277	0.032
b	307.115075	0.068	41.799538	0.063	4	12.140	0.027	1.310	0.005	0.690	0.020	0.698	0.029
c	307.000743	0.041	41.794607	0.180	4	13.151	0.008	0.546	0.015	0.341	0.039	0.311	0.075
d	306.999448	0.095	41.837653	0.220	4	13.679	0.050	0.645	0.011	0.387	0.069	0.385	0.069
e	307.047839	0.106	41.859748	0.079	4	13.049	0.030	1.306	0.031	0.756	0.048	0.633	0.076
f	307.066378	0.085	41.793821	0.161	4	13.344	0.033	1.185	0.046	0.612	0.113	0.516	0.049
g	307.110764	0.063	41.821186	0.292	3	13.629	0.034	0.632	0.049	0.323	0.049		
α	307.117452	0.091	41.957211	0.052	4	8.571	0.082	0.780	0.026	0.421	0.034	0.352	0.020
β	306.877339	0.041	41.901431	0.025	4	9.071	0.101	0.199	0.036	0.002	0.015	0.063	0.013
γ	306.824865	0.096	41.980019	0.113	4	9.892	0.009	1.155	0.037	0.583	0.010	0.520	0.030
δ	306.820622	0.117	41.789043	0.067	4	9.979	0.023	0.051	0.033	-0.018	0.047	0.038	0.031
ϵ	307.109590	0.046	41.721316	0.036	4	10.816	0.018	0.300	0.017	0.160	0.022	0.159	0.020
ζ	306.854831	0.089	41.869731	0.036	4	11.071	0.007	0.285	0.026	0.157	0.036	0.113	0.052
η	307.220886	0.054	41.838218	0.059	4	11.351	0.015	0.931	0.023	0.519	0.017	0.412	0.027
θ	307.119788	0.068	41.936323	0.034	4	11.462	0.019	1.212	0.026	0.677	0.028	0.598	0.040
ι	306.970465	0.124	41.735072	0.125	4	12.139	0.039	1.646	0.017	1.127	0.052	1.156	0.037
κ	307.223231	0.091	41.852592	0.051	4	12.571	0.015	0.644	0.014	0.397	0.033	0.377	0.017

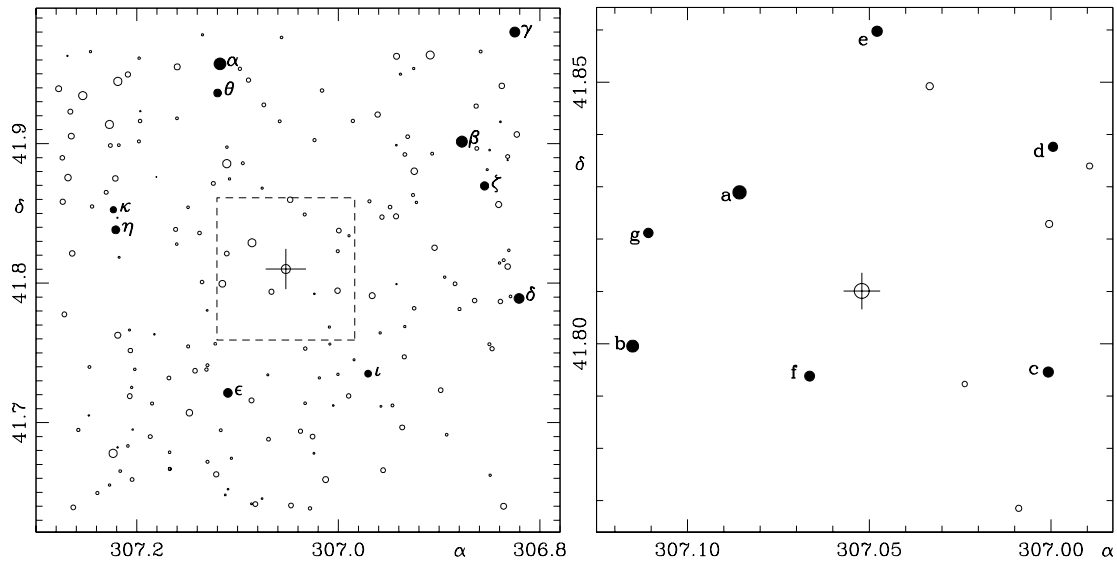


Figure 1. BVR_CI_C photometric comparison sequence around Nova Cyg 2007. The cross indicates the nova. N is the number of nights in which the given star has been measured in the given band. The error in α and δ are in arcsec. The panel on the left covers a $20' \times 20'$ area centered on the nova and shows stars down to $V = 16.5$. The dashed $6' \times 6'$ area is zoomed in on the right panel.

$a = \text{TYC 3160-1716-1}$, $\alpha = \text{BD+41.3764}$, $\beta = \text{BD+41.3757}$, $\gamma = \text{TYC 3160-1572-1}$,
 $\delta = \text{TYC 3160-1841-1}$, $\epsilon = \text{BD+41.3763}$, $\zeta = \text{TYC 3160-1645-1}$

Nova Oph 2007 $\alpha_{J2000} = 17\ 42\ 44.013$ $\delta_{J2000} = -23\ 40\ 35.05$

	α_{J2000} (\pm'')		δ_{J2000} (\pm'')		N	V (\pm)		B-V (\pm)		V-R _C (\pm)		R-I _C (\pm)	
a	265.665733	0.056	-23.708134	0.112	4	13.152	0.029	0.845	0.014	0.492	0.043	0.539	0.021
b	265.733692	0.065	-23.642616	0.120	4	13.948	0.035	0.888	0.026	0.542	0.049		
c	265.708289	0.074	-23.679742	0.427	3	14.988	0.066	1.257	0.000				
α	265.605326	0.077	-23.736586	0.136	4	9.287	0.014	0.710	0.022	0.451	0.018	0.467	0.010
β	265.750569	0.065	-23.510333	0.105	4	11.183	0.013	0.658	0.023	0.407	0.029	0.496	0.039
γ	265.662570	0.065	-23.753022	0.124	4	11.765	0.020	0.817	0.026	0.506	0.022	0.548	0.028
δ	265.854080	0.074	-23.830975	0.102	4	12.498	0.006	0.566	0.023	0.351	0.026	0.390	0.030
ϵ	265.809502	0.060	-23.576961	0.090	4	12.528	0.026	0.951	0.038	0.582	0.026	0.594	0.043
ζ	265.797109	0.084	-23.546070	0.113	4	12.609	0.012	0.767	0.021	0.485	0.022	0.573	0.023
η	265.744712	0.033	-23.565366	0.093	4	12.805	0.027	1.593	0.015	0.925	0.043	0.928	0.019
θ	265.504715	0.127	-23.536622	0.164	4	13.149	0.009	0.722	0.030	0.442	0.040	0.525	0.036
ι	265.642594	0.147	-23.760569	0.170	4	13.664	0.015	1.123	0.020	0.651	0.048	0.661	0.054
κ	265.715803	0.094	-23.604210	0.132	4	14.107	0.044	1.062	0.043	0.634	0.084	0.640	0.095
λ	265.776500	0.608	-23.638827	0.421	3	15.077	0.064	1.292	0.063				

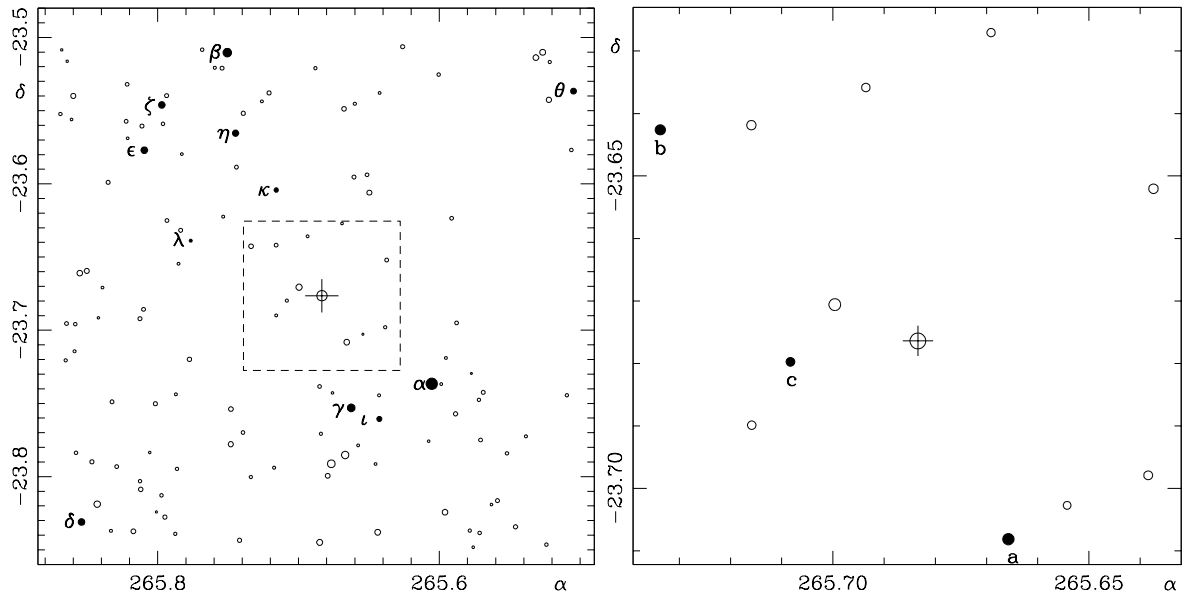


Figure 2. BVR_{CI_C} photometric comparison sequence around Nova Oph 2007. The cross indicates the nova. N is the number of nights in which the given star has been measured in the given band. The error in α and δ are in arcsec. The panel on the left covers a $20' \times 20'$ area centered on the nova and shows stars down to $V = 15.8$. The dashed $6' \times 6'$ area is zoomed in on the right panel. $\alpha = \text{HD 160704}$ (B0 II)

close to the coordinates derived by Nishiyama & Sakamoto (2007) at position end figures 12^s52 and 36^{''}5, and by Steeghs et al. (2007) at end figures 12^s47 and 36^{''}4. The USNO-A2.0 star closest to this position is object 1275-13944467 at position end figures 12^s505 and 36^{''}69, with $B = 20.0$ and $R = 18.5$.

The coordinates we derived for Nova Oph 2007 are:

$$\alpha_{J2000} = 17\ 42\ 44.013\ (\pm 0''.032) \quad \delta_{J2000} = -23\ 40\ 35.05\ (\pm 0''.072),$$

close to the coordinates derived by Kadota (2007) at position end figures 44^s00 and 35^{''}1, and by Itagaki (2007) at position end figures 43^s99 and 35^{''}0. Our position is roughly halfway between that of USNO-A2.0 0600-28293794 (position end figures 44^s014 and 40^{''}80, $B = 15.6$ and $R = 12.3$) and that of USNO-A2.0 0600-28294416 (position end figures 44^s353 and 28^{''}29, $B = 18.6$ and $R = 16.4$), the closest two USNO-A2.0 stars.

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