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NSV 01756: A RED VARIABLE IN ERIDANUS

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Name of the object:	
BD $-05^{\circ}1073$ = GSC 4745_1397 = HV 10413 = CSV 000454	
Equatorial coordinates:	Equinox:
R.A. = $04^{\text{h}}53^{\text{m}}27^{\text{s}}.83$ DEC. = $-05^{\circ}34'49''.0$	2000.0
Observatory and telescope:	
Mollet del Valles Observatory, 0.4-m Newton telescope US Naval Observatory Flagstaff Station, 1.0-m Ritchey–Chretien telescope	
Detector:	CCD in all cases

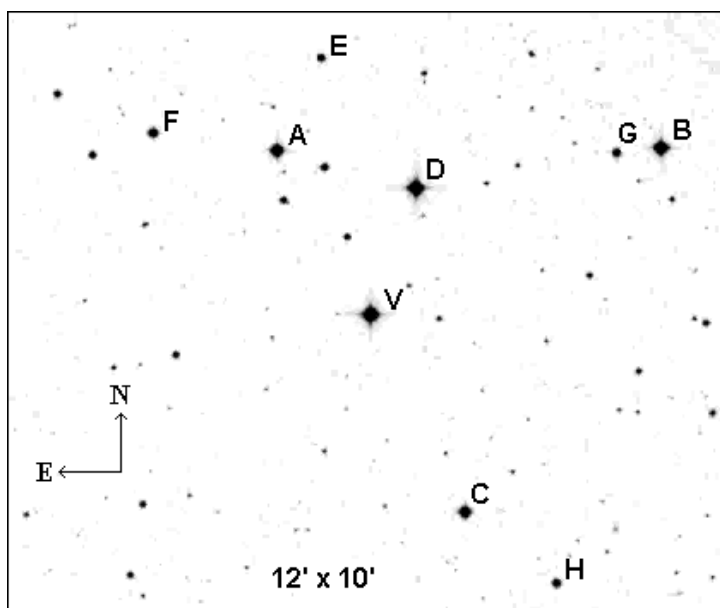


Figure 1. Field of NSV 01756 (V = variable) made from RealSky (1996), and the standardized field stars listed in Table 1

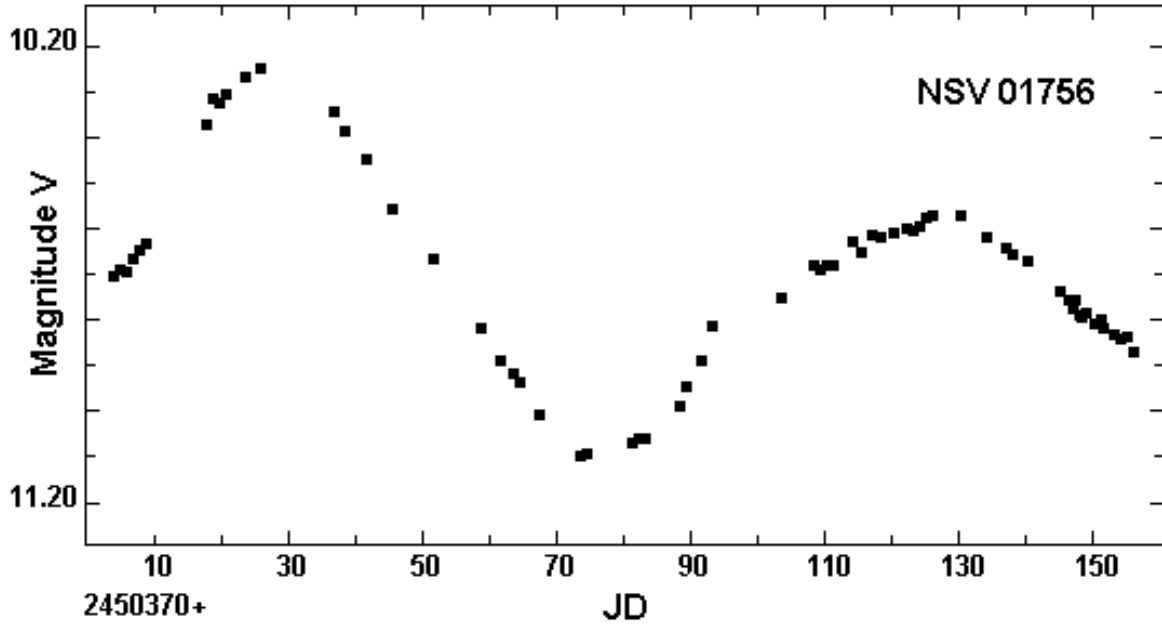


Figure 2.

Table 1

Star	GSC	V	s.d.	$B - V$	s.d.	$V - R_c$	s.d.	$R_c - I_c$	s.d.
A	4745_1330	11.063	0.013	0.502	0.017	0.299	0.013	0.309	0.009
B	4745_1403	10.599	0.008	0.536	0.018	0.311	0.013	0.311	0.008
C	4749_0698	11.609	0.008	0.538	0.012	0.335	0.011	0.287	0.010
D	4745_1325	10.376	0.016	1.154	0.017	0.592	0.024	0.512	0.011
E	4745_1227	13.759	0.027	0.586	0.053	0.370	0.036	0.341	0.107
F	4745_1303	13.036	0.014	1.384	0.056	0.733	0.016	0.669	0.035
G	4745_1360	13.399	0.031	0.791	0.055	0.419	0.042	0.480	0.056
H	4749_0397	13.216	0.006	0.527	0.033	0.336	0.029	0.299	0.060

Table 2

JD 2400000 +	V	s.d.	$B - V$	s.d.	$V - R_c$	s.d.	$R_c - I_c$	s.d.
50516.6661	10.755	0.001	1.671	0.001	1.317	0.003	1.738	0.001
50517.6592	10.755	0.002	1.655	0.002	1.323	0.005	1.730	0.001
50518.6260	10.793	0.003	1.642	0.004	1.325	0.002	1.766	0.002
50521.6297	10.819	0.002	1.647	0.004	1.321	0.003	1.756	0.003
50753.8732	10.839	0.001	1.668	0.002	1.336	0.001	1.754	0.001
50776.9077	10.714	0.002	1.651	0.003	1.335	0.003	—	—
50821.7318	10.866	0.001	1.598	0.003	1.344	0.003	1.856	0.002
50835.7631	10.703	0.003	1.590	0.005	1.312	0.002	1.829	0.002
50836.6767	10.677	0.002	1.617	0.004	1.303	0.003	1.823	0.004
50837.6255	10.660	0.002	1.615	0.002	1.293	0.002	1.802	0.003
50838.7089	10.644	0.002	1.626	0.002	1.288	0.003	1.767	0.004
50839.6702	10.643	0.001	1.622	0.001	1.289	0.002	1.802	0.005

Filter(s):	<i>B, V, R, I</i>
Comparison star(s):	BD $-05^{\circ}1072 =$ PPM 701872 = GSC 4745_1325
Check star(s):	GSC 4745_1330
Transformed to a standard system:	Johnson–Cousins
Standard stars (field) used:	Landolt standards (Landolt, 1992)
Availability of the data:	
Tables 1 and 2	
Type of variability:	SR
Remarks:	
<p>The variability of NSV 01756 was announced by Handley and Shapley (1940). They indicated that this object was an eclipsing binary star with a photographic magnitude variation from $12^{\text{m}}.8$ to $13^{\text{m}}.5$. Bidelman (1987) estimated an M4 spectral type. To know more about NSV 01756, the star was systematically observed in the <i>V</i> band for 61 nights from October 1996 to March 1997, and occasionally observed in 1995 and 1998. Some observations were obtained in <i>B</i>, <i>R</i> and <i>I</i> bands. Figure 1 shows the field of NSV 01756. Table 1 lists the standardized <i>V</i> magnitudes and color indices of comparison stars near the variable, while Table 2 lists the color indices for NSV 01756. Observations show no evidence for the star to be an eclipsing binary. The light curve suggests that probably it is a semiregular variable. The maximum detected amplitude in the <i>V</i> band was $0^{\text{m}}.84$, from $10^{\text{m}}.25$ to $11^{\text{m}}.10$ (Figure 2). Data show two successive light maxima separated by a time span of 100 days, but since SR stars show period variations between successive light maxima, more observations should be performed to ascertain the long term behavior of NSV 01756.</p>	

References:

Bidelman, W.P., 1987, *IBVS*, No. 2993

Handley, C.M., Shapley, H., 1940, *HB*, No. 913

Landolt, A.U., 1992, *AJ*, **104**, 340

RealSky, 1996, The Astronomical Society of the Pacific and the Space Telescope Science Institute, San Francisco