

Confirmation of Catalina Transient CSS071116:214843-000723 as a Cataclysmic Variable from SDSS Stripe82 data

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| Star Name: | CSS071116:214843-000723, SDSS J214842.52-000723.4 | | |
| Coordinates (J2000): | 21 48 42.52, -00 07 23.4 | | |
| Variability type: | UG(SU:); | Limits, System: | 15.0-22.8 (r'); |
| Period: | | Epoch: | JD |

Remarks:

CSS071116:214843-000723 was detected in outburst by the Catalina Real-Time Transient Survey (CRTS) on November 16, 2007 (MJD 54420.09361) at instrumental red magnitude 15.8 and included in their list of candidate cataclysmic variables (Table 2 in Drake et al. 2008), which also notes that a likely $r' 22.4$ quiescent progenitor exists in the Sloan Digital Sky Survey (SDSS).

The SDSS data release 7 Stripe82 Database (Abazajian et al. 2008; <http://www.sdss.org/dr7/start/aboutdr7.html>) gives 39 observations of SDSS J214842.52-000723.4 showing an outburst of maximum magnitude at least $r' 15.0$ that commenced at least four days prior to the CRTS detection and which was still five magnitudes above quiescence seventeen days later.

The profile and nature of the Stripe82 lightcurve confirm the object as a cataclysmic variable, whilst the amplitude and duration are suggestive of the UGSU subtype, although there is obviously no evidence of superhumps from this data to confirm this, and a literature and mailing list search suggests no follow up work was done on the object in this regard.

The data sampling regime is somewhat sparse so it is not clear as to whether outbursts are as rare as the lightcurve at first glance suggests.

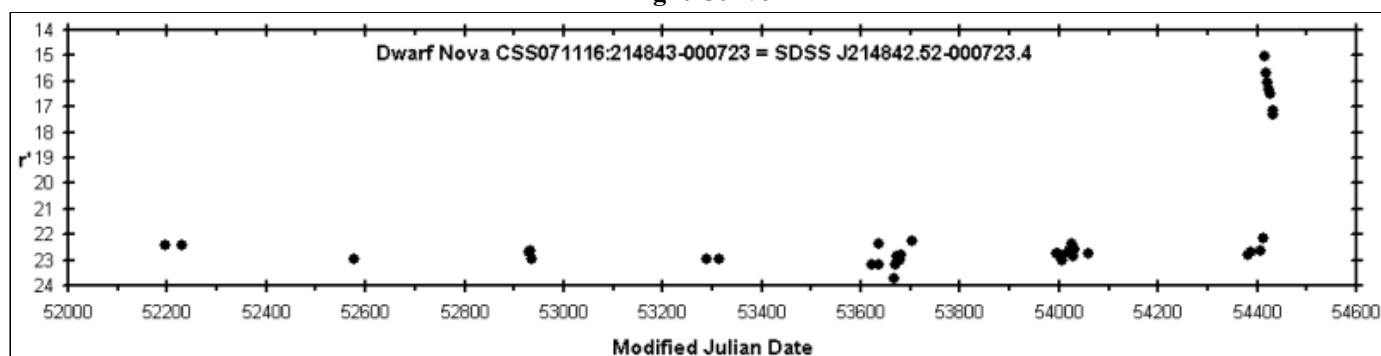
The mean quiescent magnitude of $r' 22.8$ from the Stripe82 data is quoted as the minimum magnitude here, having a standard deviation of 0.3 magnitudes.

References:

Abazajian, K.N., Adelman-McCarthy, J.K., Agüeros, M.A., et al., 2008, arXiv:0812.0649

Drake, A.J., Djorgovski, S.G., Mahabal, A., et al., 2008, arXiv:0809.1394v2

Light Curve



SDSS Stripe82 r' band photometry for Catalina Transient CSS071116:214843-000723.

Data Source

1. [catalina_cv.dat](#)