

## New Algol-Type Eclipsing Binaries in Camelopardalis

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Received: 21.12.2005; accepted: 15.02.2006  
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| #  | Name | Other            | Coord (J2000)           | Type | Max   | Min   | System | Period  | Epoch (JD)  | type | Sp | Comment                  | L.Curve                | Find.Chart                  | Data                                                                                                        |
|----|------|------------------|-------------------------|------|-------|-------|--------|---------|-------------|------|----|--------------------------|------------------------|-----------------------------|-------------------------------------------------------------------------------------------------------------|
| 1  |      | GSC 4067-01570   | 3 48 32.49, +63 30 40.5 | EA   | 12.8  | 13.4  | R      | 5.295   | 2451496.90  | min  |    | <a href="#">Comm. 1</a>  | <a href="#">1.jpg</a>  | <a href="#">chart1.jpg</a>  | <a href="#">NSVS 2016618</a> <a href="#">NSVS 2047172</a>                                                   |
| 2  |      | GSC 4068-01272   | 4 04 00.12, +62 31 54.6 | EA   | 13.7  | 14.6  | R      | 25.25   | 2451485.1   | min  |    | <a href="#">Comm. 2</a>  | <a href="#">2.jpg</a>  | <a href="#">chart2.jpg</a>  | <a href="#">NSVS 2026488</a> <a href="#">NSVS 2055242</a>                                                   |
| 3  |      | TYC 4514 01183 1 | 4 07 55.12, +77 31 21.7 | EA   | 11.05 | 11.5  | R      | 0.75184 | 2451503.629 | min  |    | <a href="#">Comm. 3</a>  | <a href="#">3.jpg</a>  | <a href="#">chart3.jpg</a>  | <a href="#">NSVS 442682</a> <a href="#">NSVS 484376</a>                                                     |
| 4  |      | GSC 3726-00172   | 4 11 48.10, +56 46 26.5 | EA   | 12.5  | 12.95 | R      | 2.5453  | 2451519.26  | min  |    | <a href="#">Comm. 4</a>  | <a href="#">4.jpg</a>  | <a href="#">chart4.jpg</a>  | <a href="#">NSVS 2099490</a>                                                                                |
| 5  |      | GSC 4064-00608   | 4 13 35.87, +60 23 11.4 | EA   | 12.95 | 13.5  | R      | 3.372   | 2451513.91  | min  |    | <a href="#">Comm. 5</a>  | <a href="#">5.jpg</a>  | <a href="#">chart5.jpg</a>  | <a href="#">NSVS 2034117</a> <a href="#">NSVS 2059422</a>                                                   |
| 6  |      | GSC 4086-00342   | 4 48 18.86, +64 01 15.8 | EA   | 12.4  | 13.1  | R      | 0.80688 | 2451489.326 | min  |    | <a href="#">Comm. 6</a>  | <a href="#">6.jpg</a>  | <a href="#">chart6.jpg</a>  | <a href="#">NSVS 2171764</a>                                                                                |
| 7  |      | TYC 4084 00286 1 | 5 10 18.49, +63 19 50.7 | EA   | 10.8  | 11.1  | R      | 0.86803 | 2451517.85  | min  |    | <a href="#">Comm. 7</a>  | <a href="#">7.jpg</a>  | <a href="#">chart7.jpg</a>  | <a href="#">NSVS 2184262</a>                                                                                |
| 8  |      | GSC 4093-00372   | 5 40 15.68, +66 14 30.2 | EA   | 12.95 | 13.35 | R      | 0.9879  | 2451513.705 | min  |    | <a href="#">Comm. 8</a>  | <a href="#">8.jpg</a>  | <a href="#">chart8.jpg</a>  | <a href="#">NSVS 2198395</a> <a href="#">NSVS 2232002</a>                                                   |
| 9  |      | TYC 4098 00132 1 | 5 50 55.06, +62 51 46.0 | EA   | 12.7  | 14.3  | R      | 7.468   | 2451515.70  | min  |    | <a href="#">Comm. 9</a>  | <a href="#">9.jpg</a>  | <a href="#">chart9.jpg</a>  | <a href="#">NSVS 2207263</a> <a href="#">NSVS 2235122</a>                                                   |
| 10 |      | GSC 4107-01004   | 6 15 55.76, +66 53 15.5 | EA   | 13.5  | 14.1  | R      | 1.0541  | 2451527.360 | min  |    | <a href="#">Comm. 10</a> | <a href="#">10.jpg</a> | <a href="#">chart10.jpg</a> | <a href="#">NSVS 653342</a> <a href="#">NSVS 2248809</a>                                                    |
| 11 |      | TYC 4105 00762 1 | 6 48 27.59, +65 20 56.9 | EA   | 11.1  | 11.65 | R      | 1.5047  | 2451542.667 | min  |    | <a href="#">Comm. 11</a> | <a href="#">11.jpg</a> | <a href="#">chart11.jpg</a> | <a href="#">NSVS 2343228</a> <a href="#">NSVS 2369318</a>                                                   |
| 12 |      | TYC 4531 01142 1 | 7 27 23.78, +77 22 22.5 | EA   | 12.3  | 13.7  | R      | 3.52632 | 2451523.31  | min  |    | <a href="#">Comm. 12</a> | <a href="#">12.jpg</a> | <a href="#">chart12.jpg</a> | <a href="#">vis.dat</a> <a href="#">NSVS 605140</a> <a href="#">NSVS 708115</a> <a href="#">NSVS 738607</a> |

### Comments:

1. MinII = 13.0, D = 0.18 P.
2. MinII = 14.2, D = 0.10 P.
3. MinII = 11.20, D = 0.15 P.
4. MinII = 12.95, D = 0.16 P. The primary eclipse might in fact be the secondary.
5. MinII = 13.5, D = 0.08 P. The primary eclipse might in fact be the secondary. A twice shorter period is possible.
6. MinII = 12.55, D = 0.08 P.
7. MinII = 10.95, D = 0.1 P. Identification with the X-ray source 1RXS J051020.1+631940 is possible.
8. MinII = 13.15, D = 0.16 P.

9. MinII = 12.8, D = 0.10 P.

10. MinII = 13.8, D = 0.10 P.

11. MinII = 11.5, D = 0.07 P.

12. MinII = 12.5, D = 0.10 P. The period value is based on the NSVS data and our additional visual observations (118 estimates, JD2453500-2453681; comparison stars: TYC 4531 01943 1, TYC 4531 01084 1, TYC 4531 00373 1, magnitudes of the comparison stars were taken from the Tycho-2 catalog; telescope: 15-cm reflector).

**Remarks:**

I present the discovery of 12 new Algol-type eclipsing binaries (EA) in Camelopardalis. A search for variables was carried out in the publicly available data of the Northern Sky Variability Survey (NSVS, Wozniak et al., 2004, also see <http://skydot.lanl.gov/nsvs>). These observations were analyzed using the period-search software developed by Dr. V.P. Goranskij for Windows environment. The coordinates were drawn either from the Tycho-2 or 2MASS catalogs.

**References:**

Wozniak, P.R., Vestrand, W.T., Akerlof, C.W. et al., 2004, Astron. J., 127, 2436