

Astronomy Letters 2011 vol.37 N12, pages 845-857

---

## Investigation of the new cataclysmic variable 1RXS J180834.7+101041

Yakin D., Suleimanov V., Borisov N., Shimanskii V., Bikmaev I.  
*Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia*

---

### Abstract

We present the results of our photometric and spectroscopic studies of the new eclipsing cataclysmic variable star 1RXS J180834.7+101041. Its spectrum exhibits double-peaked hydrogen and helium emission lines. The Doppler maps constructed from hydrogen lines show a nonuniform distribution of emission in the disk similar to that observed in IP Peg. This suggests that the object can be a cataclysmic variable with tidal density waves in the disk. We have determined the component masses ( $M_{WD} = 0.8 \pm 0.22 M_{\odot}$  and  $M_{RD} = 0.14 \pm 0.02 M_{\odot}$ ) and the binary inclination ( $i = 78^{\circ} \pm 1.5^{\circ}$ ) based on well-known relations between parameters for cataclysmic variable stars. We have modeled the binary light curves and showed that the model of a disk with two spots is capable of explaining the main observed features of the light curves. © 2011 Pleiades Publishing, Ltd.

<http://dx.doi.org/10.1134/S1063773711120115>

---

### Keywords

1RXS J180834.7+101041, cataclysmic variables, eclipsing stars