

X-RAY ORBITAL MODULATION OF A CANDIDATE PERIOD BOUNCE CATAclySMIC VARIABLE

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Period bounce cataclysmic variables (CVs) are systems where a white dwarf accretes from a brown dwarf donor, having reached a point where the degeneracy of the donor reverses the orbit period evolution. Period bounce CVs are expected by evolutionary models to make up a great portion of the CV population. However, only a few such systems have been identified observationally. We emphasize the importance of X-ray data in order to identify period bounce CVs, as it provides proof of accretion from the substellar companion onto the white dwarf, because in this type of system the coronal emission of the donor is below the sensitivity of current instruments.

We have observed the period bouncer candidate SDSS J151415.65+074446.4 with XMM-Newton and we report here the detection of X-ray orbital modulation. We calculate the orbital period through the analysis of the X-ray lightcurve and we derive a mass accretion rate from the X-ray luminosity. Our analysis establishes SDSS J151415.65+074446.4 as a sibling of SDSS J121209.31+013627.7, the only other white dwarf and L dwarf system confirmed as a period bouncer through its X-ray properties. We provide an outlook of the eROSITA all-sky survey capabilities for the X-ray detection of such systems.