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MWC 560 - disappearance of optical flickering

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on **29 Oct 2019; 08:41 UT**

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CCD photometry of the jet ejecting symbiotic star MWC 560 (V694 Mon) has been performed with the 50/70 cm Schmidt telescope at the Rozhen National Astronomical Observatory.

On 2019 October 22.053 UT, for a 2.5 hours long observation run, we obtained 207 points in Johnson B and V bands, with mean $B=9.29 \pm 0.01$, $V=8.94 \pm 0.01$. During our run, no variability with amplitude larger than 0.04 mag was visible.

On 2019 October 25.041 UT, for a 2.3 hours long observation run, we obtained 122 points in Johnson UBV bands, with mean $U= 8.93 \pm 0.01$, $B= 9.29 \pm 0.01$, $V=8.94 \pm 0.01$. Again, no variability with amplitude larger than 0.04 mag nor changes from night to night were detectable.

The brightness of the object is high and its UBV band magnitudes are close to the brightest values observed during the last 30 years.

We have not detected flickering on minute-to-hour time scale with amplitude greater than 0.03 mag. The full amplitude of variability was <0.05 mag (including the observational errors of ± 0.006). The standard deviation for the runs was only 0.012 mag. To the best of our knowledge, it is the first time when no rapid photometric variability in U and B band is observed in this object. Usually in U and B bands, MWC 560 exhibits variability on minute-to-hour time scale with amplitude 0.2-0.3 mag, and standard deviation 0.050-0.090 mag (e.g. Lucy et al. 2019 and references therein).

The absence of flickering indicates that, for some unknown reason the accretion disc around the white dwarf does not display any fluctuations in the optical bands. It is probably in an unusual stable state.

For our understanding of the disc-jet-flickering connection in the symbiotic binaries and related objects, it will be important to follow the U and B bands and to detect when and how the flickering will re-appear. This work is supported by the grant KP-6-H28/2 by the Bulgarian NSF.

[MWC 560 disappearance of the flickering in October 2019.](#)

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