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HBHA 4705-03: A new cataclysmic variable

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Abstract

Results of photometric and spectroscopic studies for the new eclipsing cataclysmic variable star HBHA 4705-03 with an orbital period of 0.1718 days are presented. Its spectrum exhibits hydrogen and helium emission lines. The Doppler maps constructed from hydrogen lines and the He II λ 4686 line show that the regions near the inner Lagrangian point are the main source of emission in these lines, while the maps constructed from He I lines suggest the presence of an accretion disk around the primary. The masses of the components ($MWD = 0.54 \pm 0.10 M_{\odot}$ and $MRD = 0.45 \pm 0.05 M_{\odot}$) and the orbital inclination of the system ($i = 71.8^{\circ} \pm 0.7^{\circ}$) have been determined from observational data using well-known relations for close binaries and cataclysmic variable stars. © 2013 Pleiades Publishing, Ltd.

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Keywords

binary stars, cataclysmic variables, HBHA 4705-03