MINIMUM ORBITAL PERIOD OF CATACLYSMIC VARIABLES

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The shortest known orbital period of a cataclysmic binary with a hydrogen dwarf secondary filling its Roche lobe is about 80 minutes. Theoretically the shortest possible orbital period for such a system is less than 60 minutes. We tried to explain why the periods shorter than 80 minutes are not observed. We estimated the time scale of angular momentum loss of a cataclysmic binary and the resulting mass transfer rate. The minimum orbital period for a given $\dot{M}$ is obtained during the transition of the secondary from the Main Sequence onto the Degenerate Dwarf Sequence. $P_{min} \propto \dot{M}^{\frac{1}{2}}$. Therefore, only those systems can reach low P for which $\dot{M}$ is small. This explains why among the shortest period cataclysmic variables there are no novae: presumably their mass transfer rates are too large. It also indicates that "polars" (AM Her-type stars) and SU UMa-type stars should have low $\dot{M}$.

The detailed discussion will be published in "Acta Astronomica".

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