

ON THE EVIDENCE FOR PLANETS ORBITING THE POST-COMMON ENVELOPE BINARY NN SER

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Short-period eclipsing binaries have been subject to investigations for eclipse-time variations for decades. In case of the detection of period variations, different scenarios like apsidal motion, Applegate's mechanism, loss of orbital momentum or a third body, have been discussed. Here, we present eclipse-time variations obtained from published and partly re-analysed as well as new high-precision mid-eclipse times of NN Ser obtained between 1988 and 2010. The periodicity reported by Qian et al. (2010) is not confirmed. Our new results are compared with the different scenarios. In case the period change is due to a third and potentially a fourth body, these two would be in the planetary mass regime. We therefore also discuss the question of first and second generation origin of these planetary candidates in this post-common envelope system.