Orbital Period and Breaking Luminosity Relation in LMXBs

It has been long debated that whether the sharp luminosity drop in X-ray binaries is due to the transition from accretion to the propeller stage or is the result of the ionization of the disc due to irradiation from the central source. The latter model predicts a positive correlation between the critical luminosity at which transition to rapid decay stage occurs and the size of the disc which depends on the binary separation and hence the orbital period of the binary system. We have searched for such a relation among the 5 black hole and 9 neutron star hosting low mass X-ray binary systems. We find no correlation between the critical transition luminosity and the orbital period.