

SHORT PERIOD CATAclySMIC VARIABLES WITH STRANGE WHITE DWARF COLOURS

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Using photometric ULTRACAM observations of three new short period cataclysmic variables, we model the primary eclipse lightcurves to extract the orbital separation, masses, and radii of their component stars. Of these three systems, two have very low-mass sub-stellar donors, and one has a donor mass within 2σ of the hydrogen burning limit. All three of the new systems lie close to the modified, “optimal” model evolutionary sequence of Knigge et. al. (2011). We briefly re-evaluate the long-standing discrepancy between observed donor mass and radius data, and theoretical CV evolutionary tracks. By looking at the difference in the observed period at each mass and the period predicted by the Knigge et. al. (2011) evolutionary sequence, we qualitatively examine the form of excess angular momentum loss that is missing from the models below the period gap to find an empirical prescription for missing angular momentum loss by showing that the excess AML present in CVs grows in importance relative to gravitational losses as the period decreases. Detailed CV evolutionary models are necessary to draw more quantitative conclusions in the future.