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High Speed Optical Photometry of the LMXB UW CrB: An improved Limit on the Orbital Period Derivative JACOB SEGURA, PAUL MASON, Univ of Texas, El Paso, EDWARD ROBINSON, University of Texas, Austin — We present new broad band optical photometry of the low mass X-ray binary (LMXB) UW CrB on four consecutive nights in June 2013. These data were obtained at the 2.1-m telescope of McDonald Observatory and have a time resolution of 10s and cover a bit more than one orbital cycle each night. The light curves display partial eclipses of the accretion disk by the donor star that vary both in depth and orbital phase in the same manner as has been previously reported. Analysis of the new eclipse times in conjunction with published eclipse timings are well fitted with a linear ephemeris. We derive an upper limit on the time derivative of the orbital period, based on the best fit quadratic ephemeris, and discuss its implications on the average mass transfer rate. By including the newly observed type I bursts with published bursts in our analysis, we find that bursts are not observed between 0.93 and 0.07 phases, i.e. they are not observable during partial eclipses of the disk.

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