

<http://doi.org/10.69646/14sbac11a>

THE CRITICAL MASS RATIO FOR W UMA-TYPE CONTACT BINARIES

BOJAN ARBUTINA¹ , SURJIT WADHWA²

¹*Department of Astronomy, Faculty of Mathematics, University of Belgrade, Studentski trg 16,
11000 Belgrade, Serbia*

²*School of Science, Western Sydney University, Locked Bag 1797, Penrith, NSW 2751, Australia
E-mail: arbo@astro.edu.rs*

W UMa-type contact binaries are close binary systems of low mass in which both components fill their inner Roche lobes. Low mass ratio systems of this type are especially interesting because there are indications that in their case components can merge and form fast-rotating stars such as FC Com stars and the blue-stragglers, and (luminous) red novae such as V1309 Sco. The condition for the onset of tidal (Darwin) instability and probable merger can be linked to some critical mass ratio below which we expect a contact system to be unstable. We give an overview of this condition and show how it can be used to identify potential mergers. At the end we discuss a number of known extreme mass ratio binaries from the literature.