

The modulated Kozai-Lidov cycles in the binary's dynamics

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We consider the binary consisting of a massive primary and less massive secondary. The influence of the Sun as outer perturber can result in coupled changes in eccentricity and inclination of the secondary's orbit with respect to the primary (Perets and Naoz, 2009; Fang and Margot, 2012). While wide and ultra-wide binaries demonstrate classical Kozai-Lidov oscillations (Grundy et al., 2011), for more compact binaries the income of the quadruple and higher order terms in the gravitational field of the primary becomes essential. We investigate the possible modulation of Kozai-Lidov oscillations due to the primary's oblateness. A special attention is given to the resonance effects. References: Fang, J., Margot, J.-L. 2012, AJ, 143:59; Grundy, W.M., Noll, K.S., Nimmo, F., et al. 2011, Icarus, 213, 678; Perets, H.B., Naoz, S. 2009, ApJ, 699, L17