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# Dynamical stability of the quadruple systems HD 68255/6/7 and HD 76644

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## Abstract

We analyze the dynamical stability of the hierarchical quadruple systems HD 68255/6/7 and HD 76644 via numerical integration of the equations of motion of the four-body problem, with a chainlike regularization of close stellar interactions. The observational errors were taken into account using Monte Carlo simulations, assuming that they possessed a Gaussian distribution. HD 68255/6/7 is probably stable, while HD 76644 is unstable with a probability exceeding 0.97 and with a disruption time of no more than 105 years. The influence of the observational errors and possible scenarios for the formation of unstable multiple stars are discussed. © Pleiades Publishing, Inc., 2006.

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