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# STUDIES OF THE SATELLITE MOTIONS IN THE LOCAL GROUP[†]

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The motion of a satellite, represented as a test particle in the field of the mutually approaching Milky Way (MW) and Andromeda Nebula (AN), is studied. The motion of the AN with respect to the MW is assumed to be rectilinear. The models of both the MW and the AN are qualitatively the same: spherically symmetric with the Plummer potential. As free parameters, appear the mass ratio AN/MW (assumed to exceed 1) and initial conditions for the satellite whose motion is studied with respect to the MW. If the AN were absent, then this motion would be characterized by four independent isolating integrals of motion. The authors study, in particular, the changes in these integrals which are beyond the error level in order to establish the influence of the AN. As a preliminary result they have found that, over the last $4 \times 10^9$ years, the presence of the AN could not produce significant changes in the apogalactic distances within 300 kpc.

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