# The theory of motion of JV Amalthea

Sławomir Breiter
Astronomical Observatory of the A.Mickiewicz University
Poznań , Poland

The analytical solution for the motion of Jupiter's satellite Amalthea is constructed up to the third order of a small parameter. The gravitational actions taken into account are: the potential of Jupiter, the Galilean satellites' perturbations and the action of the Sun. The internal accuracy of the obtained solution is of the order of hundreds of meters on the time span of 100 years. No long-periodic effects comparable with the observed motion of Amalthea exist in the analytical solution. Tidal effects are discussed as a hypothetical source of secular acceleration. The general conclusion suggests the need of a new reduction of the observational material covering the whole interval from 1892 until now.