

The Prediction of the Motion of the Atens, Apollos and Amors Over Long Intervals of Time

¹*Astronomical Observatory of the Chorzów Planetarium, 41-501 Chorzów 1, P.O. box 10, Poland.
E-mail: irek@entropia.com.pl*

If we take into account two starting orbits which differ only by error of calculation of any orbital element, then after some time differences in mean anomaly between these neighbours orbits growths rapidly. It denotes, that it is impossible to predict behavior of asteroids outside this time. This time I have named *time of stability*. Equations of motion of about 1000 Atens, Apollos and Amors (AAA) were integrated 300,000 years forward using RA15 Everhart method. As the starting point point the elements of the asteroids were taken from MPC until March 2000. The Osterwinter model of Solar System was used. The calculated *times of stability* for these AAA are very short (<1,000 years - 33%, <10,000 years - 89%). The behavior of averaged times of stability of AAA are almost the same as the behavior of *survival times* of Evans an Tabachnik for testing particles in this same region (*Letters to Nature*, v. 399, May 1999).