EPSC Abstracts
Vol. 12, EPSC2018-1064, 2018
European Planetary Science Congress 2018
© Author(s) 2018

Study on Statistical Properties of Asteroid Orbits Approaching Earth

Maria Borukha, Angelina Veselova
Saint-Petersburg State University, Russian Federation (maria.borukha@gmail.com)

Abstract

To study the statistical properties of orbits of asteroids, a database site cneos.jpl.nasa.gov on 17.04.2018 and on 26.07.2015 was used. Distribution function of absolute stellar magnitudes is bimodal, the parameters of two Gaussian approximations are calculated. Gaps in the distribution of semi-major axes, corresponding to resonances with Jupiter 6: 1, 9: 2, 4: 1 are discovered. Extremum values of the orbital characteristics of asteroids and correlation factors between orbital elements are computed. Statistical characteristics for groups of Amors, Apollos, Atens, and also for asteroids with the probability of collision with the Earth more than 10^{-7} are found separately.

The characteristics for the catalogs are compared on July 26, 2015 and April 17, 2018.