ON SIMILAR DYNAMICAL BEHAVIOUR OF SOHO COMETS AND HIGH INCLINATION ASTEROIDS. N. A. Solovaya[1] and E. M. Pittich[2], Astronomical Institute, Slovak Academy of Sciences, Dúbravská cesta 9, 845 04 Bratislava, Slovak Republic, [1]astrosol@savba.sk, [2]pittich@savba.sk.

The orbital evolution of fictitious SOHO comets and asteroids with high inclination orbits has been investigated. The fictitious SOHO comets are represented by bodies with initial orbits similar to those of the SOHO comets and eccentricities assumed to be near parabolic. Because parabolic orbits of the SOHO comets were determined from the coronographs data covering short near perihelion part of the orbits, the assumption about their near parabolic eccentricities is well-founded. Sungrazing comets discovered from the Earth support this idea, too. The fictitious asteroids are bodies with initial orbits similar to those of main belt prograde and retrograde asteroids with high inclinations, the movements of which correspond to the conditions of the Tisserand invariant for $C = C(L1)$ in the restricted three body problem.

The numerical integration of equation of motion of these bodies during the interval of 500,000 years, using a dynamical model of the solar system consisting of all planets, shows that they are dynamically stable at least within the investigated period. They periodically change their eccentricities and inclinations. Some of the fictitious asteroids periodically gain very small perihelion distances when their inclination and eccentricity values are similar to those of the SOHO comets. The orbital evolution of the investigated bodies is similar. They can migrate within whole region of the solar system.