TAURID METEOROID AND ASTEROID COMPLEX

Eduard M. Pittich[1] and Jozef Klačka[2]

[1]Astronomical Institute of the Slovak Academy of Sciences
Dúbravská cesta 9, 842 28 Bratislava, Slovak Republic
E-mail: pittich@savba.sk

[2]Department of Astronomy and Astrophysics, Faculty for Mathematics and Physics
Comenius University, Mlynská dolina, 842 15 Bratislava, Slovak Republic
E-mail: klacka@fmh.uniba.sk

Origin of the Taurid meteor stream is investigated on the basis of an assumption that the complete set of observable quantities may be explained as a simultaneous action of nongravitational forces acting on meteoroids ejected from the parent body represented only by comet P/Encke.

Discussion is concentrated on the problem if the assumption about the importance of nongravitational forces is acceptable. Numerical values for nongravitational acceleration are found out. Time evolution from 10, 000 to 15,000 years is considered and graphically presented.

The test is made for dust particles ejected at perihelia of the orbit of the comet Encke. The particles are released at the speed of 40 $\mathrm{m\,s^{-1}}$. Gravitational perturbations of all planets and nongravitational effects are considered.