THE THERMAL DESORPTION OF THE DUST PARTICLES SUBSTANCE NEAR THE SUN

A.V. Golubaev

Institute of Astronomy, Kharkov National University by V.N.Karazin, Kharkov, Ukraine,
Alexandr_sky@mail.ru

The work is devoted to the study of the physical and kinematic properties of the dust particles which approach to a distance less than 0.1 AU to the Sun. The statistical and quantitative analysis of a database of the meteor video observations (http://sonotaco.jp/doc/SNM/ , SonotaCo catalog, Japan) revealed the following regularities:

1) Some of the sporadic meteor particles have the orbit elements which are similar to the orbits of the sungrazing comets;

2) The distribution of meteor particles on the perihelion distance shows a sharp decrease in the number of observed meteoroids with $q < 0.08$ AU.;

3) The inflow into the earth's atmosphere the sungrazing dust particles fixed after the perihelion passage is about 20 times weaker then before the perihelion passage;

4) The distribution of the mass revealed a maximum displacement (toward to the lower masses) for the sungrazing dust particles, which were fixed after the perihelion passage;

5) The comet observations make it possible to establish the temperature (T) dependence of the dust particles as a function of the heliocentric distance (r): $T = 326r^{-0.55}$;

6) It have been revealed a new groups of meteor radiants associated with the particles of the sungrazing sporadic dust background. Each group of the radiant belong to the comet families: Marsden, Kracht and Kreutz.

The methods of ground-based observations of meteoroids is proposed for the studying the effect of thermal desorption of the meteor matter near the Sun.