METEORITE FALL RECONSTRUCTIONS

SOLT, P. Geological Institute of Hungary, H-1143 Budapest, Stefania ut 14, Hungary,

Meteorite falls usually produce special events like: explosion, fireball, smoke, cracklings as the entered and partly ablated meteorite disintegrates. Usually only the larger fragments are found, but there are thousands of micro-particles, droplets and spherule forms in the fall area of the spreading zone (Kaba, Mocs). These particles spherules are very important for the reconstruction of the entering process and by the composition of the meteorite. It is a big surprise that up to now for instance by the fall of the St. Robert meteorite the noticed dust was not collected. On the surface of the Kaposfured meteorite on the ablation crust we can observe some spherules taking shape. The volatile-rich carbonaceous chondrites usually produced much more fireball event (Kaba) like any other ones. The density of the spherules is determinated by the composition of the meteorite and the area of the spherule occurrence is determinated by the mass of the meteorite and the angle of the fall. If we want to look for spherules in the soil of the spreading area its important to know the rate of the soil-accumulation. To make the meteorite-fall reconstruction by spherules we have to collect soil samples in different areas: cross section for the fall direction, boundary zone of the spreading ellipsoid and from the placers of the migrated spherules transported by the rains into the rivers or streams in the neighbourhood. After laboratory work we shall find lot type of spherules: not only from the meteorite-fall, but from the erosion surface of the area and some artificial ones in the industrial areas. To make sure difference between different type of sperule origin we need elemental, rare element and isotopic analyses.