Parallel double–station video observations paired with spectroscopic video observations are a good way to study millimetre-sized meteoroids. Almost two decades of video observations of meteors at the Ondřejov observatory give us broad database to study large quantities of meteoroids and their properties.

In this work we combined spectral video observations and results of the modelling of the fragmentation of meteoroids. Along with complex information about meteoroid's trajectories and orbits, this can give us better understanding about origin, internal structure etc. of these millimetre-sized interplanetary bodies.

Meteoroids that contained small grains tend to release the sodium early. Since there is a smaller amount of sodium for Na depleted meteoroids, the sodium was released earlier than it was released for meteoroids with same grain sizes and without the sodium depletion. Overall, meteoroids with sodium depletion showed different composition: they were composed of stronger material without very small grains and they did not showed very bright wakes. Two iron meteoroids on Halley type orbits were observed. They are probably remnants of complicated early years of our solar system. The distribution of grain sizes of Jupiter–family members was in a good agreements with results from the COSIMA instrument from the ROSETTA mission.