

COSIMA - analysis of collected dust particles in the inner coma of comet 67P/Churyumov-Gerasimenko

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COSIMA, the COmetary Secondary Ion Mass Analyser, is one of the three scientific in-situ dust instruments onboard the Rosetta spacecraft [1]. Rosetta has been orbiting comet 67P/Churyumov-Gerasimenko since August 2014. COSIMA is collecting cometary particles in the inner coma by exposing metal targets. It then images the targets periodically in search of the captured particles. A variety of particle morphologies are seen. A sample particle is shown in Figure 1.

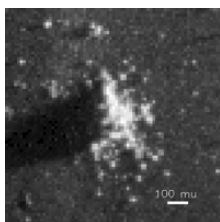


Figure 1: A cometary particle collected by COSIMA [2]

Some of the identified cometary grains are further investigated by SIMS (Secondary Ion Mass Spectrometry). The high resolution mass spectra contain positive or negative ions of elements, organic molecules and molecular fragments originating from the selected grain surface.

[1] Kissel *et al.* (2007), *Sp. Sci. Rev.* **128**, 823-867. [2] Schulz *et al.* (2015), *Nature*, **518**, 216-218.