

Rosetta COSIMA - Cometary Dust Analysis next to Comet 67P/ Churyumov-Gerasimenko

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In-situ cometary dust observations are obtained by COSIMA (COmetary Secondary Ion Mass Analyser) which is one of the scientific instruments onboard the ESA mission Rosetta that presently orbits the nucleus of Jupiter-family comet 67P/Churyumov-Gerasimenko. COSIMA is collecting cometary dust particles in the inner coma on special metal target plates. These particles are subsequently imaged and identified with an optical microscope and their composition is analyzed with a secondary ion mass spectrometer. COSIMA has collected more than 12.000 cometary particles in the inner coma, at various distances from 10 to hundreds of kilometers off the cometary nucleus. The obtained mass spectra contain ions of complex mixtures of mineral compounds and organic molecules as well as molecular fragments representing the elements and molecules on the surface of these particles and the targets. We will discuss the observations of the inner coma dust particles as observed for the collected, imaged and analyzed cometary particles.