Contribution ID: **25** Type: **not specified**

GIADA (Grain Impact Analyzer and Dust Accumulator) contribution to Comets characterization

Tuesday, 18 June 2024 12:00 (30 minutes)

The GIADA (Grain Impact Analyser and Dust Accumulator) instrument played a pivotal role in the Rosetta mission, providing invaluable data on the dust environment of comet 67P/Churyumov-Gerasimenko. GIADA, conceived to analyse the physical and dynamic properties of dust particles ejected by the comet nucleus, offered a unique opportunity to study the dust flux and particle dynamics evolution over time and space. GIADA measured the momentum and the speed of individual particles larger than approximately 30 micrometers (diameter) travelling at velocities up to about 30 m/s. In addition, GIADA measured the cumulative mass and the fluence of micron/submicron particles and provided dust particles density constraints.
The data collected by GIADA has significantly enhanced our understanding of cometary dust environments and has been crucial in improving models dealing with comet activity and formation, providing inputs also to Solar System formation models. Additional GIADA key findings: 1) it revealed a complex dust environment contributing to spot out the dust-to-gas ratio evolution, linked to the heliocentric distance; 2) it contributed to the crucial understanding of the physical properties of cometary nuclei. Data collected by GIADA have been combined with data acquired by other instruments on-board Rosetta, maximising its success, and will continue to be a valuable resource for the scientific community.

NIXAD

No

Face to face

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