

Composition of dust at comet 67P

A. Bardin¹, D. Baklouti², H. Cottin³, C. Briois⁴, C. Engrand⁵, H. Fischer⁶, N. Fray³, E. Gardner⁷, K. Hornung⁸, R. Isnard^{3,4}, Y. Langevin², H. Lehto⁷, L. Le Roy⁹, N. Ligier², S. Merouane⁶, P. Modica⁴, F.-R. Orthous-Daunay¹⁰, J. Paquette⁶, J. Rynö¹¹, R. Schulz¹², J. Silén¹¹, S. Siljeström¹³, O. Stenzel⁶, L. Thirkell⁴, K. Varmuza¹⁴, B. Zaprudin⁷, J. Kissel⁶ and M. Hilchenbach⁶.

¹Carnegie Institution of Washington, DTM, Washington, DC, USA

²Institut d'Astrophysique Spatiale, Université Paris-Sud/CNRS, Orsay, France

³LISA, UMR CNRS 7583, Université Paris-Est Créteil et Université Paris Diderot, Institut Pierre Simon Laplace, Créteil, France

⁴LPC2E, CNRS/Université d'Orléans, Orléans, France

⁵CSNSM, CNRS/IN2P3/Université Paris-Sud, Orsay, France

⁶Max-Planck-Institut für Sonnensystemforschung, Göttingen, Germany

⁷University of Turku, Department of Physics and Astronomy, Tuorla Observatory, Piikkiö, Finland

⁸Universität der Bundeswehr, Neubiberg, Germany

⁹Center for Space and Habitability, University of Bern, Bern, Switzerland

¹⁰IPAG, UMR 5274, Université Grenoble Alpes, CNRS, Grenoble, France

¹¹Finnish Meteorological Institute, Helsinki, Finland

¹²European Space Agency, Noordwijk, The Netherlands

¹³RISE, Bioscience and Materials/Chemistry and Materials, Stockholm, Sweden

¹⁴Institute of Statistics and Mathematical Methods in Economics, Vienna University of Technology, Vienna, Austria.

During two years, the time-of-flight secondary ion mass spectrometer COSIMA (COmetary Secondary Ion Mass Analyzer), on board the Rosetta orbiter, performed *in situ* analysis of the dust particles ejected from comet 67P/Churyumov-Gerasimenko (67P), before and after perihelion. COSIMA collected more than 35,000 particles and fragments of particles, with size ranging from 14 μm (the pixel resolution of the internal microscope COSICOPE) to 1000 μm and analyzed about 250 of them.

We will present the global composition of 67P's dust, as deduced from COSIMA measurements. It will be compared to the *in situ* analyses of comet 1P/Halley, obtained by the Giotto and Vega missions, to the laboratory analyses on 81P/Wild 2 dust particles captured by the Stardust mission and to Chondritic Porous Interplanetary Dust Particles (CP-IDPs) collected on Earth.