

Development of DESTINY⁺ Dust Analyser

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DESTINY+ Dust Analyser (DDA) is an impact ionization dust analyser for the JAXA's DESTINY+ spacecraft for an active asteroid, Phaethon, flyby mission. DDA will reveal the bulk chemical composition of interplanetary and interstellar dust particles and Phaethon ejecta particles by obtaining TOF mass spectra of positive ions generated by hypervelocity impact of dust particles. This presentation reports the development status of DDA. The performance test of the DDA engineering model (EM) with the electrostatic dust accelerator at the University of Stuttgart shows a remarkably higher mass resolution (m/dm) compared to its precursor model, CDA onboard Cassini spacecraft. The adjustment of the mechanical/thermal/electrical interface with the spacecraft system is about to finish. Some important designs for dust detection such as the position and the movable range of the DDA sensor head have been finalized. The flight model (FM) design will be finalized after Critical Design Review (CDR) and its manufacturing will be ongoing this summer.