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Cassini-CDA Science in 2014 and beyond

Ralf Srama (1,2) and the CDA science Team

(1) University of Stuttgart, -, IRS, Stuttgart, Germany (srama@irs.uni-stuttgart.de), (2) Baylor University, Waco, TX, USA

Today, the German-lead Cosmic Dust Analyser (CDA) is operated continuously for 10 years in orbit around Saturn. Many discoveries like the Saturn nanodust streams or the large extended E-ring were achieved. CDA provided unique results regarding Enceladus, his plume and the liquid water below the icy crust. In 2014 and 2015 CDA focuses on extended inclination and equatorial scans of the ring particle densities. Furthermore, scans are performed of the Pallene and Helene regions. Special attention is also given to the search of the dust cloud around Dione and to the Titan region. Long integration times are needed in order to characterize the flux and composition of exogenous dust (including interstellar dust) or possible retrograde dust particles. Finally, dedicated observation campaigns focus on the coupling of nanodust streams to Saturn's magnetosphere and the search of possible periodicities in the stream data. Saturn's rotation frequency was identified in the impact rate of nanodust particles at a Saturn distance of 40 Saturn radii.
In the final three years CDA performs exogenous and interstellar dust campaigns, studies of the composition and origin of Saturn's main rings by unique ring ejecta measurements, long-duration nano-dust stream observations, high-resolution maps of small moon orbit crossings, studies of the dust cloud around Dione and studies of the E-ring interaction with the large moon Titan.