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High-Resolution Enceladus Atlas and Compositional Maps derived from Cassini ISS and VIMS

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The first version of the high-resolution Enceladus atlas was released in 2006 [1]. The Cassini Imaging Science Sub-system (ISS) acquired more high-resolution images ($<$ 1 km/pixel) during five close flybys of Enceladus in 2008 and 2009. We combined these images with lower-resolution coverage taken between 2007 and 2009 to improve the high-resolution global mosaic of Enceladus. The whole mosaic was shifted by 3.5° to the West to be consistent with the IAU definition of the prime meridian location. This new global mosaic is the baseline for the second release of the high-resolution Enceladus atlas that consists again of 15 tiles mapped at a scale of 1:500,000. We proposed 29 additional names for features which will be used as nomenclature in the atlas. We are awaiting validation of the new nomenclature by the IAU. The new release of the atlas will be made available to the public through CICLOPS (http://ciclops.org) and PDS (http://pds.jpl.nasa.gov).

The Cassini Visual and Infrared Imaging Spectrometer (VIMS) observed Enceladus during a couple of flybys between 2005 and 2009. This gave us the possibility to combine these data into a global VIMS mosaic. Based on this mosaic maps of Enceladus' spectral properties could be derived. Thus, global maps illustrating the spatial variations of the absorption band depth of water ice were calculated, which are indicative of varying sizes of the water ice particles [2].

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[2] Jaumann, R., Stephan, K., Hansen, G.B., Clark, R.N., Buratti, B.J., Brown, R.H., Baines, K.H., Newman, S.F., Bellucci, G., Filacchione, G., Coradini, A., Cruikshank, D.P., Griffith, C.A., Hibbitts, C.A., McCord, T.B., Nelson, R.M., Nicholson, P.D., Sotin, C., and Wagner, R., 2008: Distribution of icy particles across Enceladus' surface as derived from Cassini-VIMS measurements. Icarus 193.