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Composition and Physical Properties of Enceladus' Surface

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Saturn's satellite Enceladus was observed using Cassini's Visual and Infrared Mapping Spectrometer instrument. Data were obtained during three flybys of Enceladus in 2005. Enceladus' surface is mostly nearly pure water ice except near its south pole, where there are CO_2 , light organics, and amorphous and crystalline water ice, particularly in the region dubbed the "tiger stripes". An upper limit of 5 precipitable nm is derived for CO in the atmospheric column above Enceladus, and 2% for NH₃ in global surface deposits. Upper limits of 140 K (for a filled pixel) are derived for the temperatures in the tiger stripes.