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## Saturn's Stratospheric Hazes From HST Ultraviolet Imaging

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We present a study on Saturn's stratospheric hazes using archived images from the Hubble Space Telescope Advanced Camera for Surveys. These observations were taken from 2005 to 2014, including the Great Storm during the years 2010 and 2011. For our research we used ultraviolet images from the Solar Blind Channel camera equipped with the F115LP and F125LP filters. At these wavelengths, the reflected spectrum is fundamentally Rayleigh-scattered, with substantial contributions from hydrocarbon absorptions and additional scattering by the aerosols in the hazes above the tropopause. The goal of this work is to analyze temporal and latitudinal changes in the characteristics of the stratospheric haze, gases and particles, analyzing the absolute reflectivity and its limb darkening. Such behavior can be reproduced using the empirical Minnaert's law. This provides nadir-viewing reflectivity and limb darkening coefficient as a function of latitude and time. This is a first approach that helps to qualitatively identify the changes occurring in the aerosol layer during this period of time, which include the massive Great White Spot of 2010. In order to quantify such aerosol changes, we use the radiative transfer code and retrieval suite NEMESIS (Non-Linear Optimal Estimator for Multivariate Spectral Analysis) to reproduce the observed reflectivity. Here we will focus on the detected variations of the vertical distribution of the stratospheric particles, their integrated optical thickness and size distribution and will correlate them with the seasonal changes taken place in the atmosphere of the planet.