



## Variations in spectral reflectivity and vertical cloud structure of Jupiter's Great Red Spot

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The Great Red Spot (GRS) of Jupiter is a large anticyclonic vortex present in the Jovian atmosphere. First observed in the XVII century, it is almost constantly located at 22°S and it is arguably one of the main atmospheric phenomena in the Solar System. Despite having been widely studied, the nature of the chromophore species that provide its characteristic colour to the GRS's upper clouds and hazes is still unclear, as well as its creation and destruction mechanisms.

In this work we have analysed images provided by the Hubble Space Telescope's Wide Field Camera 3 between 2015 and 2019, with a spectral coverage from the ultraviolet to the near infrared, including two methane absorption bands. These images have undergone a photometric process of cross calibration, ensuring a consistent correlation among the images corresponding to different visits and years. From such calibrated images, we have obtained the spectral reflectivity of the GRS and its surroundings, with particular emphasis on a few, dynamically interesting regions.

We used the NEMESIS radiative transfer suite to retrieve the main atmospheric parameters (particle vertical and size distributions, refractive indices...) that are able to explain the observed spectral reflectivity of the selected regions. Here we report the spatial and temporal variations on such parameters and their implications on the GRS overall dynamics.