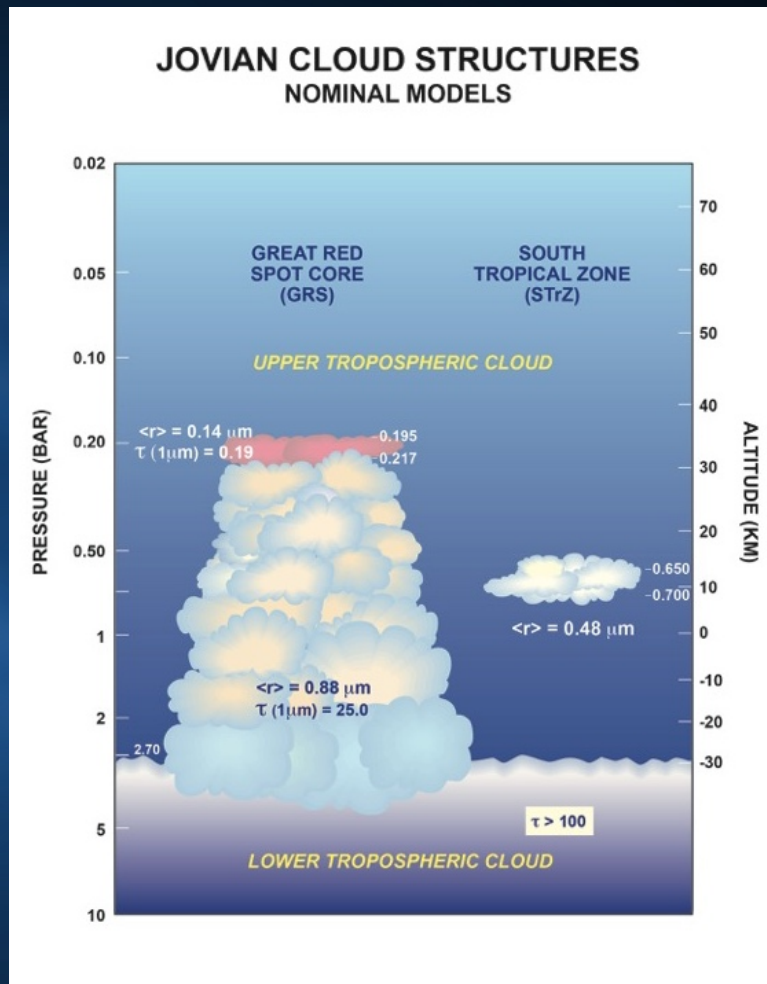
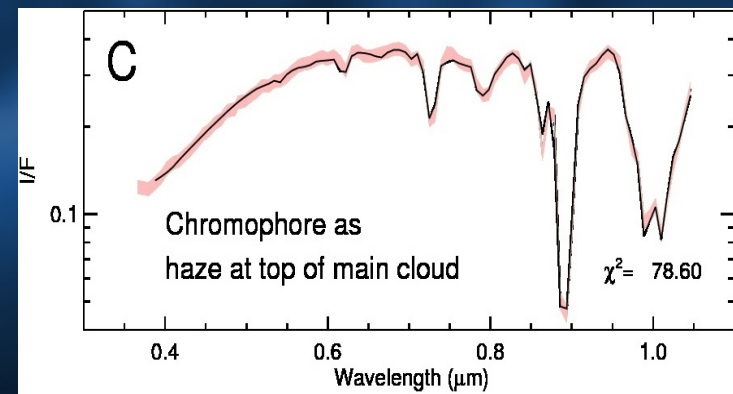


Why is Jupiter's Great Red Spot Red?



Baines, et al. (2019), *Icarus*

Jupiter's Great Red Spot (GRS) is made of aerosols (a chromophore) created by the reaction of **ammonia**, broken down by UV sunlight, and **acetylene**, produced from lightning in thunderstorms and atmospheric methane, in the high GRS cloud top region near the 200-mbar (0.2 bar) level. Both ingredients are upwelled from depth via powerful convection within the GRS associated with thunderstorms, and are concentrated, in a process that takes only months to years, to form a "crème brulee" layer on the top of the storm clouds.



UV-Near-IR Spectrum of Jupiter's GRS obtained by Cassini VIMS (red) is well-matched with ammonia and acetylene ($\text{NH}_3 + \text{C}_2\text{H}_2$) aerosols produced in the laboratory and modeled as a thin surface layer (black).