

SO₂ measurements using SPICAV-UV in nadir mode

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The spectroscopic study of UV (170 – 320 nm, $R \sim 200$) sunlight scattered and reflected by the upper clouds and hazes of Venus as seen by the SPICAV-UV instrument onboard *Venus Express* has been routinely performed since 2006. Preliminary modeling has shown that SO₂ (and possibly SO) column abundances above cloud top level could be monitored thanks to their specific UV absorption bands. Observations during about 30 orbits from 2006–2007 exhibited: (1) latitudinal contrasts of SO₂ and possibly SO, with more gaseous content visible at lower latitudes; (2) a strong correlation with the cloud top altitude as measured simultaneously by SPICAV-IR; (3) a decrease of the maximal column abundance of SO₂ from more than 100 $\mu\text{m-atm}$ near the morning terminator to below 30 $\mu\text{m-atm}$ in the evening, yielding a typical photochemical lifetime of SO₂ on the order of 10⁵ s. We propose a dynamical interpretation of our observations consistent with other recent measurements indicating a currently strong convective activity within Venusian clouds compared to its level during the *Pioneer Venus* era.