



***Spitzer* mid-infrared spectroscopic observations of uranus**

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We present disk-averaged mid-infrared spectra of Uranus that were measured with the InfraRed Spectrometer (IRS) aboard *Spitzer* between 270 and 1950 cm^{-1} . They were taken with low (about 64 to 128) and high (≈ 600) spectral resolving power and at three different planetographic latitudes, which were 120° apart from one another. These observations were made on 2004-11-12 and 2004-11-13 as part of a Guaranteed Time program by J. Houck. The apparent planetographic latitude of the center of Uranus seen by *Spitzer* was -15° .

These observations show strong indications for the presence of several new hydrocarbons in Uranus' atmosphere: diacetylene, C_4H_2 , methylacetylene, $\text{CH}_3\text{C}_2\text{H}$, and ethane, C_2H_6 . We present also the case of two other molecules, carbon dioxide, CO_2 , and cyanoacetylene, HC_3N , whose spectral features are not quite strong enough for a definitive detection. We found as well an emission feature between 1000 and 1100 cm^{-1} and discuss possible interpretations. There are no significant variations in line strength between the observations made at different longitudes.