

Analysis of Cloud Feature Evolution in the Middle and Lower Cloud Decks of Venus

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The middle and lower cloud decks of Venus occupy a region susceptible to atmospheric convection, with cloud features forming and dissipating on the order of hours. Little is known about the physical behavior of these cloud features and how it differs from the cloud physics commonly seen on Earth. Analysis of data from the Venus Express VIRTIS (Visible and Infrared Thermal Imaging Spectrometer) instrument will provide some insight on the way that these features move and evolve based on their characteristics. Features in this altitude regime are here observed in the 1.74 micron band, a window in the atmospheric absorption spectrum that most clearly resolves these clouds. Data on features was extracted from VEX orbits 299-302 at mid-latitudes and orbits 306-309 at low latitudes to provide a wide range of different features to study. The majority of features studied were found to be darkening with time, a result which may indicate a greater effect due to scattered sunlight than was anticipated.