GALILEO/NIMS NEAR-INFRARED THERMAL IMAGERY OF THE SURFACE OF VENUS; **R. W.** Carlson, K. H. Baines, M. Girard, L. W. Kamp (JPL), P. Drossart, J. Encrenaz (Paris-Meudon Observatory), F. W. Taylor (Oxford University)

Numerous highland and lowland features on the surface of Venus are observed in multispectral imagery acquired at ~50 km spatial resolution by the Near-Infrared Mapping Spectrometer (NIMS) on board the Galileo spacecraft in February, 1990. Specifically, such features are observed at 1.18 μm, a wavelength particularly sensitive to thermal emission from the hot, lower atmosphere (<10 km) and surface, and show up particularly well when this image is "de-clouded" using a simultaneously-acquired 2.3-μm image of the upper, cloudy atmosphere. Due to the steep atmospheric temperature gradient (approximately 8 degrees per kilometer), hot lowland areas appear relatively bright, while cooler, highland areas appear dark (due to the steep atmospheric temperature gradient - approximately 8 degrees per kilometer - surface temperatures span approximately 100 K over the 13 kilometer range of surface altitudes observed in this image).

Prominent highland features include Maxwell Montes (~12 km altitude.), Alpha Regio (2.5 **km),** Fistla Regio (~2.0 km), Bell Regio (2-3 km), and the western edge of Aphrodite Terra (2-?..5 km). Low-lying regions include Sedna Planitia (-1.0 km), Tinatin Planitia (-0.5 km), and the Bereghinya Planitia (0 km). From correlations with radar altimetry maps, such imagery may place useful constraints on surface emissivity and temperature variations, as well as on the nature of continuum opacity of CO_2 in the 1-micron region.