

The Pre-Impact Coma of Comet Tempel 1: Deep Impact Imaging Results

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From images of the nucleus and coma of Tempel 1, we characterize the comacomposition and structure, and nucleus color prior to impact by the Impactor spacecraft of NASA=92s Deep Impact mission. We compare the spatial structure of the distribution of gas to that of the dust in the coma. The Medium Resolution Instrument (MRI) carried filters designed for gas emissionspecies, C2, CN, and OH at 514, 387, and 309 nm, and continuum filters (dust) at 526 and 345 nm. Continuum flux is interpolated or extrapolated to the gas filters wavelengths and removed from the gas filter radiance. A uniform radial profile is removed from each image to enhance outburst or jet structure. The structure and activity of the coma species is related to the processes producing the observed species, and the regions of the comet that are active. Our goal is to relate the in situ results to approach observations and to specific areas of surface activitywhile characterizing the inner coma of the comet.