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SUPERNOVA 2005db IN NGC 214

L. A. G. Monard, Pretoria, South Africa, reports his discovery of an apparent supernova (mag $\sim$ 17.3) on unfiltered CCD images taken on July 19.144 UT (and confirmed on July 20.058 at mag $\sim$ 17.4) with the 0.30-m Schmidt-Cassegrain reflector at the Bronberg Observatory near Pretoria. SN 2005db is located at $\alpha = 0^{\rm h}41^{\rm m}26^{\rm s}.79$, $\delta = +25^{\circ}29'51''.6$ (equinox 2000.0), which is 16$''$ west and 2$''$ south of the nucleus of NGC 214. Nothing is visible at this location on Monard's images taken on July 2.159 (limiting red mag 18.5) or on the Digitized Sky Survey (limiting red mag 20.5).

COMET 9P/TEMPEL

C. M. Lisse, Applied Physics Laboratory, Johns Hopkins University, and University of Maryland; J. Van Cleve, Ball Aerospace; Y. R. Fernandez and K. J. Meech, University of Hawaii; and the Spitzer Deep Impact team report that the Spitzer Space Telescope (SST) strongly detected the ejected material from comet 9P during a long-term monitoring campaign of the 'Deep Impact' encounter. The brightness of the comet's continuum after impact (at 16 μm and within a 10$''$-wide aperture) shows a sharp, doubly inflected rise to a total post-impact excess of 25 percent over the course of 2 hr from the time of spacecraft impact at July 4.244 UT. A 5–35-μm spectrum of the comet taken 36 min after impact shows a flux density of $\sim$ 1 Jy due to the ejecta, on top of the ambient coma signal of $\sim$ 4 Jy. Silicate emission features indicative of crystalline olivines and pyroxenes were seen in the 9–37-μm region of the spectrum, superimposed on a 325-K continuum. The silicate emission bands in the range 8–13 μm were $\sim$ 500 percent of the continuum. From the relative line strengths of the bands, amorphous silicates must be present, as well. The spectral signature of polyaromatic hydrocarbons (PAHs) at 6.8, 7.7, and 11.3 μm is small compared to the silicate emission, but detectable. Spectral features due to water ice, water vapor, and carbonaceous materials (carbonates and hydrogenated aromatic hydrocarbons) were detected in the 5.8–7.2-μm region. Emission features attributed to carbon dioxide were found at 13.4, 13.9, 15.1, and 15.3 μm. New cometary features at 12.5, 28, and 31.5 μm are tentatively assigned to crystalline aluminum oxide. The ejecta spectral signatures were detected from the time of impact through at least 41 hr afterwards, but by 121 hr after impact all spectral signatures above the pre-impact levels were absent. The SST will continue to observe the comet periodically through Aug. 16.

2005 July 22 *Daniel W. E. Green*