

Stardust-NExT




Inspired by

Previous Comet Missions

According to science team members from the Deep Impact Mission, there was no shortage of surprises from their 2006 encounter. Scientists first predicted that the gasses escaping from the impact hole in the comet nucleus would differ substantially from those released naturally on the comet's surface, but, the gasses were about the same **composition**. However, different parts of the comet's nucleus released different kinds of gases-- something that wasn't expected!

Another revelation was that the grains excavated from the crater were much smaller than expected – even more surprising was that there were no large rocks at all! Comet Tempel 1, does not appear to be very dense. Further, there were huge, smooth regions that look like flows. “We have no explanation for what made them,” Dr. M. A’Hearn, Co-Investigator for the mission

reposted. Finally, there were lots of round holes resembling impact craters on the nucleus, “but the surface of a comet erodes away so fast that once again, the explanation [for what causes them] escapes us.”

On February 14th (*Valentine's Day*),  2011, the SD-NExT team will have some answers. The mission will look for changes that occurred since the comet last passed by the Sun, continue mapping and modeling the comet's nucleus begun in 2005, and study areas of the smooth flow and exposed water ice.

Rampant speculation abounds throughout the science community as the SD-NExT team prepares for another exciting encounter. However, until the data from the Tempel 1 crime scene streams back to Earth, in essence, the gun's still smoking but the jury's still out.

Editorial

All right, *Chronicle* fans, gaze on at the beauty to the left, comet Hale-Bopp in 1997. Not just another pretty face in the night sky, is it? Spy those tails; imagine the nucleus at the forefront of the coma. You know where the Sun must be compared to the comet now, don't you?

Stay tuned for more *Comet Chronicles!*

