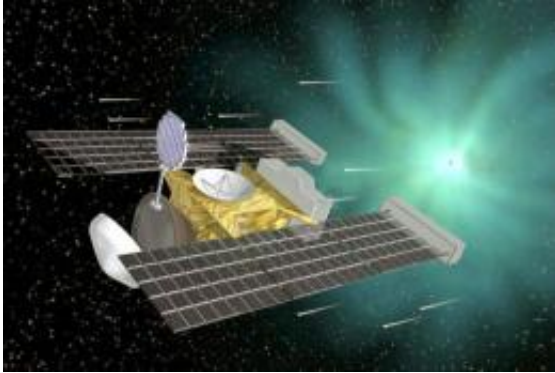


NASA plans Valentine's date with a comet

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Artist's rendering of Spacecraft Stardust

Like two strangers in the night, a US spacecraft and a speeding comet will dash by one another on Valentine's Day, NASA said Wednesday, and skywatchers are eager to see what happens.

The Stardust-NExT spacecraft will be rapidly snapping pictures of the [Tempel 1 comet](#) as they pass at a mere distance of 200 kilometers (about 124 miles).

Space experts are curious to see how a trip around the Sun has affected the surface of the Tempel 1, which is about six kilometers (3.7 miles) wide and travels on an orbit that brings it as close to the Sun as Mars and as far away as Jupiter.

Tempel 1 was last glimpsed in 2005 by NASA's [Deep Impact](#) mission as

the [comet](#) was shooting toward the Sun on its five-year orbit between Mars and Jupiter.

Back then the encounter was akin to, say, a boy shoving a girl on the playground to gauge her reaction.

Deep Impact pummeled the comet with a special impactor spacecraft and the material that came out was a surprise to scientists: a cloud of fine powdery material emerged, not the water, ice and dirt that was expected.

Deep Impact also found evidence of ice on the surface of the comet, not just inside it.

Now space experts want to see how the comet has changed after its tour around the scorching Sun.

"Every day we are getting closer and closer and more and more excited about answering some fundamental questions about comets," said Joe Veverka, Stardust-NExT principal investigator at Cornell University.

"Going back for another look at Tempel 1 will provide new insights on how comets work and how they were put together four-and-a-half billion years ago."

The February 14 meetup has been a long time coming for Stardust-NExT, or New Exploration of Tempel, NASA said.

"As of today, the spacecraft is approximately 15.3 million miles away from its encounter," the US space agency said in a statement.

"Since 2007, Stardust-NExT executed eight flight path correction maneuvers, logged four circuits around the sun and used one Earth gravity assist to meet up with Tempel 1.

"Another three maneuvers are planned to refine the spacecraft's path to the comet."

The rendez-vous will occur 209 million miles (336 million kilometers) away from Earth. Initial raw images from the flyby are expected to be in NASA's hands by early February 15.

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