

Key 'Stardust' spacecraft find questioned

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Spanish scientists say one of the major discoveries from last year's "Stardust" space mission might have resulted from rocket booster contamination.

Stardust was the first U.S. space mission to capture samples from a comet and return the material to Earth. But scientists were surprised to find Stardust had collected tiny grains of the mineral osbornite, which chemically is titanium nitride.

Astronomers concluded the osbornite could have formed near the sun, and ejected to the outer reaches of the solar system -- an indication that the infant solar system was a much more violent and place then previous believed.

But Jesus Martinez-Frias and colleagues at the Center for Astrobiology in Madrid suggest another possible explanation.

The researchers note the Stardust's rocket thrusters used a propellant of ultra-pure hydrazine, which is also used to make titanium nitride on Earth, and might have reacted in space with titanium from the comet or spacecraft to form titanium nitride.

Martinez-Frias and colleagues say further studies are needed before reaching a final conclusion on the osbornite origin.

The theory is detailed in the May 16 issue of the journal *Energy & Fuels*.

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