The STARDUST Mission to Comet P/Wild 2: Why and How?

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STARDUST is a discovery class mission launched on February 7, 1999 toward a flyby of Comet P/Wild 2 on January 2, 2004. Its primary goal is the return of 1000 or more cometary dust particles 15μm or larger in diameter to Earth on January 15, 2006 for study in terrestrial laboratories. An attempt is also being made to capture particles from the interstellar dust stream discovered to be flowing through the solar system by the Ulysses spacecraft and confirmed by Galileo. The capture medium in both cases is a grid of aerogel, a low density foamed glass. In addition, STARDUST carries an imaging system, an ionization impact time-of-flight mass spectrometer, and a dust flux monitor. Some of the goals of current cometary research and the rationale and specific goals for this particular mission will be presented together with some detailed discussion of the means by which it is hoped those goals will be achieved.

* Retired and returned to JPL as a resident affiliate.