GENESIS SEARCH FOR ORIGINS FACT SHEET

The Genesis Mission: An Overview

When looking to the skies, we may wonder:

- What is the Sun made of?
- What makes Earth different from other planets?
- Are the planets made of the same stuff as the Sun?

Of course, we have no eyewitness account of the formation of the solar system. Scientists are attempting to understand what happened back then from pieces of evidence including meteorites and interstellar dust grains. An additional piece of evidence that would help in this quest for understanding is an accurate knowledge of the detailed composition of the Sun.

One of the scientists studying the formation of planets is Don Burnett, principal investigator of the Genesis mission. He designed a NASA project to collect a sample of solar material that may help scientists answer important and puzzling questions.

In August 2001, NASA launched the Genesis spacecraft. The spacecraft is not a time machine; it cannot go back to the time of formation of the solar system. What it will do is the next best thing.

The Genesis spacecraft journeyed toward the Sun. It went to a place outside the Earth's magnetic field where the Earth and Sun gravities are balanced. While in orbit, the spacecraft bathed in solar wind that is flung out from the Sun. Solar wind particles are similar to material from which the planets formed, and are atoms, ions, or high-energy particles.

Once in position, the Genesis spacecraft uncovered its collectors. Particles of solar wind were embedded into ultra-pure silicon wafers and other pure materials. After 29 months in orbit, the sample collectors were re-stowed and returned to Earth. In September 2004, an exciting mid-air recovery of the sample return capsule will take place over the Utah desert. The solar wind samples will be stored and cataloged under ultra-pure cleanroom conditions and made available to the world's scientific community for study.

The Genesis mission will yield the first samples of extraterrestrial materials returned in the new millennium. These particles of solar wind will provide significant insights for scientists as they interpret the results of other NASA planetary missions.

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JPL 400-959 5/01