Capturing Solar Wind

To capture the solar wind, the Genesis team turned to such treasured materials as gold, sapphire, and even diamonds. These precious materials, along with silicon, make up the small tiles that are pieced together to form the Genesis spacecraft's collector arrays. In flight, an onboard computer decides which array would work best and deploys one of these bicycle wheel-shaped collector arrays to catch the particles when they collide with the tiles. Late in the mission, the collector arrays are all retracted and stored in the spacecraft's sample return capsule, which will protect them during their journey to Earth.

A Mid-Air Recovery

The sample return capsule will separate from the Genesis spacecraft and coast toward the Utah Testing and Training Range (UTTR). At about 1.5 miles above the ground, the sample return canister will release a parachute which will slow its descent. A helicopter with specially designed retrieval equipment will move in, capture the capsule in mid air and transport it to Earth with the solar wind particles safely intact.

Genesis Education and Public Outreach

NASA invites you to come along and share in the excitement of Genesis. Through education and public outreach, NASA provides opportunities to learn about the science of the Genesis mission, to meet the team, and to chart the Genesis spacecraft's progress throughout its journey. Educational activities for space enthusiasts of all ages are available at the Genesis mission Web site. For more information visit:
http://genesismission.jpl.nasa.gov

Stage 3: Main Chute Release

Just 1.5 miles (2.4 kilometers) above the ground, the main chute — a rectangular parafoil similar to a skydiver — allows the sample return capsule to spiral gently downward. Tracking radar communicates the capsule's movement to the retrieval helicopters.

Stage 4: Capture

Two helicopters — one a backup — perform the mid-air capture with specially designed retrieval equipment. The lead helicopter flies into the parafoil's glide path, hooks and collapses the chute. After carrying the sample return capsule back to a nearby airfield, the helicopter gently lowers it onto a specially designed cradle for safe delivery to a nearby contamination-controlled laboratory.

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