GENESIS MISSION ELECTRONIC NEWSLETTER

25th Edition, December 2001

http://genesismission.jpl.nasa.gov

THE BEST OF 2001

2001 was an eventful year for the Genesis mission, with the year in review below. The Genesis mission project members wish you the very best in 2002. Happy New Year!

JANUARY 2001

Meet Ben Clark, Lockheed Martin Scientist

Meet Genesis Co-Investigator Ben Clark, Lockheed Martin Space Systems—Astronautics Operations. In a recent interview, Clark noted that "Genesis is an extremely fascinating mission when you realize that we are actually collecting material from the sun without having to dip down into that fiery inferno and scoop up the tenuous matter that resides there."

FEBRUARY 2001

Genesis Kids

Do you know a child who loves space science and wants to get involved in Genesis mission activities? Introduce them to Genesis Kids -- the newest addition to the Genesis Web site.

Genesis Grams

"*I wish I could go to Mars someday and I wish Genesis good luck! I think Genesis is very exciting*," wrote a brother and sister from Wheatridge, Colorado. This submission and the remaining Genesis Grams have been engraved on the Genesis microchip and are awaiting launch aboard the spacecraft in mid-2001. View Genesis Grams for ages 10-and-under.

MARCH 2001

Genesis Meets Young Astronauts

An upcoming Young Astronauts thirty-minute program features Genesis video clips, hands-on activities from Genesis science education modules, and the opportunity to call in to ask questions. For more information visit the Young Astronauts schedule.

Meet Genesis Mission Assurance Manager Bob Axsom

Meet Jet Propulsion Laboratory's Bob Axsom. As Genesis mission assurance manager, Bob's role is to assure the success of the mission.

Genesis Grams: The Next Generation

"*The Earth is a blue, churning sapphire amidst the vast reaches of the galaxy*," wrote a student from Muskego, Wisconsin. The ages 11-17 category of Grams is posted on the Genesis Web site.

APRIL 2001

Space Day and Genesis Kids

In observance of National Space Day on May 3, 2001, Genesis Kids features a new interactive mission sticker book for pre-school kids online. Additionally, on this Web page children of all ages can submit a question about science, the sun, or the Genesis mission in the "Ask Blast" feature and receive a personal reply.

Genesis Grams: "Because stars smile every night …"

A Genesis Gram entry from Lisbon, Portugal says, *"Because stars smile every night, your eyes shine every morning; because you exist, life is better."* The 18-and-over category of Genesis Grams is posted online. All of the entries are featured online and have been engraved upon a microchip for travel into space aboard the Genesis spacecraft.

MAY 2001

Countdown to Launch: The Genesis Spacecraft Has Landed

"GENESIS SPACECRAFT ARRIVES IN FLORIDA FOR JULY LAUNCH" headlines the latest news release from the Jet Propulsion Laboratory and Kennedy Space Center. As launch-related activities move into full swing, you can have an insider's look at what's going on at Cape Canaveral as they prepare for the Genesis mission's July 30 launch.

Middle School Students Fascinated by a Clean Room?
A newly-released middle school education module titled *Dynamic Design: The Cleanroom*

focuses on the Genesis mission cleanroom at NASA Johnson Space Center near Houston, Texas. Students experience the requirements and conditions of working in NASA's cleanest room and model the assembly of the Genesis solar collector wafers onto the array frame. The video, *Cleanroom Technology* is a part of this education module.

JUNE 2001
Countdown to Launch: The Countdown is ON!
In their "latest pics straight from the lab," you can monitor the "countdown to launch" activities online from the time of spacecraft arrival at Cape Canaveral.

Two Florida Genesis Launch Education Conferences
K-12 classroom teachers, planetarium personnel, JPL Solar System Ambassadors, and JPL Solar System Educators are invited to attend a special one-day training workshop. On August 1, 2001 at Astronaut Memorial Planetarium on the Brevard Community College campus, there will be a FREE, hands-on training workshop to field test Genesis education materials, sponsored in part by the Florida Space Grant Consortium.
California State University Northridge is offering a Genesis mission Chautauqua course for educators at Kennedy Space Center in conjunction with the launch. Genesis Outreach Coordinator and Director of the California Chautauqua Field Center Dr. Gil Yanow will lead the three-day course.

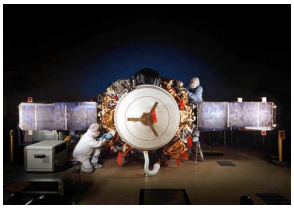
JULY 2001
Countdown to Launch: The Countdown is ON!
On launch day, Monday, July 30, countdown coverage will begin at 11 a.m. EDT. Coverage from Cape Canaveral Air Force Station will conclude shortly after spacecraft separation that occurs 64 minutes after launch.

Genesis Launch Events
July 30 launch events are happening around the country. Jet Propulsion Laboratory Solar System Ambassadors are hosting Genesis mission launch day presentations at Chabot Planetarium in Oakland, Adler Planetarium in Chicago, and Jetty Park at Port Canaveral in Florida. The launch is scheduled for 12:36 p.m. Eastern Daylight Time.

Meet Don Sweetnam

Meet Genesis mission Operations Manager Don Sweetnam at the Jet Propulsion Laboratory. Don serves as Planning, Control, Analysis, and Recovery (PCAR) team leader.

Genesis and the Media
Press Kit: The Genesis mission press kit is hot off the press and available on the Jet Propulsion Laboratory Web site.
News Release: The Jet Propulsion Laboratory's latest mission news release can be accessed directly from their news release page.
News Release: Los Alamos National Laboratory mission press release and accompanying photos.
Audio Release: Jet Propulsion Laboratory engineer Marla Thornton shares her enthusiasm for mathematics and science study in an audio release on the Genesis mission site.
Rocket Images: Launch of the spacecraft will occur aboard a Boeing Delta II rocket. You can view Kennedy Space Center launch preparations on the Boeing Web site at:
NASA Discovery Newsletter: Read the story of the Genesis mission online in NASA's Discovery Dispatch newsletter.
Genesis Viewing Gallery: A new viewing gallery is posted on the Genesis mission Web site. These images range from 72 to 144 d.p.i., and reside apart from the 300 d.p.i. Press Room Graphics Gallery. The captioned images are offered for public use, with respective photo credits posted.



AUGUST 2001

Genesis Launch Report

After a flawless launch on August 8 at 12:13:40 p.m. EDT, the Genesis spacecraft is on its mission to "catch a piece of the sun." View JPL news release and launch replay. At 64 minutes, 12 seconds into the mission, the Genesis spacecraft separated from the Delta's third stage. Immediately after separation, Genesis' solar arrays unfolded and pointed toward the sun. The spacecraft's signal was successfully acquired by the NASA Deep Space Network complex at Goldstone, California, 85 minutes after launch.

Genesis Mission Status Update

The Genesis spacecraft is performing well. This week, the doors of the Genesis Ion Monitor (GIM) and Genesis Electron Monitor (GEM) were successfully opened.

Genesis and the Media

NASA TV's live online video stream, CNN live, and hundreds of national and international newspapers, television, radio stations, and online news reporters got into the excitement of the Genesis launch, releasing news around the event. Imagine the anticipation when the science canister returns in September 2003! Stay tuned.

A Back to School Apple for the Teacher

The Genesis mission Web site features a new cleanroom electronic field trip that you can access online. The interactive field trip virtually walks your students into NASA's cleanest room at Johnson Space Center, and takes them through several interactives, including suiting up in a bunny suit, using a liquid particle counter, and several group activities on attaching collector wafers onto the array frame. The field trip is part of a NASA Genesis cleanroom trilogy, including a newly-released middle school education module titled *Dynamic Design: The Cleanroom* and a video titled *Cleanroom Technology*.

SEPTEMBER 2001

Genesis Mission Status Update

Visit the mission status updates page to review status reports since the time of launch.

Become a McREL Development Network Associate

Genesis materials provide standards-based instructional strategies that can be used in varied formal and informal settings. Educators from around the country are invited to field test any of our education modules or Genesis Kids materials this school year. Interested educators should contact John Ristvey at 303-632-5620 or jristvey@mcrel.org for more information.

Genesis and the Scout Report

The Internet Scout Project has selected the Genesis mission Web site for inclusion in the Scout Report, listed in its "Two from Space" item. The Internet Scout Project is located in the Department of Computer Sciences at the University of Wisconsin-Madison, and is sponsored by the National Science Foundation to provide timely information to the education community about valuable Internet resources.

OCTOBER 2001

Genesis Mission Status Update

Week of October 22: Preparations have begun for inserting the spacecraft into orbit about the first Lagrangian point, L1, which will occur on November 16, 2001. The backshell of the sample return capsule, still in the "cracked open" position, will be closed completely in preparation for orbit insertion on November 13. Science will be paused on November 15 and then restarted on November 19. Recent activities on the spacecraft include continuing to check out the science instruments and the WIND algorithm, which will be used to automatically determine the type of solar wind that is passing by the spacecraft, then extend or stow the appropriate solar wind collector arrays to catch particles in the wind. A solar shock and coronal mass ejection reached the spacecraft about 16:30 Universal time on October 21. There was a slight noise increase in the electron monitor when the shock came through. LANL reports, "Everything looks hunky-dory."

Genesis Discussion Forums

Genesis Education and Public Outreach announces the debut of its online discussion forums. These forums offer an opportunity to exchange ideas and offer suggestions on a variety of mission outreach activities and services. For information on how to participate, contact John Ristvey at: jristvey@mcrel.org

---

NOVEMBER 2001

November 30, 2001: Today Marks the Start of Genesis Science Collection

According to Principal Investigator Don Burnett, "We've been planning for this day since 1983 when we calculated the feasibility of a solar wind sample return. December 1997 marked the official start of the Genesis mission; today marks the official start of science collection for Genesis. This is when the first atoms arrive from the sun to the spacecraft—our first guaranteed solar matter that will be returned to Earth."

We're There!

The Genesis spacecraft went into perfect orbit insertion about the first Lagrangian point, L1, the morning of November 16, 2001. According to Mission Design and Navigation Team Lead George Carlisle, "The recent LOI (Lissajous Orbit Insertion) maneuver, on November 16, set up the five halo loops that Genesis will complete around L1 (lasting about 30 months), thus beginning the science part of the mission. Though this was a modest maneuver, it made the difference between allowing us to stay near L1 and collect the valuable science data represented by the solar wind particles over the next two and a half years, and falling back to Earth within a few months, empty handed."

Genesis Mission Status Update

November 16, 2001—Genesis Mission Status Report on Launch Orbit Insertion (LOI)

We're there! A flawless 268-second burn was performed today to inject the spacecraft into its Lissajous orbit at Lagrange 1. A quick look of the burn that took us in to orbit insertion shows that the direction was within 1 degree of the plan. The backshell was successfully closed and science paused on Thursday. The program will hold a Readiness Review on November 20. The review objectives include showing that the project is ready to open the canister and start science, has contingency plans, and operations is ready to implement the plan. We continue to maintain the sample return capsule's battery at the desired temperature of 23 C with its heater. The science instruments were successfully taken out of high voltage operation before orbit insertion. The Sun has been quiet for the last few days... Read the JPL news release on LOI.

Where is the Genesis Spacecraft Now?

View the position of the Genesis spacecraft. Most images are updated every 10 minutes.

Middle School Education Module on Launch and Propulsion

Launch student excitement with the new middle school module titled *Dynamic Design: Launch and Propulsion*. Student texts and activities guide classroom learning about the history of rocketry and how rockets are launched today.

December 2001

Genesis Spacecraft Begins Mission to Collect Samples of the Sun

December 3, 2001

NASA's Genesis mission is officially open for business today, as it extends its special collector arrays to catch atoms from the solar wind. The atoms it collects, believed to have been part of the solar nebula "cloud" from which our solar system developed, will help scientists gain a better understanding of the conditions in the distant past before Earth and other planets formed. Read the JPL News Release.

This subscription is a free service offered by the NASA Genesis mission outreach team at Mid-continent Research for Education and Learning (McREL). Based in Aurora, Colorado, McREL is a private, nonprofit organization whose purpose is to improve education through applied research and development. McREL provides products and services, primarily for K-12 educators, to promote the best instructional practices in the classroom.

Genesis Mission Outreach E-News features information about the mission, its outreach Web site, and products, services, and materials available from the McREL Genesis Education and Public Outreach (EPO) team. NASA's Discovery 5 Mission: Genesis is managed by the Jet Propulsion Laboratory.

Various versions of Internet browsers handle the links to URLs embedded in this e-newsletter differently. We hope you will be able to navigate easily to the featured sections of the Genesis EPO Web site.