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Student Names NASA Earth Observing Satellite

In a student contest to name the first in a series of Earth Observing System satellites, NASA chose 'Terra' as the winning name in honor of our planet's mythical Mother Earth. The Terra spacecraft will enable scientists to study, with unprecedented clarity, global climatic and environmental changes going into the new millennium.

In setting a launch date of July 15 for the spacecraft formerly known as "EOS AM-1," NASA's Associate Administrator for Earth Sciences, Dr. Ghassem Asrar, announced the new name after reviewing the top ten finalist essays from a contest jointly sponsored by NASA and the American Geophysical Union (AGU).

"The concept of 'Terra' uniquely conveys the themes and objectives of this important Earth science mission," Asrar said. "I congratulate Sasha Jones, a student in St. Louis, Mo., for submitting the winning name and essay." Sasha's school, Brentwood High in St. Louis, will receive a computer and software that will enable students and teachers to access Terra satellite imagery on the World Wide Web.

Jones is a senior at Brentwood. She plans to attend Western University in the Fall and major in English.

In all, the international contest drew more than 1,100 entries from the United States and a dozen other countries. Members of the selection committee included top NASA and AGU officials, as well as earth scientists and science teachers.

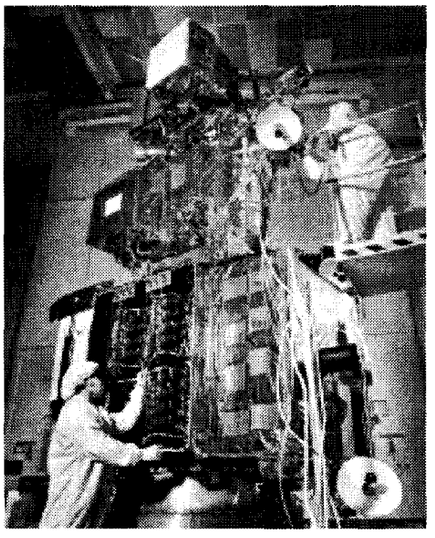
Terra is the flagship of NASA's Earth Observing System, a series of satellites designed to observe the Earth from the unique vantage point in space. Focused on key measurements identified by a consensus of U.S. and international scientists, Terra will enable new research into the ways that our planet's land, ocean, air, ice and life interact together as a whole climate system.

Terra is managed by Goddard for NASA's Office of Earth Science Enterprise, Washington, D.C.

The AGU is an international organization of more than 35,000 scientists dedicated to advancing the understanding of Earth and its environment in space and making the results of their research available to the public.

More information on the Terra project may be found on NASA's Terra Web site at URL: **http://terra.nasa.gov**

Goddard's Landsat-7 Spacecraft Shipped to California



Landsat-7 spacecraft at Valley Forge, Pa. prior to shipment to Vandenberg AFB in California. (Lockheed photo)

By Lynn Chandler, Office of Public Affairs

Goddard's Landsat -7 spacecraft was transported from Lockheed Martin Missiles & Space facility in Valley Forge, Penn. to Vandenberg Air Force Base, Calif. on Jan. 28.

Landsat-7 is scheduled to launch April 15 aboard a Delta-II expendable launch vehicle. The spacecraft is the latest in a series of satellites that are designed to provide images of the Earth's land surface and surrounding coastal regions.

National and international users will be able to access Landat-7 data for global change research, regional environmental change studies and other civil and commercial purposes.

Local College Hosts Exhibit

By Cynthia O'Carroll, Office of Public Affairs

Anne Arundel Community College (AACC) is hosting an exhibit titled "Soaring Above Setbacks: African-Americans in the Space Program" in celebration of Black History Month. The exhibit, which runs through Feb. 26, is located in the Pascal Center for Performing Arts building.

Forteen black astronauts, plus seven engineers, physicists and astronomers who have contributed to the space program are profiled in this exhibit. Among the items available to visitors are pictures and books, an audio tour, videos of each astronaut, plus an interactive CD-ROM scavenger hunt questionnaire titled,"Black Wings: A Chronicle of African-Americans in Aviation."

A key feature of this exhibit is to show how these individuals overcame personal struggles to excel in the space program. "I see this show as a snapshot of the intellectual potential in the black community," stated **Jim Jackson**, AACC admissions adviser and curator of the exhibit.

In addition to the exhibit, Jackson will present a 50-minute video on Feb. 17 called "Black Stars in Orbit." The video documents the qualifications required to become an astronaut.

Admission to the exhibit is free.

SOHO Sets a Space First

By William Steigerwald, Office of Public Affairs

For the second time in six months, engineers have revitalized the European Space Agency's (ESA) orbiting solar observatory, the Solar and Heliospheric Observatory (SOHO), and have accomplished a first.

The spacecraft went into a self-protection mode, known as Emergency Sun Reacquisition, on Dec. 21, 1998 when the last of its three gyroscopes failed. Having lost a fundamental orientation system, SOHO continually fired onboard jets to keep its sensors pointed toward the sun.

To stop the rapid depletion of hydrazine fuel over the last month, engineers at ESA and Matra Marconi Space designed a new software program on Feb. 2 that enabled the spacecraft to resume science operations without its gyroscopes. The satellite is now programmed to ignore faulty information from the gyroscopes and use new software sent up by ground controllers. This is the first time that a spacecraft equipped with gyroscopes has carried on working without them.

The first picture of the sun taken by SOHO after the new recovery is available on the Internet at: **http://sci.esa.int/soho/**

New Animation Depicts Changes in Antarctic Ice Sheet

By Lynn Chandler, Office of Public Affairs

For the first time, scientists at NASA have generated a computer model depicting changes in the Antarctic ice sheet since the peak of the last ice age - nearly 20,000 years ago. The West Antarctic ice sheet lost nearly two-thirds of it's mass during this period — a volume sufficient to raise the sea level by 33 feet.

West Antarctica is the most prominent remaining ice-filled marine basin on Earth. It is drained by fast-moving ice streams that extend far into the ice-sheet interior. Much debate exists over the potential effect of West Antarctic's volume being released into the ocean. Scientists hope to better understand the history of Antarctic ice sheet so they might better predict how the ice sheet may respond to future climate changes.

Employees can download images and quicktime movies from the following web site: **http://svs.gsfc.nasa.gov/~akekesi/Antarctica/**

Background information on this topic can be viewed at:
http://igloo.gsfc.nasa.gov/wais/
or: **http://igloo.gsfc.nasa.gov/science/perspective.html**

Explorer Mission Proposals Selected for Feasability Studies

Spacecraft that will help answer some of the biggest questions in space science have been chosen as candidates for NASA's medium-class Explorer (MIDEX) program, including one from Goddard.

The Swift Gamma Ray Burst Explorer, a Goddard selected Midex propopsal, is a three-telescope space observatory for studying the position, brightness, and physical properties of gamma ray bursts. Gamma ray bursts are the largest known explosions in the Universe, outshining the rest of the Universe when they explode unpredictably in distant galaxies. However, their underlying nature and cause of the explosion are true mysteries.

Swift will use its gamma ray telescope, X-ray telescope, and ultraviolet/optical telescope to determine the nature of gamma ray bursts by probing distant regions of the Universe. Swift will be led by **Dr. Neil Gehrels** of Goddard. Mission cost to NASA is $135 million.

The spacecraft will observe the largest explosions and brightest galaxies in the Universe; study the link between the Earth's aurora and the solar wind; search for planetary systems around 40 million stars; and investigate magnetic eruptions in the Sun's corona. The five proposals will undergo detailed study over the next five months in the first step of a two-step process. NASA will select two of the missions for flight under the MIDEX program, designed to foster lower-cost, highly focused, rapidly developed scientific spacecraft.

The selected proposals were judged to have the best science value among 35 proposals submitted to NASA in August 1998 in response to an Explorer Program Announcement of Opportunity. Each selected proposal will receive $350,000 for the purpose of conducting a four month implementation feasibility study focused on cost, management and technical plans, including educational outreach and small business involvement.

The Explorer Program is managed by Goddard for the Office of Space Science, Washington, D.C.

Additional information on the proposals can be found at the following website: **ftp://pao.gsfc.nasa.gov/pub/pao/releases/1999/H99-007.txt**

Goddard Scientists Image First Gamma Ray Burst

By William Steigerwald, Office of Public Affairs

Astronomers have taken the first-ever optical images of one of the most powerful explosions in the Universe — a gamma ray burst — as it occurred on Saturday, Jan. 23. Gamma ray bursts produce more energy in a very short period than the rest of the entire Universe combined.

Because such bursts occur with no warning and typically last for just a few seconds, quick detection by orbiting spacecraft and instant notification to astronomers are critical in order to catch the bursts in the act.

The gamma-ray-burst detectors of the Burst and Transient Source Experiment (BATSE) onboard NASA's orbiting Compton Gamma Ray Observatory detected the beginning of a bright gamma ray burst. As the burst was in progress, computers determined a rough location and radioed the position to the Gamma Ray Burst Coordinates Network (GCN), based at Goddard. The position was immediately forwarded via the GCN to astronomers at ground-based observatories located around the world.

Just 22 seconds later, the Robotic Optical Transient Search Experiment (ROTSE) in Los Alamos, N.M. was in position and took images of the patch of sky where the burst was reported. The first picture showed a brightening new star within the sky region where the burst was reported.

Additional details on this story are available on the Goddard homepage at: **http://pao.gsfc.nasa.gov/** (Select "Hot Topics")

Goddard Firsts

The first commercial satellite, Telstar-1, launched on July 10, 1962. The spacecraft engaged in practical applications and uses of space technology such as weather and communication.

Goddard Awards Quick Ride Studies

Goddard's Rapid Spacecraft Development Office (RSDO) recently awarded contracts for studies to investigate the feasibility of carrying science and technology instruments to geosynchronous earth orbit (GEO) as piggy-back secondary opportunities on commercial communications satellites. Each contract has a value of $200,000 and studies are expected to take about 90 days.

The awardees are: Hughes Space and Communications, Los Angeles, Calif., Space Systems/Loral, Palo Alto, Calif., Lockheed Martin Missiles and Space, Sunnyvale, Calif. and Orbital Sciences Corporation, Germantown, Md.

The GEO Quick Ride studies to be conducted by the satellite vendors will define the technical challenges of the piggy-back to GEO approach and provide data to a NASA engineering team. The NASA team will then work with the communications industry satellite owners to make offers using the on-ramp feature of RSDO's Quick Ride program to the science community. The studies are necessary to demonstrate the technical feasibility of the secondary piggy-back approach to the satellite buying industry.

"A NASA team will consolidate the data gathered into a set of generic interface requirements which can be used by scientists to plan instruments that can take advantage of the Quick Ride flight service," said **Jim Adams**, chief of the Rapid Spacecraft Development Office at Goddard.

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