

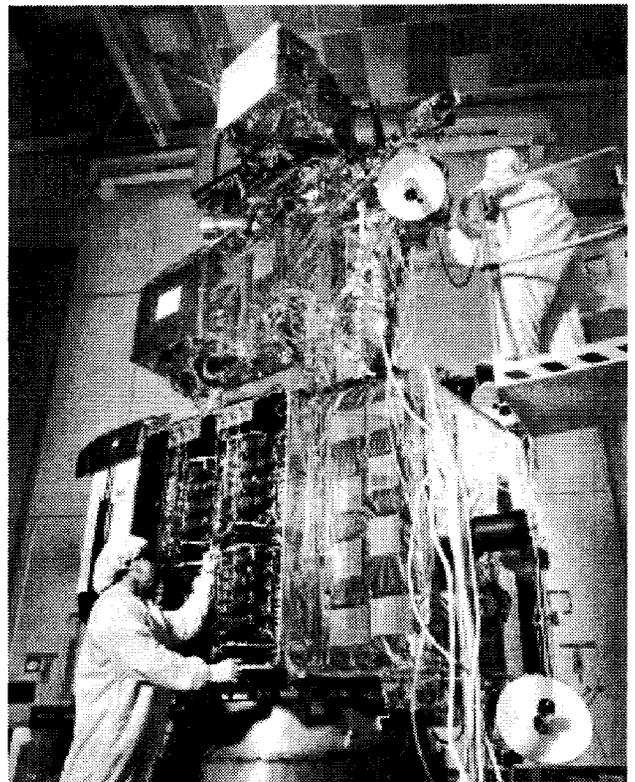
## LANDSAT 7 Readied For Launch: L-13 Days and Counting

Landsat 7 is the latest in a series of satellites belonging to NASA's Earth Science Enterprise program that will provide researchers with an important and unique suite of high-resolution observations of our terrestrial environment.

The diversity of Landsat applications makes it unique among Earth observing satellites. Landsat satellites have produced the first composite multispectral mosaic of the 48 contiguous United States. Data from the Landsat series has been used to monitor timber loss in the U.S. Pacific Northwest, estimate soil moisture and snow water equivalence throughout the U.S. and measure forest cover at the individual state level. Other uses of the satellite data include population changes in and around metropolitan areas and to measure water quality in lakes.

Instrumentation onboard Landsat 7 will provide researchers with high-resolution images of the Earth's surface--about 3.8 gigabits of data for each scene, which is roughly equivalent to 15 sets of encyclopedias and explain the causes behind land-surface changes. This is particularly key for human-induced changes (e.g., agriculture, urbanization, deforestation), where change generally occurs on small (human) scales. The spacecraft will image about one quarter of the Earth's landmass every 16 days.

Landsat 7 is scheduled to launch on **Thursday, April 15** at 2:32 p.m. EST. Employees may view the launch in the Building 3 Auditorium. The Public Services Unit of Public Affairs will



be on hand to greet employees and provide information handouts for the mission. Commentary will begin at 1:00 p.m. EST.

For additional information about the spacecraft and its mission, go to the following Web sites:

<http://landsat.gsfc.nasa.gov/> for program and technical information, educational materials, image gallery, and NASA organizational information;

<http://geo.arc.nasa.gov/sge/landsat/landsat.html> for information regarding Landsat satellite data, program news, program history and chronology and instrument details;

<http://www.inform.umd.edu/geog/landsat7/> for public information regarding Landsat-7 science activities.



*Casper R. Taylor, Jr., Speaker of the Maryland House of Delegates, presents House Resolution 192 offering "its sincerest congratulations to NASA Goddard Space Flight Center" to Center Director Al Diaz.*

*The resolution was presented to Diaz "in recognition of your 40th anniversary as an internationally renowned Center of space and earth science which has launched over 200 missions to investigate age-old mysteries of the Earth, the Sun and the Stars." The resolution was presented by the Speaker on behalf of all members on March 16 following remarks by Diaz to the Maryland House of Delegates.*

## Events and Products Highlighting Goddard's 40th Anniversary

**Sunday, May 2** -- Community Day at the Goddard Visitor Center.

**Monday, May 3** -- 40th Anniversary Symposium with Administrator Dan Goldin, Maryland Delegation and distinguished HQ and GSFC technical leaders.

**Tuesday, May 4** -- Walk around informational tours with former Center Directors.

**Wednesday, May 5** -- Picnic on the mall area, U.S. Postal Service 40th Anniversary commemorative stamp cancellation.

**Thursday, May 6** -- Library Open House

**Friday, May 7** -- Recreation Center party for employees and alumni.

A 40th Anniversary book, commemorative T-shirts, mugs and wine are also available to employees at a special price.

For more information about Goddard's 40th Anniversary special events, go to our Web site at: <http://pao.gsfc.nasa.gov/gsf/40th/40th.htm>

## Huge Spring Storms Rouse Uranus From Winter Hibernation

If springtime on Earth were anything like it will be on Uranus, we would be experiencing waves of massive storms, each one covering the country from Kansas to New York, with temperatures of 300 degrees below zero.

A dramatic new time-lapse movie produced by NASA's Hubble Space Telescope shows for the first time seasonal changes on the planet.

Once considered one of the blander-looking planets, Uranus is now revealed as a dynamic world with the brightest clouds in the outer Solar System and a fragile ring system that wobbles like an unbalanced wagon wheel.

Uranus is tilted completely over on its side, giving rise to extreme 20-year long seasons and unusual weather. For nearly a quarter of the Uranian year, the sun shines directly over each pole, plunging the other half of the planet into a long, dark and frigid winter.

A full text version of the release and time-lapse movie can be viewed on the Internet at: <http://pao.gsfc.nasa.gov/gsf/newsroom/RELEASES/chron/chron99.htm>

## ODIN's Redesigned Web Page

ODIN recently redesigned their Web site to include the following items of interest: customer newsletter (Customer Outreach link), Hardware Tech Refresh activities currently underway (Asset Management link) and a direct link to the CNE Home page (Network Support). Employees can view the Web site at <http://www.odin.rmsinfo.com>

## Deployed Antenna Sending Streams Of New Mars Images

A steady stream of new data from Mars, including high-resolution images, will begin arriving shortly at Earth receiving stations following the deployment of Mars Global Surveyor's high-power communications antenna.

"Having a deployed, steerable high-gain antenna is like switching from a garden hose to a fire hose in terms of data return from the spacecraft," said Joseph Beerer, flight operations manager for Mars Global Surveyor at NASA's Jet Propulsion Laboratory.

"Up until now, we have been using the high-gain antenna in its stowed position, so periodically during the first three weeks of our mapping mission, we had to stop collecting science data and turn the entire spacecraft to transmit data to Earth," Beerer explained.

"Now that the high-gain antenna is deployed and steerable, we have the ability to simultaneously study Mars and communicate with Earth."

Engineers deployed the antenna on March 28. The antenna had been stowed since launch in Nov. 1996 in order to reduce its chances of being contaminated by exhaust from the spacecraft's main engine, which fired periodically throughout the mission.

Further information and animation is available at the following Web site: <http://mars.jpl.nasa.gov/mgs/index.html>

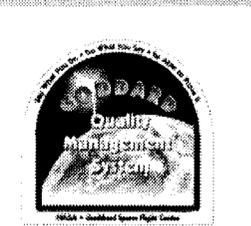
## ISO 9001

### Goddard's New Quality Policy

With customer satisfaction as our primary goal:

- GSFC is committed to meeting or exceeding our customer's requirements.

- We achieve excellence in all of our efforts.



Visit ISO at <http://arloch.gsfc.nasa.gov/iso9000/index.html>

## Another Goddard First

Goddard's Nimbus 7 satellite, launched Oct. 24, 1978, was the first to monitor our atmosphere for man-made and natural pollutants.

The Total Ozone Mapping Spectrometer aboard Nimbus 7 highlighted a significant environmental problem in 1987 when it confirmed the existence of an ozone hole above Antarctica.

## TERRIERS Satellite to Produce First 3-D Images Of Earth's Upper Atmosphere

More than 60 Boston University undergraduates, graduate students and faculty are anxiously awaiting the launch of a satellite they built and tested under a NASA student research program.

They named the spacecraft the Tomographic Experiment using Radiative Recombinative Ionospheric EUV and Radio Sources (TERRIERS) in honor of the school's mascot, the terrier.

Using a unique combination of space and ground-based instruments combined with tomographic techniques, TERRIERS will produce unprecedented three-dimensional images of the ionosphere.

Just as computerized axial tomography scans (CT scans) and magnetic resonance imaging (MRI's) provide high-resolution three-dimensional images of the human body, images obtained from the TERRIERS satellite will produce never before seen three-dimensional images of the ionosphere.

"There is an increasing need to understand this environment as changing conditions in the ionosphere can affect transmissions from communications satellites - impacting devices like cell phones, beepers and global positioning systems," said Daniel Cotton, TERRIER's principal investigator and research assistant professor of space physics at Boston University. Adverse conditions in this region can also affect other orbiting spacecraft like NASA's Space Shuttle and the International Space Station.

TERRIERS is scheduled for launch from Vandenberg AFB, Calif. at 9 p.m. PST on April 19. Initial data retrieval is expected to occur as the spacecraft passes directly over Boston for the first time during the morning of April 20.

For more information about the TERRIERS mission, visit the Boston University Web site at: <http://net.bu.edu/terriers/>

## Customer Focus Information Available On The Web

Did you know that Goddard has a Customer Credo and there is a place you can go for guidance on becoming a customer-focused organization?

A wealth of information is available on an internal web page to achieve our goal of ensuring that GSFC products and services are both leading edge and attractive to potential customers.

To learn how to enhance Goddard's customer focus, visit the "Customer Focus Section" of Goddard's Changing Workforce Web Page at <http://workforce.gsfc.nasa.gov/a3b.html>

### staff

Executive Editor: James Sahli  
Managing Editor: Susan Hendrix  
Contributing Editor: Nancy Neal  
Senior Photographer: Mark DeBord  
Submission deadline: Friday each week (submissions subject to editing)  
For additional information contact:  
Susan Hendrix 301-286-7745

Subscription Information:  
GSFC & WFF Mailing List  
Offsite/Commercial Subscriptions  
Retiree Subscriptions

Contact:  
Gweny Durrah, Code 239  
Jim Sahli, Code 130  
Bob Wilson 301-422-8334