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- El Nino could return this year to wreak more havoc
- September 11 attacks strengthened US unilateralism and protectionism - Lamy
- Chances increase for El Nino's return this year, warns UN expert
- "Le Petit Prince" returns to space -- for a while
- WWF calls on Russia to ratify Kyoto Protocol this year

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SPACEDAILY EXPRESS

March 13, 2002

TRW Gears Up
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Shenzhou-3 Design
Changes Caused
Lengthy Mission
Delay

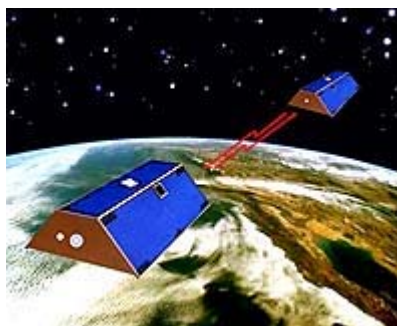
Purdue To Create
Life-Supporting
Ecosystem In Space

US Airways Offers

TERRADAILY

Grace Space Twins Set To Team Up To Track Earth's Water And Gravity

Pasadena - Mar 8, 2002
NASA and the German Space Agency are preparing to launch the Gravity Recovery and Climate Experiment (GRACE), a scientific pathfinder mission that will test a novel approach to tracking how water is transported and stored within the Earth's environment.



The twin GRACE satellites are set to launch March 16, 2002, from Russia on a five-year mission that will revolutionize understanding of changes in the Earth's gravity field over time and space.

The mission will precisely measure the planet's shifting water masses and map their effects on Earth's gravity field, yielding new information on effects of global climate change.

The twin GRACE satellites are set to launch March 16, 2002, from Russia on a five-year mission that will revolutionize understanding of changes in the Earth's gravity field over time and space.

The mission will provide measurements of the gravity field that are far more accurate and sensitive than any that can be obtained by ground-based observations or single remote-sensing spacecraft.

"GRACE marks the first launch of NASA's Earth System Science Pathfinder program, designed to develop new measurement technologies for studying our Earth system," said Dr. Ghassem Asrar, associate administrator for NASA's Earth Science Enterprise, NASA Headquarters, Washington.

"Through NASA's continuing investment in technology development, we've been able to create an innovative mission at a fraction of the cost of missions formulated just a decade ago.

"GRACE will provide us with a new view of our home planet and help us to better understand climate change and its global impacts such as changes in sea level and the availability of water resources," Asrar said.



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DRAGON SPACE

Design Issues Resolved: Shenzhou Awaits Launch

Beijing - Mar 13, 2002



A senior space official revealed Monday that internal design issues with

systems of the Shenzhou-3 (SZ-3) spacecraft were the major cause for the lengthy delay in launching the third test flight of China's future manned spacecraft.

- Shenzhou-3 On The Pad
- Manned Flight In 2003?
- Alpha Spacecom To Launch New China Sat Node By Late 2003

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STATION NEWS

Designing Ecosystems For Space

West Lafayette - Mar 12, 2002



The National Aeronautics

Out Of This World Mileage Program

A more precise gravity map of Earth is expected to increase the accuracy of many techniques used by scientists who study Earth with space-based instruments.

Columbia Lands Successfully After Hubble Mission

These techniques -- ranging from satellite altimetry and radar interferometry to digital terrain models covering large land and ice areas -- provide critical input to many scientific models used in oceanography, hydrology, glaciology, geology and related disciplines.

Support For Critical Role Of Carbon Dioxide On Mars Grows

As they race around the globe 16 times a day, the satellites will sense minute variations in the Earth's surface mass below and corresponding variations in the Earth's gravitational pull.

WWF Calls On Russia To Ratify Kyoto Protocol This Year

Regions of slightly stronger gravity will affect the lead satellite first, pulling it slightly away from the trailing satellite.

Star Wars Like Technology Closer Than Galaxies Far Away

By measuring the constantly changing distance between the two satellites and combining that data with precise positioning measurements from Global Positioning System instruments, scientists will be able to construct a precise Earth gravity map.

Gilat Responds to Filing of Class Action Lawsuits

Criminalizing Embryonic Stem Cell Work Will Threaten US Science

GRACE is the first Earth-monitoring mission in the history of space flight whose key measurement is not derived from electromagnetic waves bounced off the Earth's surface.

CIA Warns Missile Threat Greater Than During Cold War

Instead, the mission will use a microwave ranging system to accurately measure changes in the speed and distance between two identical spacecraft flying in a polar orbit about 220 kilometers (137 miles) apart, 500 kilometers (311 miles) above Earth.

Orbital Express Program Moves Ahead With Phase 2 Award

The ranging system is so sensitive it can detect separation changes as small as 10 microns -- about one-tenth the width of a human hair over a distance of 220 kilometers.

Russian Defense Minister Meets With Bush, Rice, Rumsfeld

An additional instrument aboard the satellites called an atmospheric limb sounder will measure the amount by which the Global Positioning System satellite signals are distorted by Earth's atmosphere.

India Sees New Urgency For Abolition Of Nuclear Weapons

Scientists will use these data to improve the accuracy of key atmospheric observations, which serve as input for weather forecast models.

China Still Fuming Over Taiwan Defence Minister's US Visit

GRACE is a joint partnership between NASA and the German Center for Air and Space Flight (Deutsches Zentrum fur Luft und Raumfahrt, or DLR). The U.S. portion of the project is managed for NASA's Office of Earth Science, Washington, by NASA's Jet Propulsion Laboratory (JPL), Pasadena, Calif.

New Threat Alert System In Place In The United States

Science data processing, distribution, archiving and product verification are managed under a cooperative arrangement between JPL and the University of Texas' Austin-based Center for Space Research in the United States and Germany's Earth Research Center (or GeoForschungsZentrum).

and Space Administration announced today that Purdue University will head a center to develop "advanced life support" technologies for sustaining human colonies on Mars and elsewhere in space.

- Europe Offers Local Firms Money For ISS Research Projects

SPACE TOURISM

Circle The Earth 400 Times And Fly Into Orbit

Arlington - March 11, 2002



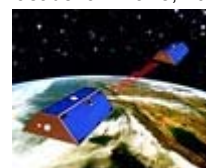
US Airways and Space Adventures have signed a deal where US Airways'

Dividend Miles members will have the once-in-a-lifetime opportunity to earn and redeem frequent flyer miles for travel to the ultimate tourist destination -- outer space. US Airways is the world's first airline to offer mileage accrual for redemption as space travel.

LAUNCH PAD

GRACE Set To Soar Saturday

Pasadena - Mar 8, 2002



NASA and the German Space Agency are ready to launch the Gravity

Recovery and Climate Experiment (GRACE), a pathfinder mission that will test a novel approach to tracking how water is transported and stored within the Earth's environment.

- Atlas 2 Launches NASA Data Bird
- Ariane 5 Launches \$2 Billion ESA EO Satellite
- ViaSat Has The Track On Kodiak Pad

TERRADAILY

- El Nino Awakens
- Superbugs Conquer The Globe

EARTH OBSERVATION

- US Sat Recon Upstages UN-Iraq Talks

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LAUNCH PAD

GRACE Hopes To Make Rocket Launch A Breeze

Plesetsk - Feb 14, 2002

The launch of the NASA / DLR Grace satellites now tentatively scheduled for 15 March 2002 from Plesetsk Cosmodrome, will see Eurockot Launch Services, the joint venture owned by Astrium (51%) and the Russian company Khrunichev (49%), conduct its first commercial mission.



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