

*Explore the Universe in Your Own Backyard*



# LAUNCHFEST

NASA GODDARD SPACE FLIGHT CENTER

**Saturday**  
**September 13, 2008**  
**10:00 a.m.–4:30 p.m.**





# welcome



## Welcome to LaunchFest. We know you'll have a great time exploring the universe in your own backyard!

Your journey through LaunchFest has four parts or "Pods." The pods can be found throughout your tour. Look for the pod icons and discover NASA's Goddard Space Flight Center.

- The Explore Pod looks beyond human spaceflight to the mysterious universe.
- The Tech Pod reveals space exploration in your everyday life.
- The People Pod introduces you to the stellar Goddard community.
- The Green Pod will explain what's happening on our planet Earth.

LaunchFest also has great entertainment, yummy food, and other fun activities. Celebrate NASA's 50th Anniversary and snack on a tasty treat made by Warren Brown, Food Network Celebrity Chef. Grab some popcorn and enjoy a flick at the LaunchFest FilmFest. Enjoy a leisure tour of the Center.

Your LaunchFest experience will begin the moment you park your car and board one of our free, Asteroid Belt Shuttles. Your first exploration stop will be based on your remote parking site. Once you've finished exploring Goddard, return to Building 32 to be transported back to your point of origin.

### Become a Mission Specialist

Kids of all ages can become LaunchFest Mission Specialists. Pick-up a Mission Passport at any "Ask-a-LaunchFest Expert" booth or the "LaunchFest Information" tent on the Mall. The Mission Passport will guide your journey through LaunchFest aboard your elliptical orbiter as you visit and explore each Pod. After completing your mission, visit that Pod's Passport Mission Control to check out with the Commander. Be prepared to tell the Commander the favorite part of your mission while you receive your stamp. Collect at least 4 of the available 6 stamps and visit the passport station at the Visitor Center to get your NASA Back-to-School backpack. Good Luck!

### Ask-A-LaunchFest Expert

Several "Ask-A-LaunchFest Expert" booths are placed throughout the Center to assist you with whatever you may need. Pick up a LaunchFest Program or Mission Passport (for kids), and learn about several of our premier attractions, activities, and events that you won't want to miss!

### Security and Safety

If you need help, notify a volunteer wearing a blue LaunchFest t-shirt. You can also visit LaunchFest Event Headquarters in Tents #34 and #35 on the Mall or call 301-286-8338. First Aid is located on the Mall in Tent #18. The Prince George's County Fire Department will also be available to help throughout the Center.

In the event of an emergency, please dial 911 from any onsite phone. The address is NASA Goddard Space Flight Center, 8800 Greenbelt Road, Greenbelt, Maryland 20771.

### Accessibility

Several accommodations have been made for accessibility concerns. Please stop by LaunchFest Event Headquarters on the Mall (Tents #34 & #35), or ask any volunteer with a blue LaunchFest t-shirt for a list of these services.

### Tell Us About Your LaunchFest Experience

Please give us feedback on this event by e-mailing the Office of Public Affairs at: [Michelle.R.Jones@nasa.gov](mailto:Michelle.R.Jones@nasa.gov)



## Don't miss...

### A Salute to NASA's 50th Anniversary

In 2008, NASA celebrates 50 years of scientific and technological excellence. NASA has powered us into the 21st century through signature accomplishments that are enduring icons of human achievement. Among those accomplishments are technological innovations and scientific discoveries that have improved and shaped our lives on Earth in countless ways. Please join us as we celebrate the past and look forward to a promising new era of inspiration, innovation, and discovery at the Festival of Cakes.



### Journey To Tomorrow Adjacent to Mall

Visit this 53' foot trailer packed with interactive hands-on activities and digital learning stations. Be sure to try the solar system scale where visitors discover how much they weigh on each of the planets.



### Meet an Astronaut 10:45 a.m. Mall

Mission Specialist Paul Richards shares his personal voyage as an astronaut on STS-102 and will be available for autographs after his brief presentation.

### Special Welcome by Goddard's Center Director

11:30 a.m.

#### Mall

Center Director Robert Strain welcomes you to Goddard, home to world-renowned science and technology and over 9,000 employees.



### A Salute to Hubble

10:30 a.m., 11:15 a.m. & 12:00 p.m.

#### Building 8 Auditorium

The Columbia Orchestra will present "Christopher Theofanidis Rainbow Body" with Dr. Mario Livio of the Space Telescope Science Institute at Johns Hopkins University.



### Festival of Cakes

1:00 p.m.

#### Mall

Join members of the Columbia Orchestra and Food Network Celebrity Chef Warren Brown as they celebrate NASA's 50th Anniversary. CakeLove founder and owner, Warren Brown, will showcase an array of delectable sweets, including CakeLove's popular cakes, brownies and cookies. Take part in the cake cutting ceremony that starts at 1:00 p.m. Be on time, as tasty treats are served to the first 5000!



### 2006 Nobel Prize Laureate, Dr. John Mather

2:00 p.m.

#### Building 8 Auditorium

Goddard's own Nobel Prize Laureate, Dr. John Mather, will discuss origins of the universe, his Nobel Prize winning-research, and the James Webb Space Telescope.

### JAXA Space

3:00 p.m.

#### Building 8 Auditorium

See launch footage and lunar images for the Japan Aerospace Exploration Agency's Selene mission and view a spectacular lunar fly-by movie.



## Hungry?

Serving up some delicious local eats, these food vendors offer savory edibles available for purchase. Find a flavor that satisfies your cravings while you enjoy LaunchFest. **Several of our Mall food vendors have decided to join Goddard in the Greening of LaunchFest. Stop by the Somat compost truck on the Mall to find out more!**

### On the Mall

Jay's and Annes Pepper Jack Grill (Greek & Mexican Food)  
Boardwalk Fries (Chicken Tenders & Fries)  
"Weekness" for Sweetness (Caribbean Food)  
Margaret's Soul Food (Soul Food)  
Buddy's Crab's & Ribs (Crab cakes & Pulled Pork/Chicken)  
National Museum of the American Indian (Native American Food)  
Rita's Concessions (Beach Food)  
Armand's Pizza  
Golden Krust (Caribbean)  
A&B Soft Ice Cream  
Go Melvo (Sno Balls)

### At the Spacey-Kid Zone (Recreation Center)

Goddard Recreation Center Catering Services  
(chicken, hot dogs, and burgers)



= photo opportunity



= upcoming mission

Ever look up in the sky at night and wonder what the universe has to offer? Look no further than Goddard Space Flight Center to find out! Learn about the solar system, human exploration, and the cosmos in the Explore Pod. You'll find out what it takes to build, launch, and maintain the spacecraft that have given us exciting discoveries about the universe around us.

## Live Presentations, Demonstrations, and Scheduled Activities

### Cosmic Survey

10:00 a.m. & 1:00 p.m.

#### Buildings 7/10/15

An interactive photographic introduction to scientific classification that gives new insights into our Earth and other objects in the universe and their size and scale.

### Impacts!

11:00 a.m. 1:00 p.m. & 3:00 p.m.

#### Buildings 7/10/15

What caused the craters on the Moon? Find out and explore more about crater formation in this completely interactive crater-modeling experience.

### What's Out There?

11:00 a.m. & 2:00 p.m.

#### Buildings 7/10/15

Use household materials to figure out the composition of familiar objects in the universe and how astronomers discover the elements and compounds that make up objects in space.

### Why Go into Space?

12:00 p.m. & 3:00 p.m.

#### Buildings 7/10/15

"Why Go Into Space?" is an interactive demonstration that answers a common question about NASA's satellites. The demonstration explains different wavelengths of light and why space-based observing is necessary.

## All Day Activities



### Spacecraft Test and Integration Facility

#### Buildings 7/10/15

Before launching a spacecraft, satellites are tested at the Goddard Spacecraft Test and Integration Facility to ensure it can withstand the rigors of space. Live demos are conducted throughout the day. You can see a centrifuge, acoustics chamber, and much, much more!



### Lunar Reconnaissance Orbiter (LRO)

#### Buildings 7/10/15/29

LRO is the first mission in NASA's planned return to the Moon. LRO will launch in 2009 with the objective of finding safe landing sites and locating potential resources. Take advantage of this unique opportunity to see real spaceflight hardware in one of the world's largest clean rooms and participate in several hands-on activities that further expand your knowledge about this upcoming mission.

**Moon Pie**—Take part in this activity where you will work in teams to apply your knowledge about the Moon, its environment, and the LRO Mission.

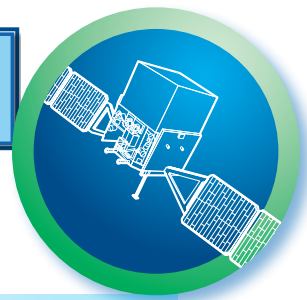
**Build An LRO**—Learn about the instruments carried aboard LRO and how these instruments will help us better understand the Moon and plan for a future lunar outpost.

**Lunar Mapping**—Pictures of the lunar surface with increasing resolution will be displayed along with an example of the 1 m resolution that will be possible with LRO's Narrow Angle Camera. These images will be coupled with lunar geologic maps.

**Moon Rocks**—A 5 kg lunar sample encased in a Lucite pyramid will be on display.

# explore pod

...Explore Further



### Solar Dynamics Observatory (SDO)

#### Building 7

SDO is designed to help us understand the Sun's influence on Earth and near-Earth space by studying the solar atmosphere. Participate in several activities that enlighten you about the Sun's quirky and sometimes stormy output of extreme ultraviolet light.

**Sun Spots**—Use a telescope to observe solar phenomena (weather permitting).

**Make Your Own Cereal Box Diffractor**—Use common everyday materials to construct your own cereal box diffractor and observe diffraction and the spectrum of various items.

**All About Magnetics**—Learn how magnets, electromagnetism, and magnetic fields work and how our Sun and Earth are giant magnets. Learn how NASA plans to predict solar weather by studying the magnetic activity on the Sun.

### Walk on the Sun

#### Building 7

The "Walk on the Sun" Solar TErestrial RElations Observatory (STEREO) Space Mission science exhibit makes possible new ways of understanding data and imagery from this recent space mission. It is designed to increase accessibility and provide new ways to explore the millions of images and other data recorded by the two spacecraft as they study the Sun, coronal mass ejections, and solar winds.

### STEREO 3D Movie

#### Building 7

NASA's STEREO satellites have given the world 3D views of the Sun for the first time. The two observatories are not large, about the size of a golf cart! They were launched on October 25, 2006. During the two-year mission, the STEREO Program will explore the origin, evolution, and interplanetary consequences of some of the most violent explosions in our solar system. Come view this 3-D movie to learn more!

### Maryland Science Center Star Lab

#### Buildings 7/10/15

Check out an inflatable, portable planetarium!

### Wallops Flight Facility Exhibit

#### Buildings 7/10/15

There's more to Goddard than just the Greenbelt site. Goddard Space Flight Center's Wallops Flight Facility is an important piece of Goddard and is located on Virginia's eastern shore and prides itself on being NASA's only-owned launch range.



### James Webb Space Telescope (JWST)

#### Buildings 7/10/15

Scientists/engineers speak about JWST's science objectives: to examine every phase of our history, from the Big Bang to the formation of the solar system. Also highlighted will be the engineering marvels of JWST, including its deployment.

### Spaceflight America (Volanz Aerospace Inc.)

#### Bldg. 29

Learn about the 2008-2009 Astronaut Glove Challenge and find out how you can enter!

**NOTE: explore pods are continued on page 12.**







# people pod

...More Than Rocket Science

*NASA is more than shuttles and satellites. NASA's greatest asset is the people that support every mission – from rocket scientists to human resource managers to legal counsel. The People Pod focuses on the human element of NASA's space exploration and study, and introduces you to the people that make up Goddard.*

## Live Presentations, Demonstrations, and Scheduled Activities

### Goddard Science Café

#### Building 1 Cafeteria

These NASA scientists, engineers, and researchers share their exciting work.



#### Dr. Paul Mahaffy

10:30 a.m.

Learn how SAM (Sample Analysis at Mars) will investigate the surface of Mars.

#### Dr. Dave Thompson

11:30 a.m.

Find out how Goddard designed and launched a new, powerful tool to explore the most extreme environments in the universe.

#### Cathy Peddie

12:30 p.m.

Do you own a GPS? So do we! NASA is developing our own mapping system to go back to the Moon with LRO.

#### Dr. Neil Gehrels

2:30 p.m.

Dr. Gehrels discusses how one of Goddard's missions carries three instruments to enable the most detailed observation yet of gamma ray bursts.

### More than Rocket Science

#### Building 1 Cafeteria

Rethink the NASA stereotype. Goddard scientists, engineers and other employees do more than just complex calculations.

#### Terri Randall

11:00 a.m.

Customer Service Manager, Terri Randall discusses what it takes to provide top-notch customer service to a world-class science organization.

#### Leigh Janes

12:00 p.m.

NASA Aerospace Engineer, Leigh Janes will talk about her journey at Goddard from a Gen Y perspective.

#### Mark Branch

1:00 p.m.

NASA Aerospace Engineer, Mark Branch by day, and DJ Scientific by night discusses what it takes to juggle two careers.

#### Kelly Farrell

2:00 p.m.

Legislative Affairs Liaison, Kelly Farrell discusses how she keeps an eye on Congress.

#### Noble Jones

3:30 p.m.

NASA Engineer and professional Arena football player, Noble Jones will let us in on his secret of how he tackles challenges on and off the football field.

### Generation Y Meet and Greet

11:00 a.m. and 3:00 p.m.

#### Building 1, Room E100B

Enjoy a conversation with some of Goddard's influential young employees who contribute to the Center's success. These men and women just like you work in all areas of Goddard—from Public Affairs to Flight Dynamics. This is NOT a lecture. This is NOT a presentation. Discover how they got to Goddard and maybe learn something about yourself.

### Mind Your Manners

1:15 p.m.

#### Building 1, Room E100B

Shawn E. Gilleylen, Chief Etiquette Officer and creator of Success with Etiquette, presents to a highly interactive, educational, and entertaining session with fun role-playing exercises that help children develop their social skills and character while building self-esteem, confidence, and leadership skills.

### Polish Your Professional Presence

2:00 p.m.

#### Building 1, Room E100B

Shawn E. Gilleylen, Chief Etiquette Officer and creator of Success with Etiquette teaches you valuable strategies to reveal the principles of proper etiquette and how dress, body language, communication, and social skills can enhance or undermine your chance to obtain your dream job.

## All Day Activities

### So You Want to Work at GSFC? Career Showcase

#### Building 1, Room E100

Participants will gain a better understanding of the Federal application process and the careers at the Goddard.



### Picture Yourself Working at NASA

#### Building 1, Room E100

Get your picture taken and embedded electronically in a space suit, on the Moon, or other NASA related images.

### Health & Wellness in Our Community

#### Building 1, Room E100

Dr. Randy Hallman and his staff from Yahlic Clinic will be on hand to discuss several health and wellness related topics, including general nutrition, workstation/computer ergonomics and everyday activities done without pain.

### Free Massage!

#### Building 1, Room E100

Have an achy back? Stop by and get a seated massage by a staff member of the Yahlic Clinic.

### Success With Etiquette

#### Building 1, Room E100

Visit the Etiquette Expert, Shawn Gilleylen, Chief Etiquette Officer and creator of *Success with Etiquette* and get tips on how to improve your chances of getting the NASA job of your dreams.

### Greenbelt Library

#### Building 1, Room E100

Get "book-smart" with the Greenbelt Library as they present "Library Jeopardy," targeting all ages. Pens, pencils, card cases, toy gliders and children novelty rings will be given as prizes.

# LAUNCHFEST

NASA- What have we done for you lately?—Every day, in a variety of ways, American lives are touched by space technology. Since 1976, about 1,400 documented NASA inventions have benefited U.S. industry, improved the quality of life and created jobs for Americans. Come to the Tech pod and learn about NASA in your life!



## Live Presentations, Demonstrations, and Scheduled Activities

### Dr. Thorsten Markus

10:30 a.m. & 12:30 p.m.

#### Building 28, S121

Dr. Markus discusses his study of Earth's polar regions: the science, the adventure and the beauty!

### Beebots in Space (Ages 4–7)

11:00 a.m. & 1:00 p.m.

#### Building 28, Room N270

Beebot buzzes into town to teach us about robots and programming. Students will give Beebot commands and explore a newly discovered planet. Presented by The Greenbelt Recreation Department along with Computer Explorers.

### Everyday Engineering (Ages 8–11)

12:00 p.m. & 2:00 p.m.

#### Building 28, Room N270

Beyond math and science, engineering brings an understanding of how the world works. Through this fun, hands-on project, kids gain the confidence and know-how to tackle all kinds of everyday engineering. Presented by the Howard County Library.

### Are You Smarter than a Rocket Scientist?

3:00 p.m.

#### Building 28, Room E210

This game show-style event pits audience members against our rocket scientists in a test of trivia and observation. Prizes will be awarded to winners!

## All Day Activities

### Y Space?

#### Building 28 Atrium

Y Space answers the question, "Why Space?" Visitors also learn answers to the questions, "What do I get out of space exploration?" and "Is it worth the risk and cost?" Explore NASA City, an interactive exhibition of spin-offs in their everyday lives. Learn about many of the discoveries made in recent decades through the space program and about the return on the investment made in space exploration.

### Touch the Earth

#### Building 28 Atrium

While your fingers walk the globe, learn about topography and oceanography. You will be amazed by the beautiful and educational imagery as you travel the globe.



### Picture Yourself in Space

#### Building 28 Atrium

Get your picture taken and embedded electronically in a space suit, on the Moon, or other NASA related images.

### Innovative Partnerships Program (IPP)

#### Building 28 Atrium

Representatives from IPP are on hand providing information about recent success stories relating to how the technology developed at the NASA Goddard Space Flight Center is benefiting your everyday life and to give away items.

### Robotics Demonstrations

#### Building 28 Atrium

GREAT (Goddard Robotics for Exploration and Avionics Testing) is a robotic vehicle operated by remote control to simulate what is planned for the Moon and Mars. Come see the robot in action!

### Scientific Visualization Studio

#### Building 28, Room S121

Step into a virtual world where satellite data is matched with world-class animators to create science conceptual visualizations based on reality, but showcasing virtual reality.

### Flight Dynamics Facility

#### Building 28, Room N222

With over thirty years of experience, the Flight Dynamics Facility has an impressive record of achievement and success in the support of scores of NASA space missions of every kind. Today, a professional staff of analysts tends to a wide variety of missions. Learn how these analysts keep it all together and take part in several other activities:

**Getting to the Moon without Mapquest**—Learn how we map a trip to the Moon.

**Where in Space is My Spacecraft?**—Find out how we track spacecraft in space.

**Getting Connected with Your Spacecraft**—Discover how we always have our eyes on the spacecraft.

**3-D Visualization for Advance Mission Planning**—Take a close look at the 3-D system that designs pathways through space.

### Space Operations Learning Center (SOLC)

The SOLC is a great place for students to learn about space through informative videos and challenging interactive simulations.

### Goddard TV Operations Control Room

#### Building 28, Room 212

The Goddard TV Operations Control Room monitors the presence and quality of the multi-channel digital TV video/audio programming, which originates at the various NASA centers and is then transmitted throughout the United States to all NASA facilities, schools, cable companies, and the news media. The control room is also used to record and monitor video, audio, and data related to all shuttle missions as well as various unmanned launches.

### Become a Moon Base One Explorer

#### Building 28 Atrium

Learn the principles of establishing a permanent presence on the Moon. Presented by Federation of Galaxy Explorers.





*Fires in California, Chesapeake Bay recovery efforts, drought in the Southwest, polar bears in trouble, ice sheets melting*

*Come and see how Goddard is keeping an eye on your Mother (Earth, that is), and helping to take care of her with our innovative Green technologies and buildings. Learn about how satellites are constantly monitoring the health of the Earth's atmosphere, oceans, land, and life.*

## Live Presentations, Demonstrations, and Scheduled Activities

### Stormin' Bob Swanson, The Singing Weatherman

#### Building 32

He's not just a weatherman – he's a one-man band! What do you get when you cross music with meteorology? Stormin' Bob Swanson, the Singing Weatherman. Stormin' Bob's "Music and Meteorology" program will tap into kids' natural fascination with the weather.

#### Get a Measure on the Weather

11:00 a.m., 12:00 p.m., 1:00 p.m.

#### Building 32, Room E103

Demonstrations of professional weather instruments (anemometer, thermometer, wind vane, rain gauge), including a real weather balloon and radiosonde instrument package. Stormin' Bob Swanson demonstrates high and low pressure and its importance to meteorologists.

#### Cooking up a Storm

3:00 p.m. – 4:00 p.m.,

#### Building 33, Room E103

Stormin' Bob Swanson juggles his way through the water cycle, explaining how the energy released during condensation helps to fuel thunderstorms. Also included are tornado demonstrations. Don't miss the hits, "Head in the Clouds" and "The Weather Safety Polka."

### Earth Science Multi-Media Presentations

#### Building 33, Room H114

#### Live Presentations:

Presenter: **Holli Riebeek**

NASA's Earth Observatory: Take a tour of NASA's Earth Observatory to enjoy current views of Earth from space and to learn about emerging research on Earth and its climate.

Presenter: **Steve Graham**

Earth Science E-Theatre: NASA's Earth Science E-Theatre is a dynamic theater-style presentation of high-definition Earth observations on global climate change.

Presenter: **Holli Riebeek**

Citizen Science: A citizen scientist's introduction to NASA Earth observations. Become a citizen scientist by exploring the same space-based satellite data that scientists use to study Earth and its climate.

Presenter: **Rob Simmon**

Perspectives of Earth from Space: See how the view from space provides a new perspective on our home planet.

Presenter: **Dr. Claire Parkinson**

The Earth's Changing Ice Cover: Listen to a NASA polar scientist describe recent changes in the Earth's sea ice and ice sheets as revealed through satellite observations.

### DVDs to be shown:

**A Tour of the Cryosphere:** A ten-minute movie about glaciers, ice caps, and sea ice, and how global warming is changing Earth's frozen assets.

**Multi-Sensor Fire Observations:** A ten-minute movie about how NASA is fighting fires from space.

### Schedule:

10:15	NASA's Earth Observatory
10:30	Earth Science E-theater
11:10	A Tour of the Cryosphere
11:20	Multi-Sensor Fire Observations
11:30	Citizen Science
12:00	Earth Science E-theater
12:40	Perspectives of Earth from Space
1:00	NASA's Earth Observatory
1:15	Multi-Sensor Fire Observations
1:25	A Tour of the Cryosphere
1:30	Perspectives of Earth from Space
1:45	Multi-Sensor Fire Observations
2:15	The Earth's Changing Ice Cover
2:40	Citizen Science
3:10	A Tour of the Cryosphere
3:20	Earth Observatory
3:40	Multi-Sensor Fire Observations

## All Day Activities

### EOS Mission Control Center

#### Building 32

See where and how NASA Goddard Space Flight Center controls several Earth-observing satellites.

### Earth Science Spacecraft Models

#### Building 32

MODIS

Vesper

Aura

Aqua

### National Oceanic and Atmospheric Administration (NOAA)

#### Building 32

Meet our partners from NOAA. From daily weather forecasts, severe storm warnings, and climate monitoring to fisheries management, coastal restoration, and supporting marine commerce, NOAA's products and services support economic vitality. NOAA's scientists use cutting-edge research and high-tech instrumentation to provide citizens, planners, emergency managers, and other decision makers with reliable information when they need it. Learn how NASA and NOAA partner on several projects and take part in a variety of interactive activities, including:

- Scijinks
- Space Place
- Weather Jeopardy—interactive game

LAUNCHFEST



- Experts/videos for GOES Mission
- Experts and videos from several missions, including GOES, POES, and NOAA-N Prime
- Search and rescue emergency beacons
- Demo of the NOAA weather radio
- Jet Stream meteorology and Xtreme weather—interactive CD
- GOES and POES benefits to all
- NOAA/NESDIS Magic Planet and ocean climate interaction



## Crevasse Tracking

### Building 33

This activity will enable visitors to track crevasses and snow mounds over a 6-year period through LIMA images.

## Ice, Cloud, and land Elevation Satellite (ICESat)

### Building 33

Are the ice sheets that still blanket Earth's poles growing or shrinking? Will global sea levels rise or fall? NASA's ICESat satellite is helping to answer these and other questions, to help fulfill NASA's mission to understand and protect our home planet.

## Aura

### Building 33

Aura (Latin for breeze) was launched in 2004 and answers questions about changes in our life-sustaining atmosphere. See a scale-model of this spacecraft and take part in a hands-on activity that includes UV beads and Frisbees!

**UV Radiation and the Ozone Hole**—This activity will feature special materials (beads, Frisbees) that are sensitive to ultraviolet (UV) radiation. Participants will be given the opportunity to observe the changes in the beads and Frisbees to see how they react when exposed to UV.

**NO<sub>2</sub> & Air Quality**—Visitors will examine data in several formats in order to determine the presence or absence of seasonal variability in tropospheric nitrogen dioxide (NO<sub>2</sub>) concentrations.

## Aqua

### Building 33

Launched on May 4, 2002, the Aqua satellite has six different Earth-observing instruments and is named for the large amount of information being obtained about water on Earth. The water variables being studied include almost all elements of the water cycle: water in its liquid, solid, and vapor forms. Additional variables being measured include radiative energy fluxes, aerosols, vegetation cover on the land, phytoplankton, and dissolved organic matter in the oceans, and air, land, and water temperatures. Come to the Aqua display to learn more.

## Landsat

### Building 33

"It's like having superhuman vision!" That's how some people describe the unique view of Earth that Landsat provides. Come and see how scientists use these remote sensing images to better understand how and why Earth is constantly changing.

**Find The Difference?**—In this activity, participants will draw from a suite of poster-sized images of Earth from space. Participants will be given an opportunity to pair them up and will be challenged to identify at least 5 differences between the two.

**Spectroscopy and Light**—Visitors will be able to experiment with an Alta II hand-held spectrometer to investigate how different pigments reflect light. The Alta II handheld spectrometer has several different bands of reflectivity, and when plotted on a graph, can produce a spectral response. This activity will be used to demonstrate to visitors how spacecraft puts together an "image" of the Earth using spectral responses. In addition to using the Alta II spectrometer, visitors will be able to use crayons and different colored lights to experiment with how pigments and colors of light combine, and how that affects what spacecraft see.

**Explore A Pixel**—Visitors will be taken to a plot of congruent land and will be asked to 'classify' the land (grass cover and pavement).

**Land Ice vs. Sea Ice**—Much of the world's ice can be divided into two major categories: floating ice (icebergs, sea ice) and land ice (glaciers, ice sheets). Both types of ice are at risk of shrinking if temperatures continue to increase, yet each affects global sea level in different ways. This demonstration is a day-long activity that focuses on the importance of scientific measurements taken at the polar regions.



## Glory

### Building 33

The Glory Mission will help increase our understanding of Earth's energy balance. Meet representatives from the project and learn more about this upcoming mission.



## NPP

### Building 32

Come see how this upcoming mission will collect and distribute land, ocean, and atmospheric data to the meteorological and global climate change communities.

## SMAP

### Building 33

Learn how we will all benefit from having a mission that focuses on soil moisture.

## Making Images from Space

### Building 33

This exhibit demonstrates how NASA scientists turn satellite data into images. In this activity, the Aqua Satellite has gathered data for you to process. Put your scientist hat on and turn data into an image of the Himalaya Mountains.

## Magic Planet

### Building 33

Explore NASA science through the lens of Magic Planet. This interactive, digital globe allows users to view and explore dynamic images of Earth, other planets, and space.



## Baltimore/Washington Partners for Forest Stewardship

### Building 33

Meet representatives from this preservation organization who help us protect some of Maryland's most precious forestlands.

## Goddard's "Greening" Effort

### Building 33

Meet Goddard representatives and learn about the many environmentally-focused activities that are going on at the Center, including our new green building and our landfill gas project.



# LAUNCHFEST

## SPACEY-KID ZONE

**(Recreation Center—Sponsored by the NASA Federal Credit Union)**

Moonbounces & More!  
 Spacey Crafts with Girl Scouts (Troop #472)  
 Spacey Story Time & Crafts with the Howard County Library  
 NASA Federal Credit Union  
 Air Brush Tattoos  
 Balloon Artist  
 World Wide Sports Games

## VISITOR CENTER

Radio Station 105.9—True Oldies  
 Science on a Sphere  
 Model Rocket Launches  
 Ozone Garden  
 Mock-up Space Shuttle EVA Spacesuit—Photo Op.  
 Send Your Name to Space & More  
 Robots on the Road  
 Goddard Clubs  
 ExoPlanet Lab  
 DLN

## BLDG. 33—TOUR STOP

**(Green Pod)  
 Pod Content**

Crevasse Tracking  
 Magic Planet  
 Baltimore/Washington Partners for Forest Stewardship  
 Goddard's Greening Efforts  
 Spectroscopy and Light  
 Making Images from Space  
 Find the Difference  
 Explore a Pixel  
 Land Ice vs. Sea Ice  
 NO<sub>2</sub> & Air Quality  
 UV Radiation & the Ozone Hole

Earth Science Multi-Media Presentations  
 SAM Animations  
 The following missions will be represented in a variety of ways, including exhibits, activities, and demonstrations:  
 Aura  
 Aqua  
 Landsat  
 ICESat  
 Glory  
 NPP (in Bldg 32)  
 SMAP

## BLDG. 32—TOUR STOP

**(Green Pod)  
 Pod Content**

NOAA-related Activities and Exhibits  
 Scijinks  
 Space Place  
 Weather Jeopardy  
 Exhibits, Experts, and Video Footage (GOES, POES, NOAA-N Prime, and more!)  
 Search and Rescue Beacons  
 Jet Stream Meteorology and Xtreme Weather

NOAA/NESDIS Magic Planet and Ocean Climate Interaction  
 Demonstrations with Stormin' Bob Swanson, Singing Weatherman  
 "Get a Measure on the Weather"  
 "Cooking Up a Storm"  
 NOAA Weather Radio—All Hazards  
 EOS Mission Control Center  
 Earth Science Spacecraft Models

## BLDG. 28—TOUR STOP

**(Technology Pod)  
 Pod Content**

Innovative Partnerships Program  
 Touch the Earth  
 "Picture Yourself in Space" Photo Booth  
 Beebots in Space (ages 4–7)  
 Everyday Engineering (ages 8–11)  
 NASA City  
 Discovery Decade  
 Are You Smarter Than a Rocket Scientist?

Robotic Demonstrations  
 Y Space?  
 Discovery Decade  
 NASA City  
 Federation of Galaxy Explorers  
 Scientific Visualization Studio  
 Flight Dynamics Facility  
 Space Operations Learning Center (SOLC)  
 Goddard TV Operations Control Room

## OTHER LAUNCHFEST ACTIVITIES

Special Welcome by GSFC's Center Director, Robert Strain  
 Festival of Cakes: A Salute to NASA's 50th Anniversary  
 Mission Passport & Back-to-School Backpack

In the event of an emergency, please dial **911** from ANY onsite phone. The address is **NASA Goddard Space Flight Center, 8800 Greenbelt Road, Greenbelt, Maryland 20771.**

**BLDG. 1****(People Pod)**

Business Presentations by the Etiquette Expert  
 GSFC Science Café  
 Gen Y Meet and Greet  
 "Picture Yourself Working in Space" Photo Booth  
 Health & Wellness and Free Massages by the Yahlic Clinic  
 Greenbelt Library  
 More Than Rocket Science  
 Career Showcase

**BLDG. 8 AUDITORIUM**

Columbia Orchestra presents "Theofanidis' Rainbow Body: A Salute to Hubble"  
 Presentation by GSFC Nobel Prize Winning Scientist Dr. John Mather  
 JAXA Lunar Fly-by

**BLDG. 3 AUDITORIUM**

LaunchFest FilmFest (Auditorium)  
 Control & Operations Centers  
 Hubble Space Telescope Model

**BUS ROUTE****1 BUILDINGS OPEN FOR TOURING****ATM****RESTROOMS LOCATED IN EACH BUILDING****THE MALL****Exhibits**

First Aid  
 Security  
 Event Headquarters  
 Ask a LaunchFest Expert  
 Meet & Greet an Astronaut  
 Area High School Science Fair Winners  
 Capital Segway  
 JAXA Space  
 FIRST Robotics Demonstration  
 National Federation of the Blind  
 NASA Goddard Merchandise Tent  
 Howard B. Owens Science Center  
 Patuxent Research Refuge  
 Gorgeous Prince George's  
 Hybrid Technologies  
 US Naval Academy  
 LaunchFest Sponsors' Booths:  
 Honeywell  
 SGT  
 Parsons Corporation  
 Goddard Clubs  
 University of Maryland Squonk Opera  
 Journey to Tomorrow  
 Maryland National Guard Xbox Gaming  
 Festival of Cakes presented by Warren Brown of CakeLove  
 Space Shuttle Preparations for STS-125

**Children's Activities**

Moonbounces & More!  
 Balloon Sculpting  
 Face Painting  
 Caricatures by Dana

**Craft Fair Vendors**

Beaded Lanyards & Jewelry  
 Jewelry, Pottery & Photography  
 Midnight Daydreams  
 Sterling Silver and Freshwater Pearl Jewelry  
 Craf-T-Friends

**Entertainment**

LaunchFest Scavenger Hunt  
 Goddard's Own, DJ Scientific  
 Gonzo's Nose  
 K-9 Unit Demonstration  
 Dance Club Demonstration  
 MAD Productions  
 Don Chapman Group  
 Stormin' Bob Swanson, Singing Weatherman  
 Goddard's Own, Jolyn Nace

**Food Vendors**

(see list on page 2)

**BLDG. 5—TOUR STOP**

Spacecraft Fabrication Facility Machine Shop

**BLDGS. 7/10/15/29—TOUR STOP****(Explore Pod)****Pod Content**

Cosmic Survey  
 What's Out There?  
 Why Go In Space?  
 Impacts!  
 Wallops Flight Facility Exhibit  
 Topographic Features  
 Walk on the Sun Exhibit  
 The 3-D Sun  
 Become a Moon Base One Explorer/Federation of Galaxy Explorers  
 Maryland Science Center's Star Lab  
 ILC Dover  
 Putting E=mc<sup>2</sup> to Work  
 Moon Rocks  
 Lunar Mapping

HST PCU Trainer  
 SpaceFlight America (Volanz Aerospace)  
 The following missions will be represented in a variety of ways including exhibits, activities, and demonstrations:  
 LRO  
 STEREO  
 SDO  
 IBEX  
 New Horizons  
 Cassini/CIRS  
 JWST  
 GLAST  
 MSL/SAM  
 STEREO

HST  
 TacSat  
 MESSENGER  
 Clean Rooms  
 Spacecraft Test and Integration Facility  
 Centrifuge Chambers  
 Topographic Features (located in Bldg 33)  
 MSL Sam (located in Bldg 33)

**TRANSPORTATION**

Two shuttle bus routes have been established to efficiently move you around the Center.

**Asteroid Belt Shuttles** will transport you to and from the remote parking locations. Please catch these shuttles at Building 32.

**Elliptical Orbiters** are guiding you around the Center on tours. Please catch these buses at designated tour stops throughout the Center.

Shuttles will run at approximately 10-minute intervals throughout the day.





# entertainment

*Local musicians, choral groups, dancers, entertainers, and more are scheduled to perform during LaunchFest. Some of the groups feature employees, while others come from the Baltimore/Washington communities. These entertainers will be on the Main Stage on the Mall at various times throughout the day. All acts are located on the Mall unless otherwise noted.*

## **DJ Scientific All Day**

NASA Aerospace Engineer by day, Mark Branch becomes his renowned alter ego, DJ Scientific for LaunchFest. Join DJ Scientific on the Main Stage as he trades in his spectrum analyzers and oscilloscopes for a microphone, turntable, and mixer. DJ Scientific cranks hip hop tunes and drops LaunchFest nuggets throughout the day.

## **Washington's Premier Party Band All Day**

10:00 a.m.–1:10 p.m.  
Gonzo's Nose is the most popular party band in the D.C. area! Come hear popular hits from the last three decades!

## **K-9 Unit Demonstration**

11:20 a.m.  
Meet SecTek Security Sergeant Glayde Goodenough and his partner Eba! Learn the types of jobs this special dog executes for the Goddard Space Flight Center.

## **Dance Club Demonstration**

12:10 p.m.  
Come see the grace, elegance, and choreography in this ballroom dance demonstration by the Goddard Space Flight Center Dance Club.

## **Jolyn Nace**

12:25 p.m.  
Goddard employee Jolyn Nace sings big band and jazz hits.

## **Don Chapman Group**

1:15 p.m.  
The Don Chapman Group is one of the area's premiere vocal acts. They deliver rich and dynamic harmonies, percussion-driven arrangements, and medleys featuring the lead vocals and guitar work of Don Chapman.

## **Stormin' Bob Swanson, The Singing Weatherman**

2:00 p.m.  
See a unique performance that will inspire children and adults to explore weather in an exciting new way.

## **MAD Productions (the Music and Drama Club of NASA/GSFC)**

2:35 p.m.  
MAD will be presenting the musical, "Joseph and the Amazing Technicolor Dreamcoat" in dinner theater format at the Goddard Space Flight Center Barney and Bea Recreation Center from October 24 – November 22. Some of the cast members will be presenting several numbers from the show as a preview.

## **Space Shuttle Preparations for STS-125**

3:00 p.m.  
On the Mall  
Goddard educators discuss the Space Shuttle preparations for mission STS-125, the return to the Hubble Space Telescope for Servicing Mission 4.



# LAUNCHFEST



All exhibits are located on the Mall unless otherwise noted.

## First Robotics Demonstrations

### Adjacent to Mall

Experience what it is like to participate in a FIRST Robotics Competition. High school students are on-hand to guide you through this interesting and rewarding unique varsity sport of the mind.

## Hybrid Technologies

### Adjacent to Mall

Tired of high gas prices? Lithium Electric transportation is 100% green, has no emissions, and provides 120 miles per charge at only \$2.20 per charge. On hand are Lithium Electric vehicles, including a custom chopper.

## LaunchFest “Greening” Effort

Visit one of our marked waste stations to properly sort your waste into the compostable and recyclable bins. While you are there, be sure to thank our volunteers for doing their part to save our planet!

## LaunchFest Scavenger Hunt

The scavenger hunt challenges teams to explore LaunchFest and discover answers to questions, find items and experience Goddard. Prizes will be awarded. Scavenger hunts start near Bldg. 1 on the Mall at specified times. Must work as a team of 2–4 people.

## Maryland National Capitol Park & Planning Mounted Police Unit

Be sure to say hello to one of the Maryland National Capitol Park and Planning mounted policemen and their specially-trained horses as they make their way around LaunchFest.

## Maryland National Guard

Get your game on with the Maryland National Guard's Xbox 360 Gaming Trailer. Check out their rock climbing wall for teenagers and adults.

## Moonbounces & More!

Fantasy World entertainment provides a variety of attractions for the young and young at heart!

## Segway of Annapolis

### Adjacent to Mall

This is your chance to experience the fun of a Segway. Visit Segway of Annapolis and take a transporter for a test ride!

## Mall Tents

### About Faces Entertainment – Tent #14

Balloon sculptors and face painters are here to inspire kids of all ages to bring their imagination to life.

### Area High School Science Fair Winners – Tent #4

Students from St. Mary's and Charles counties display their winning science fair experiments.

### Beaded Lanyards & Jewelry – Tent #36

Beaded lanyards are unique, hand-crafted pieces of jewelry that make a statement.

### Caricatures by Dana – Tent #16

With a distinguishing pen stroke and a knack for capturing an individual's inner vitality, Dana Verkouteren is sure to flatter and delight with her black and white caricatures.



### Closing the Recycling Loop with Organics – Tent #13

Visit the USDA – Agricultural Research Service as they demonstrate biodegradable food service ware in various stages of decomposition. See the natural processes at work and recycling loop closed organically. Hear about the on-going research in destroying pathogens in organic waste materials in order to use compostable materials safely.

### Craf-T-Friends – Tent #37

Craf-T-Friends has a variety of crafts and jewelry.

### Goddard Cuong Nhu Karate Club – Tent #15

Cuong Nhu is a martial art that blends the basic elements of a number of different styles. Come see the Goddard Space Flight Center Cuong Karate Club as they demonstrate this unique style of self defense. The demonstrations will also include board breaking.

### Goddard Dance Club – Tent #7

Ready to take your dancing to the next level? Visit the Goddard Space Flight Center Dance Club's booth for mini, on-site lessons that includes Latin and Ballroom dancing.

### Goddard Flying Club – Tent #9

See videos and photos of the Goddard Space Flight Center's Flying Club plane.

### Gorgeous Prince George's! – Tent #12

Meet with representatives from Prince George's County Recycling Division. Learn practices of eliminating waste before it is created and learn how you can keep Prince George's County gorgeous!

### Howard B. Owens Science Center – Tent #3

Goddard's neighbor, the Howard B. Owens Science Center, stops by to showcase their hands-on approach to science education and enrichment.

### JAXA Space – Tent #1

Meet with one of NASA's international partners, and learn about the Japan Aerospace Exploration Agency's recent achievements and future plans.

### Jewelry, Pottery, & Photography – Tent #41

Enhance your home and presence with unique, handcrafted jewelry, pottery and photography.

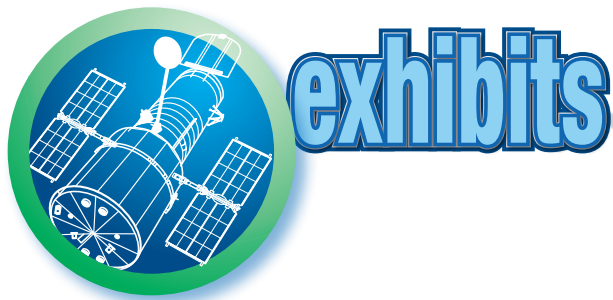
### Midnight Daydreams – Tent #38

Midnight Daydreams carries a variety of polymer clay items, including figurines, sculptures, pictures frames, and jewelry.

### NASA Goddard Merchandise Tent – Tent #40

The Goddard Employee Welfare Association (GEWA) will sell mission memorabilia as well as general NASA merchandise.





**National Federation of the Blind – Tent #2**

The National Federation of the Blind Jernigan Institute features information and displays highlighting technologies used by the blind along with achievements that have been made in science and engineering by blind individuals. Also featured is their latest book, "Touch the Invisible Sky," which features tactile Hubble Space Telescope images.

**Patuxent Research Refuge – Tent #6**

Learn about the National Wildlife Visitor Center and handle items such as pelts and mounts for tactile exploration.

**Solar Views – Tent #10**

Take an intimate look at the Sun. Forget your shades...look through a solar filter and learn more about the different aspects of the Sun. Presented by the Goddard Astronomy Club.

**Sterling Silver & Freshwater Pearl Jewelry – Tent #39**

Here's your opportunity to add a unique, hand-crafted accent to your look with sterling silver and freshwater pearl jewelry.

**University of Maryland – Tent #5**

The Clarice Smith Performing Arts Center at the University of Maryland will preview and promote their upcoming Squonk Opera.

**US Naval Academy – Tent #21**

See and hear the US Naval Academy Amateur Radio Club demonstrate solar power and amateur satellite operations.

**Meet some of our LaunchFest Sponsors**

**Honeywell – Tent #43**

**SGT – Tent #42**

**Parsons Corporation – Tent #45**

**LAUNCHFEST**



**Putting E=mc<sup>2</sup> to Work**  
**Buildings 7/10/15**

The Gamma-ray Large Area Space Telescope (GLAST) is a space-based gamma-ray observatory that studies black holes, galaxies, and gamma-rays. Visit this booth to see how it's all being done!



**Interstellar Boundary Explorer (IBEX)**  
**Buildings 7/10/15**

IBEX is an upcoming mission that images global interactions at the outer reaches of the solar system. During its science investigation, IBEX will use a pair of energetic neutral atom "cameras" to image the interactions between the million mile-per-hour solar wind continually blown out by the Sun and the low-density material between the stars, known as the interstellar medium. Visit the IBEX display to learn more.

**New Horizons**  
**Buildings 7/10/15**

New Horizons studies worlds at the edge of our solar system. The first voyage to a whole new class of planets in the farthest zone of the solar system, New Horizons is a historic mission of exploration. To learn more, come to the New Horizons exhibit.

**Cassini**  
**Buildings 7/10/15**

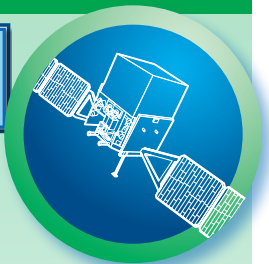
Cassini's observations of Saturn's largest moon, Titan, have given scientists a glimpse of what Earth might have been like before life existed. They now believe Titan possesses many parallels to Earth, including lakes, rivers, channels, dunes, rain, snow, clouds, mountains, and possibly volcanoes. Come to this exhibit to learn more about what Earth might have been like before life existed.

**MESSENGER Magnetometer (MAG) and X-Ray Spectrometer (XRS) Displays**  
**Buildings 7/10/15**

Visitors will view animations created by one of the members of the MESSENGER Magnetometer instrument team.

**explore pod**

continued from page 3



**Hubble Gallery**  
**Building 29**

Check out one of the world's largest clean rooms and don a spacesuit to try your hand at some astronaut maneuvers. Also see Hubble hardware from previous servicing missions.



**ILC Dover**  
**Building 29**

Talk with representatives from ILC Dover and watch video footage of astronauts at work in space. Here's your chance to don an astronaut space suit and gloves.

**Topographic Features**  
**Building 33**

Use digital elevation maps to recognize features on the surface of Mars. These maps came from the Mars Orbiter Laser Altimeter (MOLA) instrument aboard the Mars Reconnaissance Orbiter.



**SAM Lab Tour Stop/Animations**  
**Building 33**

The Sample Analysis at Mars (SAM) Instrument Suite will fly onboard the Mars Science Laboratory (MSL) in 2009. Come see a full scale model and learn how SAM's five science goals will address three of the most fundamental questions about the ability of Mars to support life. After viewing the full-scale model, visit Rm. H114 to see SAM animations.

**Spacecraft Fabrication Facility Machine Shop**  
**Building 5**

See the Spacecraft Fabrication Facility Machine Shop up close and personal where satellite parts are constructed and crafted. This high-tech shop features the latest computer-controlled milling equipment.



Goddard's Visitor Center provides several opportunities for fun and mind-expanding activities for all ages. Listen to entertaining music and capture a memory or two. Take a break as you stroll around the Rocket Garden and learn more about Goddard's mission and accomplishments.

## Educational Activities

### Visitor Center

Members of the Goddard Education Office will host a variety of hands-on activities throughout the day, including:

### Rocket Launches

10:30 a.m., 11:30 a.m., 12:30 p.m.

#### Visitor Center

Craft your very best design and launch a rocket using a variety of media, including drinking straws, bottles, and air.

- 10:30 a.m. Straw Rocketry
- 11:30 a.m. Pop Rockets
- 12:30 p.m. Compressed Air Rockets

### UV Beads

11:30 a.m. & 2:30 p.m.

#### Visitor Center

Become a ultraviolet detective with these amazing UV-sensitive beads. It's solar magic in action!



### Simulating an Extravehicular Activity (EVA)

1:30 p.m. & 3:30 p.m.

#### Visitor Center

Experience the difficulty astronauts face during EVA by attempting to place small pieces into a Perfection game while using oversized gloves. The importance of crew aids and tools will also be stressed during this activity.



### Hubble Images Through the Eyes of Students

Recreate Hubble images using various media, such as markers, crayons, pencils and colored pencils. Participants will create their own interpretations of the amazing images Hubble Space Telescope has captured over its eighteen-year life in space.

**Quizdom**—Join in on Quizdom, an interactive, entertaining, exciting and educational game show, similar to the television show, "Jeopardy."

**Send Your Name to Space**—Send your name to space on board the Kepler Spacecraft.

### Robots on the Road

The NASA Aerospace Education Services Project's "Robots on the Road" activity engages middle school students in exciting, hands-on robotics activities. While seemingly simple in design, the sensors and programming language share many similarities with existent NASA instrumentation. Students use problem-solving, team building, and critical thinking skills as they operate robots in space exploration tasks that simulate ones used by NASA scientists and engineers.

### Radio Station—True Oldies (105.9)

10:00 a.m. to 1:00 p.m.

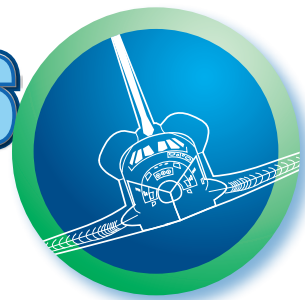
#### Visitor Center

105.9 will provide music and entertainment. Be sure to stop by for an opportunity to win one of their great prizes.

### Goddard Amateur Radio Club

### Goddard Stamp Club

# neat treats



## Science On a Sphere

### Visitor Center

Science on a Sphere (SOS) is an advanced media projection technology utilizing computers and video projectors to display climate change, population, weather, and exploration data and images. Several of Goddard's employees, including Deputy Director for Science and Technology, Dr. Laurie Leshin, will offer a special presentation. Arrive early, seating is limited.

- Dr. Ralph Kahn** 11:30 a.m. & 12:00 p.m.
- Dr. Claire Parkinson** 12:30 p.m. & 1:00 p.m.
- Dr. Amy Simon-Miller** 1:30 p.m. & 2:00 p.m.
- Dr. Laurie Leshin** 2:30 p.m., 3:00 p.m., 3:30 p.m.



### Space Shuttle EVA Spacesuit Mock-up

Did you remember to bring your camera? If so, stop by and take your photo with a self-standing Mock-up Shuttle EVA Suit.

## Model Rocket Launch Demo (ages 10–18)

1:15 p.m. & 3:00 p.m.

### Visitor Center

See real model rockets launched into the sky while learning about modern rocketry and exploring our namesake, Dr. Robert Goddard.

## Ozone Garden

### Visitor Center

The ozone-monitoring garden is full of plants that scientists have found to be ozone-sensitive. When exposed to high levels of ozone, each of these plants shows damage on their leaves. Older leaves have the most damage. Plants with ozone damage have very fine colored spots on the upper surfaces of their leaves, and some leaves also turn yellow. Come learn about atmospheric chemistry and public health with the garden, and also learn about setting up your own ozone monitoring program.

## Lights, Camera, Action!—LaunchFest FilmFest

### Building 3 Auditorium

Check out the LaunchFest FilmFest, an extraordinary collection of short videos produced at Goddard. The people, the missions, the science, the engineering, it's all included, captured in glorious high definition. With films covering many of the upcoming launches and even a surprise appearance by WALL•E, there's something here for everyone. The films run continuously, so come by any time, grab some popcorn, and enjoy a compelling, behind-the-scenes look at Goddard.



### Control and Operations Centers

#### Building 3

The mysterious Bldg. 3 is home to several of Goddard's control and operations centers, including the Hubble Space Telescope Control Center, the NASA Communications Network, and the SOHO Mission Operations Center. Discover the secrets behind satellite operations.



### Hubble Space Telescope Model

#### Building 3

Hubble's Servicing Mission 4 is gearing for launch next month. See the model and learn more about the world's most famous telescope.





# spacey-kid zone

*The Spacey-Kid Zone, sponsored by the NASA Federal Credit Union, is an arena of activities for children of all ages to enjoy. The Spacey-Kid Zone features moonbounces, temporary tattoos, spacey story-time readings, and plenty of arts and crafts. Kids are welcome stay a while, so long as they are under adult supervision. Food will also be available for purchase in the Spacey-Kid Zone.*

## Recreation Center

### Moonbounces & More!

Fantasy World Entertainment will provide a variety of attractions for the young and young at heart, including airbrush tattoos, balloon sculpting, and a worldwide sports game station.

### Spacey Story Time & Crafts with the Howard County Library

10:00 a.m. – 30 minute sessions

Explore basic science concepts inspired by children's literature.

### Spacey Crafts with Girl Scouts (Troop # 472)

A variety of crafts are offered throughout the day (see schedule under Live Presentations/Demonstrations and Scheduled Activities)

#### Alka-Rockets

10:00 a.m.

Recreation Center

#### Balloon Engines

12:15 p.m.

Recreation Center

#### Spacey Photo Frame

2:30 p.m.

Recreation Center

### NASA Federal Credit Union

Representatives from the NASA Federal Credit Union will be on hand to offer information about the products and services that the credit union offers to any interested member of the community.



# LAUNCHFEST



# launching soon!



## Goddard is Leading More Than a Dozen Exciting Missions

*These missions include the final repair trip to upgrade the famous Hubble Space Telescope, and spacecraft to study powerful gamma rays, the Moon, the Sun, and Earth's weather and pollution.*

**The Coupled Ion-Neutral Dynamics Investigation (CINDI)** hunts giant, radio-busting plasma bubbles. These giant bubbles of plasma can disrupt crucial radio communication and navigation signals, like the Global Positioning System (GPS). CINDI simultaneously explores when and where plasma bubbles occur, how severe they will be, and how long they will last. For more information on CINDI, visit: <http://cindispace.utdallas.edu>

**The Fermi Gamma-ray Space Telescope** is a powerful tool exploring the most extreme environments in the universe, where nature harnesses energies far beyond anything possible on Earth. It will detect thousands of super-massive black holes in the cores of distant galaxies. For more information about the Fermi Gamma-ray Space Telescope, visit: [www.nasa.gov/glast](http://www.nasa.gov/glast)

Next on the manifest is the **Interstellar Boundary Explorer (IBEX)**, scheduled for launch in October. IBEX will observe the region beyond the termination shock. The termination shock marks the beginning of our solar system's final frontier, a vast expanse of turbulent gas and twisting magnetic fields. IBEX will provide a first step toward exploring the galactic frontier. For more information about IBEX, visit: [www.nasa.gov/mission\\_pages/ibex/index.html](http://www.nasa.gov/mission_pages/ibex/index.html)

**NASA will launch the shuttle Atlantis** in October to keep the Hubble Space Telescope operating at an incredible rate of scientific productivity.

With more than 17 years of trailblazing science already accomplished, Hubble will be reborn with Servicing Mission 4, during which astronauts will conduct five space walks to enhance Hubble's capabilities. Astronauts will also attempt the first ever on-orbit repair of two existing instruments: the Space Telescope Imaging Spectrograph and the Advanced Cameras for Surveys. For more information about Hubble, visit [www.nasa.gov/hubble](http://www.nasa.gov/hubble)

**A Geostationary Operational Environmental Satellite (GOES)**, GOES-O is scheduled for launch in December. GOES helps meteorologists better observe and predict local weather events, including thunderstorms, tornadoes, fog, flash floods, hurricanes, and other severe weather. GOES-O carries a Solar X-Ray Imager and Space Environment Monitoring instrument for monitoring space weather important for astronaut safety. For more information about GOES, visit <http://goespoes.gsfc.nasa.gov/goes/index.html>

NASA will return to the Moon with the launch of the **Lunar Reconnaissance Orbiter (LRO)**. LRO will create the most accurate and comprehensive topographic maps of the lunar surface to date, vital for pinpointing landing sites for future manned missions.

LRO will scan for resources and create accurate temperature maps necessary for designing structures that can endure the Moon's extreme environment. LRO will help begin to learn how to extract, process, and use extraterrestrial materials, significant to sustain a human presence in space. For more information about LRO, visit: <http://lunar.gsfc.nasa.gov>







# launching soon!



**The Solar Dynamics Observatory (SDO)** will provide detailed forecasts of solar activity, necessary to protect satellites orbiting Earth and astronauts traveling to the Moon and Mars.

Slated for a December launch, SDO will look inside the Sun where solar activity begins. SDO's images, ten times better resolution than HDTV, will provide a better understanding of the flows of plasma inside the Sun, which is a key to predicting solar storms and activity cycles. For more information about SDO, visit <http://sdo.gsfc.nasa.gov>

**NOAA-N Prime** is planned for launch in February 2009 and is the last of a fleet of polar-orbiting environmental satellites (POES), which have served the nation and the world since 1978. NOAA-N Prime will carry a suite of instruments that will provide critical global information for numerical weather and climate predictions. GOES and POES satellites collect and relay search and rescue distress signals, and data collection system inputs from buoys and other platforms. For more information on the NOAA series of weather satellites, go to [http://goespoes.gsfc.nasa.gov/poes/spacecraft/noaanprime\\_spacecraft.html](http://goespoes.gsfc.nasa.gov/poes/spacecraft/noaanprime_spacecraft.html)

**The Glory mission**, planned for launch in June 2009, will help scientists determine why Earth's climate is changing and how much of that change is due to human activity.

Glory is designed to collect data on the composition, properties, and distribution of natural and man-made aerosols in Earth's atmosphere and climate system. Glory's data will help NASA scientists understand the spatial and temporal distributions of human-caused and naturally occurring aerosols. In addition, Glory will determine the Sun's direct and indirect effect on Earth's climate. For more information about Glory: <http://glory.gsfc.nasa.gov>

**The TWINS (Two Wide-angle Imaging Neutral-atom Spectrometers)** mission in 2009 will provide a new capability for stereoscopically imaging the magnetosphere. For more information about TWINS, visit: <http://nis-www.lanl.gov/nis-projects/twins>

Have you always wanted to see a rocket launch but can't get to Florida's Space Coast? Then take the short three-hour drive to Virginia's Eastern Shore where two space missions are planned from Goddard's Wallops Flight Facility: TacSat-3, and the Max Launch Abort System.

**The TacSat-3 satellite** is part of the effort to develop and demonstrate the technology to deliver real-time data to the combatant commander. A NASA Ames Research Center microsat called PharmaSat and two CubeSats also will fly on the mission. Launch is planned for October.

**The Max Launch Abort System (M-LAS)** test will provide data to the NASA Engineering and Safety Center, which is charged with evaluating a potential alternate design for the launch abort system on NASA's Orion crew exploration vehicle. The name "Max" is in honor of Maxime Faget, the original designer of the Project Mercury capsule and holder of the patent for the "Aerial Capsule Emergency Separation Device" (escape tower). M-LAS incorporates a sleek, bullet-shaped composite fairing that completely encapsulates the Orion crew and service modules. For more information about the Wallops Flight Facility visit: [www.nasa.gov/centers/wallops](http://www.nasa.gov/centers/wallops)

# LAUNCHFEST



The LaunchFest Steering Team would like to extend a special thank you to our sponsors, partners and volunteers. LaunchFest would not be possible without your tireless work and dedication.



**NASA  
FEDERAL  
CREDIT UNION**

**LOCKHEED MARTIN**



**AIAA**  
National Capital Section



**ITT**

*Engineered for life*



**STINGER  
GHAFFARIAN  
TECHNOLOGIES**

*Achieving Results . . . Exceeding Expectations*

**Honeywell**

**comcast**

**We would also like to thank:**

**ASRC Federal, CSC, General Dynamics, Goddard Alliance, Golden Krust, Jackson and Tull, Noodles & Company, and Parsons.**



