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Spaceport News

John F. Kennedy Space Center - America's gateway to the universe

www.nasa.gov/centers/kennedy/news/snews/spnews_toc.html

Rollout delights workers, Atlantis crew

A half-moon and giant xenon lights illuminated space shuttle Atlantis as it slowly crept out of the Vehicle Assembly Building just before midnight April 21, for what is scheduled to be its last rollout to Launch Pad 39A.

Inclement weather delayed the nighttime move twice, but the wait paid off for more than 500 Kennedy Space Center employees, family and friends who came to marvel at the sight. They even welcomed a rare treat when the six astronauts who will fly Atlantis to the International Space Station made an appearance.

STS-132 Commander Ken Ham asked the crowd, some of whom work hands-on with the shuttle every day, "Is it not the most beautiful thing you've ever seen?" His answer came back immediately with cheers and applause.

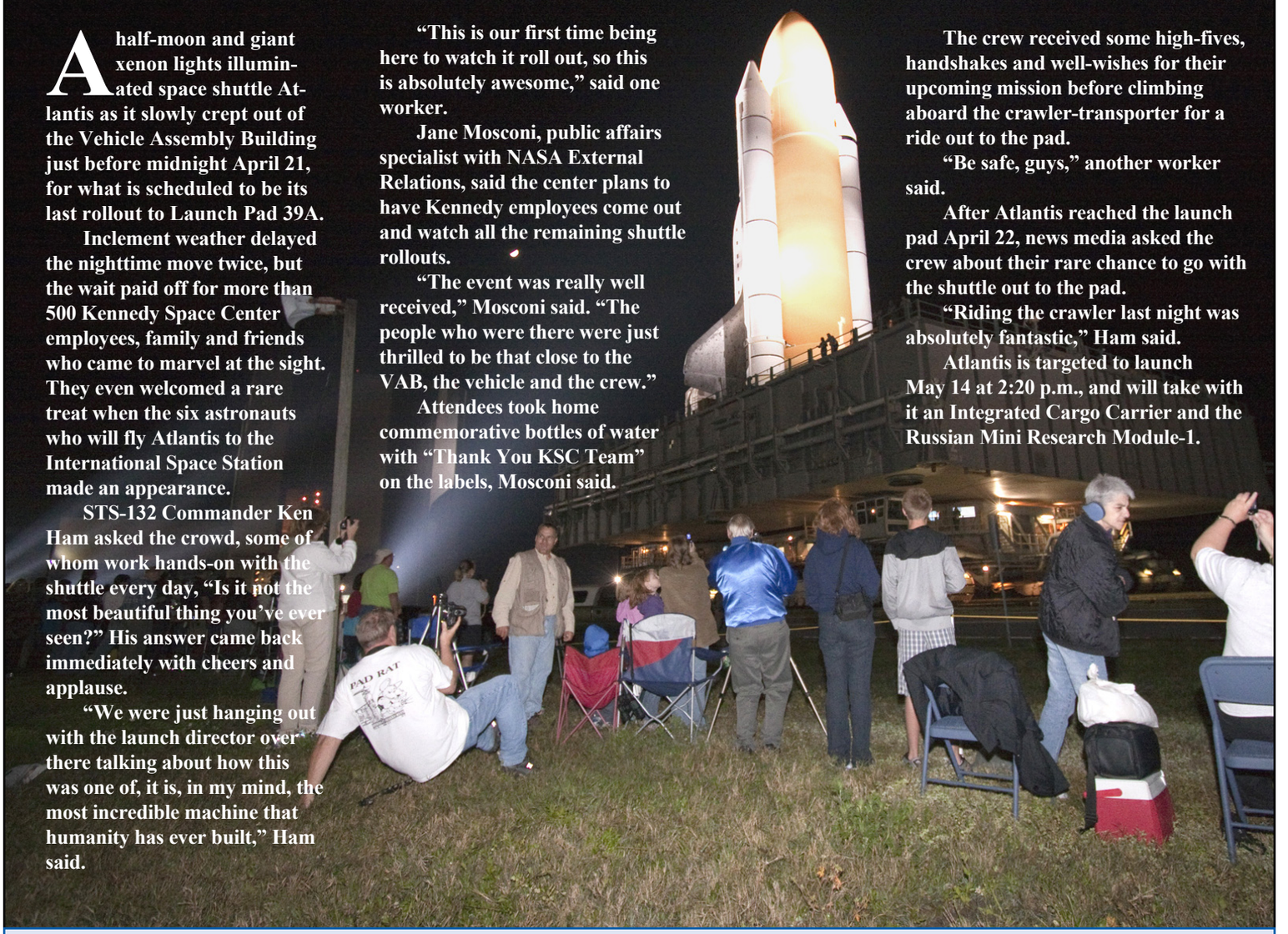
"We were just hanging out with the launch director over there talking about how this was one of, it is, in my mind, the most incredible machine that humanity has ever built," Ham said.

"This is our first time being here to watch it roll out, so this is absolutely awesome," said one worker.

Jane Mosconi, public affairs specialist with NASA External Relations, said the center plans to have Kennedy employees come out and watch all the remaining shuttle rollouts.

"The event was really well received," Mosconi said. "The people who were there were just thrilled to be that close to the VAB, the vehicle and the crew."

Attendees took home commemorative bottles of water with "Thank You KSC Team" on the labels, Mosconi said.



The crew received some high-fives, handshakes and well-wishes for their upcoming mission before climbing aboard the crawler-transporter for a ride out to the pad.

"Be safe, guys," another worker said.

After Atlantis reached the launch pad April 22, news media asked the crew about their rare chance to go with the shuttle out to the pad.

"Riding the crawler last night was absolutely fantastic," Ham said.

Atlantis is targeted to launch May 14 at 2:20 p.m., and will take with it an Integrated Cargo Carrier and the Russian Mini Research Module-1.

Inside this issue . . .

President outlines space plan to workers

By Steven Siceloff
Spaceport News

Astronauts will soar spaceward in commercial spacecraft while NASA develops technology so humans can venture into the solar system and to Mars, President Barack Obama told a space conference April 15 at Kennedy Space Center.

Laying out his plans, Obama committed NASA to a series of development milestones he said would lead to new spacecraft for astronauts to ride to the International Space Station, a modified Orion capsule developed as an emergency return spacecraft, and a powerful new rocket. He also promised a host of new technologies that would protect space travelers from radiation and other unique hazards.

"Early in the next decade, a set of crewed flights will test and prove the systems required for exploration beyond low Earth orbit," the president said. "And by 2025, we expect new spacecraft designed for long journeys to allow us to begin the first-ever crewed missions beyond the moon into deep space. We'll start by sending astronauts to an asteroid for the first time in history.

By the mid-2030s, I believe we can send humans to orbit Mars and return them safely to Earth. And a landing on Mars will follow. And I expect to be around to see it."

NASA/Jim Grossmann

President Barack Obama mingles with the participants of the Conference on the American Space Program for the 21st Century in the Operations and Checkout Building at Kennedy. Obama opened the conference with remarks on the new course his administration is charting for NASA and the future of U.S. leadership in human spaceflight.

The president spoke to 200 senior officials, space and industry leaders, and academic experts inside the Operations and Checkout Building at Kennedy in the same area that was used to process Apollo spacecraft for the missions to the moon.

Standing in front of one of the space shuttle main engines that launched former U.S. Senator and astronaut John Glenn into orbit, Obama said, "It was from here that men and women, propelled by sheer nerve and talent, set about pushing the boundaries of humanity's reach.

"The question for us now is whether that was the beginning of something, or the end of something. I prefer to believe it was the beginning of something."

The president increased NASA's budget by $6 billion throughout the next five years to fund the plans while other government programs are being frozen.

Noting "the sense that folks in Washington -- driven less by vision than by politics -- have for years neglected NASA's mission and undermined the work of the professionals who fulfill it," the president said the budget increase changes that.

The address comes at a critical juncture for NASA because the space shuttle fleet is scheduled

See **PRESIDENT**, Page 6

Following Obama's speech, those invited to the 2010 Conference on the American Space Program for the 21st Century broke into four groups to talk about NASA's future goals

Panel 1: Expanding our Reach into the Solar System

Moderator: John Holdren, director, Office of Science and Technology Policy

Panelists: Edward Crawley, professor, MIT; John Grunsfeld, former NASA chief scientist and astronaut; Scott Hubbard, professor, Stanford University

"I believe we are born as explorers, we are born as scientists. Even before we can talk, we are trying understand how the world works," said Grunsfeld, a five-time shuttle astronaut and now deputy director of the Space Telescope Science Institute. "So, in this 2011 budget that's been proposed is an extremely strong statement about the importance of science in our country and in the world. And specifically, the building blocks, the innovation, to allow us to make new investments to look toward the future."

Panel 2: Increasing Access to and Utilization of the International Space Station

Moderator: Miles O'Brien, journalist

Panelists: Michael Foale, astronaut; Tom Pickens, CEO, Spacehab; Bretton Alexander, president, Commercial Spaceflight Federation

"We need a redundant and parallel path as a nation to get to our investment in space," said Foale, who has spent several months aboard the International Space Station and the Russian space station Mir. "If you are going to put a lot of money into an object in space that you need to get you, you need to have two ways to get there, at least. It's very important that the commercial crew efforts to get astronauts to space station happen soon."

Panel 3: Jumpstarting the New Technologies to Take Us Beyond

Moderator: Norman Augustine, chair, Review of U.S. Human Space Flight Plans Committee

Panelists: Doug Cooke, NASA associate administrator for Exploration Systems; Bobby Braun, NASA chief technology officer; Ed Lu, program manager for advanced projects, Google, and former astronaut

"The NASA centers are full of intellectual capital... and that intellectual capital, while it's working on some of the greatest challenges in human spaceflight, or in exploring our solar system, that same capital can also be applied to major national needs here on the Earth," Braun said. "Major societal challenges, like energy, prediction of disasters, weather, national security, these are all things that integrate and cross right into our space program."

Panel 4: Harnessing Space to Expand Economic Opportunity

Moderator: Lori Garver, NASA deputy administrator

Panelists: Dale Ketcham, director, Spaceport Research and Technology Institute; Greg Junemann, president, International Federation of Professional and Technical Engineers; Mae Jemison, former astronaut

"The president's plan has this explicit goal of the creation and continuous improvement of American capabilities in space, which will open up new opportunities for the economy," Garver said. "It's a combined effort of the government, taking what the government does best and investing in the R&D, going further, faster, beyond low Earth orbit, and then utilizing the private sector in its unique benefits it brings, providing that innovation, to take over those things the government has historically done."

ESMD education projects challenge students for future

By Linda Herridge
Spaceport News

Florida Tech student Bruce Monteleone and his teammates, "The Invading Huns," are preparing their robot, "Attila," to dig in the dirt.

Monteleone's team and 22 other college teams from around the country will compete in NASA's first Lunabotics Mining Competition, May 25-28, at Kennedy Space Center's Astronaut Hall of Fame.

"NASA's education projects are important to college students and students in general because it teaches us how to work on a team and offers hands-on experience to supplement what we learn in class," Monteleone said.

Monteleone's team of four said building Attila required a little calculation, a lot of hands-on testing, many power tools and multiple revisions to get it ready to dig for simulated lunar soil in a giant sandbox.

The mining competition is one of several Exploration Systems Mission Directorate, or ESMD, Space Grant Education Projects, managed for NASA by Kennedy's Education Division.

Gloria Murphy, the ESMD Space Grant Education Projects manager, said that the Lunabotics Mining Competition and the 2010 ESMD Systems Engineering Paper Competition are designed to help prepare the future work force of engineers for NASA and its contractors.

"Each team must design and build a robot that could be used for in-situ resource utilization on the moon," Murphy said. "Then, they write a systems engineering paper describing their engineering tasks, such as requirement definition, design reviews and trade analysis."

The teams also must participate in an outreach project for K-12 students in their hometown.

Monteleone said his team will meet with Palm Bay High School's FIRST robotics group to help them learn about programming, design and construction. Then, they will write and submit a summary of the outreach project.

For the competition, about 60 tons of special dirt, called BP-1, was shipped by truck from Flagstaff, Ariz., to Kennedy, and is now being stored at the Multi-Purpose Payload Facility. The dirt, comprised of a crushed lava aggregate, will be transferred to the Astronaut Hall of Fame for on-site mining.

More info

Those interested in volunteering at the Lunabotics Mining Competition can contact Mandi Falconer at **mandi.c.falconer@nasa.gov**

For the fourth annual Systems Engineering Paper Competition, students researched, wrote and submitted papers on ESMD-related topics, such as spacecraft, propulsion, lunar and planetary surface systems, and ground operations. NASA and contractor engineers from across the agency reviewed and judged the entries this month.

First, second and third place scholarships were awarded and team winners also will receive VIP seating at an upcoming shuttle launch.

Murphy said the competition is designed to engage students in the science, technology, engineering and math, or STEM, disciplines critical to NASA's mission.

Last year, "Team Taurus" from Rice University in Houston, took first place with their "Bone Remodeling Monitor" paper.

According to team member Charlie Foucar, the paper focused on a systems engineering approach to designing and constructing a device that would measure the concentration of certain biochemical markers in urine and thereby calculate an astronaut's bone density.

Foucar, who currently is working as a biochemistry researcher at the Hong Kong University of Science and Technology, said the ESMD competition's focus on systems engineering was a topic that he and his teammates thought would be interesting.

"This program gave me valuable exposure to the process of developing a medical device," Foucar said. "I think experiences like this will prove invaluable to my life's goal of designing and improving medical devices as a translational researcher."

"Team Hokie" from Virginia Tech also took first place with their paper titled, "CANSAT: Design of a Small Autonomous Sounding Rocket Payload."

"It was the first time that the judges selected two first-place teams," Murphy said. "Each year, the paper competition gets better."

Last summer, then-junior Eileen Boyd from the University of Akron in Ohio, was an ESMD intern at Kennedy in the Applied Technology Directorate. Her projects, under the guidance of mentor Dr. Phillip Metzger, involved the computer simulation of blowing lunar soil when lunar modules land on the moon. Her second project involved the fine particle analysis of lunar simulants to help characterize the size and shape of lunar soil.

"My experience as an ESMD intern was amazing," Boyd said. "Opportunities such as this are important to college students because it helps them to be a part of the space exploration and technology advances of our country early on.

Boyd, who will graduate this fall with a chemical engineering degree said, "Everyone can gain experience and knowledge about what amazing things lie beyond Earth."

for NASA

Eileen Boyd from the University of Akron in Ohio, was an ESMD intern at Kennedy in the Applied Technology Directorate. Her projects, under the guidance of Dr. Phillip Metzger, involved the computer simulation of blowing lunar soil when lunar modules land on the moon. Her second project involved the fine particle analysis of lunar simulants to help characterize the size and shape of lunar soil.

Scenes Around Kennedy Space Center

NASA/Kim Shiflett

STS-132 crew completes TCDT

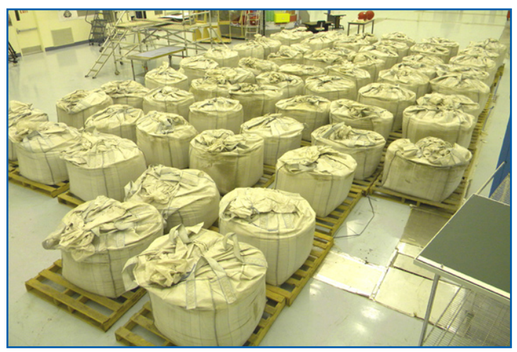
Members of space shuttle Atlantis' STS-132 crew conducted their Terminal Countdown Demonstration Test, or TCDT, and related training April 20-24. **Above:** The crew receives instruction on the location and operation of an M-113 armored personnel carrier during emergency exit training. **Left:** Mission Specialist Garrett Reisman following practice of emergency exit procedures. **Below:** The crew learns about the seven baskets suspended from slidewires that extend from the fixed service structure to a landing zone 1,200 feet west of Launch Pad 39A that would be used in the event of an emergency exit. Atlantis is targeted to launch May 14 at 2:20 p.m.

NASA/Jack Pfaller

NASA/Jim Grossmann

NASA/Jim Grossmann

Space shuttle Discovery makes its slow trek from the Shuttle Landing Facility to Orbiter Processing Facility-3 following its successful landing on Runway 33. Discovery landed April 20 at Kennedy after 15 days in space, wrapping up the STS-131 mission of more than 6.2 million miles.



For NASA

In the Multi-Payload Processing Facility, sits sand bound for the Lunabotics Mining Competition "sandbox." The sand will be tested before the sandbox is rebuilt at the Astronaut Hall of Fame for the competition in late May.

For NASA

Roy Tharpe, president of Space Gateway Support, receives the 2010 Dr. Kurt H. Debus Award from the National Space Club Florida Committee at a dinner April 17 at the Kennedy Space Center Visitor Complex.

NASA/Jack Pfaller

The third segment of the launch mount for a new mobile launcher, or ML, being constructed to support NASA's future human spaceflight program is lifted from the tractor-trailer on which it was delivered at Kennedy. The construction is taking place in the mobile launcher park site north of the Vehicle Assembly Building. The new launcher is 355 feet tall and has multiple platforms for personnel access.

NASA

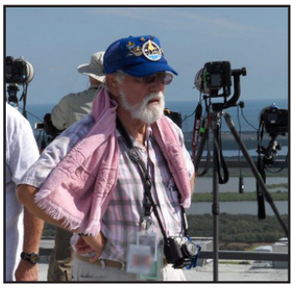
U.S. Fish and Wildlife Service presents an Indian River Lagoon Program Leadership Award to Kennedy's Center Operations Directorate for its help in rescuing endangered sea turtles during this year's cold snap. The award honors an individual or group from the lagoon region demonstrating extraordinary stewardship through advocacy, education or implementation of the Indian River Lagoon Comprehensive Conservation and Management Plan.

Volunteers key to success of centerwide events

From judging local science fair projects and cleaning beaches to assisting during the annual All-American Picnic, Kennedy Space Center volunteers play an integral role in America's space program.

The month of April, designated National Volunteer Month, is a time to recognize the thousands of people who volunteer their time and talent, and the perfect opportunity to encourage others to lend a helping hand.

Thousands of guests flock to the center for every launch, landing and other special event. During that time, volunteer groups handle VIP tours, briefings, registration, bus escorts at viewing areas and educational activities for children.



For NASA

NASA volunteer Ang Taiani has more than 500 launches under his belt, 375 of those prior to his retirement in 1984.

"Because so many different groups are accommodated during events, the personnel required to make each experience special could not be accomplished without our valued volunteers," said Carol Cavanaugh, volunteer program manager with ReDe Critique.

Nicole Rivera, a contract specialist with Kennedy's Procurement Office, volunteers with the NASA Office of Legislative and Intergovernmental Affairs on launch days and said the most rewarding part is seeing how grateful and excited guests are, "even at midnight or 1 a.m."

"Not only is it awesome to see the guests' amazement, but it's also a wonderful opportunity to meet other volunteers from the center and, in many cases, learn a lot from them," Rivera said. "Volunteering for anything here is a great learning experience, and best of all, fun!"

Volunteers also assist the Display Management Team and Speakers Bureau in spreading NASA's message. They reach children, too, by going into K-12 classrooms and talking about staying focused on math and science.

"Working with volunteers is great because they bring a lot of passion and knowledge to the table," said Andres Adorno, who heads up the Display Management Team. "That type of melting pot is very rewarding."

For Ang Taiani, no encouragement was necessary when he began helping out at Kennedy's NASA News Center during the Apollo 12 launch in 1960. He was working on the Polaris Program and came to work for NASA as an aerospace technologist at Cape Canaveral Air Force Station.

"I've been volunteering ever since," Taiani said. "It's important to get as much space program information out to the media and general public as possible."

Taiani has more than 500 launches under his belt, 375 of those prior to his retirement in 1984.

"Their duties encompass a wide scope -- no day is ever the same. It can range from their knowledge of the center, NASA's programs and security rules to crowd control, advising on proper placement of cameras at the pad, announcing a weather advisory or dealing with a stray alligator that has wandered into their area," said Cavanaugh. "No job is too large or too small."

WORD ON THE STREET

"April is National Volunteer Month. Where do you volunteer? What do you get out of volunteering?"

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From **PRESIDENT**, Page 2

to be retired after three more missions. The president said it will be quicker and less costly to let private companies develop new spacecraft for astronauts rather than continue with the original Constellation Program, which was deemed too expensive and behind schedule.

"Pursuing this new strategy will require that we revise the old strategy. In part, this is because the old strategy -- including the Constellation Program -- was not fulfilling its promise in many ways," the president said. "That's not just my assessment; that's also the assessment of a panel of respected non-partisan experts charged with looking at these issues closely."

The plan largely mirrors the "flexible path" option offered by a blue-ribbon panel established by the president last year to help decide the best map for future space exploration.

The outline does not do away with Constellation entirely. Noting the success of the agency's development of the Orion crew capsule, Obama called on NASA to develop the spacecraft so it can be launched without a crew to the International Space Station. It will be based there as an emergency vessel for astronauts living on the orbiting laboratory complex.

The speech kicked off the Conference on the American Space Program for the 21st Century.

Norm Augustine, chairman of the blue-ribbon panel called the Review of U.S. Human Space Flight Plans Committee, that evaluated Constellation and came up with the "flexible path" option, endorsed the presidential strategy as the conference got under way.

Saying NASA is largely "trapped" in low Earth orbit, Augustine said industry, with NASA's guidance, can do its part for the plan.

The president acknowledged the need to get the decision right.

"Now, the challenges facing our space program are different, and our imperatives for this program are different than in decades past," the president said. "But while the measure of our achievements has changed a great deal over the past fifty years, what we do -- or fail to do -- in seeking new frontiers is no less consequential for our future in space and here on Earth."

The plan, the president said, would free NASA's designers and engineers to develop spacecraft, large rockets and new technologies that can extend the frontier of human space exploration to asteroids and even Mars.

About $3.1 billion of the additional funding would go into research and development for a heavy-lift rocket. A design for a large booster would be chosen in 2015 with the goal of launching the spacecraft a few years later. The bigger rocket could be used to loft payloads too large for most boosters, including giant fuel depots that would be parked in distant orbits so spacecraft could refuel on their way to asteroids, the moons of Mars and eventually Mars itself.

In addition to more funding, President Obama said his initiative brings more jobs than previous schedules.

"My plan will add more than 2,500 jobs along the Space Coast in the next two years compared to the plan under the previous administration," he said. "I'm proposing a $40 million initiative led by a high-level team from the White House, NASA, and other agencies to develop a plan for regional economic growth and job creation. And I expect this plan to reach my desk by Aug. 15. It's an effort that will help prepare this already skilled work force for new opportunities in the space industry and beyond."

Taken together, the space strategy proves America is poised for a future as bright as its remarkable past, the president said.

"Fifty years after the creation of NASA, our goal is no longer just a destination to reach," Obama said. "Our goal is the capacity for people to work and learn, and operate and live safely beyond the Earth for extended periods of time, ultimately in ways that are more sustainable and even indefinite. And in fulfilling this task, we will not only extend humanity's reach in space -- we will strengthen America's leadership here on Earth."

Remembering Our Heritage

After 20 years, Hubble paints space in different light

By Steven Siceloff
Spaceport News

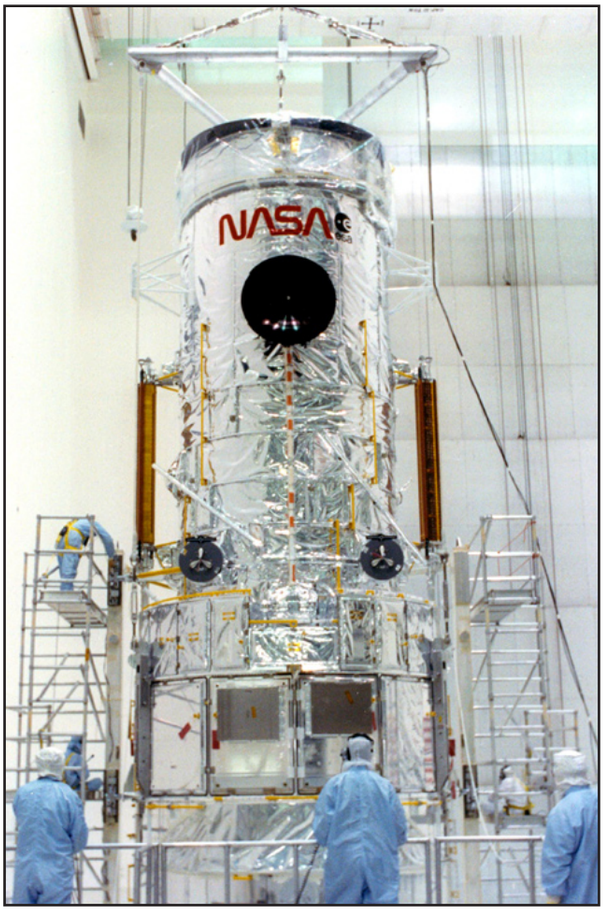
Space shuttle Discovery roared into orbit April 24, 1990, with a most precious cargo, NASA's Hubble Space Telescope. In the two decades since, teams of astronauts working from other shuttles repaired the orbiting eye on the universe and extended its abilities far beyond what was thought possible for longer than many thought realistic.

Hubble, named for groundbreaking astronomer Edwin Hubble, repaid the commitment with some of the most dazzling images the world has seen, along with fresh data that answered a wealth of questions and led to many new ones. The telescope's observations allowed astronomers to set the age of the universe at about 13.7 billion years with a high degree of certainty.

"I never believed in 1990 that the Hubble would end up this great," said Ed Weiler, NASA associate administrator for the Science Mission Directorate and chief scientist for the Hubble program when it launched. "It's changed a lot of thinking and it's changed a lot of what I learned 30 years ago in grad school."

Hubble's discoveries stretch over most aspects of astronomy, but its highlights include proving massive black holes exist and defining the age of the universe. It also proved the existence of something no one has seen -- dark energy.

"Nobody ever knew it existed before Hubble," said Jon Grunsfeld, an astronaut and astronomer who worked on Hubble during two shuttle missions.



NASA file/1989

NASA's Hubble Space Telescope is lifted into the workstands in Kennedy's Vertical Processing Facility in October 1989.

The telescope's most unique element, though, is its orbit -- a perch so high above the planet that its pictures are not warped or distorted by the air currents, moisture and other effects from Earth's atmosphere.

"It's that extreme clarity
that gives us the feeling we've traveled out into space to see these objects," Grunsfeld said. "It really is our time machine."

From more than 300 miles in space, Hubble looked back in time, showing astronomers what embryonic galaxies looked like almost 14 billion years ago.

"We're seeing the universe as it was perhaps as a toddler," Grunsfeld said.

An image that is perhaps Hubble's most famous, known as the Hubble Deep Field, was made when the telescope was pointed at a small sliver of space in the constellation Ursa Major, which appeared black and empty. Hubble found it brimming with young galaxies and stars in a kind of photographic time capsule from the universe. Astronomers called it a baby picture of space.

The Hubble Ultra Deep Field built on that image in 2003 and 2004 when it used new instruments to pick out galaxies in another section of the sky which would have been too faint for Hubble's previous equipment to detect.

"We always discover things that we never even imagine," Grunsfeld said. "The universe is always more interesting than we give it credit for."

Some of the most notable discoveries were almost lost because Hubble was launched with a tiny flaw in its main mirror. Although the mirror was ground too flat by less than the width of a human hair, that was enough to throw off the focus.

"Little did we know we were launching a telescope that had a mirror that was slightly misshapen," Weiler said. "But we found a way to fix it, which we did, which the astronauts did, in 1993 and for the past 17 years Hubble's been filling the textbooks with new science."

Starting with STS-61 in 1993, five teams of astronauts worked on the telescope from the space shuttle. The first installed a set of small mirrors that acted like a contact lens to clarify Hubble's vision. Since then, new instruments have been added, along with new components. Taken together, the servicing missions added years to Hubble's life.

"When we launched it in 1990, we were hoping to get 10 to 15 years out of it," Weiler said. "We're now talking about the 20th anniversary, so we're talking about five years of dividends on our investment, and we should be able to get at least another five years and maybe another seven, eight or nine years."

Astronomers were not the only ones pleased with the life extension. The 12 1/2-ton space telescope reached into the mind and spirit of the general public in an unprecedented way. Images from the telescope have made their way onto stamps, album covers and even into art exhibits.

"I think the unique thing about the Hubble is that it's truly brought science to the general public, especially the school kids," Weiler said. "It's still the most powerful telescope that humans have the ability to use and it has been since it was launched."

As much as Hubble became a cornerstone for astronomy, it was also the first element of NASA's Great Observatories program which produced four telescopes that looked at the different kinds of light in the universe.

Hubble was designed to see visible light, which is the same light people see. So Hubble's pictures show the universe as it appears to the human eye.

Although there won't be any more servicing missions by the shuttle, Weiler and Grunsfeld said the telescope is ready to make more discoveries.

"The telescope still looks in great shape," Grunsfeld said. "It's just a thrill to work on what is by many measures the most productive scientific instrument ever created by humans."

NASA file/1990

Space shuttle Discovery lifts off from Launch Pad 39B on April 24, 1990, carrying a crew of five and NASA's Hubble Space Telescope.

NASA Employees of the Month: May

NASA/Sandra Joseph

Employees of the month for May are, from left, William Lantz, Engineering Directorate; Timothy Ferris (Employee of the Quarter) Human Resources Office; Timothy Springstroh, Information Technology and Communications Services; Robert Morrison, Engineering Directorate; Neal Colvin, Center Operations; Mary Mulligan, Safety and Mission Assurance Directorate; Regina Clifton, Procurement Office; and Jessica Scheffman, Launch Services Program. Not pictured are Robert Cunningham, Launch Integration Office; and Dean Schaaf, Launch Vehicle Processing.

What are folks saying on facebook?

"Fantastic Voyage for Discovery. I watched the Discovery take off on my Birthday in Jacksonville, Florida. Now on my wife's birthday we heard the Sonic Boom in Phenix City, Alabama. Then watched the landing on NASA TV. We are proud of the Space program from its inception. Keep up the Good Work. Thank the Lord for bringing all of you back home safely."

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or on Twitter at: **www.twitter.com/NASAKennedy**

Looking up and ahead . . .

Targeted for May 8	Launch/CCAFS: Falcon 9/Dragon; Window 11 a.m. to 3 p.m. EDT
Targeted for May 14	Launch/KSC: Atlantis, STS-132; 2:20 p.m. EDT
May 20	Launch/CCAFS: Delta IV, GPS IIF-1; 11:29 to 11:48 p.m. EDT
No earlier than July 21	Launch/CCAFS: Falcon 9/Dragon C1, NASA COTS - Demo 1; TBD
No earlier than Mid-November	Launch/KSC: Endeavour, STS-134; TBD
Targeted for July 30	Launch/CCAFS: Atlas V, AEHF 1; 4:52 to 6:52 a.m. EDT
Targeted for Sept. 16	Launch/KSC: Discovery, STS-133; 11:57 a.m. EDT
Targeted for Nov. 11	Launch/CCAFS: Falcon 9/Dragon C2; TBD
Targeted for Nov. 17	Launch/CCAFS: Atlas V, GPS IIF-2; TBD
Nov. 22	Launch/VAFB: Taurus, Glory; TBD
Targeted for Jan. 22, 2011	Launch/CCAFS: Atlas V, SBIRS GEO-1; TBD
Aug. 5, 2011	Launch/CCAFS: Atlas V, Juno; TBD
Aug.15, 2011	Launch/Reagan Test Site: Pegasus, NuSTAR; TBD

WORD ON THE STREET

April is National Volunteer Month. Where do you volunteer? What do you get out of volunteering?

"I volunteer at my daughter's school, Hoover Middle School, and the Turtle Society. It's a family thing for us."

Alberto Blanco,
with Science Applications International Corp.

"With Brevard Achievement Center. I absolutely love giving back to the community."

Lisa Alonso,
with Craig Technologies

"At my sons' school, Roosevelt Elementary. It feels good to do something for my sons and their friends."

Jennie Ward,
with NASA

"I don't volunteer anymore because I'm busy with family. Volunteering probably will come after retirement."

Sharon Avery,
with NASA Exchange

"At Astronaut High somtimes. I like to give back to the football program that helped me out."

Aaron Mead,
with Lackman Culinary Services

John F. Kennedy Space Center

Spaceport News

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