



Spaceport News

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John F. Kennedy Space Center

STS-104 update

At press time, STS-104 was scheduled to launch aboard Atlantis no earlier than July 12 at 5:04 a.m.

Because of concerns about the International Space Station's robot arm, Shuttle and Station managers had considered the option to postpone the STS-104 Joint Air Lock mission until September.

If STS-104 were to be postponed, STS-105 would be launched first.

Launch for STS-105 is set for no earlier than Aug. 5.

STS-105 will deliver the Expedition Three crew as a replacement for Expedition Two aboard the International Space Station.

MAP to probe Big Bang

The Microwave Anisotropy Probe (MAP) was scheduled at press time for launch June 30 aboard a Delta II rocket from Cape Canaveral Air Force Station.

NASA's MAP spacecraft will journey into deep space on a voyage to explore some of the deepest mysteries of the cosmos.

Scientists hope to determine the content, shape, history, and the ultimate fate of the universe by constructing a full-sky picture of the oldest light.

MAP is designed to capture the afterglow of the Big Bang, which comes to us from a time well before there were any stars, galaxies or quasars.

Patterns imprinted within this afterglow carry with them the answers to mysteries such as:

(See MAP, Page 3)



Scientists and other workers watch as the solar panels on the Microwave Anisotropy Probe (MAP) spacecraft are deployed in the Spacecraft Assembly and Encapsulation Facility (SAEF-2) at Kennedy Space Center.

Office serves Spaceport customers

Inside

Page 2 – "Recognizing Our People" highlights awards.



Page 3 – Rob Ellison explains importance of ISO 9000 audits.

Pages 4-5 – *Spaceport News* goes inside the Emergency Operations Center.

Page 6 – Space Commerce Way will offer new route.

Page 7 – FireMAN Web site monitors fire risk conditions.

The one-stop shopping concept, which has done wonders for the retail industry, is now being applied here by the Cape Canaveral Spaceport Planning and Customer Service Office (SPCSO).

First opened a year ago, the office has received good reviews from customers and is helping to generate new launch and business opportunities for Kennedy Space Center and the 45th Space Wing.

The office, a cooperative partnership of NASA, the Air Force and the Spaceport Florida Authority, integrates and oversees planning initiatives to support an evolving vision for development of the Spaceport.

SPCSO serves to assure that the needs of the government, commercial industry, the State of Florida and other local stakeholders are

Before the formation of the Spaceport Planning and Customer Service Office (SPCSO), launch customers of both NASA and the Air Force were concerned with the complexity of getting a payload into orbit, primarily because of the multiple government offices they had to work with to accomplish their launch.

included in the future Spaceport.

"Developing the Spaceport concept is important for NASA, the Air Force, the State of Florida, those who live on the Space Coast, and most of all anyone planning to do business at the Cape Canaveral Spaceport. By combining our

resources, planning together and standardizing our business processes, we could operate more efficiently," said Rick Blucker, director of the SPCSO. "That's vital for our nation's space program as

(See SPCSO, Page 8)

Recognizing Our People

McPhillips, MEIT-1 team honored

Before each critical component of the International Space Station (ISS) is launched from Kennedy Space Center and assembled in orbit, it is tested and integrated with other components here on Earth.

The responsibility of testing the early components of the ISS rested in the hands of hundreds of men and women led by NASA's Cheryl McPhillips.

For her part, McPhillips is the winner of the 2001 National Space Club Eagle Award, an award she said that she accepted "on behalf of the Multi-Element Integration Test (MEIT) team as the project lead of MEIT-1."

"It was truly a team effort," said McPhillips.

MEIT-1 was a joint effort between NASA and The Boeing Co. that consisted of ISS personnel who saw to it that all of the Space Station's components were in perfect working order and able to communicate with each other as they were prepared in the Space Station Processing Facility (SSPF) for launch.

MEIT-1 took three years of intense planning and is credited



Cheryl McPhillips, who led the MEIT-1 effort, was among those honored with the 2001 National Space Club Eagle Award for the success of the MEIT-1 testing of International Space Station elements.

with the successful testing of some of the Station's primary components including the U.S. Laboratory "Destiny," the Canadian robotic arm and the large Z-1 truss.

Since its inception just two years ago, MEIT has detected and resolved thousands of anomalies.

MEIT-2 is currently being held in the SSPF.

The National Space Club reserves the annual Eagle Award for those who have had the most significant influence over the successful and safe completion of a human space flight mission.

Former astronaut and Chairman of the NSC Awards Committee Rick Hauck said, "Those who have led the MEIT project are perfect

"Those who have led the MEIT project are perfect examples of individuals who work on the front line towards a successful and safe space program."

Rick Hauck
Chairman of the NSC Awards Committee

examples of individuals who work on the front line towards a successful and safe space program."

Boeing's Christian Hardcastle and NASA's Kenneth Todd from Johnson Space Center in Houston are also named in the award in recognition of their leadership during MEIT-1.

IEEE recognizes KSC team's contributions

May 25, 2001 – Forty years, to the day, after President John F. Kennedy stood before Congress and vowed to land an American on the moon by the end of the 1960's, Kennedy Space Center, the Florida space center named in his memory, was presented with an award for achieving that very feat.

The event was hosted by the Institute of Electrical and Electronics Engineers (IEEE).

The IEEE Milestone award honored the KSC pioneers who raced to develop the technology that would eventually land the Apollo 11 crew on the moon in July 1969.

The Milestone plaque, given by IEEE President Joel Snyder, recognized KSC for successfully creating an infrastructure necessary to accommodate the world's first spaceport.

It is an infrastructure that included state-of-

the-art radar tracking, data telemetry, instrumentation, space-to-ground communications, on-board guidance, and real-time computation.

NASA-KSC's Director of External Relations and Business Development JoAnn Morgan, who witnessed the technology developments first hand, was on hand to accept the award on behalf of KSC.

"This award signifies the historical impact their work (KSC pioneers) has had on an international level," Morgan said.

More than 200 honorees and guests in attendance were treated to presentations from U.S. Senator Bill Nelson and Florida's Lieutenant Governor Frank Brogan.

In addition, the ceremony also featured a video excerpt of President Kennedy's famous "Special Message to Congress" speech.



JoAnn Morgan, director of External Relations and Business Development, accepted the IEEE award on behalf of the KSC team.

ISO 9000 helping to improve processes

Periodic department reviews are standard for Kennedy Space Center employees, but the significance of these ISO 9000 audits still mystifies some workers and makes others uncomfortable.

Sometimes employees only see their piece of the process, but it is important for team members to understand where their contributions fit into the total picture, said Rob Ellison, KSC senior management's representative for ISO 9000.

Once employees realize they are vital in keeping KSC effective and efficient, they understand how important ISO 9000 standards are, Ellison said.

"People want to do a good job and they want recognition for that good work," he said.

Fortunately, a new company, National Quality Assurance (NQA), is now auditing KSC and is providing a more positive audit experience.

KSC recently completed a recertification audit. NQA recommended that KSC's registration to ISO 9001 be extended for three more years.

"NQA wants to add value to NASA," he said. "One area audited by NQA involved JPMO Director Ray Lugo and his joint Air Force/NASA team. Their contract



Rob Ellison, center, KSC senior management's representative for ISO 9000, works with Opportunity For Improvement managers William Johnson and Michele Foster of the External Relations and Business Development Directorate.

surveillance plan was recognized as outstanding."

While all audits may not produce such a glowing evaluation, employees can learn to use the examinations to gauge their organizational and individual performances and make improvements, said Ellison, who also serves as a Baldrige National Quality Program examiner.

Ellison uses his experience as a Baldrige examiner to encourage

KSC to develop more effective procedures, to go beyond basic ISO standards.

Whereas ISO just measures conformance, Baldrige standards look beyond to excellence. Many Baldrige concepts have been incorporated into ISO 9000's revision.

"The Baldrige Program encourages organizations to strive for performance excellence by showcasing award recipients – world-

class organizations – that commit to sharing their knowledge and their best practices," Ellison said.

As a Baldrige examiner, Ellison has been trained to evaluate U.S. companies trying to become the best in the marketplace.

Ellison uses his Baldrige experience to help guide KSC employees in improving their work procedures.

For example, Ellison recently worked with External Relations and Business Development's Chief of the Customer Assurance and Analysis Office Michele Foster on improving the Opportunity For Improvement (OFI) system.

"We developed the OFI system to manage corrective and preventive actions, resolve customer issues, lead improvement initiatives, and measure how well we accomplish these activities. The system captures customer suggestions for improvement and customer complaints," he said.

"Also, the system captures employee-identified problems that require action, potential problems that should be looked at, or suggested improvements that may enhance Center performance.

"The OFI system is key to managing and ultimately improving our overall business system at KSC."

MAP ...

(Continued from Page 1)

- What happened during the first instant after the Big Bang?
- How did the universe evolve into the complex patterns of galaxies that we see today?
- Will the universe expand forever or will it collapse?

To answer these questions, MAP's measured pattern of the Big Bang's afterglow, like a fingerprint, will be compared against the unique fingerprint pattern predicted by each cosmic scenario to find the right match.

"We are tremendously excited about this mission because it will help answer basic questions that people have been asking for

ages," said Dr. Charles L. Bennett, principal investigator for the MAP mission at NASA's Goddard Space Flight Center. "MAP's unprecedented accuracy and precision will allow us to determine the nature and destiny of the universe."

According to the Big Bang theory, the universe began about 14 billion years ago as an unimaginably hot and dense fog of light and exotic particles.

The universe has since continuously expanded and cooled.

The whole universe is bathed in the afterglow light from the Big Bang.

The light that is now reaching us has been traveling for about 14 billion years, thus allowing us a look back through time to see the early universe.

"The cosmic microwave light is a fossil," said Professor David Wilkinson, Princeton University. "Just as we can study dinosaur bones and reconstruct their lives of millions of years ago, we can probe this ancient light and reconstruct the universe as it was about 14 billion years ago."

MAP views the infant universe by measuring the tiny temperature differences within the extraordinarily evenly dispersed microwave light, which now averages a frigid 2.73 degrees above absolute zero temperature.

MAP will resolve the slight temperature fluctuations, which vary by only millionths of a degree. These temperature differences point back to density differences in the young universe,

where denser regions gave way to the vast web-like structure of galaxies that we see today.

MAP required an extraordinary design to achieve its accurate and precise measurements.

"Nothing has ever been built like it before," said Dr. Edward Wollack, a science team member at Goddard.

"To measure the cosmic glow reliably to a part in a million, to millionths of a degree has been the grand challenge. That's like measuring the weight of a cup of sand down to the resolution of a single grain."

After a three month journey, MAP will begin to chart the faint microwave glow from the Big Bang. It will take about 18 months to build up a full-sky picture and perform the analysis.

Inside the Emergency

The new Emergency Operations Center (EOC) on the second floor in the Launch Control Center (LCC) is Cape Canaveral Spaceport's powerful new resource in preparing for and reacting to emergencies.

The EOC is equipped to respond to emergencies of all kinds, from severe weather, which is a fairly common occurrence at the Spaceport, to a terrorist attack, which has never happened here.

The new operations center has come online in the LCC's Central Operations Facility just in time for the start of Hurricane season, which officially began June 1.

Because the LCC is rated to withstand 150-mph winds, it offers an excellent location for preparation and response, said Roger Scheidt, senior emergency management analyst with Research Planning Inc. RPI is the Emergency Preparedness subcontractor on the Joint Base Operations and Support Contract.

"The LCC is the safest building on the space center," Scheidt said. "You couldn't ask for a better location for hurricane preparation and response."

The new EOC is equipped with two 50-inch plasma screens that will be used to display broadcast and computer information needed by the Emergency Preparedness team. It also features two banks of consoles that give the team access to multiple computer servers and voice transmission systems.

If a hurricane approaches the Space Coast, the team will gather in the EOC to direct and monitor storm preparations. They will work with fire and security, duty officers and other organizational hurricane coordinators to make sure the Spaceport is well prepared to weather the storm.

The team – RPI staff and emergency management representatives from NASA, Air Force, United Space Alliance and Boeing – will, if necessary, ride out a hurricane at the EOC to help ensure critical systems on Center and at Cape Canaveral Air Force Station (CCAFS) continue functioning.

After the hurricane passes, the team will

work with various groups to help reestablish normal operations at the Spaceport.

Previously, two emergency preparedness operation centers were used to respond to hurricane threats, one at KSC and one at CCAFS.

"The new center will function as a nerve center bringing together all the emergency responders," said Wayne Kee, NASA KSC emergency preparedness officer. "We've already tried out the EOC with a hurricane exercise and we think it will be a big asset in case we do have to face a hurricane this season."

KSC has had on average one brush with a hurricane each year for the past decade, Kee said.

The EOC will also be manned for other emergencies as needed and for Shuttle launches. Emergency Preparedness will man the Alternate EOC, BlockHouse 25, and the Mobile Command Center for other CCAFS launches.

The EOC became a part of the Central Operations Facility (COF) at the LCC through an invitation of United Space Alliance (USA), which established the COF to better serve Shuttle operations.

The COF offers a centralized location with modern workstations for managers and support personnel to easily gather and work together.

Duty officers from USA and Space Gateway Support monitor consoles adjacent to the Emergency Operations Center. The Emergency Preparedness team constantly needs to communicate with the duty officers during emergency operations, so the new EOC location offers face-to-face communication, a significant improvement over the previous system of having to make numerous phone calls.

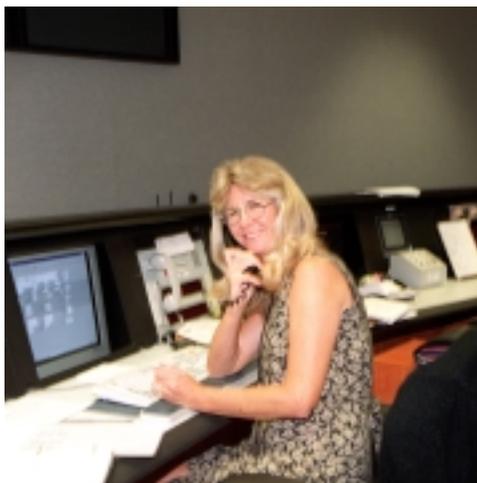
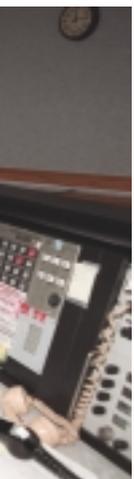
"We asked Emergency Preparedness to join the COF because we thought it would better facilitate coordinating emergency response," said Michael Shacreaw, COF site manager for USA. "There are so many players. It's important for us all to be able to clearly communicate with each other during these crucial operations."



cy Operations Center



Pictured above is the Launch Control Center where the new Emergency Operations Center (EOC) is located. At left is the EOC, which is contained within United Space Alliance's Central Operations Facility. Staff of Emergency Preparedness subcontractor Research Planning Inc. and Jim Cheek, a USA safety officer, monitor the consoles. Pictured from left to right are Charles Street, Dennis Reddecliff, Roger Scheidt, Ned Scheerhorn and Cheek. Below, Scheidt and Reddecliff discuss emergency procedures. At bottom left, a United Space Alliance duty officer and JBOSC duty officer Kathy Alderman are ready to support the EOC staff.





An aerial view of the area where the Space Commerce Way is being built. The road's intersection with State Road 3 is shown toward the bottom of the photograph. The Kennedy Space Center Visitor Complex can be seen near the top of the photograph.

Space Commerce Way underway

Orange cones and flags on State Road 3 were a familiar sight in recent weeks for Kennedy Space Center employees traveling to and from work.

The cones and flags were necessary for beginning construction of the new Space Commerce Way road. It may have been a little trickier getting to the office, but the road will make it easier for employees to traverse the Center and offer less hassle for tourists traveling to KSC Visitor Complex.

The first phase of the 2.7-mile Space Commerce Way began with construction of an intersection just south of the JBOSC Corrosion Control Facility.

Completion of the first phase is planned for early 2002.

The first phase is being funded

by the Florida Department of Transportation.

Construction of the second leg of the road will be funded by Delaware North Parks Services of Spaceport Inc.

Construction will begin in early 2002.

Space Commerce Way is being built so that the planned Space Experiment Research and Processing Laboratory (SERPL) will fall within KSC's secure area.

The new road will also provide access for the future Space Commerce Park, said Jose Perez-Morales, NASA project manager for the road and SERPL.

"This new road is going to have a major effect on the traffic pattern out here," Perez-Morales said. "It definitely will be a change for the

better and I think everyone who drives in the area is really going to appreciate the change."

When completed in 2003, Space Commerce Way will permit travel from Merritt Island to Titusville 24 hours a day, seven days a week.

KSC security gates will be relocated because of the altered route. Because of the move, employees will no longer have to re-identify themselves when traveling to and from the Launch Complex-39 and the Industrial Area.

The first phase of the SERPL construction, site preparation, is expected to begin in July. The intent is for the Space Commerce Way to be completed before the SERPL is opened.

Planning for the Space Commerce Park, which is expected to draw a

When completed in 2003, the Space Commerce Way will permit travel from Merritt Island to Titusville 24 hours a day, seven days a week.

variety of technology companies nearer to the Center, is in the initial stages.

FireMAN Web site monitors conditions

Fire is a global process, and to Florida residents, smoke billowing up on the horizon is a familiar sight.

Our local ecosystems have evolved with and adapted to fire, and fire management has become a necessary task at Kennedy Space Center (KSC) and surrounding areas. Fire is used to control fuel loads and to maintain habitats for native species.

The presence of several thousand employees, millions of dollars worth of sensitive equipment, and the environment of the Merritt Island National Wildlife Refuge (MINWR) and Canaveral National Seashore have made KSC a unique and valuable area. In addition to the obvious dangers of fire damage, contamination and cleanup costs of smoke damage can be massive.

The MINWR Fire Management Office needed more information to monitor the conditions across the KSC landscape, in turn allowing them to take full advantage of the few opportunities available to carry out prescribed burns.

The solution was to create a graphic, available on the Internet, detailing the conditions across the KSC landscape and areas scheduled for prescribed burns.

It resulted in the Fire Management and Analysis Network (FireMAN), a Web site that quickly provides NASA, the U.S. Fish and Wildlife Service and the Air Force information regarding our current fire risk.

The Earth Systems Modeling and Data Management Laboratory (ESMDML), operated by Dynamac Corp. with support from Matrix, has tapped into the base meteorological grid. A Geographic Information System processes the data that pours in from across the base, and relays it to FireMAN. A software package called WeatherPro calculates indices such as the National Fire Danger Rating System and Keetch-Byram Drought Index.

The lab also archives all of this information for future reference.

FireMAN was born of a partnership between the Spaceport Engineering and Technology and



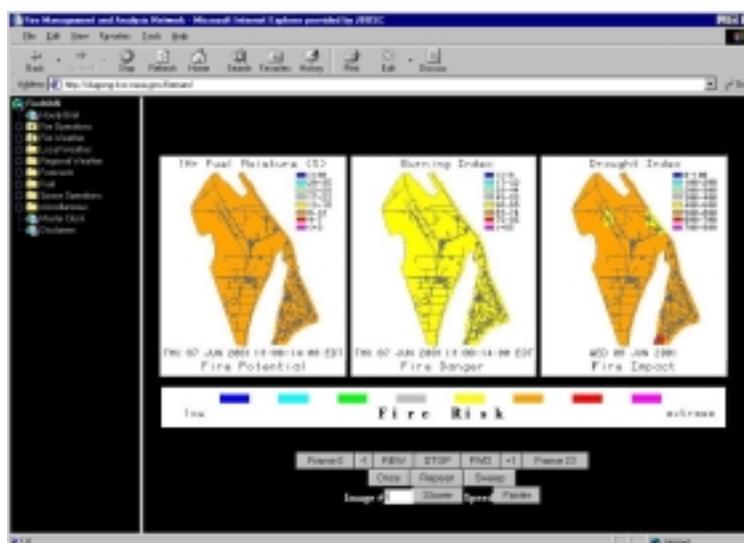
the Spaceport Services Directorate, MINWR and ESMDML.

“We’d like to see this analysis capability transferred to other regions,” said Ron Schaub, ecologist/remote sensing analyst with Dynamac. “There is also great potential for adding educational content that would be of value and interest to the general public.”

But for now, pending further funding, fire managers are excited about FireMAN’s uses here.

“We are the stewards of this landscape,” said Schaub. “It’s home to so much wildlife, and when you add the technology to it, there’s no place else like it on Earth. FireMAN is a great tool.”

FireMAN is available at <http://dugong.ksc.nasa.gov/fireman/>.



The screen shot above shows the FireMAN Web site’s ability to display fire risk conditions in the area. Above the screen shot is an aerial view of a prescribed burn in the Refuge area.

SPCSO ...

(Continued from Page 1)

budgets get tighter and competition in the launch business gets tougher.”

The office is currently working on 14 active programs, including the Advanced Technology Development Center (ATDC), Delta IV, Atlas V and X-37.

Before the formation of the SPCSO, launch customers of both NASA and the Air Force were concerned with the complexity of getting a payload into orbit, primarily because of the multiple government offices they had to work with to accomplish their launch, Blucker said.

Launch customers saw the Canaveral launch site as one entity and wanted to work with it as such vs. needing 12 to 15 of their own engineers to work through the numerous aspects of payload processing and launch.

Small, new commercial launch companies especially were perplexed and somewhat intimidated by the many layers of bureaucracy required to launch.

Now the one-stop-shop office assigns each new customer a “spaceport manager.” The manager acts as a facilitator and advocate and works to make the process as transparent as possible from the time the customer arrives until the launch or program is complete.

It is referred to as the “cradle to orbit” philosophy. Managers help iron out public safety issues, real estate agreements and environmental concerns in addition to walking customers through all unfamiliar requirements.

“Our customers say they like having an individual dedicated to running interference and breaking up log jams for them,” said Frank Davies, chief of customer service for the SPCSO. “The larger players like Boeing, Lockheed and Orbital Sciences are well-plugged into the system here, but they still need us to help them work out some specific and unique issues. The smaller players don’t know who to go to for what and we shepherd them through the whole process.”

NASA payload customer Richard Blakeslee said he has found working with his spaceport manager extremely helpful. Blakeslee, with



Pictured second from right, Suzy Cunningham, a senior spaceport manager in the Spaceport Planning and Customer Service Office, is working with Greg Clements, far left, project manager for the Advanced Technology Development Center (ATDC). Cunningham’s job is to be Clements advocate, guiding him through the process of coordinating with a multitude of government agencies to get approvals for his ATDC project. Also pictured are Vivian Dear, Air Force range safety systems safety engineer, and Gregory Popp, director of business operations for the Spaceport Florida Authority (SFA). The Air Force and the SFA are among the agencies Clements needs to work with to be able to build and run the ATDC at the old Titan 20 pad, which is pictured behind the group. The ATDC will serve as a test bed for proposed improvements for ground processing equipment and launch pad infrastructure for the Shuttle and other space launch vehicles.

the Global Hydrology and Climate Center at Marshall Space Flight Center in Huntsville, is principle investigator for the Altus Cumulus Electrification Study (ACES).

The Altus, a remotely operated aircraft the size of a Cessna, will fly out of Patrick Air Force Base and conduct weather studies over KSC beginning in July 2002.

“I appreciate the fact the office provides a single point interface with the various groups we need to work with,” Blakeslee said. “It’s certainly convenient because there are many entities we have to deal with on this project.”

Spaceport Florida Authority Executive Director Ed Gormel sees the SPCSO as another step in creating greater cooperation among NASA, the Air Force and the State of Florida with the result of better customer service and planning for the future, he said.

An earlier step was the creation of the Joint Performance Management Office (JPMO), which oversees the Joint Base Operations and Support Contract for KSC and the 45th Space Wing.

“This office is another piece in the development of the Cape Canaveral Spaceport,” Gormel said. “It’s had a number of successes and continues to evolve to better serve Spaceport customers.”



John F. Kennedy Space Center

Spaceport News

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