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John F. Kennedy Space Center

Mars rover destined for New Year's landing

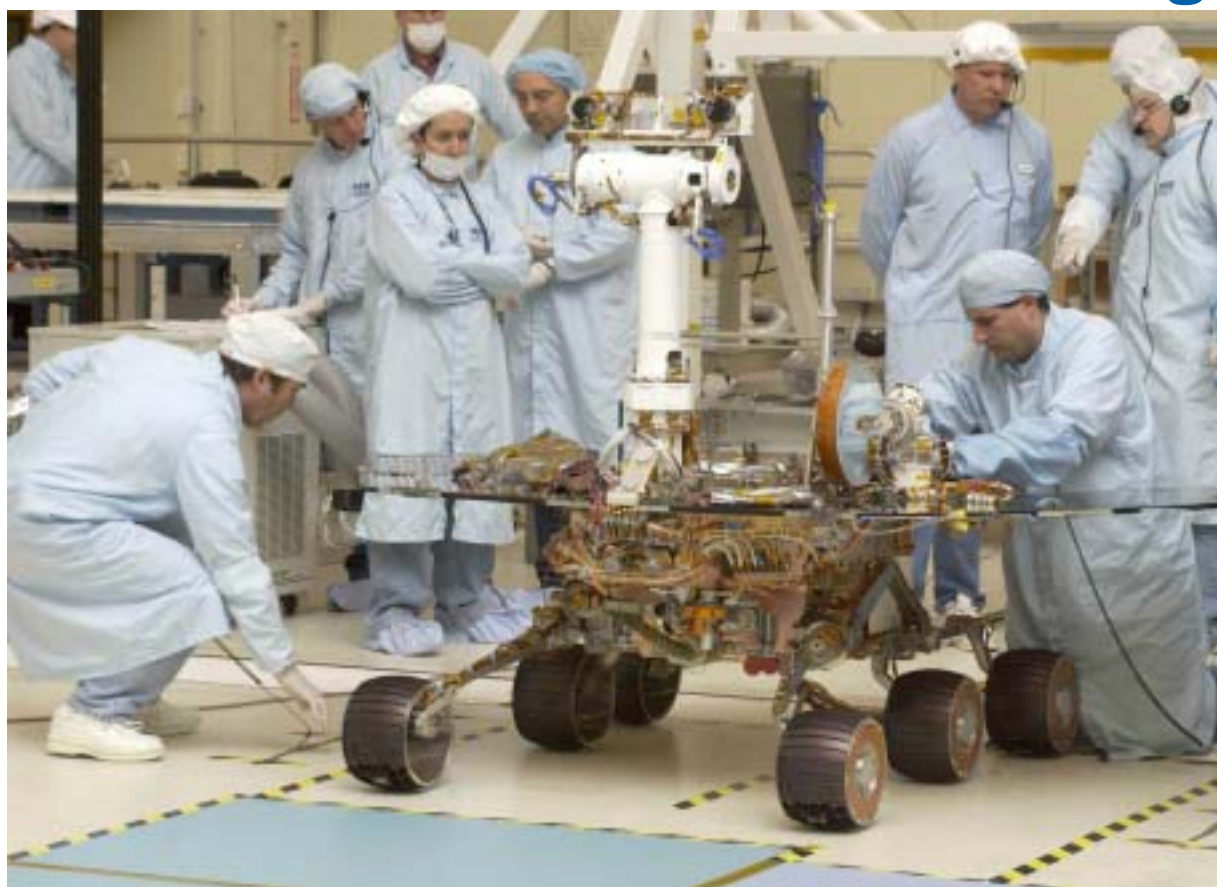
As the first of two Mars Exploration Rovers (MER) prepares to land on the red planet at 11:35 p.m. this Saturday, the Launch Services Program mission team, comprising NASA's Kennedy Space Center and the Jet Propulsion Laboratory (JPL) liaison office, wait with excited anticipation as hours of hard work finally pay off.

When MER-A "Spirit" lands on Mars and begins its search for evidence of water near an area that may once have been a lake, a second rover, MER-B "Opportunity" will near the planet for its turn to land Jan. 25 at 12:05 a.m. MER-B will land near a region containing exposed deposits of hematite.

Omar Baez, KSC Mars Missions launch director, reflected on the efforts of the processing and launch team. "The JPL, KSC, Boeing, DOE and Air Force team pulled together with the great 'spirit' that this nation always puts forth in the quest for 'opportunity'."

What started as advance planning in 1999, reached fruition last year when Spirit launched June 10, and Opportunity launched July 7, both atop Delta II expendable launch vehicles, from Cape Canaveral Air Force Station. Both rovers will spend three months performing field geology on Martian rocks and soil, leading to new discoveries on the planet.

Recalling preparations for the two launches, Sheryl Bergstrom, manager of the Jet Propulsion Laboratory KSC resident office for Eastern Launch Systems said, "The amount of work accomplished at the Cape in such a short period of time was truly a major feat. Members of the spacecraft team are to be cred-



SPiRiT IS PROCESSED by the KSC and JPL team prior to launch.

ited for their heroic efforts. I am eagerly awaiting word that MER-A has successfully landed."

And Albert Sierra, from the Mission Management office of KSC's Launch Services Program, remarked, "The team worked closely together nearly three years on the integration and launch activities for both missions. I am excited to see the next chapter - the landing on Mars."

NASA TV will provide updates beginning at 3 p.m. on Jan. 3.

"The hard geological science of reaching out and touching, drilling and analyzing the Martian surface is another stepping stone in exploring the universe," said Baez.

2003-04 -- The challenges and the accomplishments

Expanding technological boundaries and blazing new trails are part of Kennedy Space Center's (KSC) daily endeavors, and 2003 comprised a full year of these achievements.

The upcoming year is no exception, as KSC will continue demonstrating its leadership. Four expendable launch vehicles (ELV) will launch in 2004. Space Shuttle missions STS-114 and STS-121 are scheduled to launch in the last quarter. Both are International Space Station and developmental missions designed to test new return to flight safety measures.

The KSC Visitor Complex welcomed more than 1.4 million guests, and the number is expected to grow through additions of new attractions, exhibits and tour stops. Many construction efforts will progress, as well. Some of these improvements include the new Shuttle Landing Facility air traffic control tower and the Operations Support Building II.

"As we celebrate [NASA's] 45th anniversary, and indeed 2003, we pause to both celebrate the tremendous successes that we have

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Jim Kennedy
Center Director

The Kennedy Update

Happy New Year, everyone! I trust your holiday season was a safe and happy one with plenty of time spent with your family, friends and loved ones.

I also hope your batteries were recharged because 2004 roars in like a lion with the landings of our two Mars rovers, Spirit and Opportunity, in January.

As a reminder, Spirit is our first rover to land on the red planet at approximately 11:35 p.m., Jan. 3. NASA TV coverage begins at 10 p.m. This landing, along with Opportunity three weeks later, culminates many years of hard work by thousands of people from both the NASA and contractor team at several different centers.

I know all of them will be on

the edge of their seats, along with scientists and researchers around the globe, as we listen for the first signals back from Spirit after landing.

Then, at approximately 12:05 a.m., Jan. 25, Opportunity will join Spirit on the Martian surface. NASA TV coverage for that event begins at 10:30 p.m., Jan. 24. I encourage everyone to take time to tune in and watch as these remarkable chapters in our Agency's history unfold.

I'm an optimist by trade, so I know that soon we will have long awaited data from Mars beaming back to Earth for our research teams to comb over. I can't wait!

Before we totally say good-bye to 2003, I want to relay some thank-you's to people and organizations that hosted our

holiday events during December. First, thanks goes to Beth Smith and her team who arranged the Holiday Coffee held at the Headquarters Building Dec. 11.

I know we all had a wonderful time meeting with the many people who visited during the morning. It was a tremendous success, and I appreciate everyone who volunteered time to arrange a first-class show.

Then, five days later on Dec. 16, our Change Leaders Network with assistance from the Combined Federal Campaign committee hosted a super NASA-KSC Holiday Celebration at KARS Park. Everyone I saw was having a good time, taking some time to relax during the hustle and bustle of the holiday season.

Many thanks go to the NASA Exchange, who helped fund the event. We simply couldn't have held this celebration without them and it's appreciated.

My hat's off (my Santa hat, that is) to both event teams and all the volunteers who help make NASA-KSC a great place to work. It is no wonder to me why, in the latest Office of Personnel Management survey, NASA was selected as the No. 1 government agency in which to work by its employees.

I appreciate all everyone does, whether government employee or contractor, to perform our vital mission for our nation.

While 2003 is forever marked with the loss of Columbia and her valiant crew, there were also many successes of which we can be proud. I hope you tuned into the December all hands meeting to hear about a few of them.

Whether successfully launching our eight scientific satellites, opening the brand new \$30 million Space Life Sciences Laboratory or accomplishing our many hundreds of other tasks that benefit our nation, tremendous work was accomplished here in 2003.

As we close the book on 2003 and look forward to an exciting and incredible 2004, I want to thank you for all you did this past year and wish you the best of luck in all you do in 2004.

On behalf of Dr. Woodrow Whitlow, Jim Hattaway, and my wife Bernie, I wish each and every one of you the most joyous and prosperous New Year.

God bless the people of KSC, our troops fighting terrorism across the world - including our own Charlie Gambaro who is serving in Iraq (**see below**) - and this great nation!

Bernie and Jim,

Thanks for your thoughts and everything that you have done for my family. The soldiers that are here with me will make Christmas special. I have been successful in sending my soldiers back home for R&R and this should continue through January '04. I know Madelaine and the kids will miss me, however, they know that I will be with them in mind and soul.

My engineering group is accomplishing many good things for the people of Iraq. The folks that I work with are very thankful! For example, I am heading up a group that is developing a planning board for the city of Mosul. I have representatives from all sectors of the community. Things get very interesting with the language, religion and customs. We are also working on water, base camp development, electricity infrastructure issues and much more.

I also see and live daily situations that are very tough, especially when soldiers are getting hurt and killed on a daily basis. Things are getting more hostile. How do you gain the trust of the locals when you have to point weapons at all and shoot on a moment's notice to defend yourself? This is a dilemma; however, I am doing all within my control to bring home all my soldiers at the end of his tour.

I am doing very well. God is definitely looking over me and has pulled me out of some very dangerous situations safely. Well, take care and write back soon.

U.S. Army Reservist Charlie Gambaro
NASA Senior Engineer, Cape Canaveral Spaceport Management Office

Yunis values team effort the most

According to Isam "Sam" Yunis, "It's the best place I've worked, including other Centers and private companies." He's talking about Kennedy Space Center's Launch Services Program (LSP) where he has worked as a structural dynamics lead for five years.

Yunis earned his directorate's Employee of the Year award for nine months of work defining the Delta II main engine cutoff vibration environment and helping to verify the launch hardware is qualified to operate under this new environment.

Not one to rest on his laurels, he's kept busy with this project and several others ever since. "It was nice to receive the award, but it was a team effort," said Yunis. "I'm particularly fond of the Mission Analysis Branch because I cannot imagine a more intelligent and harder working group of people."

LSP is working several other important projects - among them the Orbital Space Plane (OSP) and the Jupiter Icy Moon Orbiter (JIMO) mission planned for 2012.

The OSP will launch atop an expendable launch vehicle (ELV). OSP work involves feasibility studies and trade studies, according to Yunis. Integrating unique OSP requirements, including human rating, abort trajectories and an exposed space vehicle in the ELV heritage is crucial at this point in the



ISAM "SAM" YUNIS, a structural dynamics manager for the Launch Service Program, found a solution to define the Delta II main engine cutoff vibration environment. He also earned his directorate's Employee of the Year award.

program.

"It's important that we make sure both vehicles are compatible with the unique launch requirements," said Yunis.

JIMO requires developing a launch vehicle with enough capability to handle the massive payload. Work is just beginning with studies by several contractors to investigate launch vehicle performance options.

Yunis worked at Glenn Research Center and the Analex Corp., both in Cleveland, Ohio, prior to joining the team at KSC.

When he's not at his computer looking over plots and analyzing data, the father of three children - ages 5, 4 and 2 - enjoys time at home with his family. His interests include canoeing, bicycling and organic gardening.

Though his interest in organic gardening dates back approximately 20 years, Yunis has been seriously challenged since moving to Florida. "At first, after losing crops to prehistoric pests and persistent disease, I thought organic gardening in Florida was a myth," Yunis recalls. However, recent successes have provided some hope - and food.

Jobs will change as priorities shift at Center

Only a few months ago, Kennedy Space Center Director Jim Kennedy tasked the Workforce and Diversity Management Office to develop and implement a workforce optimization plan. Since then, much has been accomplished to align KSC's civil service human resources with the Center's strategic and tactical objectives.

Concentrating on priority obligations to Orbital Space Plane, the Launch Services Program and Shuttle Return to Flight, a Centerwide Workforce Optimization Team, comprising nine members in a variety of levels, formed to consider and evaluate 168 new positions based on the budget. So far, 50 of those positions are filled, with an additional 10 more positions to be filled.

(See JOBS, Page 6)



BOB WATERMAN, new NASA lead for Spacecraft Command and Data Handling and Flight Software, Orbital Space Plane (OSP), unpacks boxes in his new office in the Operations and Checkout Building.

'Tis the Season - the KSC family co

The annual Holiday Coffee for current and former KSC employees was held Dec. 11 in the Headquarters Building. Refreshments were set up in the main concourse areas of each floor and in the conference room of the fourth floor.

“My emotions are running high as we get a chance, as we only do once a year, to see both our current and retired employees,” said KSC Director Jim Kennedy.

“It’s such a wonderful feeling to think about the people that made this Center what it is, who established a tremendous reputation for Kennedy Space

Center, and to have them join us as we attempt to continue the legacy they began. It’s a festive, great time and I’ve had a ball that’s for sure.”

The social event helps employees usher in the Holiday Season at the Center and gives retirees a chance to relive past challenges and learn about current projects.

“I think it’s the most rewarding job you can have and it will last in my memory forever,” said retiree Anna Ruby at the event. “My daughter (Anna Maria) is an electrical engineer for YA, who I’m very proud of.”



THIS YEAR'S HOLIDAY COFFEE was spread out over four floors of the Headquarters Building.



ABOVE, CENTER DIRECTOR JIM KENNEDY shows his holiday spirit by wearing a Santa Claus hat while talking to a group of KSC employees about careers at NASA. At left, employees helped themselves to various sweets and beverages at this year's Holiday Coffee held Dec. 11.

Elementary class shares cookies for Holiday Coffee



So, where did those delicious chocolate chip/oatmeal/walnut cookies at the Center Director’s Holiday Coffee come from?

A third-grade class at Theodore Roosevelt Elementary School and the Doubletree Hotel in Cocoa Beach provided KSC with 2,003 cookies as part of the hotel chain’s Great Community Cookie Giveaway. The program is part of Teaching Kids to CARE, an outreach initiative that encourages school children to start making conscious decisions about how they can serve their communities.

“It was very rewarding to see the Theodore Roosevelt Elementary School and the Doubletree Hotel working together to teach Ms. Moskal’s third-grade class about sharing with the community,” said Mike Wetmore, the Space Shuttle deputy program manager for KSC, who accepted the cookies on behalf of Kennedy Space Center. “I’m sure that the current and former employees from the Kennedy Space Center enjoyed the 2,003 cookies the class and the Doubletree have so generously provided. It was also exciting to learn that NASA’s participation in this event has contributed to the students’ interest in careers in math and science.”

celebrates the holidays together

Holiday Celebration thanks NASA civil service personnel

A Holiday Celebration for all KSC civil service personnel was held Dec. 16 at KARS 1, where a traditional holiday dinner, gifts and entertainment provided a festive atmosphere. The event was sponsored by the Change Leaders Network with assistance from the Combined Federal Campaign committee and funding from the NASA Exchange.



SERVING AS HOSTS at this year's Holiday Celebration were KSC Director Jim Kennedy (second from left), Deputy Director Woodrow Whitlow Jr. and Associate Director Jim Hattaway Jr.



THIS YEAR'S HOLIDAY CELEBRATION was held at KARS 1. Before the meal, employees listened to speeches (above) from various NASA personnel. Below, Center Director Jim Kennedy and Associate Director Jim Hattaway gave children of NASA employees a moment to introduce themselves and their parents, as well as pick out a gift.



KSC CIVIL SERVICE PERSONNEL and their families were treated to a traditional holiday dinner (above), including dessert (below).



New date set for Gravity Probe B launch

The Flight Planning Board for Gravity Probe B recently set April 20, 2004, as the new launch date for the experiment.

The spacecraft is in the NASA spacecraft processing facility at North Vandenberg Air Force Base in California. The Experiment Control Unit (ECU) was returned to Lockheed Martin in Palo Alto, Calif., in mid-December for repairs.

Two associated circuit boards contained in the ECU are being removed and replaced with ones slightly different in circuit design.

Meanwhile, the Delta II rocket is at Space Launch Complex 2 enclosed within the gantry-like mobile service tower. It has successfully completed all testing to date and will stay in the tower.

Gravity Probe B, developed by the Marshall Space Flight Center, Stanford University and Lockheed Martin, will test two predictions of Albert Einstein's general theory of relativity. The probe will monitor the geodetic effect (how space and time are warped by the presence of the Earth) and frame dragging (how Earth's rotation drags space and time around with it).

The 16-month experiment consists of four sophisticated gyroscopes that will provide an almost perfect space-time reference system. The mission will look in a precision manner for tiny changes in the direction of spin.

Oversight of launch preparations and countdown management on launch day is the responsibility of KSC.



GRAVITY PROBE B, which will monitor how space and time are warped by the presence of Earth and how Earth's rotation drags space and time around with it, is now scheduled to launch April 20, 2004, from Launch Complex 2, Vandenberg Air Force Base.

Santa's sleigh overloaded with gifts from employees



MAKING THE DONATION to this year's Adopt-a-Child program are, from left, Brig. Gen. Greg Pavolich, 45th Space Wing commander; Susan Kroskey, executive director of the Cape Canaveral Spaceport Management Office; Bill Sample, president of Space Gateway Support (SGS); and Peter A. Colangelo, SGS deputy program manager

This year, 656 children in the Adopt-a-Child program will enjoy a joyous holiday thanks to the generosity of many Joint-Base Operations Support Contract (J-BOSC) employees. After loading more than 100 bikes and 1,000 gifts, the seven-vehicle convoy traveled to the Rockledge office of the Department of Children and Families (DCF) and were greeted by DCF State Secretary Jerry Regier.

JOBS ...

(Continued from Page 3)

"I am very pleased with the quality and progress of the work completed to date," said Richard Arbutnot, director, NASA-KSC's Workforce and Diversity Management. "The Workforce Optimization Process will enable us to ensure a better mix of experienced and new personnel to meet mission requirements."

According to Arbutnot, the process will allow NASA to focus recruitment on skills needed, rather than duplicating those that already exist.

"It was important to understand these positions in terms of the skills and competencies required," said Ron Kent, chief, Workforce Planning and Analysis. "We looked at the current workforce in terms of experience levels and where their skills best fit the new requirement. We moved current experienced workforce members to where they were needed most."

According to Kent, some positions will be filled from sources outside the NASA

community, including an Agency program to recruit new college graduates. Current positions are listed on the NASA Jobs Web site (www.nasajobs.nasa.gov) and is updated as additional key shortfalls are defined.

"The Workforce Optimization Team was an outstanding group of people who produced a lot in a short amount of time and learned a lot in the process," said Kent. "It was the best way to get our near term mission done."

"The key to the success of this process is the strong management buy-in and support for it up front. The need was recognized and management provided the people to accomplish it."

KSC Director Jim Kennedy added, "I appreciate the efforts of the Workforce Optimization team and those who responded to the opportunities. The continued dedication to KSC and NASA's mission will be our greatest asset in ensuring a safe return to flight and supporting the new endeavors we anticipate in the upcoming year."

Final 2003 all hands meeting recognizes milestones

The KSC team watched an all hands meeting Dec. 12 at the Training Auditorium, where Center Director Jim Kennedy led a team of representatives in discussing items affecting the work force.

Lt. Gen. Eugene Tattini (USAF retired), deputy director of the Jet Propulsion Laboratory (JPL), spoke as an invited guest of Kennedy. In addition, representatives from the Expendable Launch Vehicle program and contractor team discussed the KSC teamwork and successes.

Dr. Irene Long, chief medical officer, began the meeting with the top three ways to survive the holiday season, including the need to stay active, eat right and stay away from stress when possible.

Long was followed by Susan Kroskey, executive director of the Cape Canaveral Spaceport Management Office and chairperson of the recently completed Combined Federal Campaign for charities.

"Our goal was quite simple – raise \$280,000 to go to charities that would help those in need," said Kroskey. "In just three days, you contributed over 50 percent of our goal. And you didn't stop there. You proved that KSC was truly the great organization we all know it is.

"All three records that you can have in this campaign were broken. The contributions totaled almost \$354,000, which is 26 percent higher than our goal and \$48,000 more than last year."

Following the check presentation from Kroskey and Kennedy to United Way Brevard president Rob Rains, the Center Director introduced Jeanne Hawkins, NASA technical contract manager and KSC lead for Safety and Mission Success (SMS) Week, who gave feedback about the information the Center received about the initiative.

During SMS Week, held Nov. 17-21, employees were encouraged to read the Columbia Accident Investigation Board Report to identify areas that were relevant to their work beyond the Shuttle program, as well as those



ABOVE, SUSAN KROSKEY, executive director of the Cape Canaveral Spaceport Management Office and Center Director Jim Kennedy (right) present the KSC Combined Federal Campaign check to Rob Rains, Brevard president of United Way. Below, the Dec. 12 all hands meeting ended with a question-and-answer session from NASA and contractor representatives.



things that will allow us to move forward.

"The comments you provided will be invaluable to Kennedy Space Center," said Hawkins. "It was evident that you did not take this as a 'check the box' exercise. The main purpose of the questions was to get a dialogue

going within your respective group. There were no right or wrong answers."

The Center Director next took the stage and discussed the Columbia tragedy, KSC's core values and other employee initiatives.

"Isn't it comforting to know that many of you volunteered

yourselves immediately, on the very day of February 1, to go to East Texas to make yourselves available for that very important recovery activity," said Kennedy.

"And isn't it comforting to know that we were able to put together under Rich Arbuthnot's

leadership, and many hundreds of volunteers, a touching memorial service that I will never forget just six days after that disaster."

The director then reflected on the accomplishments of the Center and gave many examples of people going above and beyond the call of duty.

"I love the way you demonstrate your commitment to the people of this Center," said Kennedy. "I am the first to recognize that it is each and every one of us across this Center who make it possible, not just the people whose names I read about."

He first recognized the 50 employees who have served in our country's fight against terrorism. Kennedy then recognized some personnel changes, including Mike Wetmore, director of Space Shuttle operations at KSC; Mike Butchko, former president of Space Gateway Support, who will accept a new position with Northrop Grumman; and Tim Wilson, chief engineer point of contact at KSC for the new NASA Engineering and Safety Center.

Kennedy was followed on stage by Ray Lugo, deputy director of the Launch Services Program, who gave an overview of the successful launches carried out by his team, including the Solar Radiation Climate Experiment (SORCE), the Galaxy Evolution Explorer (GALEX) and the Mars Exploration Rovers A and B, and what the challenges for the future will be.

Tattini then thanked the KSC team and explained the functions of the Jet Propulsion Laboratory. "The reason I am here today is to thank the Kennedy team for the great support they have given us for the calendar year 2003," said Tattini. "Without you, we could not have done it."

Deputy director Woodrow Whitlow was the final speaker at the meeting and talked about the NASA partnerships KSC enjoys and the challenges that lie ahead.

A question-and-answer session with Kennedy; Lugo; Joy Bryant, executive director of CCAFS and Vandenberg Air Force Base Launch Operations; Adrian Laffitte, Atlas program director for Lockheed Martin Space; and Bryan Baldwin, Pegasus program manager for Orbital Sciences Corp., concluded the program.

"I love the way you demonstrate your commitment to the people of this Center," said Center Director Jim Kennedy.

The momentum of 2003 propels KSC into 2004

2004 . . .

(Continued from Page 1)

enjoyed as well as to reflect upon the tragic losses that we have all had to endure," said Center Director Jim Kennedy.

Following the catastrophic February loss of Columbia and the STS-107 crew members, the Center resolved to remedy concerns and excel in exploration. Although KSC's perseverance was tested in 2003, this year's exciting milestones confirm that the Center's excellence prevailed.

Recovery and Reconstruction

KSC civil service and contractor employees were among the 25,000 personnel who helped with the search and recovery efforts in East Texas, utilizing almost 1.5 million man-hours and involving more than 130 federal, state and local agencies.

When the search concluded, nearly 84,000 pieces of debris were recovered or about 38 percent of the dry weight of the orbiter.

Missions

KSC managed seven ELV missions during 2003. These successes include the Ice, Cloud, and Land Elevation Satellite (ICESat) and Cosmic Hot Interstellar Plasma Spectrometer (CHIPSat), Jan. 12; Solar Radiation and Climate Experiment (SORCE), Jan. 25; Galaxy Evolution Explorer (GALEX), April 28; Mars Exploration Rovers (MER)-A Spirit, June 10, and MER-B Opportunity, July 7; Scientific Satellite Atmospheric Chemistry Experiment (SCISAT), Aug. 12; and the Space Infrared Telescope Facility (SIRTF), Aug. 25.

Two of these were launched from Vandenberg Air Force Base, Calif., and five from Cape Canaveral Air Force Station.

The single 2003 Space Shuttle mission, STS-107, launched Jan. 17 from Pad 39A. The Extended Duration Orbiter mission was a microgravity research flight. At approximately 9 a.m. EST, Feb. 1, Columbia broke up during re-entry over Texas.



SPACE SHUTTLE COLUMBIA lifted off from Launch Pad 39A on mission STS-107 at 10:39 a.m. EST on Jan. 16.

Partnerships

KSC, the Air Force, the Secretary of Defense office and the Federal Aviation Administration addressed space launch needs associated with low-cost, routine and safe space access. As a result, Future Interagency Range and Spaceport Technology Program (FIRST) emerged. FIRST develops key technologies to achieve global, interoperable spaceports and ranges.

The Agency, Dynamac Corp., Bionetics and University of Florida researchers and scientists moved to the 100,000-square-foot Space Life Sciences (SLS) Laboratory. This facility serves as a research hub for plant growth experiments, resource recovery and microbiology studies.

Technology

This is the fourth consecutive

ization Office received 128 New Technology Reports for innovations developed at the Center, and signed seven license agreements and five Space Act Agreements.

Education

The Education Programs and University Research division supported the development and implementation of NASA's Educator Astronaut Program.

KSC also helped implement a new Agency initiative - the NASA Explorer Schools Program. Five KSC regional service area schools are participating to acquire new teaching resources and technology tools for their fifth to eighth grade classes.

Safety and Health

After two years, KSC became Voluntary Protection Program (VPP) qualified by the Occupational Safety and Health Administration (OSHA). At least 78 percent of KSC's workforce, including two major contractors, is now VPP Star certified.


Return to Flight

At year-end, Atlantis and Discovery were undergoing processing for the STS-114 launch, a 12-day mission. Atlantis is the primary vehicle, but processing of Discovery is taking place in case of any problems with Atlantis.

The Center currently houses 10 Station elements, in various processing and testing stages, as NASA looks forward to continuing the third phase of assembly.

year KSC earned more Space Act Award dollars than any other NASA civil service center. The fiscal year 2003 award amount of \$195,700 is proportionately divided among award areas.

The Technology Commercial-



John F. Kennedy Space Center

Spaceport News

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