Nation watches Discovery's roll out to launch pad

First motion stirs emotions of work force

NASA’s Space Shuttle Discovery arrived at its launch pad April 7 at 12:30 a.m., completing the next major milestone for Return to Flight of America’s Space Shuttle program.

“My personal feeling is just one of elation,” said Mike Leinbach, Space Shuttle Program launch director. “We’ve been working hard. We haven’t seen a Shuttle in the light of day in almost two and a half years. But it’s not about how I feel, or about how the people at KSC feel; it’s about how the American people feel. There are folks across this country who support our program with their heart and soul.”

Discovery arrived approximately three hours later than planned. The slight delay was caused when Shuttle processing team members had to replace a Programmable Logic Controller (PLC) circuit card on the Crawler Transporter during the final leg of its journey.

The PLC is an indicator that relays height measurements to the Crawler’s operators while it’s in motion.

Discovery’s first motion started April 6 at 2:04 p.m. inside the VAB. Once outside, the orbiter was greeted by employees lining the surrounding area as it made its four-mile journey to Launch Pad 39B.

Once in place at the launch pad, the Shuttle team continued preparing Discovery for its scheduled launch, set for a window of May 15 - June 3.
Greetings, everyone! Wasn’t April 6 an exciting day at KSC with the rollout of Space Shuttle Discovery to Launch Pad 39B? My congratulations to the entire Shuttle team for all their hard work the past two and a half years arriving at this day.

Discovery sure looks great out at the pad, its rightful place, as we work toward the launch between May 15 – June 3.

As I sent my column to press, the very important External Tank test was to have taken place Thursday. While we expect everything to go great, the Shuttle team just wanted to see how the redesigned tank foam would react under “game day” conditions.

After this, the next major milestone is in the last week of April when we have a full launch dress rehearsal, which includes the STS-114 crew actually strapping into the orbiter and simulating a launch. These are exciting days at KSC and NASA, and for our nation as a whole.

Keep up the great work; America is behind you 100 percent.

Today, at approximately 1:30 p.m. local time, if you watch NASA TV or click on the NASA Web site, you will see the exciting launch of DART on a Pegasus rocket from Vandenberg Air Force Base in California. NASA will throw a “dart” into space to perform a one-of-a-kind test of a fully robotic system that could pave the way for missions allowing computers to do the future driving in space.

The new technology will allow a spacecraft to pinpoint and rendezvous with another craft without human guidance — a technology that could help take humans back to the Moon and eventually to Mars and beyond.

This is such an exciting time to work in the space business. We are working with current technology like the Space Shuttle while laying the groundwork for missions to take place 50 years from now. Good luck to our Launch Services Program, Marshall Space Flight Center and the entire DART team on the launch.

A huge pat on the back goes to Phil Bernardo and the entire KSC All American Picnic committee for the tremendously successful, fun and entertaining picnic held last Saturday. I know we all had a great day with family and friends and great Florida weather (thanks, John Madura).

It also served as our Return to Flight kickoff rally, with people receiving bus trips out to the pad to see the Shuttle. We had parachutists, great music, food, drinks, kids’ games, the works. Basically, everything you’d ever want in a picnic.

Phil couldn’t have done this alone. It took hundreds of volunteers and months of planning. To you all: thanks to making a sacrifice of your time so the rest of us could have a great day. We work very hard at KSC and it’s nice to able to play hard once in a while; last Saturday fit the bill nicely. So again, thanks to Phil and all the volunteers.

Have a great week, everyone, and GO DART and GO DISCOVERY!

Respected author Covey discusses successful traits with management

IN THE Vehicle Assembly Building, author Stephen Covey (center) looks up at the External Tank/Solid Rocket Boosters stack for mission STS-114. Human Resources Director Pat Simpkins (left) and NASA Space Shuttle Atlantis Vehicle Manager Scott Thurston accompanied Covey in the VAB. Covey and his executive assistant, Julie McAllister (at Covey’s right), recently toured the Center.

Covey also spent time discussing his book, “The 8th Habit.” Seated next to Covey are, from left, Deputy Director Woodrow Whitlow Jr. and Center Director Jim Kennedy.

April Employees of the Month

SITTING IN the front row, from left, are: Shea Gaudart, Human Resources Office; Diana Calero, ELV and Payload Carriers Program; Genger Thorn, Chief Financial Office. Standing in the back row, from left, are: Dan Tran, Information Technology and Communication Services; and John Brand, Safety and Mission Assurance.
Gill harmonizes Space Station elements testing

By Linda Herridge
Staff Writer

Tracy Gill, an engineering integrator with the International Space Station/Payloads Processing directorate, looks forward to the day when some of the recent payloads he’s worked on are included in a Space Shuttle mission.

Gill, who has supported payloads processing for 15 years, coordinates and implements requirements primarily for science and research payloads.

He completed his duties for several STS-121 science and research elements. These include the European Modular Cultivation System and the Minus Eighty-Degree Laboratory Freezer, both provided by the European Space Agency.

“I’m happy these and other payloads will finally be delivered to the Station, and I’m excited about Return to Flight,” Gill said.

For his skills in coordinating an important test, Gill earned his directorate’s February employee of the month award. He successfully implemented a functional integrated test for the Alpha Magnetic Spectrometer-2 (AMS-2) payload.

This involved testing the prototype avionics with the International Space Station (ISS) and Space Shuttle simulators in the Space Station Processing Facility high bay to validate the design. Gill worked with representatives from 30 different countries, including Russia, Taiwan, Italy and Switzerland. He also worked with Johnson Space Center in Houston and Marshall Space Flight Center in Huntsville, Ala., to coordinate the tests.

According to Gill, AMS-2, currently scheduled for a 2008 Space Shuttle flight, is a massive electromagnet with hundreds of thousands of detectors that will be attached to the ISS truss structure S3. AMS-2 will attract particles to measure the speed and curvature as they pass through the array in order to detect new types of particles.

“Tracy is a multi-talented worker with superior technical competence,” said Todd Arnold, ISS Engineering Integration chief. “He has been instrumental in leading integrated testing for ISS and Space Shuttle research payloads for many years.”

Gill started his NASA-University of Florida career in 1990. He worked on Spacelab integrated processing, including the last Spacelab mission, NeuroLab, and an Express Rack prototype. Later, he worked on several ISS Express Racks, including the first two Express Racks delivered to the Station.

He also worked on the Human Research Facility-2 (an STS-114 element).

Thompson's leadership recognized by NASA, Texas State

By Jennifer Wolfinger
Staff Writer

Before Karen Thompson began her 16-plus years at NASA, she demonstrated leadership at Texas State University while earning a Bachelor of Science degree in chemistry. Today she supports the Agency’s discovery goals as Kennedy’s Exploration Office technology and science manager.

In February, she received the university’s Distinguished Alumna Award for her ongoing accomplishments.

“I feel honored to be recognized in such a special way,” said the native Texan. “This is a credit to NASA in that we are engaged in such interesting and excellent work that people throughout the country and the world are excited about what we do.”

This award joins her prestigious NASA Exceptional Service Medal, KSC Invention of the Year Award, the Distinguished Patent Award in 1997 for the best patent involving the Los Alamos National Laboratory, two Space Act Awards and many others.

Additionally, she has chaired national and international symposia, written a book chapter for the American Chemical Society, and given numerous invited papers and presentations throughout the world.

During her senior year in college, Thompson changed her major from pre-med to chemistry in order to pursue her passion for research and to work with leading polymer chemist Dr. Patrick E. Cassidy. This new direction also presented an opportunity to teach undergraduate chemistry lab courses.

She was selected to work with Dr. G. Ronald Husk, the U.S. Army Research Office’s director of polymer research, during his one-year sabbatical at the university. This resulted in Thompson, Husk and Cassidy co-authoring a paper in the publication Macromolecules describing polyimide studies for protecting the military from chemical warfare agents.

She also leads a full personal life as stepmom to Daniel, 22, and Annette, 20, who has cerebral palsy. Thompson and her husband, retired research chemist Dr. Corley M. Thomp-
Not only did the 2005 KSC All American picnic feature classic Florida weather, but it also gave Kennedy Space Center employees a great opportunity to savor delicious foods, play carnival-style games and enjoy each other’s genuine company and hospitality.

“I want to welcome all of you to today’s picnic,” said Center Director Jim Kennedy at the Return to Flight rally that followed the welcoming parade. “This picnic would not be possible without people like (picnic chairperson) Phil Bennardo, and he will be the first to tell you he could not do it alone. It’s Phil and more than 500 volunteers who make it possible.”

But most importantly, this year’s picnic celebrated the Space Shuttle Program’s Return to Flight. The motto “KSC and proud to be” was very evident at the event.

“When we reviewed plans for the picnic four months ago, we realized we would be so privileged to have Discovery sitting on the launch pad if all went well,” Kennedy said. “As of three days ago, we have Discovery on the launch pad. Go Discovery,” which was greeted by a loud cheer. “I also want to sincerely thank the Return to Flight team. God bless you all, and please have a great day at your picnic.”

Guests of the picnic were given an opportunity to take a bus tour to see Discovery at Launch Pad 39B.

“The combination of perfect weather, the excitement of having a Space Shuttle arrive at the pad three days earlier, and the wonderful support and enthusiasm of the picnic team and numerous volunteers all worked together to make this one of the best picnics ever,” said Phil Bennardo of the Spaceport Engineering and Technology directorate.

“From everything I saw, everyone had a good time,” he said. “In spite of all the work involved, the picnic team had a good time, too.”

Shuttle Program Manager Bill Parsons told those at the rally how much appreciation he has for the work force.

“Jim Kennedy and all the folks at the Kennedy Space Center have done a great job,” Parsons said. “We’ve talked about STS-114, but we can’t forget about STS-121. Atlantis is being processed and without it being on schedule, we can’t launch 114. I have all the confidence in the world in the KSC team and this will be the safest vehicle we’ve ever flown, no doubt about it.”

Among the employees having a great day was Diane Stees, a Shuttle Processing employee who shared the afternoon with her husband, Rick, and two children, Dana and Evan.

“It’s a beautiful day for a picnic. We had a great time,” she said. “This is about our seventh (KSC) picnic and my kids really enjoyed themselves. We’re also very excited about Return to Flight.”

Another crowd favorite was the Chili Cookoff. The contest’s “Best of Show” title was awarded to the Mudbugs, with team members from Launch Operations and the KSC Fire Department. The “People’s Choice” award went to the IT Cosmic Chili Lab of the Information Technology and Communications Services Directorate.

By winning “People’s Choice,” the IT team donated proceeds to Brevard Hospice and Palliative Care of Viera.

The Raiders of the Lost Chili from the Chief Financial Office won “Best Exotic Chili” and “Best Storefront.”

The picnic committee has created a feedback survey at http://www.kspicnic.ksc.nasa.gov.
es beautiful weather, Return to Flight

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son, enjoy spending time with their family.

Proud of its graduate, the university now permanently exhibits Thompson’s biography and photo at the campus. While recently visiting the campus, she was showered with justifiable attention, as Thompson is now part of an elite group. In 1959, Texas State’s first Distinguished Alumnus Award was presented to former President Lyndon B. Johnson, who was a state senator at the time.

Thompson met with the university and alumni association presidents, as well as the dean of sciences and vice president of academic affairs.

She answered questions from top science and engineering students, toured the campus and gave a presentation about the Vision for Space Exploration. The festivities concluded with a formal Scholarship Gala where she addressed more than 300 attendees.

Now, Thompson looks forward to NASA’s future. She said, “It is exciting to see KSC employees selected to perform research and development work for such areas as ground systems development on Earth, technologies allowing extended stays and important operations on the Moon, technology concepts to be tested on the Moon for later applications for human missions to Mars, and technologies for robotic missions to Mars and beyond.”
NASA will throw a “dart” into space to perform a one-of-a-kind test of a fully robotic system that could pave the way for missions when computers will do the driving in space.

The DART mission - short for Demonstration of Autonomous Rendezvous Technology - will allow a spacecraft to pinpoint and rendezvous with another craft without human guidance, a technology that could help take humans back to the Moon and eventually to Mars and beyond.

Launch is planned April 15 from Vandenberg Air Force Base, Calif.

Next comes a demonstration in space of the entire autonomous rendezvous system. The 24-hour DART mission will be accomplished without human intervention.

The ability of unpiloted spacecraft to dock in space can assist in delivering equipment and supplies to the International Space Station, as well as conducting service missions to the Station.

The technology also could help when retrieving satellites or servicing civil, defense or commercial space vehicles.

Florida enjoys NASA’s economic benefits

In fiscal year 2004, covering the period from Oct. 1, 2003, through Sept. 30, 2004, Kennedy Space Center and other NASA centers injected $1.5 billion and $1.4 billion respectively into the Florida and Brevard County economies to support NASA activities at KSC, mainly through space program operations. These amounts represented a 5-percent increase over their 2003 levels according to a report prepared by KSC’s Chief Financial Office.

KSC and other NASA centers awarded 821 contracts in Florida in this period, with 92 percent of KSC/NASA spending concentrated on-site at KSC. Total KSC/NASA direct spending was $25 million in other Central Florida counties and $72 million in other Florida counties.

“This report is designed to inform the various local economic development agencies, government groups, our stakeholders and the community of the total economic impact of the Kennedy Space Center and NASA to our local area and to the state,” said Napoleon Carroll, KSC’s chief financial officer.

“The impact is significant and a consistent annual analysis provides detailed information for planning and reporting the effects of this injection of funds into our region.”

The total number of KSC on-site workers was 14,500, with 86 percent of the total employed by prime contractors. Among that number, 90 percent of the on-site work force lived in Brevard County and another 8.6 percent commuted from other Central Florida counties.

Employees at KSC received a total of $871 million in spendable earnings. Commodity purchases by KSC and other NASA centers in Florida totaled $629 million in fiscal year 2004.

The total economic impact of NASA in Florida was $3.3 billion in output, $1.6 billion in household income and 33,000 jobs. This activity also generated $166 million of federal taxes and $76 million of state taxes.
'Live via satellite' became a reality with Early Bird

By Kay Grinter
Reference Librarian

Forty years have passed since the world’s first commercial communications satellite, Early Bird, was launched and the expression “live via satellite,” so well-known to television viewers, was born.

Launch took place on April 6, 1965, from Cape Kennedy on a three-stage, thrust-augmented Delta rocket. The satellite took up its geosynchronous orbit over the Atlantic Ocean later that month.

On the business front, the groundwork had been laid to manage the American satellite network, as well as the existing ground stations in the United Kingdom, France, Germany, Italy, Brazil and Japan.

International agreements were finalized, creating the International Telecommunications Satellite (INTELSAT) Organization on Aug. 20, 1964.

The 85-pound, Hughes-built Early Bird satellite - also known as INTELSAT I - had 240 voice-grade channels and was designed to relay radio, television, teletype and telephone messages between North America and Europe.

The satellite provided almost 10 times the capacity of the submarine telephone cables in use for about a tenth of the price.

Early Bird provided the first scheduled transoceanic television service, as planned. One of the first dramatic broadcasts gave European doctors a live, over-the-shoulder view as an American surgeon operated on a heart.

In another broadcast, NBC anchorman Chet Huntley “teamed” for the first time with his counterpart in London, Richard Dimbleby, to report the news.

And a “Town Meeting of the World” linked statesmen in New York, London and Paris for a panel discussion about the war in Vietnam.

The impact on television viewers in Hawaii was especially exciting because they no longer had to wait to see television programs being broadcast on the mainland.

Participants in the World Peace through Law Conference in Washington, D.C., in September 1965 noted that advances in international communications, including the Early Bird satellite, could be counted among the important milestones on the road to world peace.

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million of state and local taxes.

All KSC/NASA activities injected $1.52 billion of outside money into Florida’s economy. This total consisted of $890 million in direct earnings payments to households and $629 million in purchases from contractors.

At the state level, each direct job at KSC was multiplied into 2.28 total jobs. In addition to NASA’s spending on space program operations, there are a number of other activities directly associated with KSC that add to its total impact on the economy. These include the travel expenditures of out-of-state business and government personnel that travel to KSC to conduct business, and sales to out-of-state visitors at the Visitor Complex.

The analysis is conducted at three geographic levels: Brevard County; the Central Florida region, which includes Brevard, Flagler, Lake, Orange, Osceola, Seminole and Volusia counties; and the state.

KSC managed 475 separate contracts in 2004 valued at $800 million for the fiscal year. While a large proportion (78 percent) of KSC’s total procurement dollars were concentrated in the five largest contracts, more than half of KSC awards were for small contracts ($25,000 or less).
The world’s first untethered spacewalker, an astronaut who snared two crippled satellites and a Space Shuttle commander who overcame an engine failure will be inducted into the U.S. Astronaut Hall of Fame on April 30 at Kennedy Space Center’s Visitor Complex.

Twenty Hall of Fame astronauts, including Jim Lovell and John Young, will gather to welcome Bruce McCandless, Joe Allen and Gordon Fullerton into their ranks.

This elite group of inductees is among only 60 astronauts to be honored in the Hall of Fame and the fourth group of Space Shuttle astronauts to be included.

The inductees were selected by a committee of current Hall of Fame astronauts, former NASA officials and flight directors, historians, journalists and other space authorities in a process administered by the Astronaut Scholarship Foundation.

The first inductee, Bruce McCandless, was 320 feet away from the Space Shuttle Challenger in February 1984 as he controlled himself perfectly by triggering small jets that spurted bursts of nitrogen gas from a pack on his back. It was the first successful test of an untethered astronaut spacewalk.

Three more successful tests of the pack - one by McCandless and two by Robert Stewart - helped erase some of the concern the astronauts felt after the failure of communications satellites Westar VI and Palapa B2 that were deployed soon after Challenger lifted off that month.

Joe Allen put the backpack pioneered by McCandless to practical use in November 1984 when Discovery roared into space on the first space salvage mission, to recover Westar VI and Palapa B2. Commander Rick Hauck steered the Shuttle close to Palapa B2, then Allen and Dale Gardner slipped outside while wearing spacesuits, and Allen moved without a tether to the satellite. He latched onto it and moved it into position above the cargo bay.

For 90 minutes, Allen held aloft the 1,200-pound payload while Gardner worked on it. The two astronauts used the same procedures two days later to secure Westar VI. Back on Earth, both satellites were refurbished for return to orbit.

On July 29, 1985, the Space Shuttle Challenger was 5 minutes and 45 seconds into flight when one of its three main engines suddenly shut down. Mission Control determined that by burning the two remaining engines 86 seconds longer than the planned 8 minutes and 31 seconds, Challenger could reach orbit. “Abort to orbit,” controllers radioed.

Fullerton skillfully supervised the burning of the two working engines during the extra time and settled into orbit. The crew of seven astronauts then settled in for a week of scientific experiments. Earlier, Fullerton and Commander Jack Lousma were at the controls when Columbia took off March 22, 1982, on its third test flight.

To be eligible for Hall of Fame induction, an astronaut must have made his or her first flight at least 20 years before the induction year and must be retired from NASA’s astronaut corps for at least five years. A candidate must be a U.S. citizen, NASA-trained and must have orbited the Earth at least once. In balloting, members evaluate how he or she contributed to the success and future achievements of the U.S. Space Program in post-flight assignments. For information, visit www.kennedyspacecenter.com.

Environmental and Energy Awareness Week celebrates 'Progress and Challenges'

The annual KSC Environmental and Energy Awareness Week activities will take place April 20-21 with the theme “Progress and challenges since the initial Earth Day Celebration in 1970.” There will be more than 35 exhibits, six tours and various alternative-fueled vehicles on display.

The event kicks off with a breakfast April 20 at 8:30 a.m. in the Space Station Processing Facility cafeteria. Tickets will be on sale for $4. Tickets will not be available in the cafeterias or lobbies of each facility; watch for the announcements on ticket sales. Following the breakfast, various exhibitors will be set up in the Operations and Checkout Building front parking lot from 11 a.m. to 2 p.m. On April 21, an exhibit area will be set up in the Vehicle Assembly Building parking lot E.