

National Aeronautics and Space Administration



# Roundup

LYNDON B. JOHNSON SPACE CENTER

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30 years of service

# Guest Column

## The times, they are a changin' ...

**Most** of you have heard the old Chinese proverb (or curse), “May you live in interesting times.” Some of us love change and some of us hate it, but like it or not, all of us are experiencing it. Johnson Space Center is transitioning from a center that revolved around the three big human spaceflight programs to something much more complex. Once shuttle retires, we will have one very large human spaceflight program (International Space Station), one medium-size program (Multipurpose Crew Vehicle [MPCV]) and many small programs and projects or pieces thereof. These smaller programs represent a diverse array, including the Human Research Program, the JSC portion of the Commercial Crew Program, directed work from the Office of the Chief Technologist (OCT), work we’re competing for from the OCT and significant portions of the Advanced Exploration Systems program—and that’s without even trying to name them all.

As our work changes, the center is changing as well. We are broadening our management focus to look at many more smaller pieces. Sometimes it feels like you need a scorecard just to keep track of all the bouncing balls. As part of this, we’re developing tools to look at the different efforts and make sure JSC is proactively engaged in the appropriate areas. For example, senior staff now use a schedule of formulation activities just to keep track of all the tasks. (You can see the schedule at the senior staff website, if you’re interested.) And we’re doing an integrated, centerwide Planning, Programming, Budgeting and Execution to identify where we have gaps in funding for our critical capabilities.

In parallel with that, the center has reorganized to meet the needs of the changing environment. One of these changes was to establish the Strategic Opportunities and Partnerships Development Office to provide strategic planning for future NASA/JSC business opportunities and partnerships. This is especially critical in today’s environment, where a significant portion of our work will be competed instead of directed. We will also need to reach out to some new partners in order to make sure we’re getting fresh ideas and viewpoints. The intent of this office is not to supplant the existing directorate-level offices that are doing similar work. Rather, it is to work with these offices to establish a common strategy, identify priorities and provide a clear entry point for the center.

We made several other changes, including establishing the Human Exploration Development Support Office to support existing exploration initiatives across the agency. This organization will provide both program integration support and exploration architecture support to NASA Headquarters. We’ve formally established the MPCV Program Office and the Commercial Crew Deputy Program Office to align with these new programs. We’ve also established the Space Shuttle Transition and Retirement (T&R) Office to provide overall leadership, management and integration of the Space Shuttle T&R efforts for the agency.

As NASA’s mission evolves, JSC will continue to look at the changes we need to make. If you have ideas or recommendations, please share them with your leadership. Our workforce is JSC’s biggest asset, and you are the ones who will enable us to succeed.



NASA PHOTO Jsc2005004865

**Lauri Hansen,**  
JSC Chief of Staff and  
Acting Director, Strategic  
Opportunities and Partnerships  
Development Office



### On the cover:

*Johnson Space Center celebrates a significant milestone for the Space Shuttle Program: 30 years of service.*



NASA/HARNETT JSC2011E030234

### Photo of the month:

*Just a casual stroll ...? Or does Cosmo have something to tell us? You know what they say: What happens at Space Day at the Capitol, stays at Space Day at the Capitol. Unless, of course, you read page 3.*

## In this edition ...

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# Space Day successes



By Rachel Kraft

**Students** launched stomp rockets high into the air, people young and old touched the sheen of a 3-billion-year-old moon rock and NASA team members told state legislators about the economic boon that is Johnson Space Center during Space

and exhibits that allow them to explore science, technology, engineering and mathematics (STEM) concepts that they learn in their classrooms," Neubauer said.

At the University of Texas, aerospace engineers and women in chemical engineering were treated to talks by Marybeth Edeen, manager of the International Space Station National Laboratory Office, learning how to put knowledge gained in the classroom into practice and hearing about space station accomplishments.

Brian Freedman, JSC's Legislative Affairs liaison, said efforts to tell elected officials about NASA's innovative partnerships and collaborative work hit the mark.

"Together with our industry partners, we visited every legislative office, met with the governor, the secretary of state, 13 committee chairmen and exceeded our expectations," Freedman said.

Through Space Week, JSC helped spread NASA's mission to inspire and explore.



NASA/HARNETT JSC2011E030205



**The Capitol in Austin presents an idyllic background for educating legislators and the public about the benefits of space exploration.**

Day, a blitz of activity in Austin promoting space exploration and NASA's pioneering and collaborative work in Texas. Through educational and outreach opportunities, the week of activities that culminated in Space Day on March 31 shared space discovery with students and told elected officials why space matters. This year's event, which focused on the theme "Destination: Station ... and Beyond," attracted more than 2,900 visitors to JSC-sponsored activities.

"It was a great chance to inform students and educators about the exciting work being done at NASA every day," said Jon Neubauer, the JSC Office of Education's lead for strategic partnerships.

Students who visited Education's booths could remotely operate a rover, tinker with space tools and discover the principles of pitch, yaw and roll on the lawn of the Capitol.

"It provided an opportunity to engage them in hands-on activities



NASA/HARNETT JSC2011E030221

**From left to right: Deputy International Space Station Program Manager Kirk Shireman, Governor Rick Perry, Houston Mayor Annise Parker and astronaut Doug Wheelock celebrate science and discovery during Space Day.**

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NASA/HARNETT JSC2011E030339



**Space comes "down to Earth" with hands-on activities for children.**



# The REBR: Getting up close and personal with Earth's atmosphere



By Neesha Hosein

The Reentry Breakup Recorder (REBR) successfully rode back to Earth attached to Japan's robotic H-2 Transfer Vehicle (HTV-2) cargo craft in March, bringing with it some extraordinary data. REBR is a small, autonomous device that records temperature, acceleration, rotational rate, GPS and other data upon reentering the Earth's atmosphere.

The HTV-2 was on a resupply mission to the International Space Station, during which the craft delivered 8,500 pounds of cargo and

## Future benefits

"No one has hard data on the environment when a satellite starts to break up, because once the event starts, you typically lose communication," said Johnson Space Center Human Spaceflight Payload Manager Lt. Matthew Gartmann, also of the Department of Defense (DoD) Space Test Program. "REBR is a first ever. No one's ever done this before."

Gartmann discussed incidents where items like large fuel tanks

from Delta rockets have landed on the ground. It is not yet understood why some objects like these sometimes survive reentry. (The Earth's surface is about 75 percent water, so much of the reentered debris falls into oceans and remains undetected.)

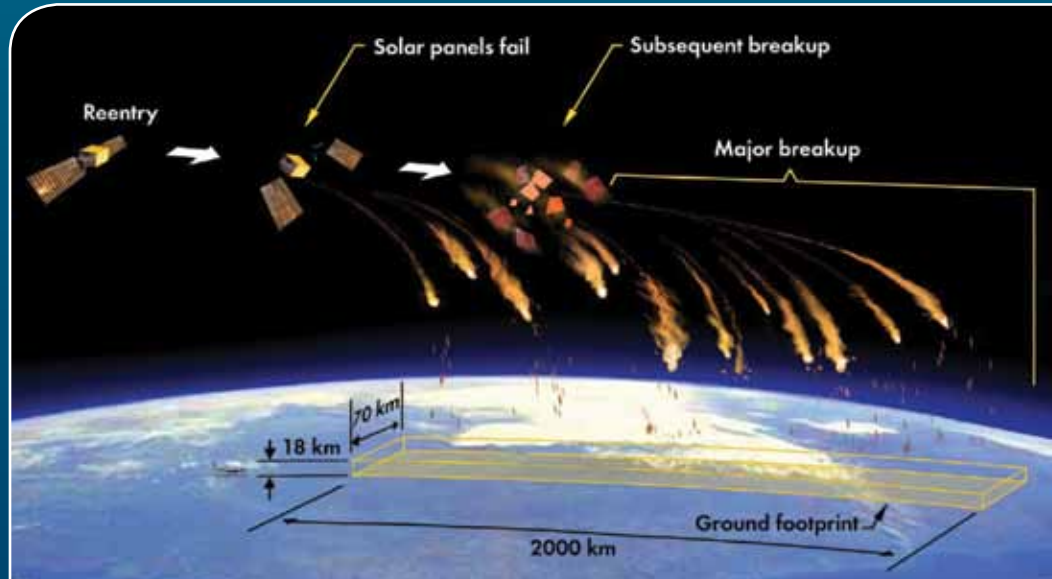
The REBR will fill in some of the knowledge gaps about the atmospheric conditions a craft faces when forcing its way back into the Earth's atmosphere.

## Flight Tests

In January, two REBRs were transported to station on the Japanese HTV-2 (one which survived reentry in March). Another REBR remains aboard the orbiting laboratory and is set to race through the Earth's

atmosphere in mid 2011, catching a ride on the European Space Agency's Automated Transfer Vehicle-2.

"The most rewarding aspect of working REBR was the cooperation from the DoD, NASA, The Aerospace Corporation and



NASA/DEHYOS JSC2010E061642

## The breakup profile of a representative satellite.

was a means of trash removal for the outpost. HTV-2 disintegrated upon collision with Earth's atmosphere, but the REBR was protected by a heat shield that kept the device intact to preserve its recorded data amid the violent reentry.

"One of the things we're trying to do is understand the break-up environment, so we can better design our spacecraft for safe reentry and possibly longer mission durations," said Steve McGrath, System Integration Group lead and System Working Group chair.

REBR was planned and fabricated by The Aerospace Corporation, with major funding provided by Aerospace and the U.S. Air Force. The heat shield was provided by The Boeing Company. NASA Ames Research Center provided in-kind support of the heat shield design.

## Housing and activation

REBR is contained within a specially constructed copper housing that attaches to the host vehicle. The housing releases REBR as the temperature around it increases.

Astronauts on the International Space Station activated REBR sensors that look for acceleration rates, a characteristic of reentry. Once reentry was detected, the data recorder collected data from all sensors. After it was expelled from the host vehicle, REBR slowed to a subsonic velocity, activated the Iridium modem and "phoned home" the data to an Iridium satellite. Through this satellite connection, the information was then relayed to home base. Figuratively speaking, the REBR function is similar to that of a black box on airplanes.



NASA/PHOTO JSC2011E000063

## The Reentry Breakup Recorder, stowed in HTV-2 in preparation for undock, deorbit and reentry operations.

our International Partners, all resulting in a truly unique and valuable data take," McGrath said. "This is exactly how we should be working together to push the boundaries of space technology."





By Catherine E. Williams

## Evidence points to ‘yes’

**The** pomp, the circumstance, the fanfare ... One can get addicted to the adrenaline rush that is the NASA space program. But when you are no longer part of the excitement ... what then?

For some, it just means creating your own.

Charles Bourland retired from the space program in 2000 and has been going strong ever since. However, he did not stray too far from his love of space food development in his activities post NASA.

Before retirement, Bourland worked in the Space Food Development Laboratory for a total of 30 years, supporting Apollo, Apollo-Soyuz, Skylab, Tektite, Food for the Elderly, Shuttle, Shuttle-Mir, International Space Station and Advanced Life Support. He was also in the middle of the action on the recovery ships for Apollo 12, 13 and Skylab 2, in charge of the shipboard quarantine food system for the astronauts.



PHOTO COURTESY OF CHARLES BOURLAND

**Bourland shows off space food technology to Queen Elizabeth and Prince Philip, Duke of Edinburgh.**

“I always wanted to write a history of space food because there are so many untold stories,” Bourland said, “but the editor wanted to write a cookbook, and I was able to include a little history in the cookbook. I would still like to write a book about space food history, and may if I get the time.”

Though Bourland’s extracurricular activities after Johnson Space Center may leave the rest of us feeling a bit inadequate, he also enjoys the slower moments now that his work life is not so fast-paced.

“The best part is no schedules, except what I plan,” Bourland said. “I enjoy being back in the country, repairing and driving old tractors that I grew up on ... hunting, fishing, traveling.”

Bourland still makes time for the next generation of explorers by giving space food presentations to local schools and groups. In addition, he’s involved with the Missouri Alumni Association, where he serves as a member of the selection committee for the Faculty Alumni Award.

So can you have “a life” on Earth after NASA? Seems highly possible, if Bourland is any indication.



PHOTO COURTESY OF CHARLES BOURLAND

**Bourland is presented the Silver Snoopy Award by the late commander of STS-107, Rick Husband.**

Things didn’t exactly slow down for Bourland when he left NASA. He shared his space exploits while teaching a “Living, Working and Playing in Space” class at the University of Houston for a few years. In 2004, Bourland moved back to his hometown area of Missouri, where he became a consultant to the NASA Food Technology Commercial Space Center for five years.

It was also during this time that Bourland co-authored a book with Greg Vogt named “The Astronaut’s Cookbook.”



PHOTO COURTESY OF CHARLES BOURLAND

**The Apollo 13 movie crew poses for a photo in the NASA Food Lab. Bourland is on the top row, third from the right.**

# Shuttle marks a historic milestone on April 12, 2011

**Numbers** are intrinsic to the Space Shuttle Program (SSP). We at NASA are also sticklers for them, especially in engineering formulas and statistical analysis. Numerically, the SSP has shined.

**30** - years of service\*

**133** - flights

**360** - men and women who have flown on the winged spaceships

**1981** - year that a reusable Space Transportation System completed its first mission

**2020** - year the human spaceflight program will continue to, at minimum, with astronauts living and working on the International Space Station (because of a unique workhorse that allowed for the station's assembly)

combined. Going from that enormous step down in the workforce, we still kept up that high flight rate.

"I get asked by outside sources all the time, 'How are you doing this?'" Shannon said. "And I say, 'There is no team we can benchmark this team against. This team is like no other.'"

To many, the shuttle is functioning like a fine wine ... ripening as time passes.

"People like to ask about the aging shuttle," former SSP Manager Glynn Lunney said. "My reaction to it was, and still is, it's not really aging—it's maturing. Preparing it for flight is a matter of figuring out what the boundaries are for everything that goes into it."

"The last flight we did (STS-133), we had no in-flight anomalies at all," Shannon said. "We've never flown the space shuttle better than we are flying it today."



NASA/PHOTO 581-30387

**An overall view of Mission Control during the landing phase of STS-1. Flight controller Ed Fendell, left foreground, mans the integrated communications systems engineer (INCO) console.**

But at the apex of what many consider to be shuttle's finest hour, numbers are almost meaningless. What matters? Emotion. Loyalty. Pride. Ownership. Commitment. During the SSP's 30th anniversary on April 12, there was plenty to be found.

"Back in 2006, we began the preparations for ending the program," said SSP Manager John Shannon. "Even though we started that work, we were asked continually if we could keep flying the shuttle. And every study we did, we came back and said yes, that with the team that we have, that is a possibility. However, the decision was finally made to retire the program. Once we received that direction, this team did what it always does. It has performed magnificently."

That SSP team is working to finish out a program that, while facing continuous challenges (be it mechanical or budgetary), always performs with the class befitting of NASA's momentous history.

Shannon indicated that if the program was to retire, they would do it the right way—by respecting the shuttle team members who have dedicated so much of their lives to keeping these special vehicles aloft.

"I asked you about 14 flights ago to please dedicate yourself, focus on every single mission and finish this program up strong," Shannon said. "Since that time, we reduced civil service/contractor shuttle workforce from about 16,000 people combined to about 7,000



NASA/PHOTO 529485MAIN 2011-2358 - FULLKENNEDY

**Thousands of Kennedy Space Center employees stand side-by-side to form a full-scale outline of a space shuttle orbiter outside the Vehicle Assembly Building. The unique photo opportunity was designed to honor the Space Shuttle Program's 30-year legacy and the people who contribute to safely processing, launching and landing the vehicle.**

That continued progress, even when facing the end of this era, is certainly bittersweet. With the completion of each mission, the shuttle and her team dutifully plots NASA's next steps in the cosmos.

"The shuttle has provided this nation with many firsts, with many proud moments, and it has helped the United States to lead the world in space exploration," said NASA Administrator Charlie Bolden. "Over three decades, this flagship program has become part of the fabric of





By Catherine E. Williams

remember not only the event itself, but you remember exactly where you were and what you were doing when it occurred,” Shireman said. Shireman remembers.

Thirty years later, he told an audience at Johnson Space Center that shuttle changed everything about space as we knew it.

“You know, our kids don’t wonder what it’s like to live in space,” Shireman said. “They don’t wonder what a cluster of galaxies looks like. They know exactly what it looks like.”

Shuttle unearthed the unknowns and made discovery mainstream. But it did even more than that.

“Shuttle’s not only changed the way we look at the world we live in, it’s actually brought the world closer together,” Shireman said.



MASA/PHOTO 16SS026E030181

**The orbiter’s cargo capacity enabled the assembly of our international engineering marvel: the International Space Station.**

All that international cooperation happened more than 200 miles above our heads with the combination of space station and shuttle. And we are still partnering for the future as this maturing SSP works through the last missions.

“The shuttle’s retirement is bittersweet for us, but I am also very excited about our future,” Bolden said. “A future that is bright and open to us because of the shuttle program. We could not be reaching for new heights and developing the next generation of capabilities without the technological breakthroughs of the shuttle and the many lessons learned that we will carry forward. With the last flight of *Atlantis* in June, the shuttles stop flying—but they don’t stop inspiring.”

\* All statistics as of April 12, 2011



MASA/PHOTO STS131-S-076

**Discovery and its seven-member STS-131 crew head toward Earth orbit and rendezvous with the International Space Station. Liftoff was at 5:21 a.m. CDT on April 5, 2010.**

our nation’s history. It’s helped us improve communications on Earth and to understand our home planet better. It’s set scientific satellites like Magellan and Ulysses speeding on their missions into the solar system and launched Hubble and Chandra to explore the universe.

“The shuttle program has given us tremendous knowledge about a reusable spacecraft and launch system from which future commercial systems will benefit. It’s enabled construction of the International Space Station, our foothold for human exploration, which is leading to breakthroughs in human health and microgravity research. And it’s provided ‘first ever’ astronaut flight and command

**STS-125 Mission Specialist John Grunsfeld, positioned on a foot restraint on the end of Atlantis’ remote manipulator system (RMS), continues work to refurbish and upgrade the Hubble Space Telescope.**



MASA/PHOTO ST25E009609

opportunities for women and minorities,” Bolden said.

Sometimes you just know when you’re witnessing something monumental.

For Kirk Shireman, deputy program manager of the International Space Station, that was the case while watching *Columbia* launch on April 12 back in 1981. Though not even a part of the space industry at the time and just a member of the general public, Shireman mentioned that the anticipation was palpable as everyone crowded around a television at Houston’s Intercontinental Airport to see NASA’s new reusable spacecraft countdown to liftoff.

“There are some events that are so large in one’s life that you



# Spacesuit development morphs for the future



By Neesha Hosein

The agency has had its share of redirection and change. With aspirations to explore new horizons in science and technology while keeping a strong tie to space travel, suit development and testing remains an important and inspiring component in NASA's future.

Although the Constellation Program has been restructured in the last year, spacesuit development is still ongoing, keeping both past and new endeavors in mind. With respect to the dynamic requirements in suit technology, needs and activities that are still necessary to support the space program and its revised agenda are being researched.

"It's a rather complicated process making sure that the suit can protect the crew in the various environments due to the many different functions that the suit has to perform," said Chris Vande Zande, acting

suits that have minimal functionality to those that could be used during microgravity spacewalks. There are currently five spacesuits under design and testing:

- **C-SAFE Pathfinder 1** – Enhanced mobility launch-and-entry suit with on-demand breathing system.
- **C-SAFE Pathfinder 2** – Enhanced mobility launch-and-entry suit with continuous loop breathing system and integrated ganged umbilical.
- **Configuration 1 Demonstrator suit** – Enhanced mobility high-pressure launch-and-entry suit with continuous loop breathing system and secondary restraint system to accommodate spacewalk load cases.
- **ESR3D** – International orange nylon suit mock-up, primarily built for unpressurized suited testing (multiple sizes available).
- **ZEI suit** – High-mobility pressure suit built to evaluate LEA and microgravity spacewalk mobility features with continuous loop breathing system.

"The demonstrator suit and first pathfinder suit were put together by Oceaneering and David Clark," Vande Zande said. "Pathfinder 2 was built by Oceaneering and ILC Dover. ILC Dover is also put together the ZEI and ESR3 suits.

"We're currently building what we call a Pressure Garment Assembly Test Article (PGATA). The hope is that this new test article will take what we've learned are the best features from all the other prototypes and culminate in a suit that best represents what we understand our LEA architecture to be at this time," Vande Zande said.

Despite the impending end of the Space Shuttle Program, there is an



NASA/MARKOWITZ JSC2010E178165

**Team members show new suit prototypes to Johnson Space Center senior staff. From left to right: Chris Vande Zande in an ESR3 suit; Joey Sung of ILC Dover in the ZEI suit; Keith Splawn of ILC Dover in C-SAFE Pathfinder 2; Shane Jacobs of David Clark in the C-SAFE Demonstrator Suit; and Jeremy Garcia of David Clark in C-SAFE Pathfinder 1.**

lead for Launch Entry Abort (LEA) development. "Orion operational concepts have evolved, launch milestones have changed, and these impact suit development schedules and requirements."

Vande Zande said that in the last 18 months, the team has reevaluated the priorities of suit evolution in regard to duration of missions, destination and functionality. These varying parameters create "very interesting design concepts to accommodate suited functions such as mobility, nutrition and water capabilities, waste management, all the while providing air and cooling to the human."

Since a return-to-the-moon mission is not currently on the agenda, much of these spacesuit requirements must undergo rigorous adjustments.

"What we're trying to do is continually develop the suit system that we have in order to meet our design goals and be an improvement over the heritage hardware," Vande Zande said. "The CSSS contract, which includes partners Oceaneering, David Clark, ILC Dover and Hamilton Sundstrand, among others, has been working with the NASA team to revise our baseline system throughout the changing environment."

The team has been developing several prototypes that range from



NASA/MARKOWITZ JSC2010E178200

**Spacesuit crew members and stakeholders get an opportunity to provide feedback and lay their hands on new prototypes.**

independent effort within the Engineering Directorate's Shuttle Crew Escape Equipment team to evaluate evolutionary approaches to the current Shuttle Advanced Crew Escape Suit (ACES). This approach has the potential to provide adaptations of proven flight equipment for future applications and leverages 30 years of shuttle experience. The PGATA and the first-generation evolutionary iteration of the ACES are slated to support Orion integrated Environmental Control and Life Support testing in the summer.

# Expedition 27/28 ramps up research



By Rachel Kraft



NASA/CARLA COFFI 201104050005HQ

The Soyuz TMA-21 launches from the Baikonur Cosmodrome in Kazakhstan on April 4.



NASA JS2011E034690

At the Kremlin Grand Palace in Moscow, greetings from the six crew members aboard the International Space Station are replayed for dignitaries and Russian and American space officials on April 12 during a gala ceremony marking the 50th anniversary of the launch of Yuri Gagarin as the first human in space.

**The** Expedition 27/28 crew launched from the Baikonur Cosmodrome to the International Space Station on April 4 aboard the Soyuz TMA-21. Soyuz Commander and cosmonaut Alexander Samokutyaev, NASA Flight Engineer Ron Garan and cosmonaut Flight Engineer Andrey Borisenko rendezvoused two days later with the rest of the Expedition 27 crew already aboard station: Commander and cosmonaut Dmitry Kondratyev, NASA Flight Engineer Cady Coleman and European Space Agency Flight Engineer Paolo Nespoli.

Their arrival restored six-person crew capabilities to the station since the departure of the Expedition 26 crew, enabling NASA and the International Partners to carry on with an immense slate of scientific work, research and activity.

Just after their arrival, the crew celebrated—along with the rest of the space community—the STS-1 30th anniversary and the 50th anniversary of Yuri Gagarin’s first trip into orbit. During an anniversary celebration, Garan said that space shuttle trips to the orbiting laboratory have cultivated “unprecedented scientific research and support international cooperation.”

The crew will spend approximately six months in space, be visited by the final shuttle flight of *Atlantis* during STS-135 and continue their work to further scientific discovery and maintain the space station. They will be joined by the rest of the Expedition 28 crew this summer: NASA astronaut Mike Fossum; cosmonaut Sergei Volkov; and Japan Aerospace Exploration Agency astronaut Satoshi Furukawa.



NASA/PHOTO ISS027E011362

Flight Engineer Ron Garan works on the Advanced Resistive Exercise Device in the Unity module aboard station.





# Spotlight Debbie Byerly

Technical Assistant to the Shuttle Program Manager



PHOTO: COURTESY DEBBIE BYERLY

**Q: Favorite TV show and why?**

**A:** "Harry's Law." I like Kathy Bates and the way she solves problems and how she deals with issues.

**Q: What was your proudest moment?**

**A:** I feel proud whenever I have the opportunity to reach out and help someone or lift someone.

**Q: Describe yourself in three words.**

**A:** Enthusiastic, loyal and caring.

**Q: What does the space shuttle's 30 years of service mean to you?**

**A:** Pride in being a part of this team that has given America one of the most successful human spaceflight programs in history.

**Q: What is your best memory at NASA or Johnson Space Center?**

**A:** Seeing my first space shuttle launch.

**Q: Coolest part of your job?**

**A:** Working with the greatest team of shuttle employees.

**Q: Favorite hobbies or interesting things you do away from the office?**

**A:** Spending time at our ranch and enjoying the horses.

**Q: What was your first job (not necessarily at NASA, but ever)?**

**A:** I worked at a snack bar for the Seattle Ferry system.

**Q: If you could trade places with any other person for a week, famous or obscure, living or dead, real or fictional, who would it be?**

**A:** Margaret Thatcher would be my choice. My favorite quote from her is, "Being powerful is like being a lady. If you have to tell people you are, you aren't."

**Q: What would people be surprised to know about you?**

**A:** I lived in Italy for almost three years.

**Q: What is your favorite quote or motto?**

**A:** "It is what it is . . ."

**Q: What would we find in your refrigerator right now?**

**A:** Ice cream, cheese and chicken.

**Q: What is your favorite sport?**

**A:** Football.

**Q: Last good book or article you read?**

**A:** I enjoy mysteries, Nora Roberts and Debbie Macomber (because her books are based in the Pacific Northwest).

**Q: Favorite travel destination (or place you'd love to go if given the opportunity)?**

**A:** Bella Italia.



PHOTO: COURTESY DEBBIE BYERLY

## WANTED!

Do you know a JSC colleague or team that does something extraordinary on or off the job? Whether it's a unique skill, interesting work, special professional accomplishment, remarkable second career, hobby or volunteerism, your nominee(s) may deserve the spotlight!

The Roundup shines the light on one special person or team each month, chosen from a cross section of the JSC workforce. To suggest "Spotlight" candidates, send your nomination to the JSC Roundup Office mailbox at [jsc-roundup@mail.nasa.gov](mailto:jsc-roundup@mail.nasa.gov). Please include contact information and a brief description of why your nominee(s) should be considered.



## NASA names Mission Control for legendary Flight Director Christopher Kraft

**NASA** recognized Christopher C. Kraft Jr., America's first human space mission flight director, by naming the Mission Control Center in his honor for his service to the nation and its space programs.

Johnson Space Center Director Mike Coats made it official April 14 at a dedication ceremony and unveiling of a new nameplate on the building, designating it as the Christopher C. Kraft Jr. Mission Control Center.

"Dr. Kraft's life stands as a testament to his dream of exploring space," Coats said. "A dream he realized here on Earth, in this building and at this center, through his engineering and managerial expertise. He is a space pioneer without whom we'd never have heard those historic words on the surface of the moon, 'Houston, Tranquility base here. The Eagle has landed.' Those words effectively put Houston, and this building behind us, on the intergalactic map forever."

Hundreds of NASA employees applauded as the nameplate was unveiled.

"When we started the Space Task Group in 1958, I don't think any of us appreciated what we were up to, where we were going, what it was going to result in, the impact on the country, the impact on the world," Kraft said. "Our experiences, our joys, were something that we were all extremely proud of. We still are today. It's great to be in this country where we can

do that sort of thing. I'm pleased as I can be to have you name this building after me—and not because it's me, but because it is the flight control people and those people here at the Johnson Space Center."



NASA/PHOTO JSC2011E036649

**Kraft speaks to the hundreds of JSC team members and guest present for the dedication ceremony.**

## Survival of the fittest

**Expedition 26** Commander Scott Kelly, who returned from the International Space Station in mid-March, and Houston Texans Offensive Tackle Eric Winston participate in one of Kelly's post-flight rehabilitation workouts at JSC.

Astronauts typically experience bone and muscle loss during long-duration missions as their bodies adapt to life in the absence of gravity. Kelly invited Winston, a personal friend, to experience how astronauts work to regain their strength and balance through a series of conditioning routines. A host of countermeasures before, during and after flight help them neutralize the effects of living and working in low-Earth orbit.

Aboard the orbiting lab, the Combined Operational Load Bearing External Resistance Treadmill, better known as COLBERT, and the Advanced Resistive Exercise Device help keep them healthy and able to perform critical tasks. Upon return, physical trainers help astronauts readjust to gravity's pull.



NASA/PHOTO JSC2011E030376

## Directorate roll call

<b>AD</b>	Astronaut Steve Swanson headed to Denver for this year's first Hometown Heroes outreach campaign stop. He made appearances at The Children's Hospital, Copper Mesa Elementary School in Highlands Ranch and the Denver Museum of Nature and Science. His last venue of the trip was the Denver Nuggets vs. Minnesota Timberwolves basketball game.
<b>AF</b>	Even with significant transition and proposed changes in course for NASA, JSC and White Sands Test Facility (WSTF) are moving full steam ahead in developing partnerships through Space Act Agreements (SAAs). For Fiscal Year 2010 (FY10), JSC completed 43 SAAs and has 55 pending initially for 2011. The Engineering Directorate led the pack in 2010 with eight completed SAAs, followed by External Relations and Space Life Sciences. WSTF completed 11 SAAs in FY10 and has another eight in queue for 2011.
<b>IA</b>	"IRD" doesn't just stand for Information Resources Directorate; IRD also represents the new motto of JSC's Information Technology organization: "Innovative, Resourceful, Dedicated to Service: Our Mission is to Enable Your Mission." On March 31, the IRD management team hand-washed the cars of IRD team members Reese Squires, Michelle Croce and Scott Browns for creating the new creed. More at: <a href="http://ird.jsc.nasa.gov/AboutIRD">ird.jsc.nasa.gov/AboutIRD</a>

## Roundup

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# Eye in the sky

## Japan's coastline before and after the tsunami

**These** images show the effects of the tsunami on Japan's coastline. The image on the left was taken on Sept. 5, 2010; the image on the right was taken on March 12, 2011, one day after an earthquake and resulting tsunami struck the island nation.



## Make a wish from space

**In** honor of those affected by the Tohoku-Kanto Earthquake in Japan, Russian cosmonaut and Expedition 27 commander Dmitry Kondratyev (center), European Space Agency astronaut Paolo Nespoli and NASA astronaut Cady Coleman are pictured with paper cranes (origami craft), which they folded to be placed in the Kounotori2 H-II Transfer Vehicle (HTV-2). The HTV-2 undocked from the International Space Station on March 28 and reentered Earth's atmosphere on March 29.