

SPACE CENTER

Roundup

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NASA goes Hawaiian

Astronaut Edward T. Lu (at musical keyboard), Expedition 7 NASA ISS science officer and flight engineer, and Cosmonaut Yuri I. Malenchenko, mission commander, share a light moment during off-shift time in the Destiny laboratory on the International Space Station (ISS). Malenchenko represents Rosaviakosmos.

For more about Ed Lu's 40th birthday celebration, see page 7.

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Riding the dragon

There's an ancient Chinese proverb that goes like this: Three men were traveling along a narrow mountain trail when they came upon a ferocious dragon. The first man tried to fight the dragon, but the dragon was too strong and it defeated and ate the man. The second man tried to run away from the dragon, but the dragon was too fast and it overcame the man and ate him. The third man, seeing what had happened to the first two, took the only other option. He jumped upon the dragon's back and held on for dear life.

At first, riding the dragon was very difficult and sometimes even terrifying. It also seemed dangerous, for the dragon was totally unpredictable and appeared to be out of control. However the man held on and survived. As time went by he was able to sense when the dragon was going to change directions and it became easier to stay on its back. Although the man could never control the dragon and had to be continuously watchful, he was able to become more comfortable riding the dragon and was actually able to share in the fruits of the dragon's many victories; for no one could stop the dragon. In the end, the man prospered because he had learned how to ride the dragon.

You've probably figured out that the dragon that these men faced was the "Dragon of Change." It's also obvious that the Dragon of Change is a prominent figure at NASA and JSC. Even before the awful tragedy that occurred February 1, we had been in a state of flux for the past year: a new Administrator, a new center director, a new International Space

Station Program Manager, a new Vision and Mission, One NASA, Educator Astronauts, IFMP, Freedom to Manage, etc.

This propensity toward change has become even more pronounced since the *Columbia* accident: the intense support of the CAIB investigation by many of you, a major turnover in Space Shuttle Program senior management, Return to Flight activities, Space Shuttle Service Life Extension Program activities, Orbital Space Plane support, new Center Directors throughout the Space Flight Enterprise, full cost accounting, etc. You name it; it's changing! Just imagine what change might take place after the official CAIB report is published!

So, what are we going to do about all this? We can dig our heels in and resist or we might high-tail it and find something else to do. Neither one of those options worked for the men on the trail. Here's what I think we should do. We should embrace these changes and use them to our advantage in improving our work, our processes and ourselves. This won't be easy. Doing things differently is a naturally uncomfortable enterprise. However, the payoff can be extraordinary if we have the courage to accept new leadership, new ideas and new methods.

Let's be positive, aggressive and flexible in responding to the changes taking place. Remember, as long as we retain our core values of total integrity, professional excellence, respect and commitment, our course will stay true and we will triumph. Let's ride the Dragon and reap its rewards!

Beak sends...

Recent NASA personnel changes

There have been a number of recent management changes at NASA centers around the country. Here is a breakdown of the new assignments as of press time.

1 Johnson Space Center – Space Shuttle Program

Bill Parsons, Manager, Space Shuttle Program

Previous position: Center Director, Stennis Space Center

N. Wayne Hale, Jr., Acting Deputy Manager, Space Shuttle Program

Previous position: Manager of Launch Integration at Kennedy Space Center

Steve M. Poulos, Jr., Acting Manager, Orbiter Project Office

Previous position: Chief, Crew and Thermal Systems Division, Engineering Directorate

Edward J. Mango, Deputy Manager, Orbiter Project Office

Previous position: Technical Assistant to the Space Shuttle Program Manager on detail from KSC

John P. Shannon, Acting Manager, Flight Operations and Integration

Previous position: Lead Flight Director on STS-102 in March 2001, then Deputy Director of the Columbia Task Force that served as the interface between NASA and the Columbia Accident Investigation Board

John F. Muratore, Manager, Systems Integration Office

Previous position: Assistant to the Director of Engineering at JSC

2 Ames Research Center

G. Allen Flynt, Deputy Center Director

Previous position: Manager of JSC's EVA Project Office

3 Kennedy Space Center

James W. Kennedy, Center Director

Previous position: KSC's Deputy Director

Woodrow Whitlow, Jr., Deputy Director

Previous position: Director of Research and Technology at Glenn Research Center

James Hattaway, Jr., Associate Director

Previous position: Director of KSC's Procurement Office

Michael Wetmore, Launch Integration Manager, Space Shuttle Program

Previous position: Acting Director of Shuttle Processing at KSC

4 Langley Research Center

Gen. Roy D. Bridges, Center Director

Previous position: Center Director for KSC

Ralph Roe, Jr., Special Assistant to the Center Director

Previous position: Manager of JSC's Space Shuttle Vehicle Engineering Office

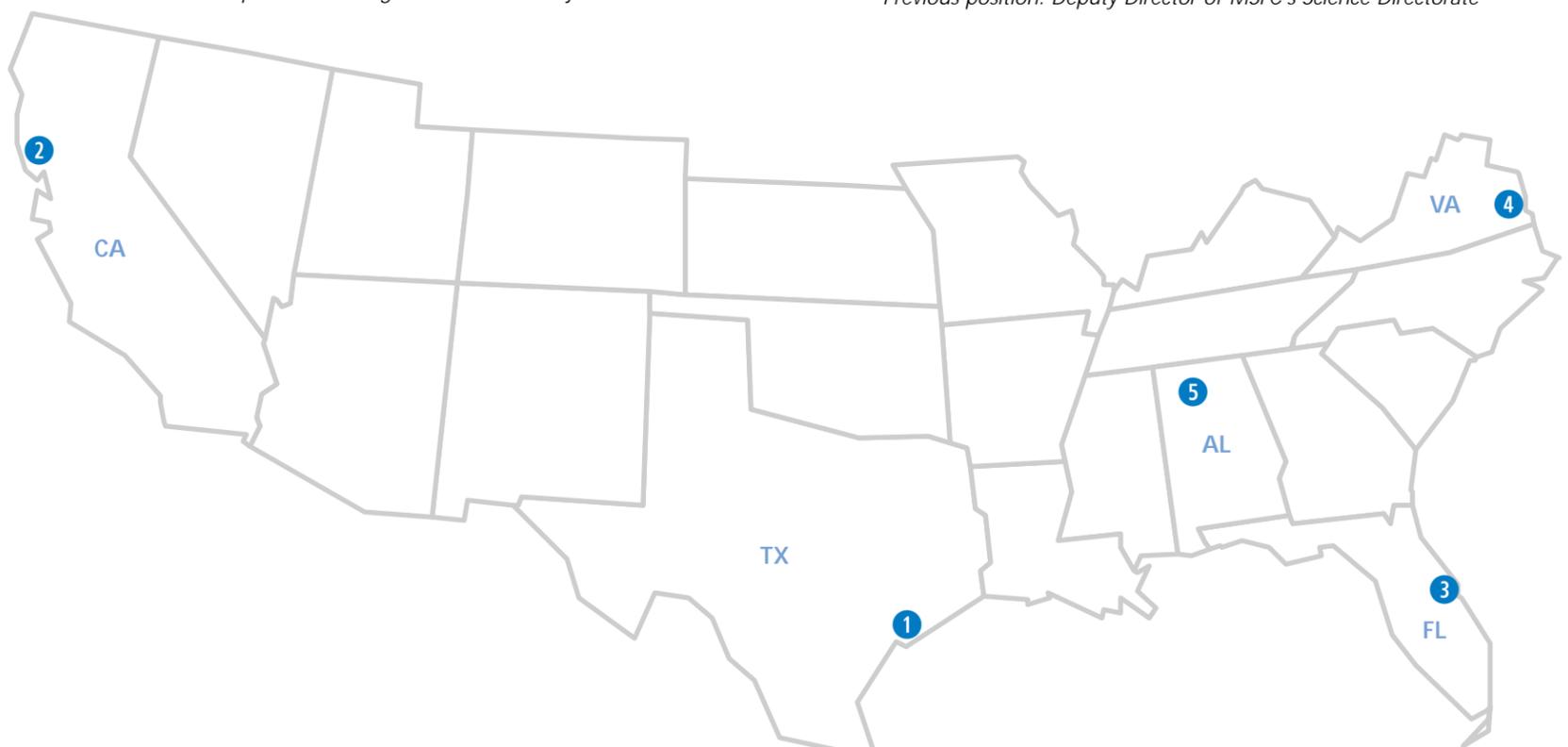
5 Marshall Space Flight Center

David A. King, Center Director

Previous position: MSFC's Deputy Director

Rex D. Geveden, Deputy Center Director

Previous position: Deputy Director of MSFC's Science Directorate



Beating the Odds

By Amiko Nevills



On November 13, 2002, a routine checkup at the doctor's office suddenly turned grim for Gerald Dragoo when he suffered a massive heart attack.

Dragoo, an avid traveler and hiker, was clinging to life – not unlike the time he had fallen 50 feet from a rugged mountainside in Nevada nearly ten years earlier. In both instances, Dragoo managed to triumph over disaster. Back then, he was rescued after surviving for seven days in the wilderness. Following his heart attack, he had some help from a tiny heart-assist device co-developed by NASA engineers.

Doctors rushed Dragoo to heart specialists at Bakersfield Memorial Hospital in California. The heart attack had caused massive blockages to both the right and left sides of his heart. Doctors told his family that surgery would help to alleviate some of the blockage, but it would not be a permanent solution.

Meanwhile, Dragoo was placed on an external heart and lung machine to help keep his heart pumping and allow it to recover. Because this machine operates externally, circulating blood out of the body through the pump and back into the body, the patient remains unconscious during its operation and can only be placed on it for a short period, said Dragoo's daughter, Lara Eriksson.

Although Dragoo's will to live was thriving, his heart was failing. A heart transplant became critical for him to survive. After unsuccessful attempts to start the left side of his heart as a result of the blockage caused by the heart attack, doctors transferred Dragoo to the University of Southern California Hospital to await a donor heart.

According to the National Center for Health Statistics, cardiovascular disorders claim the lives of nearly 700,000 Americans each year, ranking heart disease as America's number one killer, coming before cancer and motor vehicle accidents. The American Heart Association estimates that a heart transplant could benefit about 40,000 Americans a year, potentially reducing the mortality rate.

However, the need for a heart transplant grossly tips the scales when weighed against the availability of new hearts. Each year, heart centers across the United States add about 100,000 new patients to extensive waiting lists for the necessary life-saving operation with little prospect of receiving one of the 2,200 a year available donor hearts.

For Dragoo, the statistics seemed insurmountable. Yet a medical marvel based on NASA technology would soon prove that the odds could be beaten. Almost one week from his initial heart attack, Dragoo received an implantable heart pump, which uses NASA-developed technology.

This miniature device weighs less than four ounces and is about one-tenth the size of other pulsating heart pumps, which pump blood in a cycle that mimics the heart. It was the pioneering result of a team of NASA engineers, including the late JSC engineer David Saucier and renowned heart surgeon Dr. Michael DeBakey, Chancellor Emeritus of Houston's Baylor College of Medicine.

A solution to develop a miniaturized left-ventricular assist device (LVAD) was found in Space Shuttle fuel and oxidizer pump technology. Although NASA engineers found the flow of Shuttle fuel to be faster than blood, they found it to be very similar in many ways and were able to design a device with one single, rotary moving part that would reduce blood clotting – a problem with other heart pumps.

A Houston-based company, MicroMed Technology, Inc., manufactures the now-called MicroMed/DeBakey VAD®. To date, the heart pump has been implanted in 190 patients, 148 of which were implanted during European trials and 42 during ongoing U.S. trials. Trials in the United States will involve about 180 total implants.

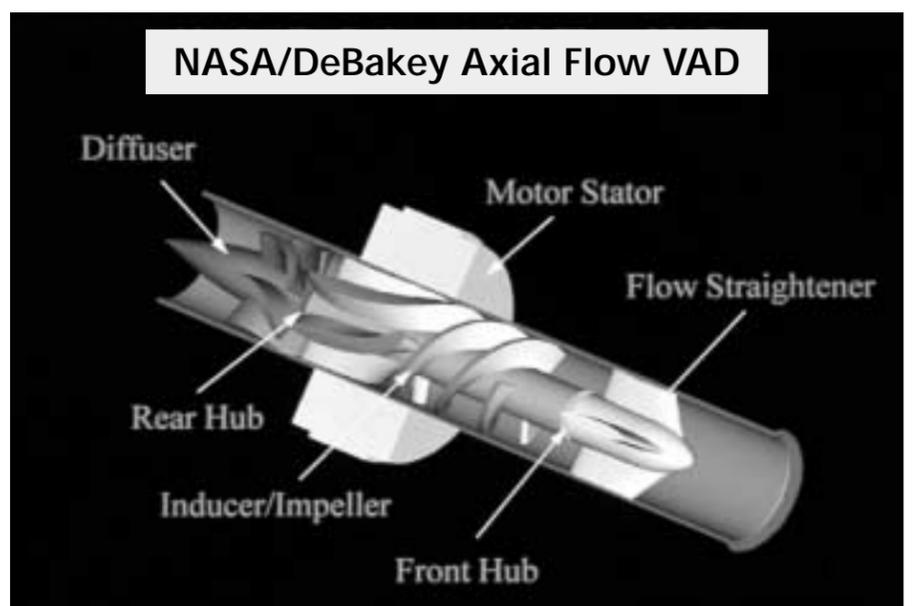
Patients have been noted to live on the MicroMed/DeBakey VAD® for as long as two years before receiving their donor heart. The LVAD is also being credited for allowing enough time for weakened hearts to repair themselves, eliminating the need of a transplant altogether.

Thanks to this medical advance and the resourcefulness of NASA's technology, Dragoo continues to survive.

"Because of the LVAD, he was able to wake up and to hear us say, 'We love you,'" Eriksson said. "Dad is alive because of it."

On Dec. 24, 2002, more than a month after the life-altering heart attack, Dragoo received his new heart. During his hospital stay, Dragoo visited other patients who would soon become LVAD patients and gave them his survival-minded words of encouragement.

"Hang in there, and don't give up," Dragoo said.



CLOCKWISE FROM TOP

Joined by his wife, Leslie, Gerald Dragoo celebrates his 57th birthday on Dec. 17, 2002 – one month after receiving the innovative heart pump. jsc2003e46931 Photo courtesy of the Dragoo family

A cross-section diagram of the MicroMed/DeBakey VAD® illustrates the key components and inner workings of the cutting-edge heart-assist device. s96-09311

A photo of the internal device – a rotational inducer – which increases pressure and allows blood to flow more continuously. s99-01826

Changing of the guard

Bill Parsons to lead Space Shuttle Program following Ron Dittimore's departure

By Kendra Ceule



Ron Dittimore

After four years as Manager of the Space Shuttle Program, Ron Dittimore has stepped down. The post is now filled by Bill Parsons, formerly the Director of Stennis Space Center (SSC) in Mississippi.

Dittimore is leaving what he calls "the job I've liked the most" – quite a statement considering his NASA career. He joined the Agency in 1977 as a propulsion systems engineer here at Johnson Space Center, gained experience in the Mission Control Center and became a Space Shuttle Flight Director in 1985. Subsequent positions have included Deputy Manager for the Space Shuttle Program Integration and Operations Office, as well as Manager of the Space Shuttle Vehicle Engineering Office.

He became Manager of the Space Shuttle Program in 1999, and says he is amazed at the changes he has seen over the past 26 years.

"In 1977, we didn't have a reusable space vehicle," he said. "Now, we've flown Shuttles 113 times. That's what we've accomplished over 20 years."

His awards include JSC's highest award, the Certificate of Commendation, as well as the NASA Outstanding Leadership Medal and the NASA Exceptional Service Medal.

His successor, Bill Parsons, has his own share of awards, including the Silver Snoopy, the NASA Exceptional Service Medal and the Commandant's Certificate of Commendation from the United States Marine Corps.

Parsons likens his time in the Marines to his NASA career, saying that he found the same pride and fulfillment with both organizations.

Before NASA, "I had good jobs," he said, "but I never had that pride of membership that I had in the Marine Corps. ... When I came to work for NASA, I found an organization that gave me pride and a sense of belonging to a really top-notch, world-class organization.

"It's been inspiring," he said.

Parsons' first job with the Agency was at Kennedy Space Center (KSC) in 1990, where he worked as a Launch Site Support Manager. He worked his way up the ladder to become Manager of KSC's Space Station Hardware Integration Office in 1996, then moved to SSC the following year to serve as Chief of Operations for the Propulsion Test Directorate.

Parsons began work at his third NASA center when he moved to JSC, where he eventually became the Center's Deputy Director. He went back to SSC in 2001 and became SSC's Director the next year, following the retirement of Roy Estess.

The next pair of shoes that Parsons filled were Dittimore's old ones.

"Bill Parsons is very talented," Dittimore said. "I have a lot of confidence in him."

"I welcome the opportunity to work with Bill," said Michael Kostelnik, Deputy Administrator for the International Space Station and Space Shuttle Programs at NASA Headquarters. "I know we've found a terrific leader to help guide the team through this difficult time."

Parsons called this "a challenging time for the program," but said that he is "proud to be a part of the Return to Flight effort."

As for the future of the Space Shuttle Program, Dittimore said he foresees a long life for the Shuttle fleet, as long as

the orbiters continue to receive the attention they need. "The Space Shuttles can serve the nation for as long as the nation desires it," he said. "They need TLC, but if we do our part, they'll continue to perform."

Dittimore, who has said his decision to leave NASA predated the Feb. 1 *Columbia* accident, said that "spaceflight is risky business. We have to be aware of and mitigate the risks."

When asked what he would miss most about his job, Dittimore did not hesitate.

"I'm going to miss the people," he said. "I'll miss the men and women of this program, and working side by side with some really good friends. I'll miss the camaraderie, the blood, sweat and tears it takes to make this thing happen, and the thrill and excitement of launches and missions."

Parsons has his own Shuttle launch memory: as a 28-year-old, he witnessed his first launch while on vacation with his family.

"When I saw that Shuttle take off at dusk, it was the most unbelievable experience," he said. "I got tears in my eyes; my heart pounded. I was proud to be an American, to see that we could do something that awesome."

A couple of decades later, Parsons is taking over the reins for the very program that inspired him back then.

As he makes room for his successor, Dittimore looks back warmly on his 26 years with NASA.

"I am one lucky person," he said, "to have fulfilled my dream of working at JSC and being involved with human spaceflight."

Some information in this story courtesy of the Public Affairs Office at Stennis Space Center



Bill Parsons explains details of the Space Shuttle orbiter to third-, fourth- and fifth-grade students in the East Hancock Elementary School's gifted program February 27.

DSCN1852 Photo by Stennis Space Center

"I am one lucky person to have fulfilled my dream of working at JSC and being involved with human spaceflight."

Ron Dittimore

Milt Heflin, Chief of the Flight Director Office, has worked with both Dittimore and Parsons. He shares his thoughts on each below.

Dittimore

"Ron and I have worked together in Mission Control as Flight Controllers and Flight Directors. Back then, as now, I have observed and admired his dedication, dignity and integrity. The manner in which he has stood up and carried out his duties as Program Manager since the accident, in a very unforgiving arena, has been without equal. Again, dignity and integrity come to mind. It appears that others will now have the opportunity to enjoy these special human traits that I see Ron having forever, no matter what he does. Our loss...their gain."

Parsons

"I have known Bill for a number of years. He has acquired a very wide range of experiences that will serve him quite well as Space Shuttle Program Manager. From what we are hearing coming out of the Columbia Accident Investigation Board, we will be looking at making some significant changes, both technically and in our preparation and operations processes. I see Bill as being very dedicated to seeing that we get right to it and get it done in a very positive and rigorous manner. He's in a really tough spot, and we all need to rally around him and his program team. Bill mentored some under Roy Estess at Stennis...it can't get much better than that."



CLOCKWISE FROM TOP

This 1989 picture shows the three STS-34 Flight Directors in Building 30's Flight Control Room #2. From left are Milt Heflin, Ron Dittimore and Bob Castle.

s89-43581 Photo by JSC Photography

Dittimore laughs as Dr. Neal Lane, Assistant to the President for Science and Technology and Director of the Office of Science and Technology, tries on a Launch and Entry Suit during a 2000 tour of JSC.

JSC2000-04969 Photo by Mark Sowa

Dittimore participates in a Space Shuttle planning meeting in Building 1.

JSC2000-0971 Photo by Robert Markowitz

Dittimore monitors console displays during STS-34.

s34(s)014 Photo by JSC Photography

Inspiration and education in New Mexico

White Sands Test Facility employees inspire local students from second grade to college

By Cheerie R. Patneau
White Sands Test Facility

“...inspire the next generation of explorers...”

Employees at Johnson Space Center's White Sands Test Facility (WSTF), near Las Cruces, N.M., have taken this line of the NASA Mission to heart. WSTF employees regularly take time out of their schedules to work with schools in their community and inspire kids about science, math and space.

“These kids are our future leaders,” said Barry Plante, Chief of WSTF's Engineering Office. “I wouldn't be surprised if one of them becomes a next-generation space explorer.”

On May 9, Plante presented a NASA certificate and a medal to each member of Patricia Mihok's second-grade class at Jornada Elementary School for their work on an outstanding research project. The class spent weeks collecting data on the wildlife in the Chihuahuan Desert, where Las Cruces is located, before compiling a report that was “graded” by professionals at JSC as part of the NASA Student Improvement Program.

Below are just a few of the other recent education events of which WSTF was a part.

Simulated Shuttle missions teach teamwork

Ed Cruse, an electronics technician for Honeywell Technology Solutions Inc. at WSTF, has spent the last five years perfecting a computer program that simulates a Space Shuttle mission from launch to landing. Cruse is a longtime member of the Science Advisors (SciAd) Program, where experienced math, science and technology experts work with teachers to promote student interest in science and an appreciation of a technical career.

“Kids want grownups to pay attention and to work with them,” Cruse said. “With the simulator, this is easy to accomplish, and at the same time, they learn about the space program.”

The objective of Cruse's simulated mission is to launch the Shuttle, repair a satellite's propellant leak and return safely to Earth. Students must complete the mission before running out of their resources – oxygen, hydrogen, fuel and oxidizer. The program puts the responsibility of completing the mission squarely on the student's shoulders. If they take too much time or are not paying attention, the Shuttle crew will run out of resources and not survive.

“When they have completed a successful mission, the kids feel they have accomplished something very difficult and have learned the value of working as a team,” Cruse said.

Engineer participates in Alliance for Minority Participation

Jo Leyva, a Honeywell mechanical engineer at WSTF, was a panelist for a discussion held this year at New Mexico State University (NMSU). The panel was sponsored by the New Mexico Alliance for Minority Participation (AMP), and addressed students in a NMSU course entitled SMET 101: Introduction to Science, Math, Engineering and Technology. AMP designed SMET 101 for community college transfer students and incoming freshmen who are uncertain about their career goals, but who are interested in SMET fields.

Leyva was joined by other local SMET experts, including a civil engineer and a range scientist, as well as by Dr. Ricardo Jacquez, the Director of AMP.

Leyva's advice to SMET students was not to worry about “cultural barriers,” always apply business ethics and values in the workplace, and study hard because “winging it” is a trap to career stagnation and regret.

“Good grades plus the determination to succeed is the way to go,” Leyva said to the students.

WSTF women inspire young students

The “Girls Can!” Career Awareness Conference was held March 1 at Lynn Middle School for more than 140 sixth-grade girls from the Las Cruces and surrounding communities. The event was sponsored by the American Association of University Women and provided an array of careers for the girls to consider.

Sonja Wood, Cheerie Patneau and Moira Romansky, all from WSTF, helped guide 12 girls through a simulated Space Shuttle mission at the conference – using the program designed by Cruse, another WSTF employee.

In an adjoining room, another demonstration was performed by WSTF women. Deb Chowning, Mary Burke and Jill Rollings demonstrated the effects of liquid nitrogen on flowers, and of a vacuum environment on balloons and marshmallow treats.

Each demonstration and discussion in the conference gave the attending girls a glimpse of a possible career – perhaps one that they had not considered before.

Among the women representing their careers were a veterinarian, archaeologist, pharmacist, wildlife biologist, artist, architect, editor, lawyer, engineer and a firefighter. Workshops for the girls' parents were also provided.

“This fair has helped me choose a science career for my profession,” said Kelsi Plante, daughter of Jan and Barry Plante (NASA WSTF) and a student at Vista Middle School.



Ed Cruse supervises a group of students as they perform a simulated Space Shuttle mission with software he developed.
Photo courtesy of the White Sands Test Facility



Jo Leyva, far left, participates in a panel discussion that was sponsored by the New Mexico Alliance for Minority Participation (AMP). The panel consisted of Leyva, a WSTF mechanical engineer; Vivie Todacheene, a range scientist; Jose Terrones, a civil engineer; and Dr. Ricardo Jacquez, Director of AMP.

Photo courtesy of the White Sands Test Facility

JSC WISHES ISS SCIENCE OFFICER A HAPPY 40TH BIRTHDAY

Aloha, Ed Lu!

By Kylie Moritz

AS PART OF A BIRTHDAY SURPRISE for Expedition 7 Astronaut Ed Lu, Johnson Space Center (JSC) Director Jefferson D. Howell, Jr. proclaimed July 1 as "Aloha Shirt Day" and encouraged employees to wear an aloha shirt to work. Pictures of JSC employees wearing aloha shirts were taken by JSC photographers and sent to the Expedition 7 crewmembers to show them our support. The mission support staff took time to honor Ed Lu on his 40th birthday while continuing to focus on their tasks for the International Space Station. Lu is currently living and working onboard the ISS as the Expedition 7 NASA ISS Science Officer along with Expedition 7 Commander Yuri Malenchenko.

Lu celebrated his birthday July 1 while orbiting 240 miles above the Earth. "I can't think of a better place to be on my 40th birthday," Lu said. "I appreciate everyone getting with the spirit and wearing your Hawaiian shirts."

Well-wishers throughout the day included NASA Administrator Sean O'Keefe, Lu's entire family in California, his fiancée, Christine Romero, the Mission Control Centers (MCCs) in Houston and Moscow, NASA Headquarters in Washington, White Sands Test Facility, Marshall Space Flight Center and friends of Lu at JSC. MCC Houston celebrated with a hula dancer birthday cake complete with palm trees and sand. A surfboard was also spotted in the crowd – a first for MCC.

"Happy Birthday to you. We are delighted that you have drawn that much attention, Ed. You do a fantastic job," O'Keefe said.

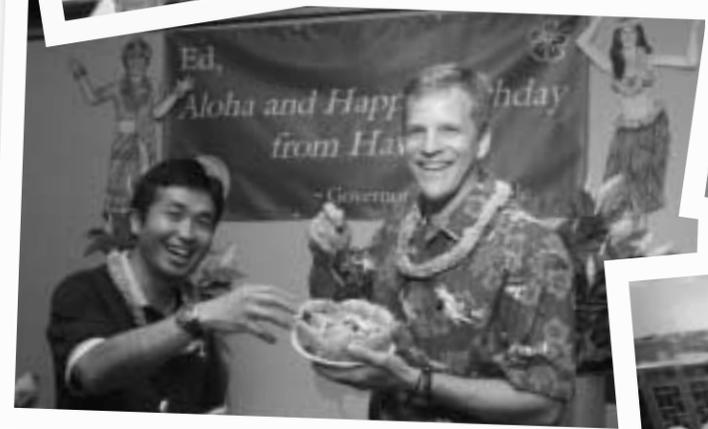
Lu considers Honolulu his hometown and has a great fondness for Hawaiian aloha shirts, frequently wearing one on orbit. Lu and Malenchenko have been seen sporting their new aloha shirts that arrived earlier this month on a Russian resupply vehicle as a gift from their support team in Houston.

On June 30 during a videoconference with Expedition 7, Hawaii Gov. Linda Lingle honored Lu by proclaiming July 1 as "Edward Tsang Lu Day" in Hawaii. Video of the conference with Expedition 7 and Gov. Lingle aired in the NASA TV video file on July 1.



Many Earth-bound JSC employees wished their orbiting colleague, Ed Lu, a happy 40th birthday on July 1. Getting into the "aloha" spirit were JSC Director Jefferson D. Howell, Jr., ISS Program Manager Bill Gerstenmaier and ISS Deputy Program Manager Charlie Precourt. Also included in the festivities: an Austin Powers tribute from the Neutral Buoyancy Lab (Lu is a fan of the Austin Powers movies), a celebration at NASA Headquarters, and Hawaiian foods, including a special "beach" birthday cake served in the Mission Control Center.

Photo Credits, Clockwise from Top
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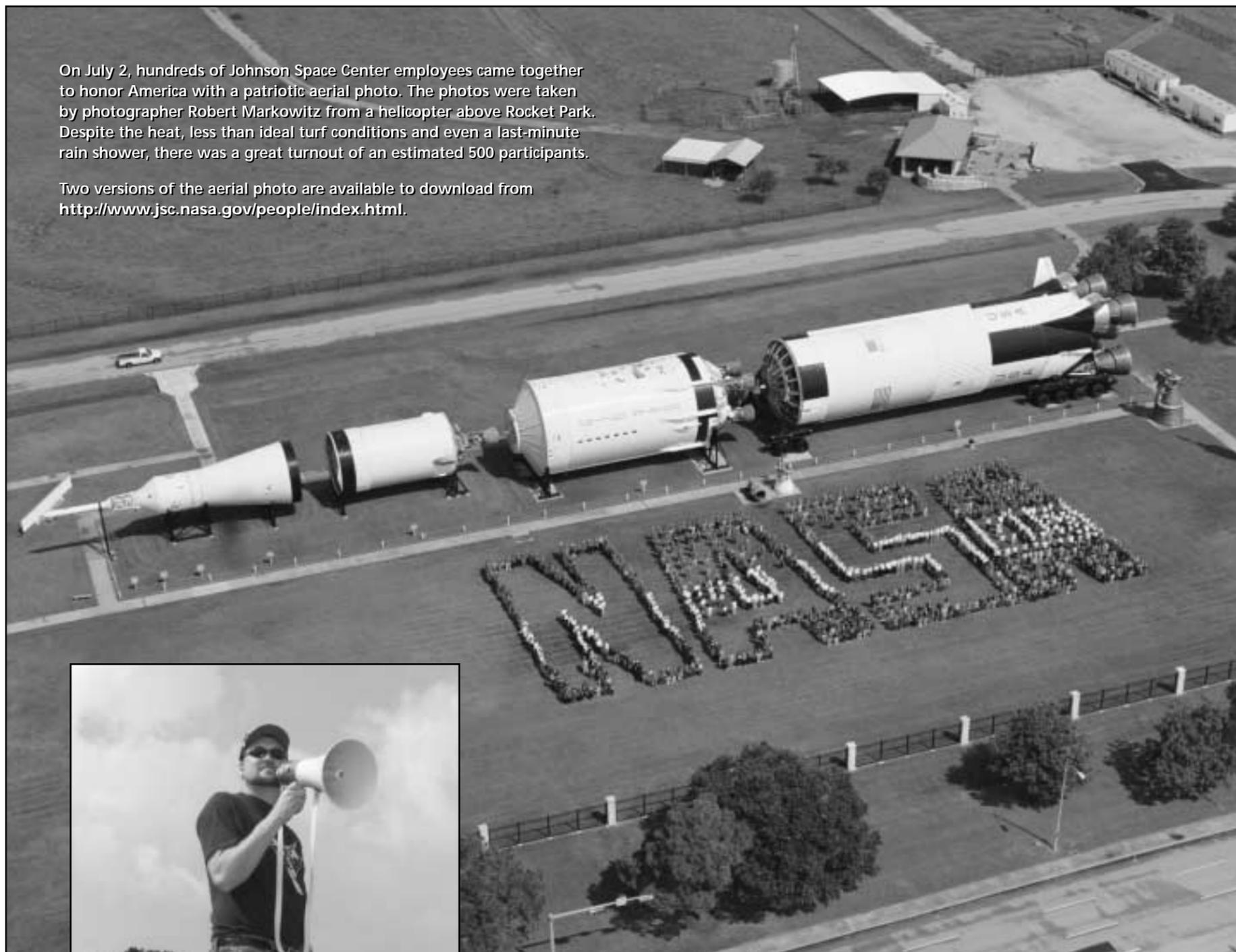


To see these shirts in color, visit JSC Features at www.jsc.nasa.gov/jscfeatures/articles/00000021.html

GIMME AN N... GIMME AN A...

On July 2, hundreds of Johnson Space Center employees came together to honor America with a patriotic aerial photo. The photos were taken by photographer Robert Markowitz from a helicopter above Rocket Park. Despite the heat, less than ideal turf conditions and even a last-minute rain shower, there was a great turnout of an estimated 500 participants.

Two versions of the aerial photo are available to download from <http://www.jsc.nasa.gov/people/index.html>.



Sean Collins, Graphics Technical Lead on the IMPASS contract, directs traffic at the aerial photo.

jsc2003e46566 Photo by Mark Sowa



The giant "NASA" takes shape at Rocket Park.

jsc2003e46570 Photo by Mark Sowa

SPACE CENTER

Roundup

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