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SPACE CENTER Roundup

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Season's Greetings

As the holiday season approaches, we can all take pride in the Center's progress this year. This first year of the new century has been a most productive one, both in space and on the ground.

Marking an early success for the year, the STS-99 crew aboard *Endeavour* completed the first human space flight mission of the 21st Century in February. The crew gathered Earth mapping and imagery data unlike any achieved before. The data will find applications in many fields including air traffic safety and communications.

Atlantis' STS-101 crew got the Memorial Day holiday off to a great start, gliding to a landing on May 29, completing a successful mission to service and supply the International Space Station. In September, *Atlantis* and its seven-member STS-106 crew, five astronauts and two cosmonauts, performed a space walk to connect power, data and communications cables between the newly arrived Zvezda Service Module and the station. In October, *Discovery* and its STS-92 crew delivered two major station components to the orbiting outpost: the Z1 Truss (communications platform) and a new docking port. Crewmembers completed four consecutive days of space walks to complete the linkup of the two elements to the ISS.

These missions paved the way for the successful launch of the first resident crew to live and work aboard the ISS. Lifting off from the Baikonur Cosmodrome in Kazakhstan on Oct. 31, a Russian Soyuz carried the Expedition 1 crew to the ISS, opening a new era in space flight and marking the beginning of a permanent human presence in space for many years to come.

The final shuttle mission of 2000, STS-97, saw *Endeavour*'s five astronauts deliver the first U.S. solar arrays that will provide power to the station and enable the operation of the U.S. Destiny Lab scheduled for launch next month. The flight concluded a year of significant achievement in Space Shuttle Program history, marked by the accomplishment of missions of unprecedented complexity. We can all take pride in the tremendous success of these missions as we look forward to the many challenges that lie ahead in completing assembly of the ISS.

The Space Shuttle Program continues to aggressively evaluate and implement beneficial space shuttle improvements. A major shuttle development milestone was the flight of the new glass cockpit on *Atlantis*. Planning for safety improvements received renewed attention this year and additional funding to implement high priority safety upgrades has been provided by Congress. Key Space Shuttle Program goals for these planned safety upgrades are a major reduction in ascent catastrophic risk; a significant reduction in orbital and entry system catastrophic failure risk; and a significant improvement in crew cockpit situational awareness for managing critical operational situations.

Many of you have been involved in the development of critically important advanced technology efforts. These have ranged from advances in lighter, stronger materials such as carbon nanotubes, to the

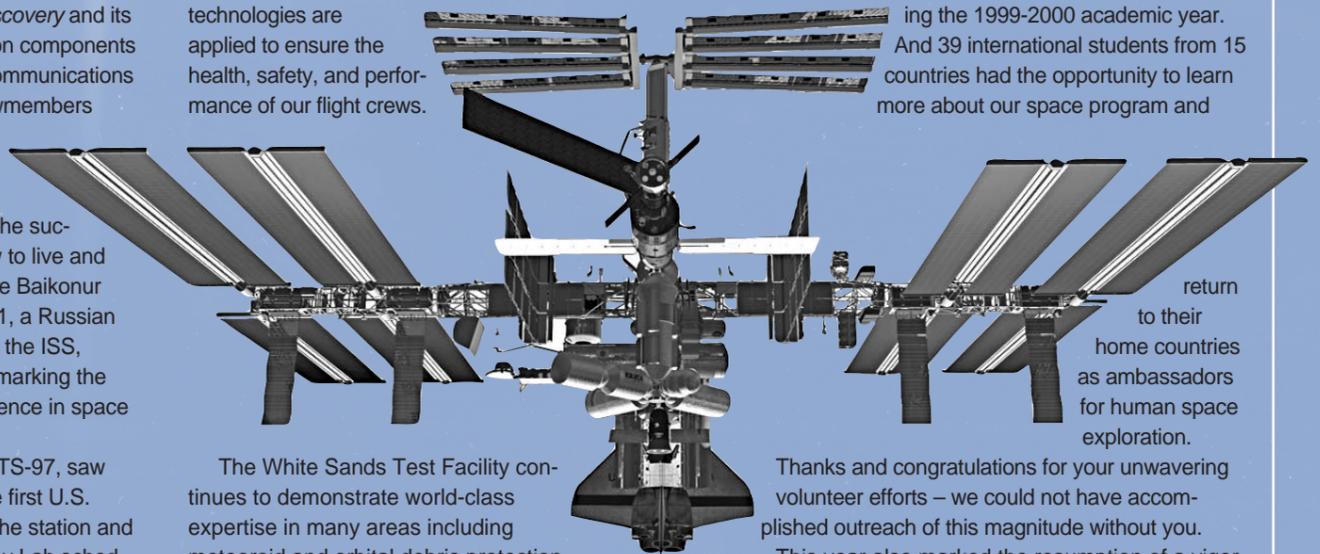
development of new robotics technologies for use by astronauts training on the ground and working aboard the ISS. We have experienced medical breakthroughs including advances in cellular biotechnology research – an exciting endeavor which is opening new vistas in our understanding and treatment of disease, tissue modeling and drug development – to advances in spacecraft design and testing including the X-38 Crew Return Vehicle and the TransHab. These research and development efforts are critical to furthering our exploration of space.

During the past year we have been developing the plans for a major new capability at JSC, the Bioastronautics Facility. One of our goals as the Center of Excellence for Human Operations in Space is ensuring our understanding and addressing the human elements of space flight. This facility will provide a world-class space biomedical research asset that will be available to students and researchers from national and international communities. Astronauts will have access to state-of-the-art physical training, rehabilitation, and medical experts as new knowledge and technologies are applied to ensure the health, safety, and performance of our flight crews.

serve the needs of our workforce team. The Western Heritage Pavilion on the grounds of JSC adjacent to Rocket Park was officially christened this year. This open-air pavilion provides viewing of the longhorn pasture, where local high school students participate in the Longhorn Project, our joint educational program with the Clear Creek Independent School District that teaches local high school students how animal husbandry, agriculture and aquaculture relate to the future of human space flight. Importantly, the new JSC Child Care Center opened its doors in August. The new facility expands capacity nearly 70 percent and features many modern innovations.

We have continued to share our story with more and more people through venues such as Open House and Inspection2000, as well as through a variety of education programs. The Science Advisor (SciAd) Program successfully completed its first year, and KC-135 student flight opportunities outreach efforts expanded to include community college students for the first time. Texas Aerospace Scholars served more than 230 Texas high school juniors during the 1999-2000 academic year.

And 39 international students from 15 countries had the opportunity to learn more about our space program and



return to their home countries as ambassadors for human space exploration.

The White Sands Test Facility continues to demonstrate world-class expertise in many areas including meteoroid and orbital debris protection, hypervelocity impact testing, and fire hazards associated with oxygen systems. They provide a wide variety of test and laboratory research and development support to all NASA centers, the Department of Defense, other government agencies and private industry. WSTF personnel are working with professionals in many industries from aerospace to health care to apply their expertise, train employees and develop new products.

The Space Operations Management Office continues its efforts to provide quality operational support to all NASA missions. In addition, SOMO made progress in the consolidation of all mission and data services for the Agency and is now working on a future architecture effort that will provide space communications support for all Enterprise requirements until the year 2020. A major emphasis during the past year has been to commercialize key assets and capabilities across the Agency. Also, the launch of the latest Tracking and Data Relay Satellite in June was a major accomplishment for the organization.

The year of firsts in space was matched by a year of firsts on the ground, firsts that have expanded our community outreach efforts and have helped us better

Thanks and congratulations for your unwavering volunteer efforts – we could not have accomplished outreach of this magnitude without you.

This year also marked the resumption of a vigorous recruiting and hiring program for the Center. Our challenging work, many accomplishments, and reputation as a world-class employer enabled us to hire 160 outstanding people from across the country. We're proud of our progress in this area, and welcome these new members of the JSC team.

It is with sadness that I note the passing this year of Dr. Robert Gilruth, the Center's first director, and former JSC Deputy Director Sig Sjoberg. Their vision, energy and dedication helped define the American space program and build JSC into what it is today, the leader in humanity's exploration of outer space. They are greatly missed.

This holiday season finds many of you working around the clock overseeing station operations, some of you in Russia, away from your families. Your efforts have contributed greatly to our success this year. I would like to extend my best wishes to all those individuals and their families for the many sacrifices you make to support our endeavors.

I thank all of you – the civil servant/contractor workforce team and our supporters in the community – for your hard work and your outstanding contributions to furthering the exploration of space. My heartfelt wishes to you and your families for a joyous holiday season.

George W. S. Abbey