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SPACE CENTER Roundup

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Atlantis crew delivers heart of the space station

Space Shuttle *Atlantis* glided to a belated but textbook touchdown at Edwards Air Force Base, Calif., at 2:33 p.m. CST Feb. 20, successfully wrapping up a 5.3-million-mile mission to deliver the U.S. Laboratory Destiny to the International Space Station.

With STS-98 Commander Ken Cockrell at the controls, *Atlantis* darted through high clouds over the Mojave Desert test center to touch down on concrete runway 22. The landing was the 47th at Edwards and brought the 102nd flight in program history to a close.

Cockrell and fellow crewmembers—Pilot Mark Polansky and Mission Specialists Tom Jones, Marsha Ivins and Bob Curbeam—returned to Ellington Field at about 3:30 p.m. CST the next day where they were greeted by a crowd of well-wishers.

“We had a wonderful flight,” Cockrell told those in attendance. “I know it’s pleased a lot of people, but it wasn’t all our doing. We did our part, I guess, but we’re here to say a really huge ‘thank you’ to all of you that put this flight together and got us ready for it.”

“The reason a flight goes well is because things come together and things don’t go wrong, and very few things went wrong on this flight, which enabled the big picture to come together so smoothly. It’s a testament to the hard work that’s gone into the Space Station Program, the Space Shuttle Program—getting *Atlantis* ready to carry the precious cargo up to the station—to the people that are running station and running space shuttle operations here on the ground at MOD [Mission Operations Directorate] and the

people in MOD that provided the fabulous training that we’ve had for about two and one-half years now to get ready for this flight.”

Cockrell took the opportunity to express greetings from the Expedition One crew. “Bill Shepherd sends his greetings to all of you. He’s having a great time up there. I can’t imagine a better crew to inaugurate the space station era.”

Polansky, completing his first flight in space, had a few words to say about his commander: “He ran a great crew, and he really enabled us to do our jobs. He was there to provide oversight for the whole program. He did a remarkable job on the rendezvous and docking. And it was, from my viewpoint, a fantastic landing. It was for me a privilege to get to work with a pro on my first flight.”

Polansky thanked all those who worked so hard to make the mission a success. “The last two weeks have been a dream come true. It was just something that I’ve wanted to do my entire life and I just can’t believe that I finally got to do it. As great an honor and a privilege as that was, I’m not naïve enough to think that flying in space is about me or about

us because it’s really all about you. Our nation’s space program is all about individuals like yourself who put in so many hours of work so that we get to go up there and be on TV for a couple of weeks doing things.”

Left on orbit is the U.S. Destiny Laboratory, which was installed onto the ISS Feb. 10 in a dazzling display of robotics finesse and space-walking skill.

Ivins began the work of installing the laboratory, using *Atlantis*’ robotic arm to remove Pressurized Mating Adapter 2 (PMA 2), a station docking port, from the Unity module to make room for Destiny. The adapter was removed from Unity and latched into a temporary position on the station’s truss. Then Jones and Curbeam began a space walk that continued throughout the day, in tandem with Ivins’ robotic work. Jones provided Ivins visual cues as she moved the adapter to its temporary position, and Curbeam removed heater power connections from *Atlantis* to the lab before unberth.

Ivins then latched the robotic arm onto the Destiny lab and began lifting it from *Atlantis*’ payload bay. High above the bay, Ivins deftly flipped the 16-ton lab 180 degrees, moving it into position to

attach to the station berthing port. At 12:57 p.m. CST, the lab was latched into position on the station, and soon a set of automatic bolts tightened to hold it permanently in place for years to come. With Destiny secured to the station, Jones and Curbeam connected electrical, data and cooling lines.

Jones and Curbeam breezed through the second space walk of the mission on Feb. 12, attaching the PMA 2 to the end of the new Destiny module and completing all of the space walk’s planned tasks and more.

During the second space walk, Jones helped Ivins remove PMA 2 from the Z-1 Truss by manually opening latches on the truss. Curbeam relocated himself to the end of the lab and provided clearance cues to Ivins as she berthed PMA 2 to the end of the lab. Curbeam attached a vent to the lab’s pressure control system.

Curbeam and Jones then moved rapidly through a variety of tasks, including attaching a vent to part of the lab’s air system and putting wires, handrails and sockets on the exterior of Destiny as aids for future space walkers. Ahead of schedule for the second space walk of the mission, they connected several computer and electrical cables between the docking port and the lab and unveiled the lab’s large, high-quality window and attached an exterior shutter.

Jones and Curbeam completed the third space walk of the mission on Feb. 14.

Space-walking tasks included going to the top of the P6 Truss to inspect latches on the solar array and testing the ability of space walkers to carry an immobile crewmember back to the shuttle airlock.

Ivins reflected on the successful work performed on orbit, calling it a “miracle.”

“I just got to say that was a miracle,” said Ivins, who also served as the flight engineer on STS-98. “We are asking for

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STS98-E-5189
Astronaut Robert L. Curbeam, STS-98 mission specialist, holds onto handrail on Pressurized Mating Adapter 3 during the second of three scheduled space walks on 5A.



Roy Estess

NASA names Estess acting JSC director

Effective Feb. 23, Roy Estess, director of NASA’s Stennis Space Center in Mississippi, was detailed to JSC as the acting center director. NASA Administrator Daniel S. Goldin appointed former JSC Director George W. S. Abbey as his senior assistant for international issues.

Estess has served as director of Stennis Space Center since 1989, and was its deputy director from 1980 to 1989. A native Mississippian and a graduate of Mississippi State University, he began his career there in 1966 as a test engineer.

Abbey’s appointment came after a highly decorated 40-year career with

NASA in a variety of increasingly senior positions. He was named JSC director in 1996. As the focus of his new duties, Abbey will conduct, on a full-time basis, an assessment of the current International Space Station partner contributions, providing the administrator with a report analyzing past and potential future contributions that will help increase the overall effectiveness of the International Space Station Program.

Look for a tribute to former Center Director George W. S. Abbey in the next issue. ■



Columbia returns
in time for its
20th birthday.

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New JSC archive
will provide
easy access.

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Volunteers
expand their
horizons.

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