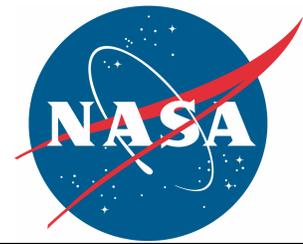


NASA Mission Summary

National Aeronautics and
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STS-123 MISSION SUMMARY

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SPACE SHUTTLE ENDEAVOUR (STS-123)

Space shuttle Endeavour's upcoming STS-123 mission will carry two new components to the International Space Station: the first section of the Japan Aerospace Exploration Agency's Kibo laboratory and the Canadian Space Agency's two-armed robotic system, known as Dextre. The Japanese Experiment Logistics Module-Pressurized Section, or ELM-PS, will hold experiment samples, maintenance tools and other spare items. Dextre can be attached to the station's robotic arm to handle smaller components typically requiring a spacewalking astronaut. At the tip of each arm is a "hand" that consists of retractable jaws used to grip objects. Endeavour's 16-day flight is the longest shuttle mission to the station and will include five spacewalks. The shuttle also will deliver a new crew member and bring back another one after a seven-week mission.

CREW

(For more details, see Press Kit, p. 21)

	<p>Dominic Gorie (GOR-ee) Commander (Retired Captain, U.S. Navy)</p> <ul style="list-style-type: none"> • Veteran of three spaceflights • Age: 50, Born: Lake Charles, La. • Married with two children • Logged 6000+ hours in more than 35 aircraft • Enjoys skiing, bicycling, fishing and hiking 		<p>Gregory H. Johnson Pilot (Colonel, U.S. Air Force)</p> <ul style="list-style-type: none"> • First spaceflight • Age: 45, Born: South Ruislip, Middlesex, UK • Married with three children • Logged 4000+ hours in 40 different aircraft • Enjoys traveling, biking, and woodworking
	<p>Robert L. Behnken (BANK-en) Mission Specialist (Major, U.S. Air Force)</p> <ul style="list-style-type: none"> • First spaceflight • Will conduct three spacewalks • Age: 37, Hometown: St. Ann, Mo. • Ph.D. in mechanical engineering, Caltech, 1997 • Enjoys mountain biking, skiing and backpacking 		<p>Mike Foreman Mission Specialist (Captain, U.S. Navy)</p> <ul style="list-style-type: none"> • First spaceflight • Will conduct three spacewalks • Age: 50, Hometown: Wadsworth, Ohio • Married with three children • Enjoys golf, running, skiing and home repairs
	<p>Takao Doi (tah-cowe DOY) Mission Specialist</p> <ul style="list-style-type: none"> • Japan Aerospace Exploration Agency astronaut • Became the first Japanese astronaut to conduct a spacewalk on STS-87 in 1997 • Born in 1954 in Minamitama, Tokyo, Japan • Ph.D.s in aerospace engineering & astronomy 		<p>Rick Linnehan (lin-eh-han) Mission Specialist (Doctor of Veterinary Medicine)</p> <ul style="list-style-type: none"> • Veteran of three spaceflights, including the fourth Hubble Servicing Mission in 2002 • STS-123's lead spacewalker, will conduct the first three spacewalks • Age: 50, Born: Lowell, Mass.
	<p>Garrett Reisman (REESE-man) Mission Specialist Expedition 16 and 17 Flight Engineer</p> <ul style="list-style-type: none"> • First spaceflight • Will perform one spacewalk during STS-123 • Age: 40, Hometown: Parsippany, N.J. • Returns on STS-124, targeted May 25, 2008 		<p>Léopold Eyharts (ā-arts) Expedition 16 Flight Engineer Mission Specialist</p> <ul style="list-style-type: none"> • European Space Agency astronaut • Flew to the station on STS-122 in February • Age: 50, Born: Biarritz, France • Enjoys reading, computers and sports



The STS-123 crew patch depicts the space shuttle in orbit with the crew names trailing behind. STS-123's major additions to the International Space Station, Kibo and Dextre, are both illustrated. The space station is shown in the configuration that the STS-123 crew will encounter when it arrives.

SPACEWALKS Each will last approximately 6.5 hours. (*Press Kit, p. 59*)

- On flight day 4, Linnehan and Reisman will prepare the ELM-PS for its removal from the shuttle's payload bay. Later that day, the Japanese facility will be installed on top of the Harmony module.
- On flight day 6, Linnehan and Foreman will assemble Dextre by removing covers and installing arm components on its main body.
- On flight day 8, Linnehan and Behnken will complete Dextre assembly by installing a tool platform and tool holster assembly.
- On flight day 11, Behnken and Foreman will evaluate the Shuttle Tile Ablator-54, or STA-54, material and a tile repair ablator dispenser for use as a shuttle thermal protection system repair technique. The Tile Repair Ablator Dispenser, or T-RAD, is similar to a caulk gun. The spacewalkers will use T-RAD to mix and squirt out the STA-54 material into holes in several demonstration tiles. The repaired samples will be returned to Earth for extensive testing.
- On flight day 13, Behnken and Foreman will move the Orbiter Boom Sensor System, the 50 ft. extension of the shuttle's robotic arm, to a temporary location on the station's main truss or backbone. The OBSS will be left on the station because shuttle Discovery doesn't have enough room in its cargo bay to carry both the boom and the large Japanese pressurized module on the STS-124 mission. The spacewalkers also will install a new trundle bearing assembly in the starboard Solar Alpha Rotary Joint to allow the joint to rotate a little bit more if necessary. That SARJ has had limited ability for several months, and metallic debris has been found inside it. Additional spacewalk tasks include inspecting the SARJ and collecting debris samples.

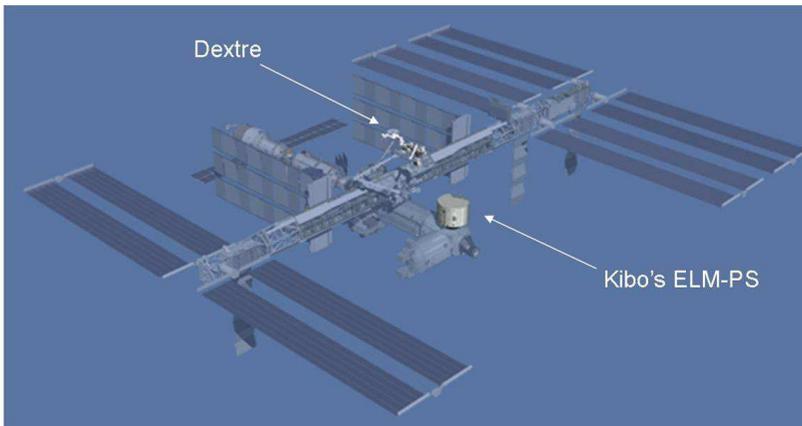


Figure 1: Space station configuration after STS-123

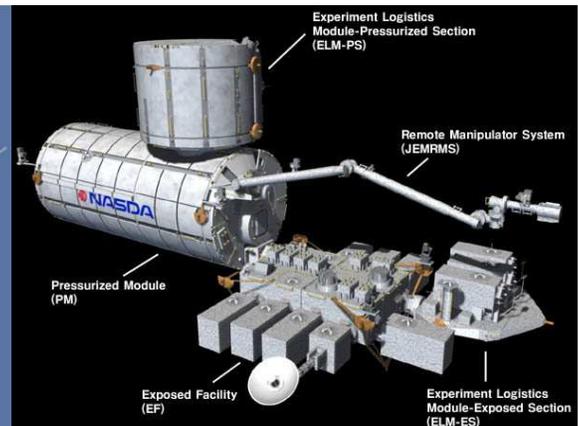


Figure 2: Kibo and its components

FACTS & FIGURES

- STS-123 is the 122nd space shuttle flight, the 25th flight to the station, the 21st flight for Endeavour and the second of six flights planned for 2008.
- The STS-123 mission will mark the addition of a mission control center in Japan. The Space Station Integration and Promotion Center, just north of Tokyo, Japan, will be responsible for monitoring Kibo operations. This facility joins the other space station control centers in the United States, Russia and Germany.
- The Kibo laboratory—which means “hope” in Japanese—is the country's major contribution to the station and will enhance the unique research capabilities of the space station. (*Press Kit p. 31*)
 - The components of Kibo will be assembled in space on shuttle missions STS-123, STS-124 and STS-127.
 - The ELM-PS, a short cylinder, will be relocated to its permanent spot on top of Kibo's Pressurized Module, which will be delivered on STS-124.
- The Canadian Special Purpose Dexterous Manipulator, known as “Dextre,” weighs approximately 3400 pounds. It is 12 feet high and 7.7 feet wide. Each arm extends 11 feet. (*Press Kit p. 50*)
 - Dextre can be operated by the crew inside the station or by flight controllers on the ground.
 - It is equipped with lights, video equipment, a stowage platform, and three robotic tools.
- The Orbiter Boom Sensor System will be returned to Earth at the end of the STS-124 mission.