

NASA Facts

National Aeronautics and
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FACT SHEET

Aug. 25, 2006

SPACE SHUTTLE ATLANTIS (STS-115)

The launch of NASA's Space Shuttle Atlantis and its six-member crew on the STS-115 mission marks the return to assembly of the International Space Station. Atlantis will transport the girder-like P3/P4 truss, the first major addition to the station since late 2002. The 35,000 pound truss provides an additional set of solar arrays that will increase the station's power capability and a giant rotary joint that allows the arrays to track the sun. Three spacewalks are planned to install the truss, deploy the arrays and prepare them for operation. Shuttle inspection techniques tested on the two previous missions will continue to be a priority on this flight. Once Atlantis arrives at the station, one or two days could be added to the 11-day mission for a focused inspection of the shuttle's heat shield. *(For more details, Press Kit p. 1-9)*

CREW



Brent Jett

- (Captain, U.S. Navy), Commander
- Veteran of three spaceflights, mission commander on STS-97 in 2000
 - Age: 47, born in Pontiac, Mich.



Chris Ferguson

- (Captain, U.S. Navy), Pilot
- First spaceflight, nickname "Fergie"
 - Age: 44, born in Philadelphia, plays drums for astronaut rock band, "Max Q"



Joe Tanner

- Mission Specialist
- Veteran of three spaceflights, will perform two spacewalks
 - Age: 56, born in Illinois, enjoys camping and mountaineering



Dan Burbank

- (Commander, U.S. Coast Guard), Mission Specialist
- Veteran of one spaceflight, will perform one spacewalk
 - Age: 45, born in Manchester, Conn., enjoys skiing, hiking and sailing



Steve MacLean (Muh-klaine) (Canadian Space Agency), Mission Specialist

- Veteran of one spaceflight, will perform one spacewalk
- Age: 51, born in Ottawa
- The first Canadian to operate the station's Canadian-built robotic arm



Heide Stefanyshyn-Piper

- (Hye'-dee Steph-uh-nih'-shun Pye'-pur)
(Commander, U.S. Navy) Mission Specialist
- First spaceflight, will perform two spacewalks
 - Age: 43, born in St. Paul, Minn., enjoys scuba diving and roller-blading.



To reflect the primary mission of the flight, the patch depicts a solar panel as the main element. As the Space Shuttle Atlantis launches toward the station, its trail depicts the symbol of the Astronaut Office. The starburst, representing the power of the sun, rises over the Earth and shines on the solar panel. The shuttle flight number, 115, is shown at the bottom of the patch, along with the station assembly designation, 12A (the 12th U.S. assembly mission). The blue Earth in the background reminds us of the importance of space exploration and research to all of Earth's inhabitants.

(Press Kit p. 16-20)

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MISSION HIGHLIGHTS (For a day-by-day timeline of the mission, Press Kit p. 10-11)

• **Three Spacewalks:** (Press Kit, p.26-31)

Each will last approximately 6.5 hours. Astronauts will:

- First spacewalk or EVA #1: On flight day 4, Tanner and Piper complete power hook ups on the truss segment.
 - Second spacewalk: On flight day 5, Burbank and MacLean prepare the rotary joint for the solar array deployment scheduled for the following day.
 - Third spacewalk: On flight day 7, Tanner and Piper are expected to retrieve the MISSE 5 (Materials on International Space Station Experiment)
- **"Camp Out"** (Press Kit, p. 6)
- On the days before each spacewalk, the two astronauts preparing for their extravehicular activity will sleep in the station's Quest airlock. They will don masks and breathe pure oxygen to begin cleansing nitrogen from their bloodstreams.
 - This is the first time this technique is used during a shuttle mission. It will save about an hour of preparation time normally required for spacewalks.

IMPROVED SAFETY

- **Shuttle backflip:** As it nears the station, the shuttle will perform a backflip so the station's crew can photograph its belly to see whether the shuttle's heat shield, known as the thermal protection system, is damaged. This tricky maneuver was first demonstrated on STS-114. (Press Kit, p. 22-25)
- **Focused inspection (tentative):** If program managers decide this is necessary, the inspection would take place on flight day 5. The second spacewalk would then move to flight day 6. (Press Kit, p. 26)
- **Late inspection:** On flight day 10, the day after undocking, the astronauts will inspect the shuttle's wings leading edges and the nose cap. Imagery analysts at NASA's Johnson Space Center, Houston, will review the data and report their findings to the Mission Management Team. (Press Kit, p.9)

FACTS & FIGURES

- Approximately 16,000 people across the country contribute to NASA's Space Shuttle Program.
- STS-115 is the 116th space shuttle flight, the 27th flight for Atlantis and the 19th flight to the station
- Jett and Tanner flew on STS-97. During that mission, the station's first set of solar arrays were delivered and installed.
- Each solar array is about 180 feet long. Together they stretch the length of a football field, including the end-zones.
- The solar arrays will double the station's current power capability once they're put on the grid after the next shuttle mission, STS-116, which is targeted for a December launch.
- The arrays eventually will provide about 20 kilowatts of power for station operations, equivalent to the power used by 16 typical U.S. homes at any given moment.

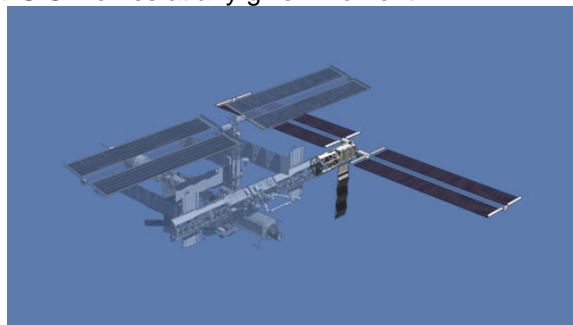


Figure 1: Configuration of the station at the end of STS-115