Space Work

Shuttle and station astronauts perform many tasks as they orbit the Earth. The Space Shuttle is a versatile vehicle that provides facilities to perform science experiments, release and capture huge satellites and even assemble the International Space Station. However, the Space Shuttle was only designed to fly in space for about two and a half weeks at a time.

The space station, on the other hand, is designed to be a permanent orbiting research facility. Its major purpose is to perform world-class science and research that only the microgravity environment can provide. The station crew spends their day working on science experiments that require their input, as well as monitoring those that are controlled from the ground. They also take part in medical experiments to determine how well their bodies are adjusting to living with no gravity for long periods of time.

Working on the space station also means ensuring the maintenance and health of the orbiting platform. Crewmembers are constantly checking support systems and cleaning filters, updating computer equipment - doing many of the things a homeowner must do to ensure their largest investment stays in good shape. Similarly, Mission Control constantly monitors the space station and sends messages each day through voice or e-mail with new instructions or plans to assist the crew members in their daily routine.

Before the International Space Station and the Russian Mir space station, the Space Shuttle was the only vehicle that NASA astronauts could live and work on for days at a time. The Space Shuttle would deliver satellites to space that could broadcast communications or peer into the edge of the universe. Of course, the crewmembers would carefully check all systems before finally releasing a satellite into Earth orbit.

Probably the most famous satellite released from the Space Shuttle's payload bay is the Hubble Space Telescope. The shuttle has even returned to space three times with replacement parts destined for Hubble. Before the Hubble can be fitted with new parts, though, an astronaut must use the shuttle's robotic arm to capture the satellite and then maneuver it inside the payload bay where it can be secured. Then, space walkers venture into the payload bay, climb up the Hubble Space Telescope and install the new parts. After ground controllers are sure the Hubble Space Telescope is in good condition, the robotic arm grabs the satellite then releases it back into space.



Research beneficial to life on Earth has been performed inside the Space Shuttle. For instance, protein crystals grown in space provide researchers insights into stronger, safer medications here on Earth. Plants grown in space help scientists learn how to grow healthier stronger plants on Earth. Plant experiments also help researchers understand the implications of feeding astronauts on long-term missions beyond low-Earth orbit. Studies have also been performed on astronauts themselves, mostly in an effort to determine the effects of microgravity on human bone and tissue.

(From www.nasa.gov)