

Space Operations Mission Directorate and Open Government

Missions to the International Space Station and Beyond

www.nasa.gov/topics/shuttle_station/

Transparency Participation Collaboration

The NASA Space Operations Mission Directorate includes the work of the International Space Station (ISS), the Space Shuttle Program, the Launch Services Program, and the Space Communications and Navigation (SCaN) Program. These programs comprise NASA's human spaceflight activities on orbit as well as the launch and communication services for all NASA human and robotic spacecraft. To achieve our mission, we must partner with other organizations, both internationally and domestic. We strive to make all activities as open and participatory as possible so that everyone on planet Earth may be a part of these missions of discovery and exploration.

Overview

NASA's principle of openness has been an integral part of human spaceflight operations by design, with all of NASA's most challenging missions undertaken live in front of a global audience. From the Apollo Program's unprecedented television coverage in the 1960s (which won NASA Television a 2009 Emmy for Lifetime achievement) to today's live video calls between school children and the ISS, human spaceflight has led the way as an example for transparency within NASA.

View ISS Assembly Spacewalks Live

www.nasa.gov/ntv



Spacewalk on November 3, 2007

NASA broadcasts spacewalks live over NASA TV and the Internet, even the most challenging of ISS assembly tasks. While anchored to a foot restraint on the end of the Orbiter Boom Sensor System (OBSS), astronaut Scott Parazynski, STS-120 mission specialist, participated in the mission's fourth session of extravehicular activity (EVA) while Space Shuttle Discovery was docked with the International Space Station. During the 7-hour, 19-minute spacewalk, Parazynski cut a snagged wire and installed homemade stabilizers designed to strengthen the damaged solar array's structure and stability in the vicinity of the damage. Once the repair was complete, flight controllers on the ground successfully completed the deployment of the array.

NASA and its international partners are working to complete assembly of the ISS, and post-completion, the Space Shuttle will be retired. The first element of the ISS was launched in 1998 and since then every step of on-orbit assembly of this laboratory has been open for the public to see. This unprecedented international achievement—with numerous, challenging spacewalks, delicate robotic arm operations, and visiting vehicles from around the world—has all been broadcast live on NASA TV. Every Shuttle launch, landing, and on-orbit operation has been available through television and the Web to engage the public in our country's civil space program. With assembly nearly complete, full use of ISS as a national laboratory is beginning. NASA plans to continue its transparency in sharing the compelling work of our astronauts on-orbit into the future.

ISS is a collaboration of five space agencies:—NASA, The European Space Agency, the Japanese Exploration Agency, the Canadian Space Agency, and Russian Space Agency. The U.S. segment of the ISS has been named as the nation's newest National Laboratory. Use of the ISS as a National Laboratory involves partnerships with several Government Agencies and organizations, including the National Institutes of Health, the National Science Foundation, the US Department of Agriculture, US Department of Defense, US Department of Energy, and a number of private companies and consortia including Astrogenetix, Inc., BioServe Space Technologies, Ad Astra Rocket Company, NanoRacks, LLC., and Zero Gravity, Inc.

NASA provides live video feeds of all major human spaceflight operations, such as launch, landing, docking, undocking, all space walks, major on-orbit assembly operations, and extensive coverage of daily life on-board the ISS. In addition to mission reporting available on NASA TV, the public can track the ongoing operations of the ISS through a variety of Web sites. The NASA ISS Web site provides a significant amount of information on the ISS, including an interactive ISS reference guide, photographs, daily crew timelines, and ISS news, as well as links to live ISS video and mission audio. Also, an ISS daily report is published 365 days per year, detailing the day's activities as well as any problems encountered or issues being worked.

View a Rocket Launch with your own eyes
kennedyspacecenter.com/



Liftoff of STS-129 on November 16, 2009

The Space Shuttle launches from Kennedy Space Center in Florida, just as the Apollo missions to the Moon and other historical launches have in the past. Expendable launch vehicles launch from Cape Canaveral Air Force Station next door. These launches can be viewed (and felt) up and down the coast, from miles away. Visitors to Florida can visit the Kennedy Space Center visitor's center, take a tour of the space center itself, ride the Shuttle Launch Experience, and visit local space-related attractions. The launch can be viewed from inside the space center (with tickets) or from the beaches and local establishments in the neighboring communities. For many, viewing a launch is a once-in-a-lifetime opportunity to connect with missions to outer space.

NASA is working to expand the range of activities in which people can participate. In 2006, NASA conducted a student competition to name the Node 2 module of the ISS, involving more than 2,200 K-12 students from 32 states. In 2009, NASA solicited public input to name the Node 3 module of the ISS, receiving more than one million poll responses. Astronauts on Shuttle and ISS missions are also using social media, such as Facebook and Twitter, to let people become a more direct part of these missions. Social media posts and real-time blog discussions inform the public prior to and during each mission, both for human missions but also for the expendable launch vehicles that carry scientific missions into space. Launches and industry interviews broadcast live on NASA TV to inform the public and encourage students to study the sciences that will help ensure NASA continues to lead the world in aerospace exploration as well as research and technology development.

How This Fits into Open Government

From the beginning of human space exploration, we have been making our activities public in real-time. This allows people to get the sense of 'being there' and learning along with our astronauts and other professionals. To achieve our goals in space exploration, we must collaborate with other government agencies, industry, as well as international partners. With the ISS as the newest National Laboratory, there will be increased opportunity to collaborate with universities and research activities.

Useful Links

1. The Space Shuttle Program: www.nasa.gov/shuttle
2. The Space Station Program: www.nasa.gov/station/
3. ISS: www.nasa.gov/mission_pages/station/main/index.html
4. ISS Daily Reports:
www.nasa.gov/directorates/somd/reports/iss_reports/index.html
5. ISS Research www.nasa.gov/mission_pages/station/science/index.html
6. ISS National Lab www.nasa.gov/mission_pages/station/science/nlab/index.html

High Schools United with NASA to Create Hardware (HUNCH)

www.nasa.gov/offices/education/programs/descriptions/HUNCH.html



HUNCH students at Clear Creek High School in Texas building training hardware

One of the more interesting HUNCH projects is a dining table for space station astronauts. The table has a vacuum system that sucks up stray food particles and keeps them out of the hardware used aboard the space station. To test the table's vacuum function, a group of Clear Creek students were the first students in the nation to fly aboard a zero-gravity plane, which NASA uses to train astronauts. The students spent a total of five hours on the plane during two flights. During the flights, students tested the vacuum's air flow, suction and filter systems. Astronauts are scheduled to take the 74-by-32-inch, aluminum table to the space station sometime this year.

7. View a Rocket Launch:

www.nasa.gov/centers/kennedy/launchingrockets/viewing.html