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Feb. 5, 2010

RELEASE : 10-036

Space Station Primed for New Era of Scientific Discoveries

CAPE CANAVERAL, Fla. -- NASA and its international partners are looking forward to unprecedented scientific opportunities aboard the International Space Station, or ISS. With station assembly nearing completion, the ISS Partnership is looking forward to using the station to its fullest capacity. The U.S. administration's fiscal year 2011 budget proposal calls for continuing station operations to at least 2020, which will create new opportunities for advancing microgravity science research.

"This is a really exciting week for the space station and for the scientists that want to use these laboratories," said Julie Robinson, program scientist for the station at NASA's Johnson Space Center in Houston. "We've already had some

important findings on station during its construction. With this strong support for continued space station lifetime to 2020 or beyond, we will have amazing discoveries from the science and technology research that can be accomplished."

NASA senior managers from the space station program and counterparts at Russia's Roscosmos, the European Space Agency, Canadian Space Agency and Japan's Ministry of Education, Culture, Sports, Science and Technology met to discuss the implications of continuing station operations and utilization and recently issued a joint statement about the station's future.

They noted, "ISS continuation could bring great benefit to all partners and humankind by demonstrating significant and sustained return on the partnership's investment in the ISS program, primarily through the enhanced research and usage opportunities."

The entire statement is available at:

http://www.nasa.gov/pdf/423071main_mcb_joint_stmt_020110.pdf

The ISS Partnership is scheduled to meet again at the Heads of Agency level on March 11 in Tokyo to further discuss partner efforts to undertake their own decisions for space station extension and the opportunity it will provide to use this unique platform for scientific, technological, diplomatic and educational purposes.

The continued use of the station will open the window for more studies that can only be done in the unique environment of space. Specifically, scientists can discover how cells reproduce and differentiate in microgravity with applications to areas such as tissue generation and wound repair. Also, there are opportunities for more human physiology research to learn about systems such as heart, muscle and bone, which can benefit space explorers and ill or injured patients.

Studies of fluid physics that benefit from lack of buoyancy in microgravity will provide new understanding of soft matter, supercritical fluids and two phase flow. Technology tests will advance areas such as robotics, life support and spacecraft servicing.

Station construction began in Dec. 1998 and will be completed during 2010. Once complete, the station will transition to a new "full usage" phase, where continuous scientific research will be conducted aboard the multinational orbiting laboratory.

During the past decade, scientific research accomplishments made aboard the station included advances in the fight against food poisoning and new methods for delivering medicine to cancer cells. Studies of salmonella bacteria identified the controlling gene responsible for its increased virulence in microgravity, and a commercial company has used changes in virulence of microbes to screen for candidate vaccines.

Results of an early station experiment led to improvements in a method for delivering drugs to targets in the human body. The research led the way for better methods of micro-encapsulation, a process of forming miniature, liquid-filled balloons the size of blood cells that can deliver treatment directly to cancer cells.

NASA has a new Web feature that provides examples of space station research dividends including cancer treatment, food poisoning vaccine development, air purification, remote ultrasound tests and many more. For more information about station science payoffs, visit:

http://www.nasa.gov/mission_pages/station/science/coolstation.html

To take a virtual tour of the station and information about station missions, visit:

http://www.nasa.gov/station

To find out how to see the station from your own backyard, visit:

http://www.spaceflight.nasa.gov/realdata/sightings

For more information about the upcoming shuttle mission, designated STS-130, visit:

http://www.nasa.gov/shuttle

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