Dec. 20, 2013

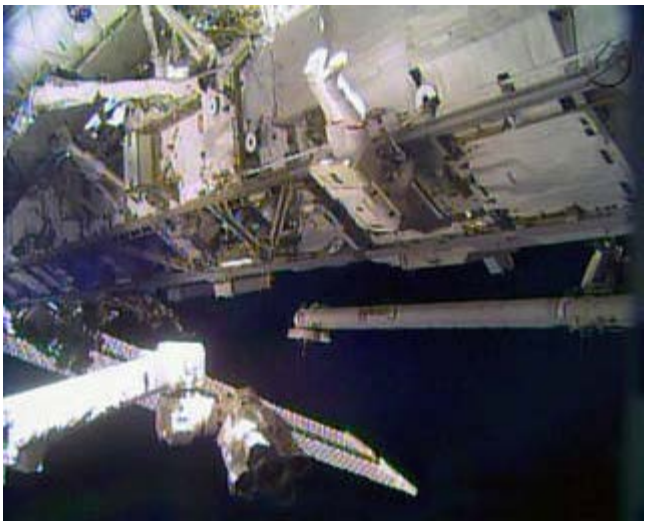
Space Station Crew Removes Ammonia Pump; Next Spacewalk Set for Tuesday

Expedition 38 Flight Engineers Rick Mastracchio and Mike Hopkins wrapped up a 5-hour, 28-minute spacewalk outside the International Space Station at 12:29 p.m. EST Saturday, completing the first in a series of excursions aimed at replacing a degraded ammonia pump module associated with one of the station's two external cooling loops that keeps both internal and external equipment cool.

› View video of spacewalk highlights

A second spacewalk to install a replacement pump module, originally planned for Monday, is now scheduled for Tuesday.

The extra day will allow time for the crew to resize a spare spacesuit on the space station for use by Mastracchio. During repressurization of the station's airlock following the spacewalk, a spacesuit configuration issue put the suit Mastracchio was wearing in question for the next excursion.-- specifically whether water entered into the suit's sublimator inside the airlock. The flight control team at NASA's Johnson Space Center in Houston decided to switch to a backup suit



Astronaut Rick Mastracchio works outside the International Space Station during the first of a series of spacewalks to replace a degraded ammonia pump module.
Credits: NASA TV

for the next spacewalk.

This issue is not related to the spacesuit water leak that was seen during a July spacewalk by European Space Agency astronaut Luca Parmitano and NASA's Chris Cassidy. Both Mastracchio and Hopkins reported dry conditions repeatedly throughout Saturday's activities and the two were never in danger.

NASA Television coverage of Tuesday's spacewalk will begin at 6:15 a.m. EST. The spacewalk scheduled to begin at 7:10 a.m.

Spacewalker Rick Mastracchio works to disconnect the fluid lines from the degraded pump module in this view from the NASA astronaut's helmet camera.
Credits: NASA TV

During Saturday's spacewalk, the two astronauts focused on removing a degraded pump module from Loop A of the station's external Active Thermal Control System. That pump module encountered a problem Dec. 11 when an internal valve stuck in an incorrect position, causing temperatures in the station's cooling lines to drop.

After exiting the Quest airlock Saturday, Hopkins made his way out to the worksite at center of the Starboard 1 truss segment. Mastracchio meanwhile attached himself to a foot restraint at the end of the station's 57-foot robotic arm so that Flight Engineer Koichi Wakata, the robotics operator for the spacewalks, could fly Mastracchio to the worksite and position him for his various tasks.

The two spacewalkers first spent some time demating four ammonia fluid line "quick disconnects" from the pump module.

Once the four fluid lines were disconnected, Mastracchio and Hopkins worked to attach the fluid lines to a pump module jumper box, which allows the ammonia to reach the system's plumbing in the ammonia and nitrogen tanks to keep it in a liquid state.

Afterward the spacewalkers installed a generic thermal cover over the pump module jumper and ammonia fluid lines.

With the spacewalk proceeding well ahead of schedule, Mission Control in Houston informed Mastracchio and Hopkins that they could press ahead with the first task originally planned for Monday's spacewalk –removing the degraded pump module from the starboard truss and attaching it to a stowage location on the Payload Orbital Replacement Unit Accommodation (POA) on the station's railcar, or Mobile Base System.

While Hopkins set up the POA and an adjustable grapple fixture, Mastracchio removed the five electrical connectors from the pump module and unfastened the module from the truss.

With Mastracchio holding the 780-pound pump while he was attached to the end of the robotic arm, Wakata guided the arm to attach the module to the grapple fixture and activated the snares to hold it in place.

Mastracchio now holds 43 hours and 58 minutes of spacewalking time during seven spacewalks, and Hopkins now holds 5 hours and 28 minutes during one spacewalk.

Saturday's spacewalk was the 175th in support of space station assembly and maintenance.

Last Updated: July 30, 2015

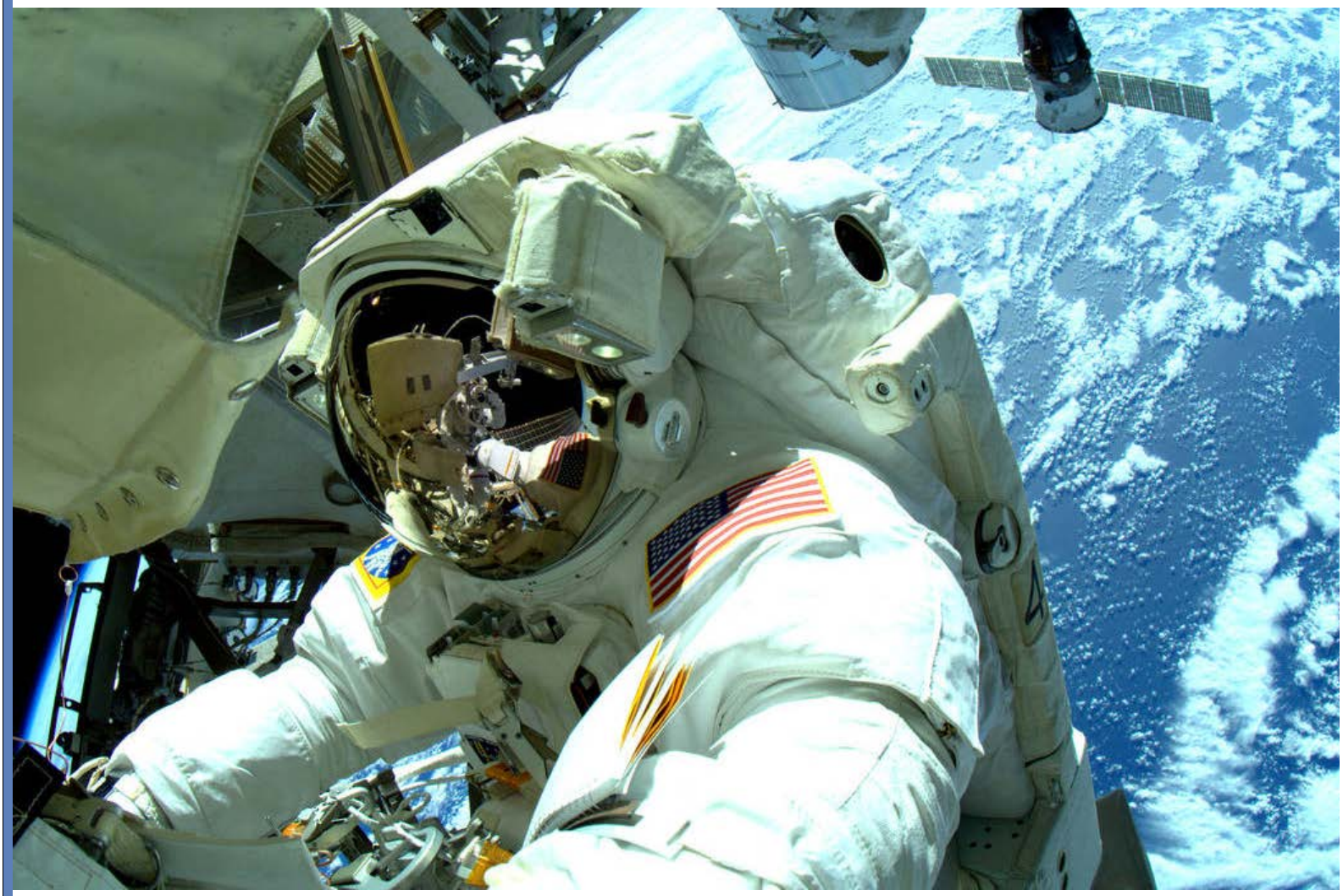
Editor: Jerry Wright

Tags: Expedition 38, International Space Station (ISS), Spacewalks

Expedition 42

March 2, 2015

Astronauts Complete Series of Three Spacewalks



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On Sunday, March 1, Expedition 42 Flight Engineer Terry Virts and Commander Barry "Butch" Wilmore ventured outside the International Space Station for their third spacewalk in eight days. Virts and Wilmore completed installing 400 feet of cable and several antennas associated with the Common Communications for Visiting Vehicles system

known as C2V2. Boeing's Crew Transportation System (CST)-100 and the SpaceX Crew Dragon will use the system in the coming years to rendezvous with the orbital laboratory and deliver crews to the space station.

Virts (@AstroTerry) tweeted this photograph and wrote, "Out on the P3 truss. #AstroButch handing me his cable to install on the new antenna. #spacewalk"

Image Credit: NASA

Tags: Expedition 42, International Space Station (ISS), Spacewalks

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Expedition 38

March 9, 2014

Expedition 38 Lands In Kazakhstan Completing Mission

Tags: Expedition 38, Expedition 39, International Space Station (ISS), Landings, Space Station Research and Technology

Read Full Article

Jan. 30, 2014

Crew Prepping for Cubesat Deployment, Awaits New Cargo Ships

Tags: Expedition 38, International Space Station (ISS)

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Jan. 26, 2014

Cosmonauts Complete Fourth Expedition 38 Spacewalk

Expedition 38 Commander Oleg Kotov and Flight Engineer Sergey Ryazanskiy closed the hatch to the Pirs docking compartment at 3:08 p.m. EST signaling the end of their six-hour, eight minute spacewalk. The cosmonauts finished up work that could not be completed during their last spacewalk on Dec. 27.

The duo wrapped up the installation of a pair of high fidelity cameras that experienced connectivity issues Dec. 27.

Tags: Expedition 38, International Space Station (ISS), Spacewalks

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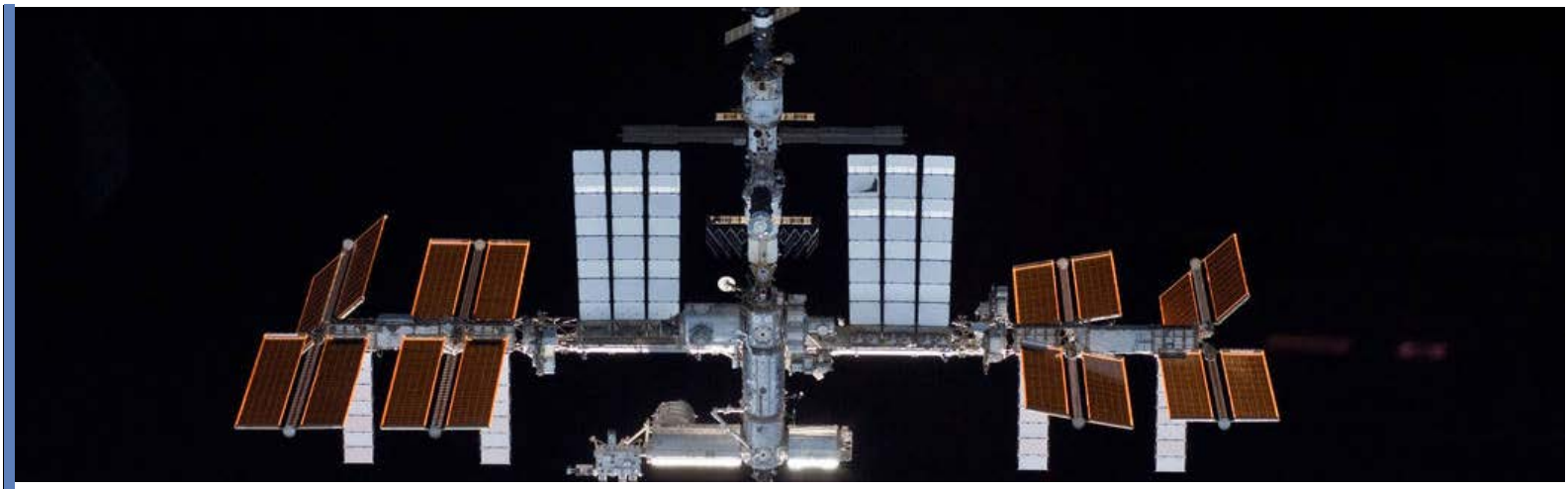

Jan. 24, 2014
M14-017

NASA TV Covers Russian Spacewalk from International Space Station

NASA Television will air live coverage of a six-hour spacewalk by two Russian members of the International Space Station crew beginning at 8:30 a.m. EST Monday, Jan. 27.

Expedition 38 Commander Oleg Kotov and Flight Engineer Sergey Ryazanskiy of the Russian Federal Space Agency (Roscosmos) are scheduled to venture outside the space station at 9:10 a.m. in a second attempt to install a pair of cameras on the hull of the station's Zvezda Service Module. The cameras are part of a Canadian commercial endeavor with Roscosmos designed to downlink Earth observation imagery to Internet-based subscribers. The two cosmonauts also plan to retrieve an experiment package housed on Zvezda's hull.

Tags: Expedition 38, International Space Station (ISS), Johnson Space Center

Read Full Article

Jan. 23, 2014

Station Crew Wrapping Up Preps for Monday's Spacewalk

The Expedition 38 astronauts wrapped up the workweek Friday aboard the International Space Station with biomedical research and robotics, while their Russian colleagues entered the homestretch of preparations for a spacewalk they will conduct Monday.

Commander Oleg Kotov and Flight Engineer Sergey Ryazanskiy donned their Russian Orlan spacesuits for a "dry run" dress rehearsal to test the suits in advance of

Tags: Expedition 38, International Space Station (ISS)

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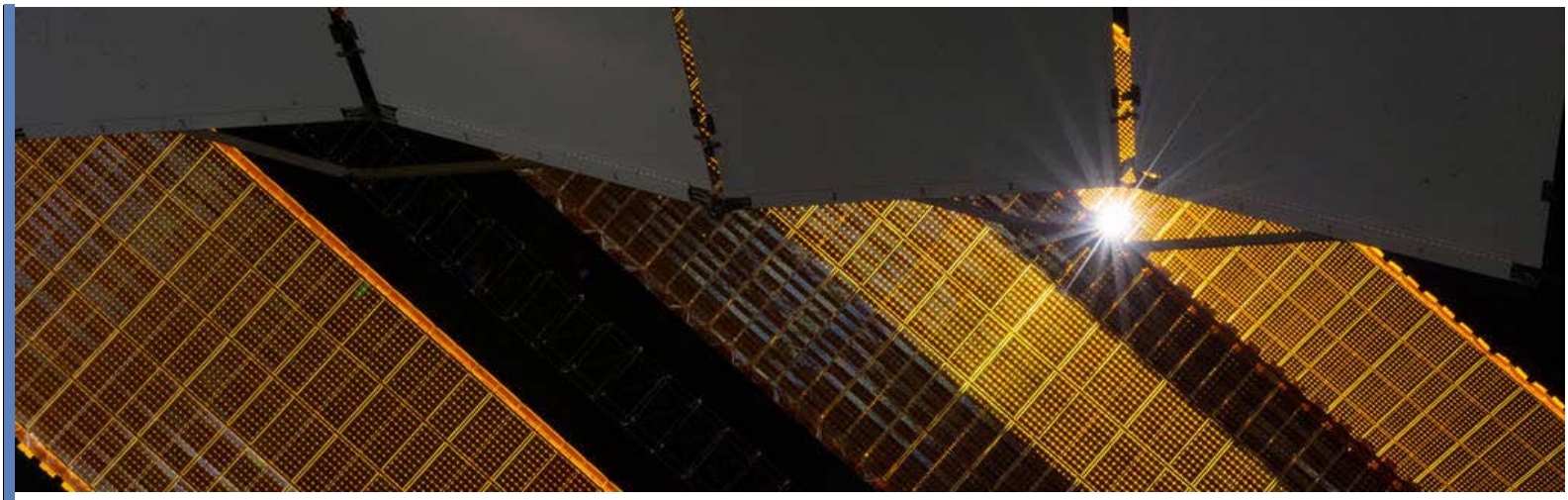

Jan. 10, 2014

Cygnus Cargo Craft Honing in on Station

The six Expedition 38 crew members aboard the International Space Station tackled a variety of science and maintenance activities Friday as they head into a busy weekend that will see the arrival of the Cygnus spacecraft on its first commercially contracted cargo flight.

Orbital Sciences Corporation's Cygnus cargo craft continues to hone in on the station, having completed four rendezvous burns to fine-tune its path following its launch at 1:07 p.m. EST Thursday from the Mid-Atlantic Regional Spaceport Pad 0A at NASA's Wallops Flight Facility in Virginia. The activation of the station's proximity operations hardware on Friday will provide a beacon for Cygnus, giving it navigational data during the final phase of the rendezvous that gets under way late Saturday.

Tags: Commercial Resupply, Expedition 38, International Space Station (ISS)

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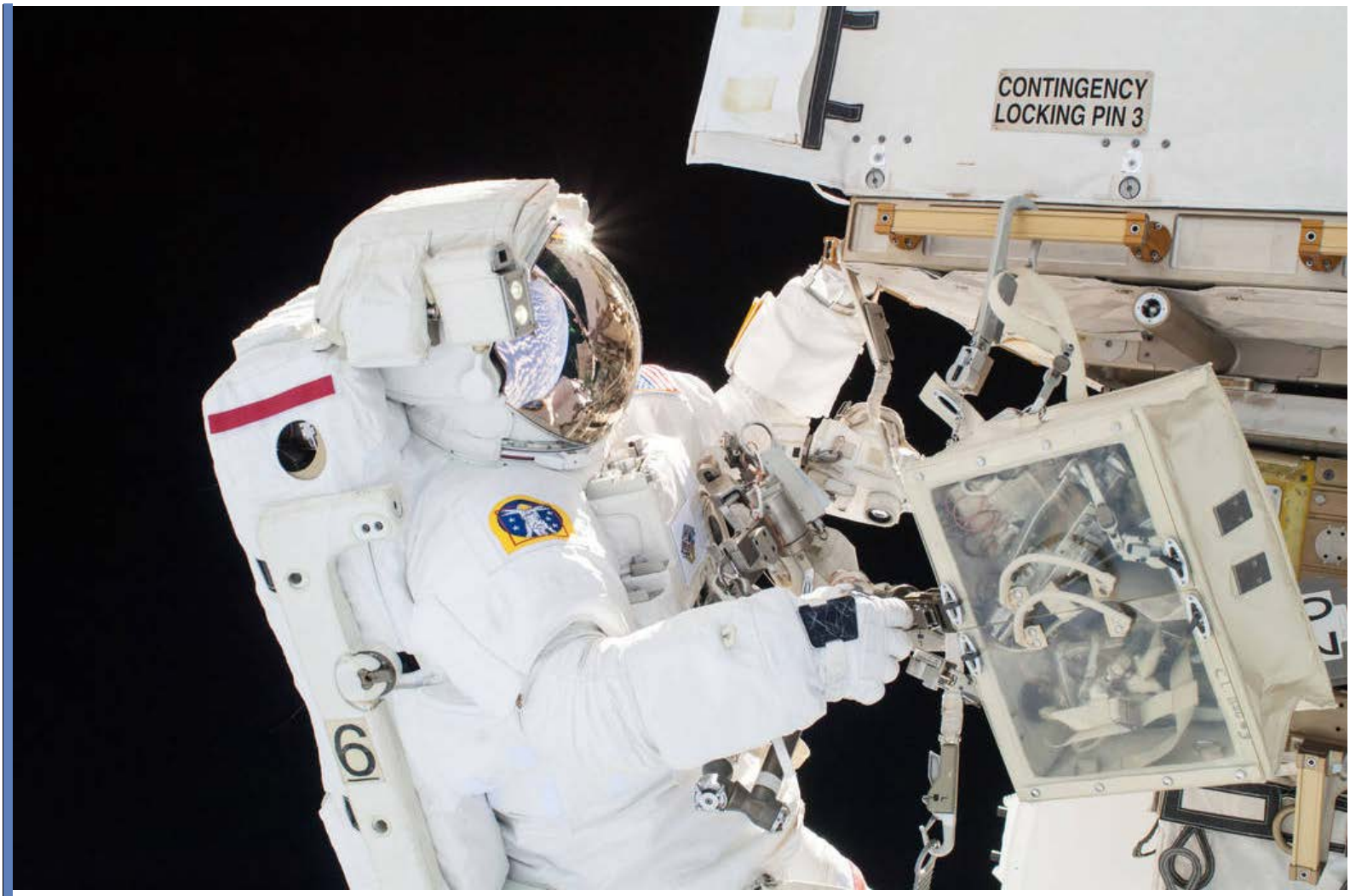
Expedition 38

Dec. 27, 2013

Astronaut Rick Mastracchio Participates in Spacewalk



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ISS038-E-020354 (24 Dec. 2013) --- NASA astronaut Rick Mastracchio, Expedition 38 flight engineer, participates in the second of two spacewalks, spread over a four-day period, which were designed to allow the crew to change out a faulty water pump on the exterior of the Earth orbiting International Space Station. He was joined on both spacewalks by NASA astronaut Mike Hopkins.

Last Updated: July 30, 2015
Editor: Jerry Wright

Tags: Expedition 38, International Space Station (ISS), Spacewalks

Expedition 38

Dec. 27, 2013

Astronaut Mike Hopkins Participates in Spacewalk

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ISS038-E-020277 (24 Dec. 2013) --- NASA astronaut Mike Hopkins, Expedition 38 flight engineer, participates in the second of two spacewalks, spread over a four-day period, which were designed to allow the crew to change out a faulty water pump on the exterior of the Earth orbiting International Space Station. He was joined on both spacewalks by NASA astronaut Rick Mastracchio.

Last Updated: July 30, 2015
Editor: Jerry Wright

Tags: Expedition 38, International Space Station (ISS), Spacewalks

Expedition 38

Dec. 27, 2013

Astronaut Mike Hopkins on Dec. 24 Spacewalk

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On Dec. 24, 2013, NASA astronaut Mike Hopkins, Expedition 38 Flight Engineer, participates in the second of two spacewalks, spread over a four-day period, which were designed to allow the crew to change out a degraded pump module on the exterior of the Earth-orbiting International Space Station. He was joined on both spacewalks by NASA astronaut Rick Mastracchio, whose image shows up in Hopkins' helmet visor.

The pump module controls the flow of ammonia through cooling loops and radiators outside the space station, and, combined with water-based cooling loops inside the station, removes excess heat into the vacuum of space.

Image Credit: NASA

Tags: Expedition 38, International Space Station (ISS), Spacewalks

Read Full Article

Expedition 38

Dec. 26, 2013

Station Cosmonauts Complete Spacewalk to Deploy Cameras

Two Russian cosmonauts in Orlan spacesuits wrapped up a 8-hour, 7-minute spacewalk to attempt the installation of photographic equipment on the exterior of the International Space Station at 4:07 p.m. EST Friday.

Commander Oleg Kotov and Flight Engineer Sergey Ryazanskiy promptly completed the main objective of Friday's spacewalk -- the installation of a pair of high-fidelity cameras as part of a Canadian commercial endeavor

Tags: Expedition 38, International Space Station (ISS), Spacewalks

Read Full Article

Dec. 23, 2013

Spacewalkers Complete Installation of Ammonia Pump Module

Spacewalkers Rick Mastracchio and Mike Hopkins completed a second spacewalk to install a spare ammonia pump module. The U.S. Quest airlock began repressurization at 2:23 p.m. EDT Tuesday signaling the official end of their spacewalk.

Tuesday's main tasks included the removal and installation of a spare pump module. The first task was to remove the spare pump module from the space station's External

Tags: Expedition 38, International Space Station (ISS), Spacewalks

Read Full Article

Dec. 3, 2013

Crew Works Ongoing Science and Practices Emergency Drill

The six-member Expedition 38 crew worked international science, continued unloading a Russian resupply craft and participated in an emergency simulation drill. The long-term residents also exercised to counteract the effects of microgravity and worked to maintain the space station's systems.

Flight Engineers Koichi Wakata and Rick Mastracchio scanned each other's eyes at the beginning of the day for

Tags: Expedition 38, International Space Station (ISS)

Read Full Article

Dec. 3, 2013

Space Station Gets Ready to Welcome Second Cygnus

The International Space Station is not just an outpost for international astronauts conducting science it also serves as a hub for an array of public and private spacecraft. Currently, there are two Soyuz spacecraft and one Progress resupply craft docked to the orbital laboratory.

Another spaceship, Orbital Sciences' newest Cygnus resupply craft, is targeted for a Dec. 17 launch to the space station from Wallops Flight Facility in Virginia. A trio of

Tags: Commercial Resupply, Expedition 38, International Space Station (ISS)

Read Full Article

Nov. 26, 2013

Russian Cargo Craft Approaches Station for Test

While the Expedition 38 crew of the International Space Station tackled a variety of biological research and maintenance activities Wednesday, an unpiloted Russian cargo craft approached the complex for a “flyby” to test upgraded rendezvous equipment.

The ISS Progress 53 resupply vehicle, which launched Monday from the Baikonur Cosmodrome in Kazakhstan, made its closest approach at 4:53 p.m. EST during a “flyby”

Tags: Expedition 38, International Space Station (ISS)

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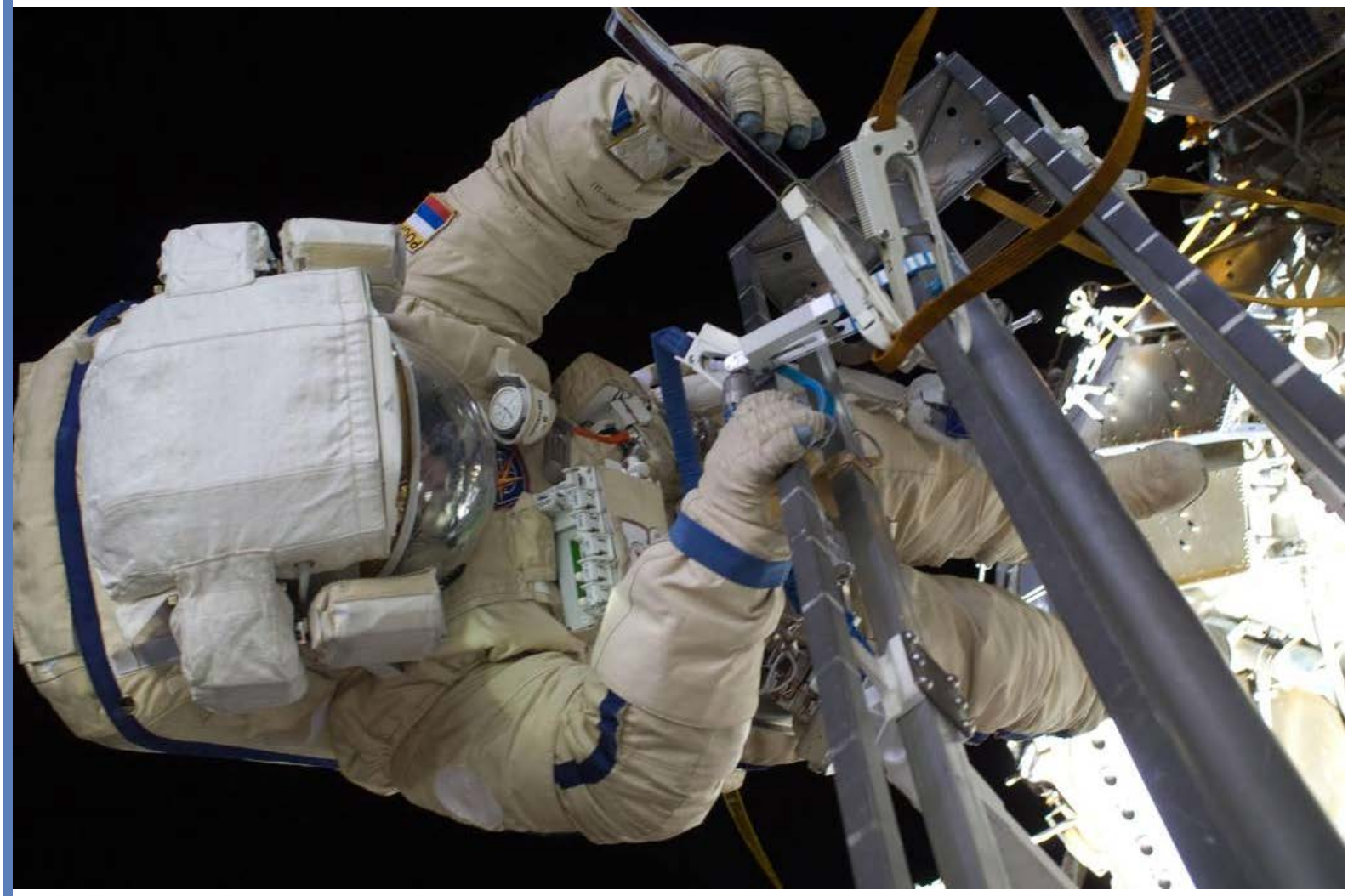
Expedition 28

Aug. 5, 2011

Cosmonauts Conduct Spacewalk



Cosmonauts Sergei Volkov and Alexander Samokutyaev (out of frame), attired in Russian Orlan spacesuits, conducted a spacewalk on Wednesday, Aug. 3, 2011, on the Russian segment of the International Space Station. During the six-hour, 23-minute spacewalk, the Expedition 28 flight engineers moved a cargo boom from one airlock to another, installed a prototype laser communications system and deployed an amateur radio micro-satellite.

Image Credit: NASA

Tags: Expedition 28, International Space Station (ISS), Spacewalks

STS-134

May 27, 2011

Otherworldly Pas De Deux

With components of the International Space Station in the view, NASA astronauts Andrew Feustel (right) and Michael Fincke are pictured during the STS-134 mission's third spacewalk. They coordinated their shared activity with NASA astronaut Greg Chamitoff, who stayed in communication with the pair and with Mission Control Center in Houston from inside the station.

Image Credit: NASA

Tags: International Space Station (ISS), Space Shuttle, Spacewalks, STS-134

STS-123

March 23, 2008

Between Earth and Space

S123E006762

Astronaut Robert L. Behnken, STS-123 mission specialist, participates in the mission's third scheduled spacewalk. During the 6-hour, 53-minute spacewalk, Behnken and Rick Linnehan installed a spare-parts platform and tool-handling assembly for Dextre, also known as the Special Purpose Dextrous Manipulator. Among other tasks, they also checked out and calibrated Dextre's end effector and attached critical spare parts to an external stowage platform. The new robotic system was activated on a power and data grapple fixture located on the Destiny laboratory on flight day nine. The blackness of space and Earth's horizon provide the backdrop for the scene.

Image Credit: NASA

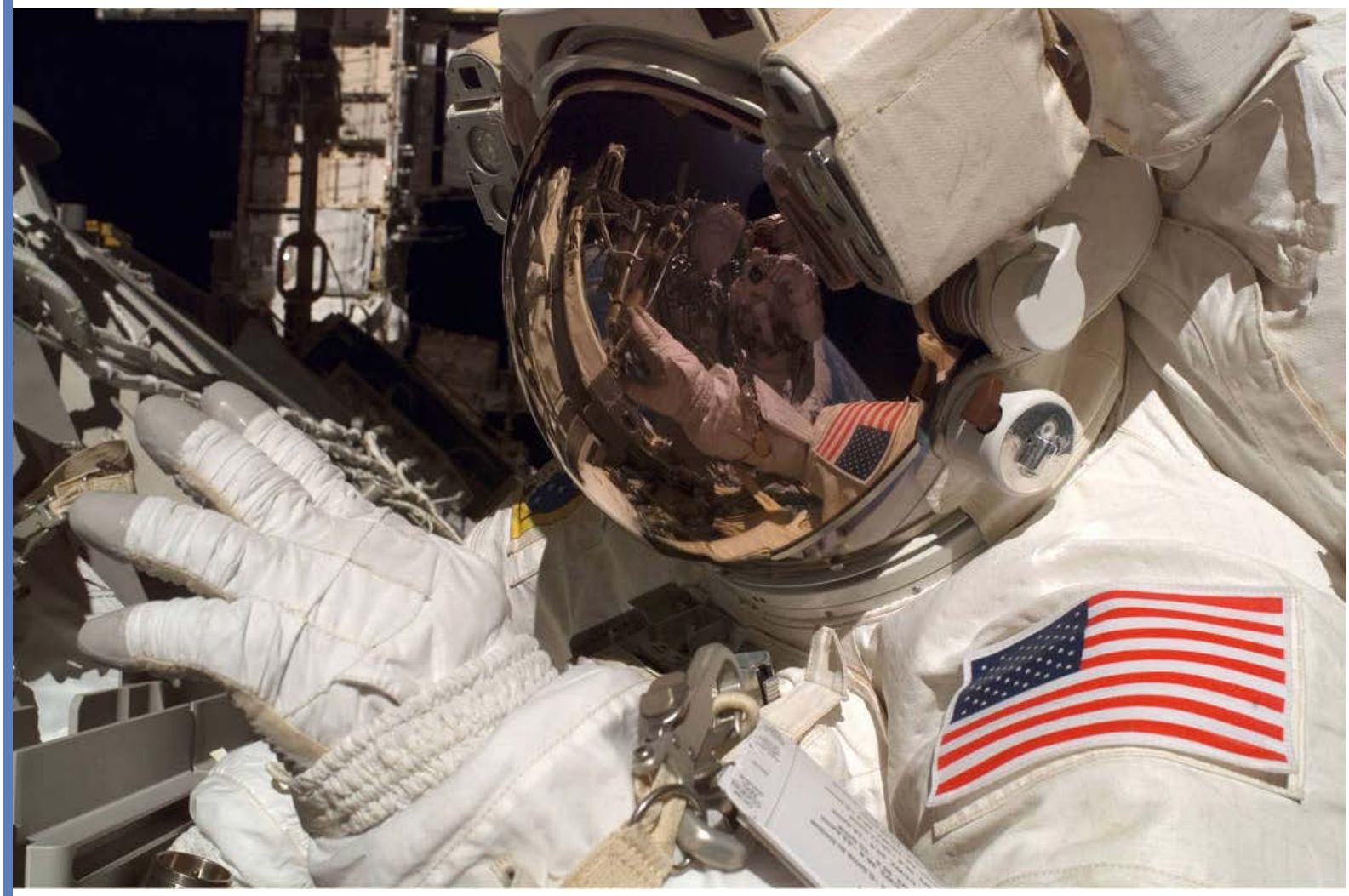
Tags: International Space Station (ISS), Space Shuttle, Spacewalks, STS-123

Read Full Article

Spacewalks

March 23, 2008

Reflection



Astronauts Jim Reilly and John Olivas (visible among Reilly's helmet reflections), both STS-117 mission specialists, participate in the mission's first planned session of extravehicular activity, resuming construction on the ISS. Among other tasks, Reilly and Olivas connected power, data and cooling cables between S1 and S3.

Image credit: NASA

Tags: International Space Station (ISS), Spacewalks, STS-117

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