

# Expedition 12 Jets SuitSat-1, Completes Second Spacewalk

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Spacewalkers release the SuitSat (right center), an old Russian spacesuit with an amateur radio transmitter. Image credit: NASA TV

The crew of the International Space Station (ISS), American astronaut William MacArthur and Russian cosmonaut Valery Tokarev, made a space walk lasting nearly six hours. The spacewalk ended Friday at 11:27 p.m. EST.

International Space Station crewmembers Valery Tokarev and Bill McArthur Friday completed a successful 5-hour, 43-minute spacewalk that included jettisoning an old Russian Orlan spacesuit equipped with a radio for broadcasts to students around the world ([Read more about SuitSat-1](#)).

The spacewalkers, both in red-striped Orlan suits, re-entered the airlock of the Pirs docking compartment and closed its hatch at 11:27 p.m. EST Friday. During the spacewalk, Tokarev, Expedition 12 flight engineer, and McArthur, E12 commander, relocated an adaptor for a small crane, retrieved experiments and inspected and photographed parts of the station's exterior.

The third spacesuit, near the end of its useful life, was jettisoned by Tokarev early in the spacewalk. That suit, called SuitSat-1, will remain in its own orbit for as much as six weeks before re-entering the Earth's atmosphere and burning.

For the first part of that time in orbit – for perhaps a week or two – devices in the suit will broadcast recorded ham radio messages in Russian, Japanese, Spanish, German, French and English. Most were voiced by students. Japanese ham operators were the first to report hearing SuitSat-1. By the end of the spacewalk, reports of contacts had ceased.

The transmissions, predicted to last for as much as several weeks or for as little as an hour (depending on battery life), were on 145.990 MHz FM, in the VHF or 2-meter part of the amateur radio band. Voice transmissions also included suit data, mission time, suit temperature and battery voltage.

SuitSat-1, called RadioSkaf or Radio Sputnik in Russian, is sponsored by ARISS (Amateur Radio on the International Space Station), an international working group made up of volunteers from national amateur radio societies, including the Radio Amateur Satellite Corporation.

Tokarev carefully jettisoned the SuitSat-1 in much the same way McArthur jettisoned the Floating Potential Probe experiment during

their November spacewalk. He pushed it away at about a 30-degree angle upward and about 10 degrees to the left of the back of the station.

After the spacesuit jettison, the crew relocated a boom adapter for the Strela, a Russian hand-operated crane, from the Zarya module to Pressurized Mating Adapter 3. That was done to clear the Zarya area for temporary stowage of protective debris panels for the Zvezda Service Module, to be delivered on STS-116.

Next the spacewalkers spent over an hour on a safing task at the mobile transporter, which can provide a base for the station's robotic arm for movement along the rails on the orbiting laboratory's main truss.

On Dec. 16 one of two trailing umbilical system cables providing power, data and video was severed by a device designed to cut the umbilical should it become jammed. A second cable provides the same links to the mobile transporter. Tokarev and McArthur partly inserted a bolt and then wire-tied a cable to eliminate the risk of uncommanded cutting of that second, intact cable.

To replace the severed cable, a new umbilical assembly is scheduled to be installed during Discovery's STS-121 mission to the station.

Back on the hull of the Zvezda service module, spacewalkers retrieved the Biorisk experiment, which looks at microorganisms in space. Subsequently they photographed a sensor for a Russian Micrometeoroid Measuring System.

Tokarev and McArthur inspected and/or photographed several areas on Zvezda's exterior, including thrusters and nearby areas. They photographed a ham radio antenna and a fuel drain outlet pipe.

The spacewalkers inspected their suits, wiped off suit gloves and then

jettisoned the towels before re-entering Pirs and closing its hatch.

This was the second spacewalk for Tokarev and the fourth for McArthur.

Source: NASA

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