

# International Space Station Expedition 11 Moving Full Speed

May 8 2005

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Commander Sergei Krikalev and Flight Engineer John Phillips are moving full speed ahead into their Expedition 11 maintenance and science work aboard the International Space Station.

Krikalev replaced a liquid processing component of the Russian Elektron oxygen generation system yesterday. It failed almost immediately prompting additional troubleshooting today. The system separates hydrogen and oxygen molecules from water, and injects the oxygen into the Station's atmosphere. Oxygen is being supplied as needed from tanks in the Progress cargo ship docked with the Station. It is one of several oxygen supplies available.

Phillips performed some on-the-spot maintenance of a balky treadmill today. It had stopped working, so he inspected electrical connections and prepared to downlink data from his last run, so biomedical engineers on the ground can try to track down the problem. Resistive exercise equipment and stationary bicycles will be used to provide the 2.5 daily hours of exercise prescribed for each crew member.

Also today, both crew members used the Robotics Work Station in the Destiny laboratory module to guide the Station's Canadarm2 robotic arm through movements designed to enable later remote operation by ground controllers. The hour-long session also served as proficiency training for the crew.

Earlier in the week, Krikalev fixed the Russian dehumidifier by clearing blockage from one of the system's lines. Krikalev also transferred

wastewater from the Station into the Progress storage tanks. Phillips packed items for return to Earth on the Space Shuttle Discovery, and did routine checks of emergency medical equipment.

Expedition 10 Commander Leroy Chiao and Flight Engineer Salizhan Sharipov remained at the Gagarin Cosmonaut Training Center in Star City, Russia. They continue with medical examinations and debriefings following their landing in a Soyuz spacecraft after six-months on orbit.

Scientific investigations for the week focused on sessions with the Renal Stone experiment. It's investigating whether potassium citrate, a proven Earth-based therapy to minimize kidney stone development, can be used as a countermeasure to reduce the risk of kidney stone formation in space. Astronauts are at an increased risk of developing kidney stones, because urine calcium levels are typically much higher in space.

The Renal Stone investigation has been designed as a double-blind study. The crew members do not know whether they are taking potassium citrate or a placebo. Further, the principal investigator, who will interpret the data, does not know in advance which crew members have taken the potassium citrate or which have taken the placebo.

The principal investigator will study the urine chemistry of the samples to determine each individual's risk of renal stone formation. If the Investigator's hypothesis is correct, the crew members identified as having a lower renal stone formation risk will be those that have taken the potassium citrate pills in-flight.

During this session, Phillips and Krikalev performed a 24 hour urine collection and logged everything they ate and drank for 48 hours. This experiment is crucial to long duration missions, since kidney stones can incapacitate a crewmember, and in the worse case, threaten their life.

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