Photo: NASA

Spacewalk for research

The International Space Station (*ISS*) orbits the Earth around 16 times a day from an altitude of approximately 400 kilometers; each orbit takes a good 90 minutes. The ISS, which is about the size of a football field and has been manned continually since November 2000, is constantly being converted and expanded – also in the services of science. On August 15, 2018, during an outboard mission that took almost eight hours, the two Russian cosmonauts Sergei Prokopyev and Oleg Artemyev installed the antenna for the Icarus system on the outside of the ISS. Now all the Icarus components on board are complete and the test phase, which will last several months, can begin.

Icarus (International Cooperation for Animal Research Using Space) – a joint project involving the Max Planck Institute for Ornithology, the Russian space agency Roskosmos, and the German Aerospace Center (DLR) Space Administration – is intended to provide a new, improved understanding of animal migration worldwide. Even small animals such as songbirds can be fitted with the Icarus transmitters without altering their behavior. Although they weigh less than five grams, these so-called tags not only record the animal's location but also collect data on acceleration, ambient temperature, and orientation relative to the Earth's magnetic field. When the ISS passes overhead, the tags send the recorded data to the space station.

The space antenna can simultaneously record data on many hundreds of animals – in other words, whole flocks. The goal is to find out more about the lives of animals on Earth: the conditions in which they live and their migratory routes. Even more than a hundred years after the first birds were ringed for scientific purposes, surprisingly little is known about this in detail. The findings will not only serve the purposes of behavioral research and species protection, but will also facilitate research about the spread of infectious diseases, the effects of ecological phenomena such as climate change and ultimately, could even be used to predict natural disasters.

🎥 https://youtu.be/4g12a3cmXNs (in German)