

Astronauts board space station for one-year mission (Update)

March 27 2015, byDmitry Lovetsky And Jim Heintz



The Soyuz-FG rocket booster with Soyuz TMA-16M space ship carrying a new crew to the International Space Station, ISS, blasts off at the Russian leased Baikonur cosmodrome, Kazakhstan, Saturday, March 28, 2015. The Russian rocket carries U.S. astronaut Scott Kelly, Russian cosmonauts Gennady Padalka, and Mikhail Korniyenko,. (AP Photo/Dmitry Lovetsky)

Two Russians and an American floated into the International Space Station on Saturday, beginning what is to be a year away from Earth for two of them.

Mikhail Kornienko and Scott Kelly are to spend 342 days aboard the orbiting laboratory, about twice as long as a standard mission on the station. Russia's Gennady Padalka is beginning a six-month stay.

The three astronauts entered the station about eight hours after launching from Russia's manned space facility in Kazakhstan. They were embraced by American Terry Virts and Russia's Anton Shkaplerov who along with Italian Samantha Cristoforetti have been aboard since late November.

The trip is NASA's first attempt at a one-year spaceflight; four Russians have spent a year or more in space, all on the Soviet-built Mir space station.

The stay is aimed at measuring the effects of a prolonged period of weightlessness on the human body, a step toward possible missions to Mars or beyond.

Kelly's identical twin Mark, a retired astronaut, agreed to take part in many of the same medical experiments as his orbiting sibling to help scientists see how a body in space compares with its genetic double on Earth. They are 51.

Kelly and Kornienko, 54, will remain on board until next March. During that time, they will undergo extensive medical experiments, and prepare the station for the anticipated 2017 arrival of new U.S. commercial crew capsules. That means a series of spacewalks for Kelly, which will be his first.

The two men also will oversee the comings and goings of numerous

cargo ships, as well as other Russian-launched space crews and an expected September visit from singer Sarah Brightman on a "space tourist" trip.



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Doctors are eager to learn what happens to Kelly and Kornienko once they surpass the usual six-month stay for space station residents.

Bones and muscles weaken in weightlessness, as does the immune

system. Body fluids also shift into the head when gravity is absent, putting pressure on the brain and the eyes, impairing vision for some astronauts in space.

The yearlong stint will allow doctors to assess whether such conditions are aggravated by a long spell in space or whether they reach a point of stasis or even taper off.

As space officials look to longer missions, the International Space Station's future appears ensured until at least 2024.

Last year, as tensions between Russia and the United States grew amid the dispute over Russia's role in Ukraine, Deputy Prime Minister Dmitry Rogozin had said Moscow aimed to exit the project in 2020.

But Russian space agency director Igor Komarov told a post-launch news conference in Baikonur that his agency and NASA have agreed to continue using the station until 2024.

In addition, "Roscosmos and NASA will work on a program for a future orbiting station. We will think about discuss joint projects," he said. Just last month, Roscosmos said it foresaw creating a Russian station for use after 2024.



U.S. astronaut Scott Kelly, crew member of the mission to the International Space Station, ISS, attends a news conference in the Russian leased Baikonur cosmodrome, Kazakhstan, Thursday, March 26, 2015. The start of the new Soyuz mission is scheduled on Saturday, March 28.(AP Photo/Dmitry Lovetsky)

NASA has never flown anyone longer than seven consecutive months. The Russians hold the world record of 14 months in space, set by Valery Polyakov aboard the former Mir space station in 1994-95. Several other Russians spent between eight and 12 months at Mir. All but one of those long-timers are still alive.

A year in space will carry not only physical challenges, but emotional ones as well.

A day before the launch, Kornienko said he would long for the sights of nature. Even on his mission in 2010, which was half as long, he said he

had asked to be sent a calendar with photos of rivers and woods.



U.S. astronaut Scott Kelly, right, crew member of the mission to the International Space Station, ISS, poses through a safety glass with his brother, Mark Kelly, also an astronaut after a news conference in the Russian leased Baikonur cosmodrome, Kazakhstan, Thursday, March 26, 2015. The start of the new Soyuz mission is scheduled on Saturday, March 28.(AP Photo/Dmitry Lovetsky)

Kelly said he thought one of the biggest challenges would be to pace himself mentally so he could remain energetic during the year aboard the laboratory.

But he joked that he wouldn't miss his sibling.

"I've gone longer without seeing him, and it was great," he said.



Russian cosmonauts Mikhail Korniyenko, crew member of the mission to the International Space Station, ISS, speaks during a news conference in the Russian leased Baikonur cosmodrome, Kazakhstan, Thursday, March 26, 2015. The start of the new Soyuz mission is scheduled on Saturday, March 28.(AP Photo/Dmitry Lovetsky)



Russian cosmonaut Gennady Padalka, crew member of the mission to the International Space Station, ISS, attends a news conference in Russian leased Baikonur cosmodrome, Kazakhstan, Thursday, March 26, 2015. The start of the new Soyuz mission is scheduled on Saturday, March 28. (AP Photo/Dmitry Lovetsky)



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In this photo taken with a fisheye lens and with long time exposure the Soyuz-FG rocket booster with Soyuz TMA-16M space ship carrying a new crew to the International Space Station, ISS, blasts off at the Russian leased Baikonur cosmodrome, Kazakhstan, Saturday, March 28, 2015. The Russian rocket carries U.S. astronaut Scott Kelly, Russian cosmonauts Gennady Padalka and Mikhail Korniyenko. (AP Photo/Dmitry Lovetsky)



Seen through part of the rocket transporter, the Soyuz-FG rocket booster with Soyuz TMA-16M space ship carrying a new crew to the International Space Station, ISS, blasts off at the Russian leased Baikonur cosmodrome, Kazakhstan, Saturday, March 28, 2015. The Russian rocket carries U.S. astronaut Scott Kelly, Russian cosmonauts Gennady Padalka, and Mikhail Korniyenko. (AP Photo/Dmitry Lovetsky)



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The Soyuz-FG rocket booster with Soyuz TMA-16M space ship carrying a new crew to the International Space Station, ISS, flies in the sky at the Russian leased Baikonur cosmodrome, Kazakhstan, Saturday, March 28, 2015. The Russian rocket carries U.S. astronaut Scott Kelly, Russian cosmonauts Gennady Padalka and Mikhail Korniyenko. (AP Photo/Dmitry Lovetsky)



Journalists take photos of the Soyuz-FG rocket booster with Soyuz TMA-16M space ship carrying a new crew to the International Space Station, ISS, blasting off at the Russian leased Baikonur cosmodrome, Kazakhstan, Saturday, March 28, 2015. The Russian rocket carries U.S. astronaut Scott Kelly, Russian cosmonauts Gennady Padalka and Mikhail Korniyenko. (AP Photo/Dmitry Lovetsky)



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U.S. astronaut Scott Kelly, left, and Russian cosmonaut Gennady Padalka, crew members of the mission to the International Space Station, ISS, wave prior to the launch of Soyuz-FG rocket at the Russian-leased Baikonur cosmodrome, Kazakhstan, Friday, March 27, 2015. (AP Photo/Kirill Kudryavtsev, Pool)



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U.S. astronaut Scott Kelly, centre, Russian cosmonauts Gennady Padalka, right, and Mikhail Korniyenko, the crew members of the mission to the International Space Station, ISS, walk prior the launch of Soyuz-FG rocket at the Russian-leased Baikonur cosmodrome, Kazakhstan, Friday, March 27, 2015. (AP Photo/Sergey Ilnitsky, Pool)



U.S. astronaut Scott Kelly, left, Russian cosmonauts Gennady Padalka, centre, and Mikhail Korniyenko, right, the crew members of the mission to the International Space Station, ISS, report to members of the State Committee prior the launch of Soyuz-FG rocket at the Russian leased Baikonur cosmodrome, Kazakhstan, Friday, March 27, 2015. (AP Photo/Sergey Ilnitsky, Pool)



Back crew member U.S. astronaut Jeff Williams, left, helps U.S. astronaut Scott Kelly, a crew member of the mission to the International Space Station, ISS, to put on his helmet during inspection of his space suit, prior to the launch of the Soyuz-FG rocket at the Russian-leased Baikonur cosmodrome, Kazakhstan, Friday, March 27, 2015. (AP Photo/Dmitry Lovetsky)



British singer Sarah Brightman attends a farewell ceremony of the Expedition 43 crew U.S. Astronaut Scott Kelly, Russian Cosmonauts Gennady Padalka, and Mikhail Kornienko, from the Russian Cosmonaut Hotel at the Russian leased Baikonur cosmodrome, Kazakhstan, Friday, March 27, 2015. (AP Photo/Dmitry Lovetsky)



An Orthodox priest accompanies U.S. astronaut Scott Kelly, Russian cosmonauts Gennady Padalka and Mikhail Korniyenko, the crew members of the mission to the International Space Station, ISS, prior to the launch of Soyuz-FG rocket at the Russian leased Baikonur cosmodrome, Kazakhstan, Friday, March 27, 2015. (AP Photo/Dmitry Lovetsky, Pool)



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U.S. astronaut Scott Kelly, centre, Russian cosmonauts Gennady Padalka, left, and Mikhail Korniyenko, crew member of the mission to the International Space Station, ISS, walk to inspect their space suits prior the launch of Soyuz-FG rocket at the Russian leased Baikonur cosmodrome, Kazakhstan, Friday, March 27, 2015. (AP Photo/Dmitry Lovetsky)

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Citation: Astronauts board space station for one-year mission (Update) (2015, March 27)
retrieved 10 April 2024 from
<https://phys.org/news/2015-03-astronauts-blast-one-year-space-station.html>

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