



Alexander Gerst – arrival at the ISS

29 May 2014

German ESA astronaut Alexander Gerst and his colleagues, Russian cosmonaut Maxim Suraev and American astronaut Reid Wiseman, have arrived at the International Space Station (ISS). The crew lifted off from the Baikonur Cosmodrome at 21:57 CEST on 28 May 2014 (01:57 on May 29 2014, local time). Their flight from the launch pad in Kazakhstan to the ISS lasted about six hours. The Soyuz capsule with the crew on board docked with the Space Station at 03:44 CEST, still at night. At around 05:52, the hatch to the ISS opened – Alexander Gerst's Blue Dot mission had begun.

"Germany's involvement in human space flight is continuing with Alexander Gerst's flight. In recent decades, beginning with Sigmund Jähn and Ulf Merbold's flights, German engineers and scientists have been contributing to humankind's ability to establish outposts in Earth orbit," said Johann-Dietrich Wörner, Chairman of the DLR Executive Board. "Once again, spaceflight is demonstrating what is possible when there is international collaboration across all boundaries to pursue a common goal and achieve it together."

Alexander Gerst has made some rough calculations; around 6000 hours of training worldwide in Houston, Moscow, Tokyo and Cologne for his mission in preparation for life and work on the ISS. The training came to an end with the launch from Baikonur – now Gerst must put the knowledge he has acquired to use during his six months in space. During his time on the ISS, Gerst will carry out some 100 **experiments**. Twenty-five of these experiments are being conducted under the leadership of German project scientists or with the involvement of German industry. These include German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR) experiments such as DOSIS-3D (Dose Distribution Inside the ISS) to determine the level of space radiation, and materials science experiments in the Electromagnetic Levitator (EML). In addition, experiments from research institutes such as the Charité Berlin medical school, the German Sport University (Deutsche Sporthochschule) and the Fraunhofer Institute for Physical Measurement Techniques (Fraunhofer IPM), as well as from companies such as Airbus will be on the 38-year-old astronaut's daily schedule.

Duties on board

Besides his work as the 'extended arm' of the scientists on Earth, Gerst will act as the Flight Engineer and perform maintenance and repair work in and on the Space Station as part of the six-man team on the ISS. He will also support the crew as a medical officer in the event of any health problems, and will be in contact with a team of doctors on the ground when doing so. He received medical training for this, enabling him to sew wounds or replace fillings. The German astronaut will also be called on when various transport craft arrive. In June Orbital Science's Cygnus transporter will dock with the ISS. In July and September, SpaceX will be sending Dragon transporters with freight on board to the Space Station. For these arrivals, Gerst has been trained to capture the spacecraft using the robotic arm attached to the outside of the station. In July, the European ATV (Automated Transfer Vehicle) 'Georges Lemaître' space transporter will automatically dock with the ISS. The German astronaut will monitor this procedure and intervene in an emergency. There are also plans for extravehicular activity, in which the astronauts will spend several hours carrying out repair and installation work on the exterior of the Space Station.

Working days by the minute

Six working days a week are planned down to the minute for Gerst. In addition, there is a compulsory fitness programme, voluntary experiments in his spare time, videoconferences and

telephone conversations with the control centres, family members and friends – and household chores. Gerst will spend 166 days in space before returning to Earth in a Soyuz capsule on 10 November 2014.

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Welcome onboard the ISS



After a six-hour express flight and a two-hour docking manoeuvre, Alexander Gerst (2nd from right), Reid Wiseman (left) and Maxim Suraev (centre) are happy to have arrived on board the ISS.

Credit: NASA.

German ESA astronaut Alexander Gerst floating in the ISS



At 05:52 CEST on 29 May 2014 the hatch opened and Alexander Gerst floated into the ISS.

Credit: NASA.

Docked Soyuz spacecraft



At 03:44 CEST on 29 May 2014, the Soyuz TMA-13M spacecraft docked with the ISS.

Credit: NASA.

Soyuz TMA-13M approaches the ISS



The Soyuz TMA-13M spacecraft with the German astronaut Alexander Gerst, Russian cosmonaut Maxim Suraev and the American astronaut Reid Wiseman approaches the International Space Station.

Credit: NASA.

Launch of Alexander Gerst's 'Blue Dot' mission



At 21:57 CEST on 28 May 2014 (02:57 local time, 29 May 2014), the Soyuz launch vehicle carrying the German ESA astronaut Alexander Gerst, Russian cosmonaut Maxim Suraev and the American astronaut Reid Wiseman to the International Space Station lifts off from Baikonur Cosmodrome in Kazakhstan.

Credit: NASA.

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