

Preparing for a journey to Mars: Crew locked for 105 days in simulator

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A bedroom inside the Mars500 facility at the Russian Institute for Biomedical Problems (IBMP). Credits: ESA

(PhysOrg.com) -- On 31 March, a crew of six, including a French pilot and a German engineer, will embark on a 105-day simulated Mars mission. They will enter a special facility at the Institute of Biomedical Problems (IBMP) in Moscow, to emerge only three months later.

Their mission will help in understanding the psychological and medical aspects of long-duration spaceflight.



The crew of six includes two Europeans, Oliver Knickel, a mechanical engineer in the German army, and airline pilot Cyrille Fournier from France. The remaining four crewmembers are Russians. They are cosmonauts Oleg Artemyez and Sergei Ryazansky, Alexei Baranov, a doctor, and Alexei Shpakov, a sports physiologist.

For 105 days, the crew will live in a special isolation facility in Moscow where they will be put through a range of scenarios as if they really were travelling to the Red Planet - including a launch, the outward journey, arrival at Mars and, after an excursion to the surface, the long journey home.

Their tasks will be similar to those they would have on a real space mission. They will have to cope with simulated emergencies, maybe even real emergencies. Communication delays of as much as 20 minutes each way will not make life any easier.

The participants will be subjected to scientific experiments to assess the effect that isolation has on various psychological and physiological aspects.

The 105-day study precedes a full simulation of a mission to Mars, due to start later in 2009. This will see another six-member crew sealed in the same chamber to experience a complete 520-day Mars mission. Both studies are part of the Mars500 programme that is conducted by ESA and the Russian IBMP. The Directorate of Human Spaceflight undertakes Mars500 within its European Programme for Life and Physical Sciences (ELIPS) to prepare for future missions to the Moon and Mars.

Provided by ESA



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