

One year in isolation

June 6th, 2011 in Space & Earth / Space Exploration



Mars500 crew having a fun portrait with red protective goggles. Credits: ESA

The six men in the Mars500 facility near Moscow have been in isolation now 365 days. The European crewmembers have been writing in their latest letters home about the highlights, monotonous life, team spirit and determination to go on.

“Wow, it’s already been a year,” begins Diego Urbina, one of the two Mars500 crewmembers from ESA, in his latest diary entry. “One way to visualise it is if you think of what you were doing exactly one year ago, and then picture yourself living in a windowless metal box from then!”

The crew have not actually gone anywhere in those 12 months, but in theory they have been to Mars and are now on the way back.

[Enlarge](#)



Romain, Yue, Diego and Aleksandr preparing an EEG recording. EEG (electroencephalography) is a recording of electrical activity along the scalp produced by the firing of neurons within the brain). Credits: ESA - Mars500 crew

The crew of six – three Russians, two Europeans and one Chinese – walked from the flashlights of a hectic press conference into their isolation modules on 3 June 2010 and began their virtual mission towards the Red Planet.

The facility faithfully mimics every aspect of an interplanetary flight, as far as it is possible without really flying into space. Their 'craft' is composed of four sealed interconnected cylinders with a total volume of 550 cubic metres. They have their own private cabins and they live and work very much like the astronauts on the Space Station.

"The dark side of this routine is that every day for the past year we woke up at the same time to do the same medical controls with the same devices: no weekend or holiday breaks for a year!" writes Romain Charles, another ESA crewmember, in his diary.

To Mars and back



[Enlarge](#)

Crew training for 'Marswalk' at the simulated martian terrain of the Mars500 experiment. The terrain, about 10 m long and 6 m wide, is covered with reddish sand and is built to resemble the surface at Gusev crater. On the 'surface', they conducted simulated scientific research by driving a rover and working with sensors to gather physical and chemical measurements. Credits: ESA / IPMB

After the first exciting months, life settled into a routine and the crew waited for Mars arrival at the end of January.

They 'docked' with a 'lander' (in reality, another module connected to their main habitation modules) that had been waiting with supplies in orbit around Mars.

After unloading the cargo, Diego settled into the lander with Wang Yue and Alexandr Smoleevskiy, and 'landed' on Mars.

They completed three sorties in Orlan spacesuits into a big hall that was built to look like the martian surface.

During these marswalks they collected samples, set up experiments and drove a rover, like real marsonauts will do one day.

After conquering the Red Planet, the trio 'flew' back to the interplanetary ship, and the crew was reunited to begin their long trip back home on 2 March.

They will 'arrive' on 5 November, when the hatch of the isolation facility is opened. The mission will still go on some weeks after that with medical checks and debriefings.

Good spirit

The biggest problem of future exploration flights is not necessarily the technology, but the humans and interactions between the crewmembers. This is the main focus of the Mars500 experiment.

"Our crew has been keeping up the dozens of experiments we have to do constantly, no matter the good times or the hard times, producing data of quality that helps some of Europe's best scientists to evaluate what the space travelers of the future will go through," writes Diego.

"We still have 5 months ahead of us a lot of opportunities to make this trip to [Mars](#) even more special," adds Romain.

"We have a great crew and although our backgrounds are significantly different, we never had any conflicts between us. That's why I'm full of optimism for our last days in the Mars500 modules. We'll see you on the 5th of November when we'll land on Earth after our 520 day's journey to the Red Planet, not before!"

Read the newest diaries from Mars500: Romain's last letter is [here](#) and Diego's letter is [here](#).

Watch also ESA TV's video about Mars500: '[One year inside](#)'.

Provided by European Space Agency

"One year in isolation." June 6th, 2011. <http://www.physorg.com/news/2011-06-year-isolation.html>