

## **KULeuven researchers on Moon and Mars with Europe's 'Zero-G' Airbus**

Last week, scientists were experimenting on Europe's 'Zero-G' Airbus with gravity conditions like those on the Moon and Mars, respectively 0.16 g and 0.38 g.

The Joint European Partial-g Parabolic Flight campaign was an unprecedented research mission organized jointly by ESA and the French and German space agencies, CNES and DLR. Special parabolic paths were flown by experienced pilots to create Moon and Mars gravity conditions for at least 25 seconds each time.

The final parabola provided full weightlessness for the experiments. Also a Leuven team of biomedical engineers (ESAT/SCD-SISTA/BIOMED-research group prof. dr. ir. S. Van Huffel) in collaboration with prof. A. Aubert, had an experiment on board after months of preparation.

They investigated the cardiovascular reactions of the human body to changing conditions of gravity by monitoring vital signs such as heart rate (ECG), blood pressure, respiration.

Throughout our daily life on Earth there is a delicate equilibrium between all these crucial parameters, but would that delicate balance be disturbed on the Moon or Mars? This experiment tries to find an answer as they hypothesize that different parameters related to heart rate and blood pressure variability are possibly linearly correlated with the gravity level. The results will be useful for fundamental research investigation and also to support astronauts' further space exploration from an operational point of view.

**official ESA website:** [http://www.esa.int/export/esaHS/SEMJKJ4LOG\\_research\\_0.html](http://www.esa.int/export/esaHS/SEMJKJ4LOG_research_0.html)

**blog:**

6 June: [http://www.esa.int/export/esaHS/SEML5MJ4LOG\\_research\\_0.html](http://www.esa.int/export/esaHS/SEML5MJ4LOG_research_0.html)

7 June: [http://www.esa.int/export/esaHS/SEMH7UJ4LOG\\_research\\_0.html](http://www.esa.int/export/esaHS/SEMH7UJ4LOG_research_0.html)

8 June: [http://www.esa.int/export/esaHS/SEMW60K4LOG\\_research\\_0.html](http://www.esa.int/export/esaHS/SEMW60K4LOG_research_0.html)

9 June: [http://www.esa.int/export/esaHS/SEMCSRHPOG\\_research\\_0.html](http://www.esa.int/export/esaHS/SEMCSRHPOG_research_0.html)

source pictures:

ESA: [http://www.esa.int/export/esaHS/SEMJKJ4LOG\\_research\\_0.htm](http://www.esa.int/export/esaHS/SEMJKJ4LOG_research_0.htm)

CNES: <http://www.cnes.fr/web/CNES-en/7114-home-cnes.php>

DLR: <http://www.dlr.de/en/desktopdefault.aspx/>

