

ExoLab Space Mission Simulation: Expanding life with art & science

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Abstract: In the context of building a minimum autonomous modular architecture for the Moon & extreme environments on earth, a simulation has been performed considering also the potentiality for Art & Science applications. In specific ExoHab and ExoLab has been equipped as technical mockup at ESTEC for multidisciplinary mission simulation [1,2,3]. During this simulation, the members with humanities background could perform the mission tasks and found inspiration to new cultural applications.



The crew. I.L. Schlacht

1. Introduction: Art in Space

Space must be a place for both scientific and cultural applications. “Art in Space will give a new dimension to the artistic production expanding human culture” (B. Foing in [4]). The use of Space as a media could generate new ideas and applications for both the space industry and the arts. Artists specialized in art & science can translate their experience into visions that could enhance the quality of life with future forms of art [5]. Those artists propose to develop new mediums and new ways to apprehend space missions. A form of collaboration in “which scientific concepts are seen as a kind of 'content', and where the artist translates these concepts into images, sounds or other experiences” triggering radically new kinds of artistic development [6].

2. The simulation

On 29 May 2015, a simulation procedure, structure and equipment were prepared as technological mock up to perform a space mission simulation. A team of nine members was invited by the ILEWG to address specific tasks inside the simulation verifying how persons from different humanistic and technical fields could bring an added value to space mission.

2.1 Crew structure & background

The crew has a classical task and hierarchy structure, but with members from different humanities & scientific fields, divided between:

- **Remote support:** Campaign director (Bernard Foing – science, technology & logistics), Commander (Irene Lia Schlacht - design & engineering), Mission support (Jolanda W. Preusterink – operations and education)
- **ExoLab:** Executive Officer (Miha Tursic - art); Crew Engineer (Desmet Guillaume - Engineering architecture); Health & Safety Officer (Eva Petric - art & psychology)
- **ExoHab:** Crew biologist (Spela Petric - bioart)
- **ATV observatory:** Crew astronomy specialists (Ludwig Pasenau - exoclimatic art); Crew scientist (Natali Blugerman – Art & Science)

2.2 Crew tasks

During the simulation the crew in EVA performed research of form of life, while the crew astronomer and biologist worked on their field of research getting inspired also on cultural application. During the EVA it was plan a communication break down and two astronauts in EVA perform a safety emergency procedure while the crew biologist and the crew health & safety officer were left alone each in one of the module trying in reconnecting the communication. The crew member left alone experienced psychological reactions related to the feeling of isolation. We summarise here results relevant to artistic inspiration derived from the simulation.

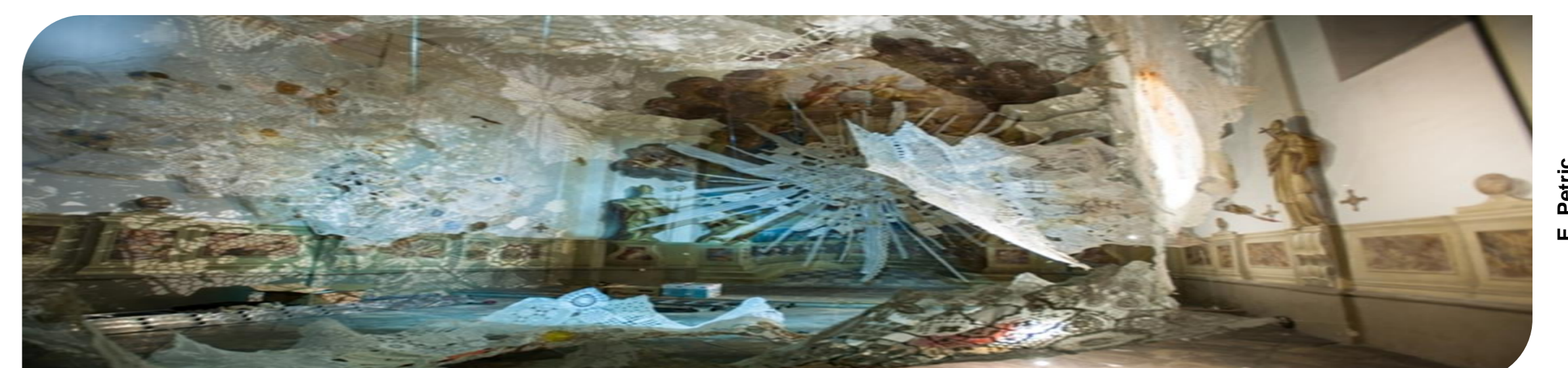
3. Results

The simulation inspired the members on cultural & artistic level.

- Executive Officer Miha Tursic: performing EVA search for life forms was inspired by questions of developing new life or life-like forms to inhabit the Moon or other planets.
- Crew scientists Natali Blugerman: performing EVA & planet observation, was inspired on her project on ice observatory as connection between human and space with elementary elements such as ice and fire developed with ice lens.
- Crew astronomy specialists Ludwig Pasenau: performing a telescopic solar observation to prevent the crew from radiations, was inspired by a video (Image1) shooting of the sun and the atmospheric activity to develop a series of space weather videos. These works could nurture an exoclimatic art project for future astronauts engaged on a long term mission.
- Crew biologist Spela Petric: providing communication support for EVA team, was inspired on a new artistic concept on difference of growing biological life in the different planets of our solar system
- Health & Safety Officer Eva Petric: being isolated in the ExoLab module, giving access to her body perception and inside, was inspired a text on her sensory perception.



L. Pasenau



E. Petric



I.L. Schlacht



L. Pasenau