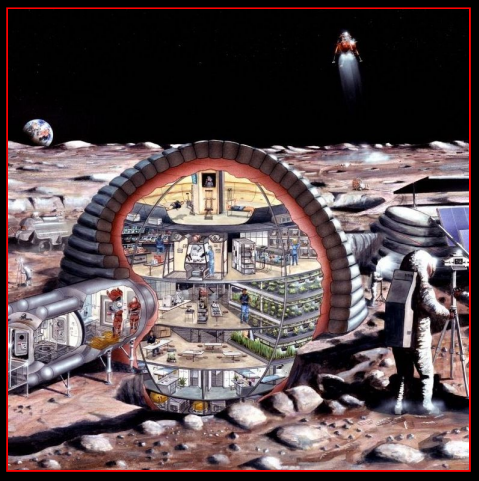
Occupational hazards and risks in a lunar space base

The goal of this project is to assess occupational hazards and associated risks in order to define risk management procedures for a lunar base.



Laboratory:	**GSCP**
Number of students:	**1 (Bachelor), 1 (Master)**
Section:	**PHYS, CH, ChE, EE, MICRO, ME, MSE, CIVIL, ENV, BIO, ENG**
Status:	**Available**

Description of the project

Assessing occupational hazards and associated risks in order to define risk management procedures in remote and isolated locations such as a lunar base is essential to ensure the sustainability of space missions. Indeed, several factors may put astronauts' life in jeopardy, from the experiments conducted during their stay - which might be dangerous for the crew or the habitat (e.g. the use of toxic chemical) - to issues associated to human behaviour - e.g. the inadequation between astronauts' skills and local interfaces written in a foreign language.

Therefore, this project aims at creating a new framework to identify the potential hazards, the main associated risks that could arise in a space base and to establish risk management procedures to mitigate them.

Description of the student work and mission

- **Mapping of the different sources of hazards:** Conducting a review of the literature to identify the different sources of hazards in complex environments, and more specifically in space missions.
- **Linking risks and hazards:** Defining the risks associated with the identified hazards; Assessing the significance of potential damage and the likelihood of occurrence.
- **Risk management recommendations:** Selecting a critical source of risk and defining risk management procedures that could mitigate those risks should they occur
- **Simulation:** Using Asclepios I mission to assess the efficiency of the mapping and of the recommendations.

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