1. Introduction
The return of extraterrestrial samples brought to Earth from Mars, planetary satellites, asteroids, the Moon will require specific storage conditions and handling procedures. The EURO-CARES project is aimed at creating an European sample curation facility (ESCF) with basic analytical equipment dedicated to extraterrestrial samples [1, 2]. In such a facility analogue materials will play a major role.

2. Objectives
- to evaluate specific storage conditions and handling procedures during curation and analysis
- to identify analogue samples crucial for evaluating and defining the protocols necessary to accomplish safe and sustainable handling
- to create a list of different types of samples that would be required for a sample curation facility

3. Each basic function of an ESCF requires specific analogue materials

4. Kinds of analogue materials

5. Considerations and requirements for analogue materials
- Solids, liquids, gases; natural and manufactured
- Analogues, reference samples, standards, and voucher specimen: temporarily and/or spatially isolated from extraterrestrial samples, yet easily accessible. Witness plates: close to returned samples.

6. List of natural analogue minerals, and rocks necessary

7. Product: Data sheet for individual analogues

8. General recommendations
- Suitable analogue materials need to be defined for each sample return mission.
- Samples of terrestrial landing sites (from the touch down site) are necessary.
- Two sets of analogue materials are necessary for training in non-sterile and sterile conditions.
- Another set of analogue materials should be made available for public outreach associated with the curation facility, such as a museum.
- Suitable analogue materials need to be made available for external labs and mission related hardware tests.

References


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