



EURO-CARES WP3 Meeting

Designing a European Extraterrestrial Sample
Curation Facility

NHM Vienna, Austria, 13-16 April 2016



Planetary Protection Issues on Sample Returned from Mars: Analytical Approach to Detect Sign of Life

J. R. Brucato¹, A. Meneghin¹ and the EURO-CARES team, ¹INAF-Astrophysical Observatory of Arcetri, L.go E. Fermi 5 Firenze, Italy (jbrucato@arcetri.astro.it).

Given the extreme difficulty to describe all possible living processes based on terrestrial biochemistry, no single approach will be able to guarantee a success in detecting life on samples returned from Mars. A multiple approach, that includes chemical and microscopic analysis, is fundamental to have comprehensive life detection. Consequently, multiple analytical techniques need to be accommodating in the sample curation facility with high biological containment to distinguish between abiogenic and biogenic signatures. At this stage of our study we are facing procedures for life detection and biohazard assessment in returned samples. Among a wide number of proposed techniques, here a new inclusive approach is proposed where different techniques are discussed and prioritised. This study will have implications on preliminary architectural/functional design of the sample curation facility.