

SPACE EXPLORATION SYMPOSIUM (A3)
Moon Exploration – Part 1 (2A)

Author: Mr. Andrea Rusconi
Leonardo S.p.A, Italy, andrea.rusconi@leonardocompany.com

Mr. Matteo Savoia
Positech s.r.l. c/o Leonardo - Finmeccanica S.p.A, Italy, matteo.savoia.ext@leonardocompany.com

Dr. Marco MOLINA
Leonardo S.p.A, Italy, marco.molina@leonardocompany.com

Mr. Richard Fisackerly
European Space Agency (ESA), The Netherlands, Richard.Fisackerly@esa.int

Dr. James Carpenter
European Space Agency (ESA), The Netherlands, james.carpenter@esa.int

Dr. Simeon Barber
Open University, United Kingdom, s.j.barber@open.ac.uk

PROSPECT OF THE MOON POLAR RESOURCES

Abstract

ESA is working together with ROSCOSMOS to establish a cooperative program of lunar exploration, in which the Luna-Resource (Luna-27) mission planned for 2020 is a major element. Part of the European contribution for the Luna-27 mission is the PROSPECT drilling and sampling package, which builds upon important experience gained by European industries and institutes in particular on drilling, sample handling and sample analysis. PROSPECT (Package for Resource Observation, in-Situ analysis and Prospecting for Exploration Commercial exploitation and Transportation) is made up of two main elements: the ProSEED (PROSPECT Sample Excavation and Extraction Drill) and the ProSPA (PROSPECT Processing and Analysis) sample analysis instrument. ProSEED is the next step in Finmeccanica's development of drilling and sampling machines specifically designed to cope with lunar icy soil specimens. ProSEED will be designed to be compatible with both European (ProSPA) and Russian scientific packages on board of Luna-27 lander. ProSPA, developed with the Open University, will be able to receive solid samples from ProSEED, extract volatiles, identify and quantify the extracted volatiles. The proposed paper will recall the activities performed so far in the drilling development and will present an overview of the work in progress in the frame of the current phase B+ for the whole PROSPECT package.