

IAF SPACE EXPLORATION SYMPOSIUM (A3)  
Space Exploration Overview (1)

Author: Dr. Christian Lange  
Canadian Space Agency, Canada, Christian.Lange@canada.ca

Dr. Erick Dupuis  
Canadian Space Agency, Canada, Erick.Dupuis@canada.ca  
Ms. Isabelle Tremblay  
Canadian Space Agency, Canada, isabelle.tremblay3@canada.ca  
Mr. Ken Podwalski  
Canadian Space Agency, Canada, ken.podwalski@canada.ca  
Mr. Gilles Leclerc  
Canadian Space Agency, Canada, gilles.leclerc@canada.ca

## THE CANADIAN LUNAR INITIATIVE: GATEWAY ROBOTICS AND LEAP

**Abstract**

Canada has a long history in human and robotic exploration of space and has contributed to many significant scientific discoveries in its quest for knowledge of our Solar System and the Universe beyond, ultimately providing tangible benefits to our society by transforming scientific propositions into knowledge and knowledge into innovation and economic growth.

There is a consensus of the 16 ISECG space agencies on a common strategy and roadmap for expanding human presence into the Solar System. While the surface of Mars is seen as the common driving goal, the latest Global Exploration Roadmap (Jan 2018) highlights the importance of the Moon on the pathway to Mars. The Gateway in lunar orbit features thereby as a major step for sustainable human lunar space exploration as a staging post for human and robotic missions to the lunar surface and deep space.

The Moon being a top planetary exploration priority, is also evidenced for instance by the US Space Policy Directive-1/NASA Exploration Campaign, European exploration programme initiatives related to the Moon, as well as Chinese lunar missions. In conjunction, there exists a rapidly developing commercial lunar transport industry, which has seen visible support provided by international partner programs (e.g. NASA Commercial Lunar Payload Services (CLPS), NASA Lunar Surface Transportation Capacity, ESA Commercial Lunar Mission Support Services (CLMSS)).

Planetary sciences are also a well-established priority for the Canadian space exploration stakeholder community, whereby Canadian planetary science priorities are defined through community consultations and documented in Canadian Space Exploration: Science Space Health Priorities 2017.

This paper will describe the vision for and implementation approach of the Canadian Government led lunar exploration activities for the next decade that will enable unique science investigations that will lead to discoveries about the Universe, our Solar System, and the capacity to live in space. They also allow for demonstration of leading-edge technologies and capabilities resulting in new products and greater economic opportunities for Canadians.