

HUMAN SPACE ENDEAVOURS SYMPOSIUM (B3)
ISS Utilisation (3)

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EXTENDING THE INTERNATIONAL SPACE STATION TO AN EXPLORATION PLATFORM AT
EML2**Abstract**

Shifting mission goals for space exploration as well as current global economic realities have increased the desirability of low cost, flexible solutions for early exploration missions. The International Space Station (ISS) represents a significant physical and intellectual investment in international collaborative design, assembly and operation by the participating nations. These investments and relationships in the ISS program can be used to quickly move beyond Low Earth Orbit (LEO) by maximizing use of existing assets. This paper describes an approach to use existing ISS assets to design and deploy an Exploration Platform at the Earth-Moon Libration Point 2 (EML2).

Making use available ISS hardware and program structures, it is possible to develop a credible plan for designing, assembling, and launching an Exploration Platform to EML2 in the near future. Balancing technology trades and development needs to achieve acceptable mission risk in early missions beyond LEO will limit total costs and mission penalties. Technologies and hardware in use on ISS today are ready in many cases to be used in new vehicles. Certain residual assets of the ISS program can be adapted for use as building blocks of an EML2 vehicle. Functional and performance requirements are discussed in the context of the proposed ISS-Exploration Platform. ISS hardware and partnerships are shown to be well advanced and ready for extension, balanced with smart investment in new technologies. This paper shows a possible path to early implementation of an Exploration Platform at EML2 by bridging ISS technologies and investments to exploration beyond LEO.