

International Cooperation for Space Exploration (1)  
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FROM THE INTERNATIONAL SPACE STATION TO THE MOON AND MARS

**Abstract**

The International Space Station, now in its 20th consecutive year of human habitation, is humanity's first permanent home away from Earth. It is also humanity's prime testbed for the capabilities, technologies, and procedures needed to establish humanity's next permanent home even farther into the solar system. In low-Earth orbit, living and working on the ISS is akin to car camping here on Earth; all the supplies, transportation, communications, and other life- and productivity-sustaining requirements are readily available. However, the distances to the Moon and Mars require systems that can largely operate independently of Earth. Onboard the ISS, NASA is evolving the life support, logistics, crew health, communications, and other systems that will allow near-independent operation in deep space. This paper will detail the ongoing work on the ISS to evolve these systems and continue towards breaking the bonds of Earth.