

HUMAN SPACEFLIGHT SYMPOSIUM (B3)
Utilization & Exploitation of Human Spaceflight Systems (3)

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INTERNATIONAL SPACE STATION: A PLATFORM FOR INTEGRATION OF NON SPACE-FARING
NATIONS INTO THE DOMAIN OF SPACE ACTIVITIES

Abstract

The International Space Station is the largest and most complex international scientific project in history. This paper analyses the role that it can play in helping non space-faring nations integrate into the domain of space activities. The stint at the Russian Mir Space Station witnessed seven U.S. astronauts spending a cumulative total of 32 months aboard. By contrast, it took the U.S. Space Shuttle fleet more than a dozen years and 60 flights to achieve an accumulated one year in orbit. Unconditionally, it offers longer stay times in space. This opens avenues for training of personnel of nations that do not have space programs. They can use it as a platform for developments in space activities vis-à-vis international crew training activities; the operation of an international space program; and the challenges of long duration spaceflight for astronauts and ground controllers. Dealing with the real-time challenges would hone skills and expertise and would foster co-operation among nations consistent with the UN Charter. Further, it offers an unprecedented state-of-the-art laboratory complex in orbit which might lead to discoveries in medicine, materials and fundamental science that will benefit people all over the world. This is in consonance with the 'res communis' doctrine which envisage that space exploration and research should be carried out for the benefit of all mankind. Research in fields like Protein crystal studies could lead to the study of possible treatments for cancer, diabetes, emphysema and immune system disorders; tissue culture; Effect of life in low gravity including effects of long-term exposure. A thorough understanding of such effects and possible methods of counteracting them is needed to prepare for future long-term human exploration of the solar system. Through its research and technology, the station also will serve as an indispensable step in preparation for future human space exploration. Space Exploration can be seen as a series of logical steps that increment our knowledge of the object population, characterization of their diversity, in situ analysis via robotic missions, and culminate in human visits to one or more objects known by then to be worthy targets. ISS is a prime location to conduct an inhabited life test of the Deep Space Habitat. NASA authors also make claims that these learning experiences would provide vital knowledge ahead of a Mars mission. This paper presents an in depth study of the tremendous help that the ISS would be of to developing nations.