

HUMAN SPACE ENDEAVOURS SYMPOSIUM (B3)  
Overview Session (Present and Near-Term Human Space Flight Programs) (1)

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MANNED SPACEFLIGHTS: PAST EXPERIENCE, LOOK INTO THE FUTURE

**Abstract**

Manned space exploration has passed almost a 50-years way: from the first one-orbit space flight to the construction of the International Space Station. Lead space countries see the future of manned space exploration in construction of new transport systems and orbital assembly sites for implementation of prospecting space programs including lunar and mars missions. Future interplanetary expeditions seem to be much more complicated missions relative to near-earth orbital flights and missions with short-time moonfalls. A number of new problems arise, in particular related to the long duration of missions, distance of spacecraft from the Earth, autonomy of crew activities, and impossibility of urgent assistance from the ground in case of emergency, limitation of resources that can not be replenished. These problems make absolutely new demands related to the safety and efficiency of crew activities. And it is already necessary to look for solutions. It is suggested to use the potential of the International Space Station as a test platform to create and practice advanced technologies of cosmonauts' on-board activities and their on-ground training for the spaceflight. For this purpose we should model conditions of autonomous crew activities onboard the ISS; generate new principles of mission control and interaction between the crew and MCC; develop and test new means and ways of the crew psychological support; create and practice smart tools of the crew informational support; develop efficient technologies of cosmonauts' selection and training.