

IAF HUMAN SPACEFLIGHT SYMPOSIUM (B3)  
Astronaut Training, Accommodation, and Operations in Space (5)

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EXPERIENCE IN TRAINING COSMONAUTS FOR VISUAL INSTRUMENTAL OBSERVATIONS  
FROM THE ISS USING THE FLYING LABORATORY

**Abstract**

One of the leading directions in whole complex of tasks performed aboard the ISS is a remote sensing of the Earth resources de means of Visual Instrumental Observations (VIOs). An important way to increase the quality of cosmonaut training is the development and building of dedicated simulators of visual environment under flight conditions aboard the ISS RS. Another way to improve the efficiency of cosmonaut training is practical lessons and training aboard the Tu-134LK-1 flying laboratory. The flying laboratory allows simulating environment that is closest to the VIOs execution conditions in a space flight. Unlike the ground-based simulators, the factors of parametric adequacy of the flying laboratories to a space flight are 1 according to the following parameters: line of sight rate, time available for detecting and photographing. Additionally, the line ground resolution of an eye conforms to observation from orbit with the use of an optical device with the 40x increase, but it is necessary to limit the field of view according to the characteristics of the optical devices. The paper represents the results of training cosmonauts for visual instrumental observations of the Earth from the ISS on real objects using the special-purpose flying laboratory. Also, it contains the assessment of the efficiency of this kind of cosmonaut training and the lines of its development.