

IAF EARTH OBSERVATION SYMPOSIUM (B1)
International Cooperation in Earth Observation Missions (1)

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SIMULATING GAGARIN'S GAZE: THE CHARM OF A DIGITAL EARTH FOR A SUSTAINABLE
PLANET

Abstract

The first space flight made 60 years ago was certainly a pivotal moment in humankind's history. It was not just a matter of new knowledge; the direct and holistic experience of space is no less important than its scientific and technological visions and incorporates them. Since Gagarin's visual experience as the first man in space, and for all the following astronauts in orbit and beyond, what distinguishes them from the rest of humankind is a shared experience that has been described as a shift in perspective, to seeing earth and all its inhabitants as a whole. Astronauts report the experience of seeing the beauty of nature, of all of Mother Earth at once in orbit as profound. At the beginning of the Space Era, the holistic vision of Earth was the prerogative of cosmonauts and astronauts alone, but not anymore. This experience was shared widely due to the environmental initiatives of Al Gore, who proposed and justified the concept of the Digital Earth as a radically new perspective, providing full geocentric situational awareness through the seamless integration of geocentric context beyond the hierarchies imposed by the maps and their distorted scale-bound division of geodata. The Digital Earth project aims to work at the cutting edge of developments in geography, natural sciences and information technology to provide a simulated, enhanced and updated digital twin of Earth. Full of beauty, but also information. The goal of recreating Gagarin's gaze, in the year celebrating the 60th anniversary of the first man in space, is achieved by sharing the visual experiences of astronauts for a simulation of Earth with different scenarios to be experienced in VR or by PCs and smartphones. This use of VR/AR would increase the popularity and impact of space exploration and DE applications: Earth-orbiting satellites, ground-based observations, and other technologies for collecting, analyzing and visualizing data about global phenomena, such as climate sciences and modeling, health emergencies and scenarios about alternative futures, environmental and cultural heritage, and sustainability. In particular, applications for Digital Health Earth (DHE) involving global and local visualization of health and environmental data would fulfill and interoperate with existing monitoring systems concerned with environmental and public safety. Public health policies, but also political discourse would benefit from such a gaze on real time situations at regional, national and worldwide level.