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[Back to Search Results](#)**Stereo images from space (Proceedings Paper)**Author(s): **Massimo Sabbatini; Maximilien J. Collon D.V.M.; Gianfranco Visentin** PDF: **Member: \$18.00, Non-member: \$18.00** Hard Copy: **Member: \$24.00, Non-member: \$24.00****RELATED PRODUCTS**[Liquid Crystals XII](#)[High-Fidelity Medical Imaging Displays](#)**Proceedings Vol. 6803****Stereoscopic Displays and Applications XIX, Andrew J. Woods; Nicolas S. Holliman; John O. Merritt, Editors, 680315**Date: **19 March 2008****Paper Abstract**

The Erasmus Recording Binocular (ERB1) was the first fully digital stereo camera used on the International Space Station. One year after its first utilisation, the results and feedback collected with various audiences have convinced us to continue exploiting the outreach potential of such media, with its unique capability to bring space down to earth, to share the feeling of weightlessness and confinement with the viewers on earth. The production of stereo is progressing quickly but it still poses problems for the distribution of the media. The Erasmus Centre of the European Space Agency has experienced how difficult it is to master the full production and distribution chain of a stereo system. Efforts are also on the way to standardize the satellite broadcasting part of the distribution. A new stereo camera is being built, ERB2, to be launched to the International Space Station (ISS) in September 2008: it shall have 720p resolution, it shall be able to transmit its images to the ground in real-time allowing the production of live programs and it could possibly be used also outside the ISS, in support of Extra Vehicular Activities of the astronauts. These new features are quite challenging to achieve in the reduced power and mass budget available to space projects and we hope to inspire more designers to come up with ingenious ideas to built cameras capable to operate in the harsh Low Earth Orbit environment: radiations, temperature, power consumption and thermal design are the challenges to be met. The intent of this paper is to share with the readers the experience collected so far in all aspects of the 3D video production chain and to increase awareness on the unique content that we are collecting: nice stereo images from space can be used by all actors in the stereo arena to gain consensus on this powerful media. With respect to last year we shall present the progress made in the following areas: a) the satellite broadcasting live of stereo content to D-Cinema's in Europe; b) the design challenges to fly the camera outside the ISS as opposed to ERB1 that was only meant to be used in the pressurized environment of the ISS; c) on-board stereo viewing on a stereo camera has been tackled in ERB1: trade offs between OLED and LCOS display technologies shall be presented; d) HD_SDI cameras versus USB2 or Firewire; e) the hardware compression ASIC solutions used to tackle the high data rate on-board; f) 3D geometry reconstruction: first attempts in reconstructing a computer model of the interior of the ISS starting from the stereo video available.

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