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Radiation Fields, Effects and Risks in Human Space Missions (5)

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COMPARISON OF DOSE MEASUREMENTS PERFORMED WITH TRITEL TELESCOPES IN THE ISS MODULES COLUMBUS AND ZVEZDA

Abstract

In the period between the 5th of April and the 10th of May 2013 dosimetry measurements were performed simultaneously with two almost identical TRITEL 3D silicon detector telescope systems in the European Columbus (TRITEL-SURE) and in the Russian Service Module of the International Space Station (TRITEL-RS). TRITEL had been developed in the Centre for Energy Research, Hungarian Academy of Sciences in cooperation with BL-Electronics Ltd. From the energy deposition spectra measured by TRITEL the absorbed dose rate and the dose equivalent rate on board ISS is determined. TRITEL-RS was operated on board the Russian Segment in frame of the Matroshka-R space experiment in cooperation with the State Scientific Center, Institute for Biomedical Problems, Russian Academy of Sciences (IBMP), Moscow. The TRITEL-SURE experiment was co-funded by the EC project SURE, contract number RITA-CT-2006-026069 and by the Government of Hungary through ESA Contracts 98057 and

4000108072/13/NL/KML under the PECS (Plan for European Cooperating States). The paper addresses the brief description of the two TRITEL systems and a cross-comparison of the results obtained during the one month of simultaneous operation. Comparison with other on-board measurements is also given. (The view expressed in the paper can in no way be taken to reflect the official opinion of the European Space Agency.)