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## **Future Experiments: ESA Active Dosimeter (EAD) on the NASA ORION EM-1 Mission**

Ulrich Straube<sup>1</sup>, Thomas Berger<sup>2</sup> for the EAD Team

<sup>1</sup>ESA-EAC, Cologne, Germany; <sup>2</sup>DLR, Cologne, Germany

Over the last decade human presence in space has increased significantly. Extended missions lasting half a year or more became “standard” scenarios. Challenges to human health and wellbeing are though still significant, increasing with mission length and workload. For future exploration missions as the planned ORION mission to the Moon and the subsequent Lunar Orbital Platform radiation surveillance of the astronauts has to be performed with active personal radiation detectors. Within the EAD project small active personal dosimeters (MU = Mobile Units) have been developed and successfully applied for measurements onboard the ISS. These measurements were done on one hand during the “Iriss” mission in 2015 enabling for the first time a full overview from mission start (Soyuz launch on 2 September 2015) to landing (Soyuz return on 12 September 2015) and later onboard the ISS in the frame of the EAD Project (2016 – 2017). For the upcoming NASA ORION-EM-1 mission upgraded versions of the EAD MU will be provided. The talk will give an overview of lessons learned with the Mobile Units in orbit and expand on the planned future mission for the ORION EM-1 flight.

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