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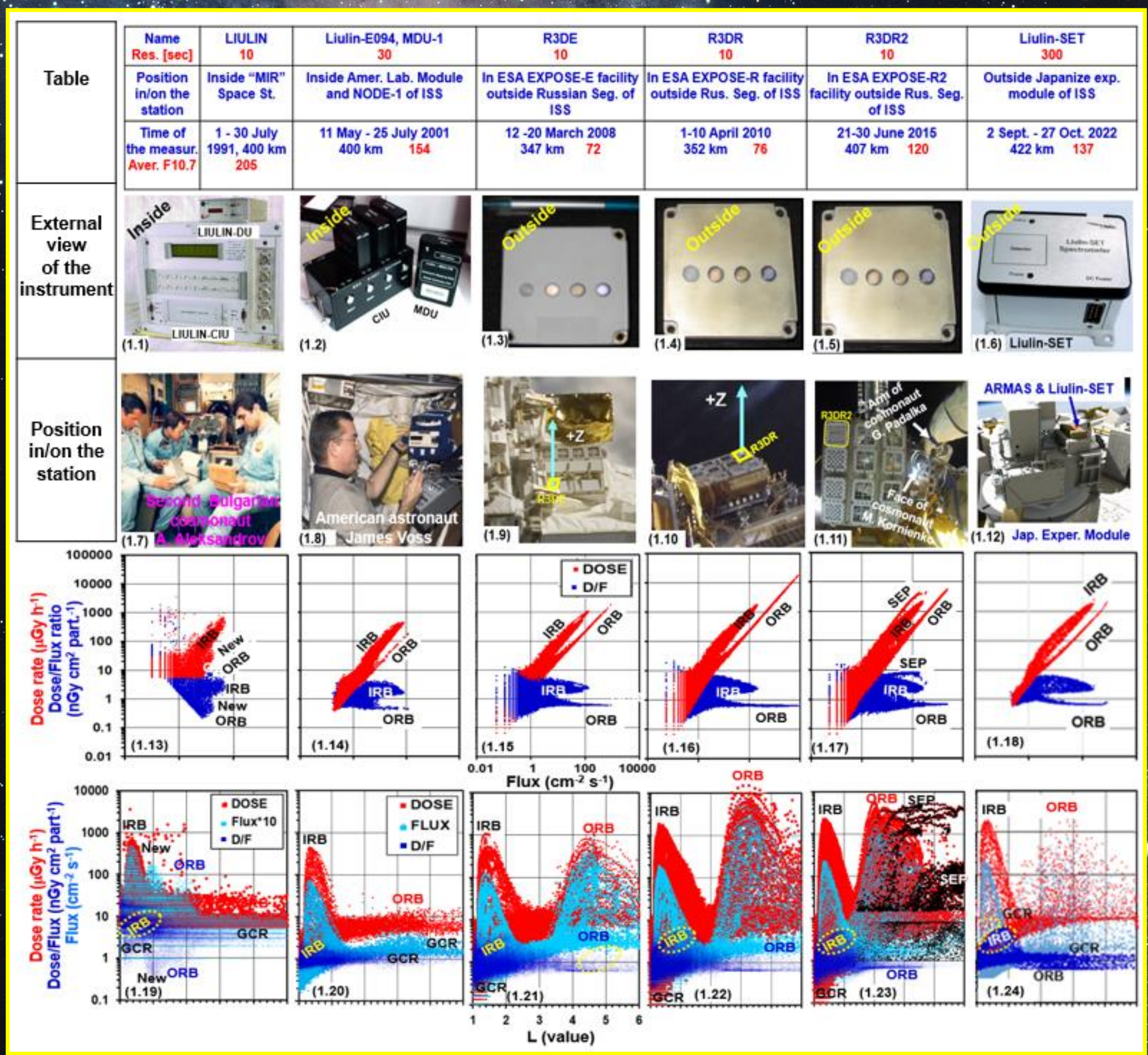
OVERVIEW OF THE LOW EARTH RADIATION ENVIRONMENT VARIATIONS ON "MIR" AND INTERNATIONAL SPACE STATIONS AS OBSERVED BY LIULIN TYPE INSTRUMENTS IN 1991-2022

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Abstract

The space weather and the connected with it ionizing radiation are recognized as main health concerns to the space station crews. Estimation of the effects of radiation on humans on MIR Space Station and on the International Space Station (ISS) requires at first an accurate knowledge of the accumulated by different radiation sources absorbed dose rates. The latter depend of the global space radiation component distribution and on the local variations, generated by the 3D surrounding shielding distribution.



Comparison of analogical graphics and data for six Liulin type experiments on "MIR" and ISS in the period July 1991-September 2022

Conclusions

The main conclusion of the presented data is that the outer radiation belt (ORB) enhancements and the penetrations of relativistic electrons at low L-values and in the inner radiation belt (IRB) are common on the manned "MIR" and ISS space stations. Although the obtained doses do not pose extreme risks for the astronauts, being on extravehicular activity, they have to be considered as a permanently detected radiation source, which requires additional comprehensive investigations.

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