Introduction to EURADOS WG11/TG3 and this Webinar

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Introduction to EURADOS WG11/TG3 and this Webinar

Objectives of WG11/TG3:

To improve models for dose assessment due to solar particle events and validate with experimental data

Result: EURADOS Report 2021-03

P. Beck, J.F. Bottollier-Depois, R. Bütikofer, E. Flückiger, N. Fuller, K.-L. Klein, M. Latocha, V. Mares, D. Matthiä, W. Rühm: **"Comparison of Codes Assessing Radiation Exposure at Aviation Altitudes in Case of Solar Particle Events"**, Neuherberg, April 2021. DOI: 10.12768/zmq7-bv59

https://eurados.sckcen.be/sites/eurados/files/uploads/Publications/2021/EURADOS-Report-2021-03.pdf.

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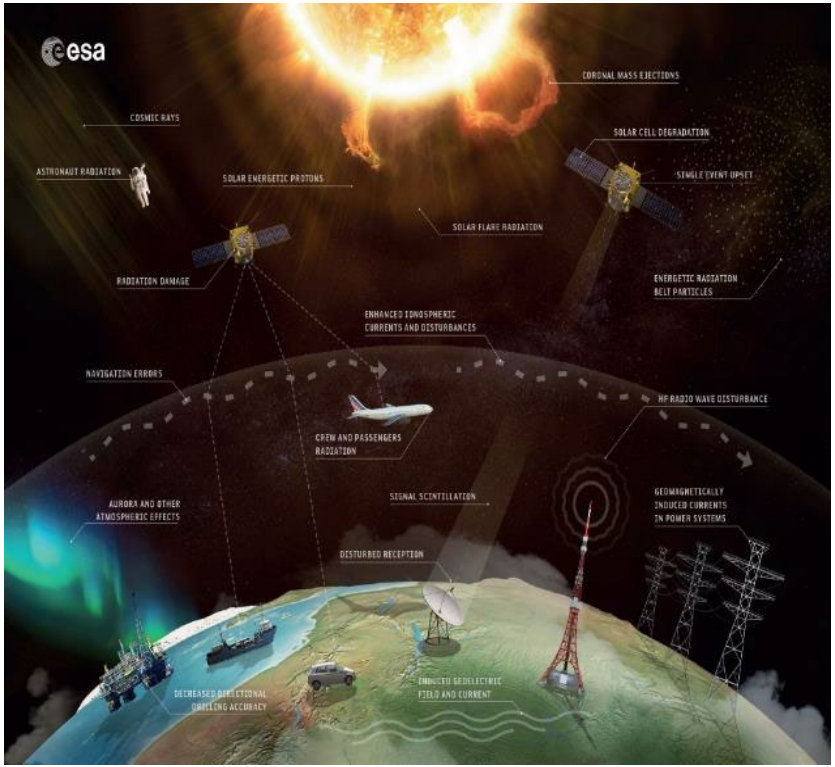

Credit: ESA

- Aircrew and passengers are exposed to cosmic radiation of **galactic** and **solar origin**.
- **Primary galactic cosmic radiation** and **energetic solar particles** interact with atomic nuclei of atmospheric producing cascade of interactions and **secondary reaction products**.
- Decrease in intensity with increasing depth in the Earth's **atmosphere**.
- Changes in intensity with variations of Earth's **magnetic field**.

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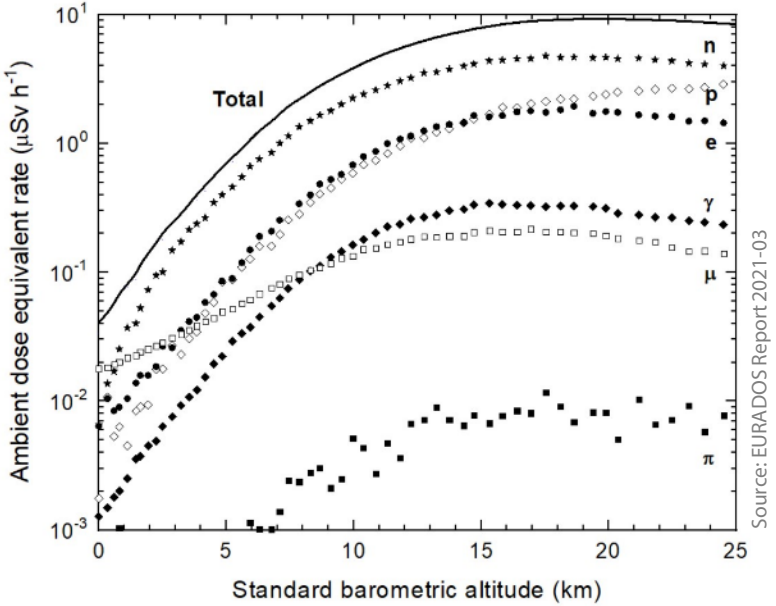
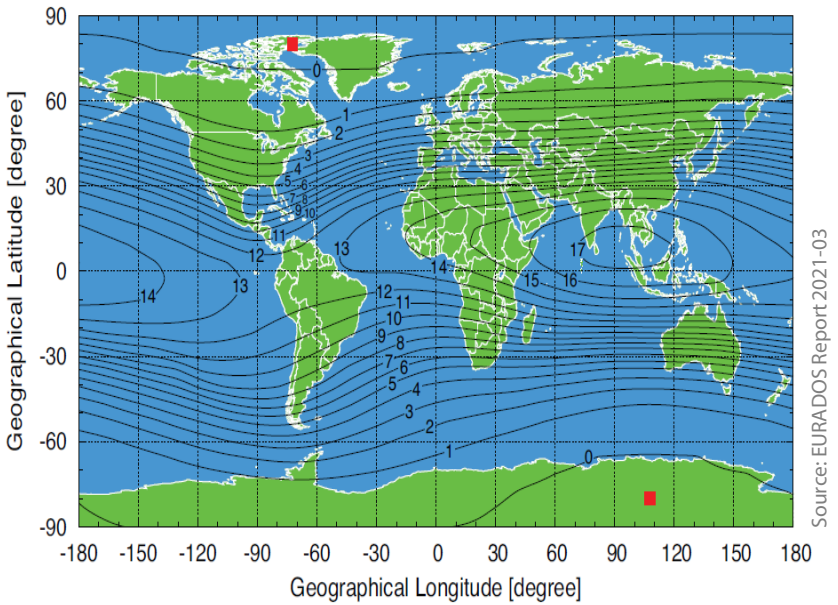
Influence atmospheric depth



Influence Earth magnetic field



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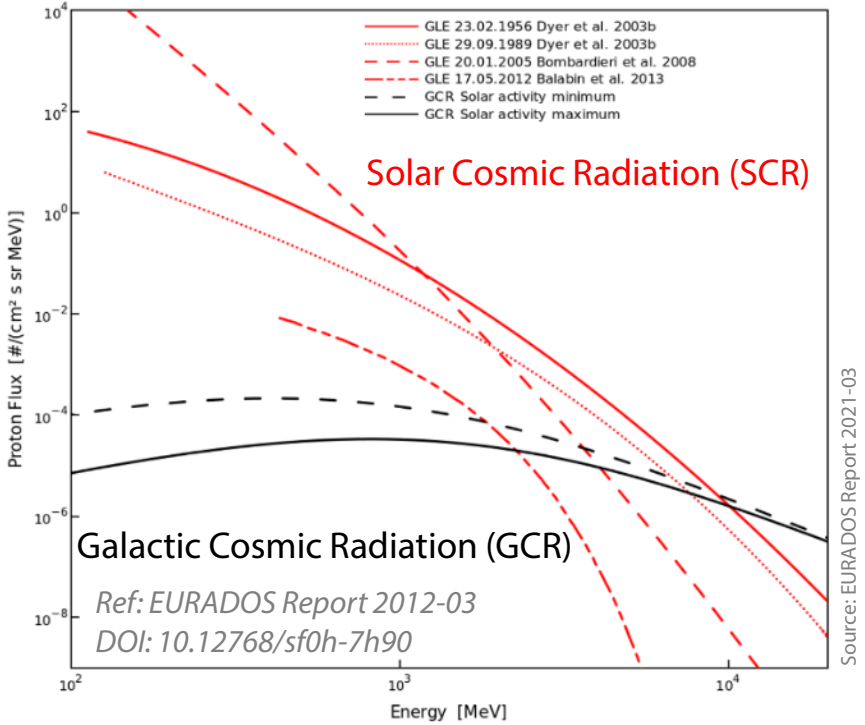

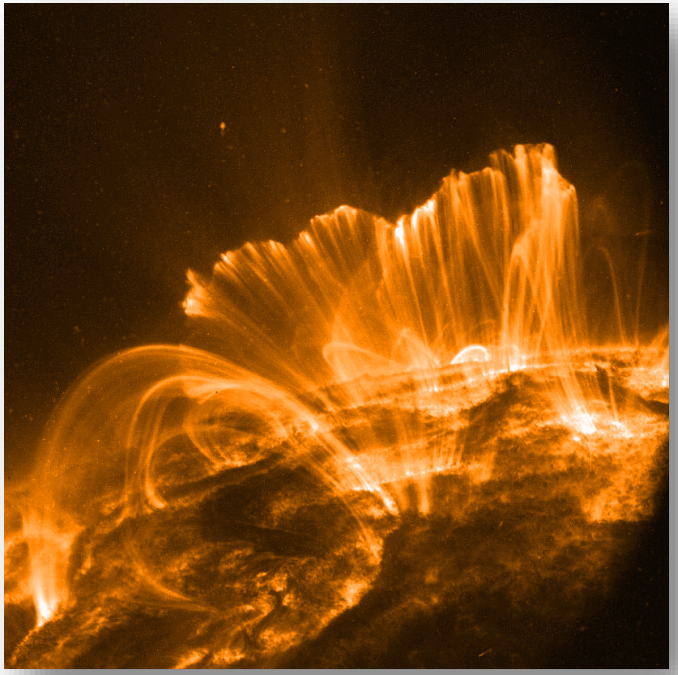

Post-eruptive loops in the wake of a solar flare, image TRACE satellite, NASA.

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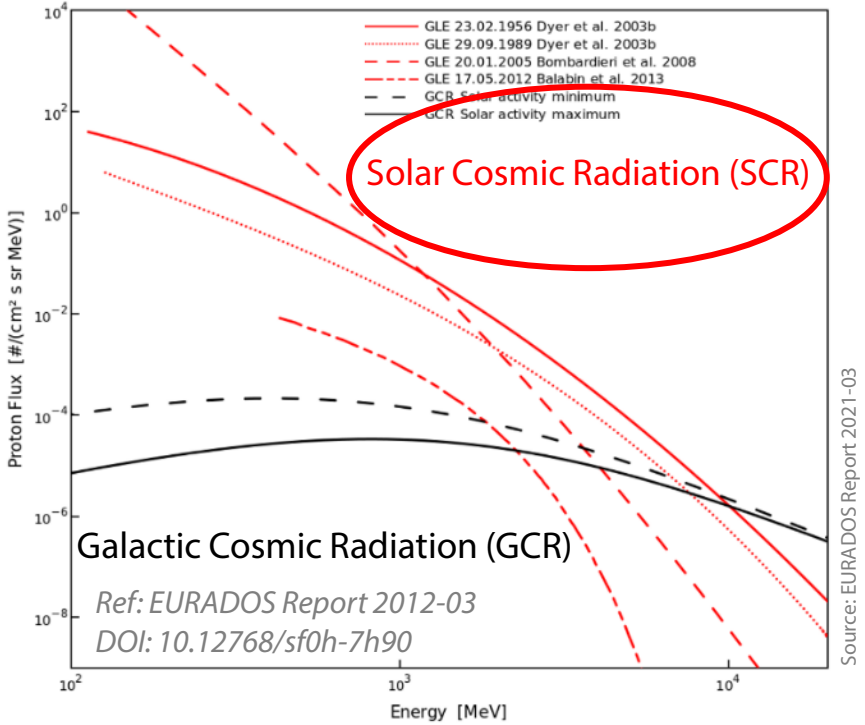

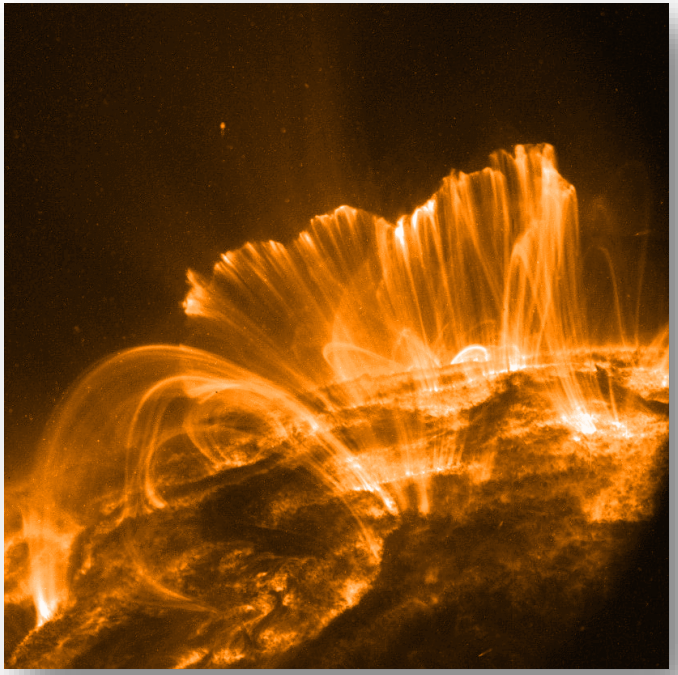

Post-eruptive loops in the wake of a solar flare, image TRACE satellite, NASA.

The following four protective measures are important

Credit: Pexels

- To assess the exposure of the crew concerned in ***H*(10)*** and ***E.***
- To consider the assessed exposure when organizing **working schedules** with a view to **reduce the radiation doses** of **highly exposed crews.**
- To **inform** the workers concerned of the **health risks** their work involves.
- To apply the same special protection during **pregnancy to female crew** in respect of the 'child to be born' as to other female workers.