

European Radiation Dosimetry Group • Mekelweg 15 • 2629 JB Delft

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Notification of Ground Level Event: December 13th, 2006 Assessment of doses by the EURADOS Working Group "Aircraft Crew Dosimetry"

A Solar Particle Event (SPE) took place on December 13th 2006, starting around 02:50 UTC with maximum intensity at around 03:00 UTC. This event was sufficiently energetic to be detected by ground level neutron monitors (GLNM) and will be registered as a Ground Level Event (GLE70).

In the polar regions, where the Earth is less shielded by its magnetic field, the GLNM count rate increased relative to the count rate on December 13th (average from 01:00 to 02:00) by 92% locally (NM Oulu, 5 min average) in the northern hemisphere and up to 44% locally (NM Kerguelen, 5 min average) in the southern hemisphere. The increased count rates fell off markedly with decreasing magnetic latitude and so one can expect that only high latitudes (>60°) were affected.

The neutron monitor count rate fell off rapidly after its maximum, and the duration was relatively short - the time to decay to 10% of the maximum was about 2 hours. Preliminary evaluations of probable doses to aircraft crew flying at the time have been made by several groups. For normal aircraft altitudes and for higher latitudes, for instance for Europe to US west coast or Japan routes, initial estimates indicate that the additional doses should not exceed 40 µSv/flight.

Final estimates will be produced after analysis of satellite and ground monitor data, and any in-flight measurements results.

On behalf of the EURADOS Working Group 5 "Aircraft crew dosimetry"

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