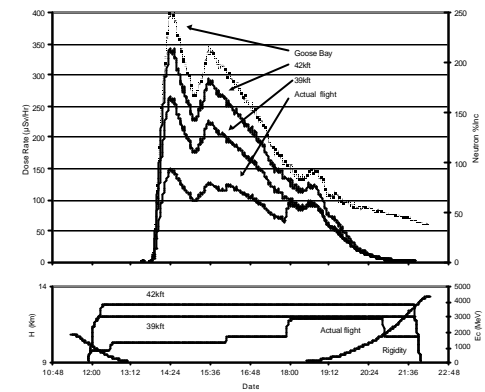


Solar Particle Effects at Aircraft Altitudes

- Solar particle events significantly increase SEEs and dose.
- Calculations based on ground level and space monitors, radiation transport codes and accurate cut-off rigidities.
- These have been validated against 5 events on Concorde but geomagnetic activity must be allowed for (factor 2).
- The radiation environment for high latitude subsonic flights is far worse than on Concorde due to steep latitude effect.
- For LHR-LAX doses of several mSv and SEE every 10 seconds in 1 Gbyte are possible.
- These methods provide a basis for a real-time service to airlines but accurate calculations, such as are needed for crew dose, require widespread flights of monitors.

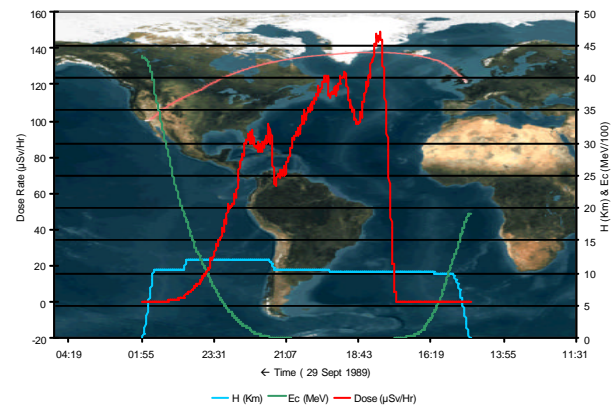
QinetiQ

Calculated dose rates for various flight profiles from LHR-LAX during peak of event on 29 Sept 1989



QinetiQ

Calculated dose rates for LHR-LAX for event of 29 Sept 1989



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