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Health threat from cosmic radiation during manned missions to Mars

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Cosmic radiation is a critical factor for astronauts'safety in the context of evaluating the prospect of future space exploration. The Radiation Assessment Detector (RAD) on board the Curiosity Rover launched by the Mars Scientific Laboratory mission collected valuable data to model the energetic particle radiation environment inside a spacecraft during travel from Earth to Mars, and is currently doing the same on the surface of Mars itself. The Martian Radiation Experiment (MARIE) on board the Mars Odyssey satellite provides estimates of the absorbed radiation dose in the Martian orbit, which are predicted to be similar to the radiation dose on Mars'surface. In combination, these data provide a reliable assessment of the radiation hazards for a manned mission to Mars. Using data from RAD and MARIE we reexamine the risks for a crew on a manned flight to Mars and discuss recent developments in space exploration.

Keywords

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Collaboration

other Collaboration

Subcategory

Outreach and Education

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