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2. CRs at Earth and planets (GEO)

Health Issues and Space Weather

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Many of the physical and physiological demands of human adaptation to spaceflight have been well studied. Space biology encompasses such topics as how zero gravity affects the human body as well as how gravity affects the reproduction, development, growth, and aging of animals and plants. However, most analysts agree that charged particle radiation is one of the main issues in regard to sending humans on long-term interplanetary missions. For more than 30 years the field of space radiation biology and related topics have progressed based on research conducted onboard space stations (e.g. Mir, ISS) and spacecraft, as well as on ground-based observations and experimental studies simulating conditions in space. The implications of these space weather induced health effects (short-term and long-term) in the context of interplanetary travel will be discussed with an emphasis on energetic particle populations, their possible effects on humans, as well as current and envisioned mitigation techniques.