

Space colonization assignment



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Space Radiation Too Deadly For Mars Mission by Charles Q. Choi, Special to SPACE. com Date: 31 March 2008 Time: 10: 00 AM ET Dangerous levels of radiation in space could bar astronauts from a mission to Mars and limit prolonged activity on the moon, experts now caution. However, more research could reveal ways to handle the risks that radiation poses to space missions. The?? magnetic field?? of Earth protects humanity from radiation in space that can damage or kill cells.

Once beyond this shield, people become far more vulnerable Astronauts have long seen white flashes while in space due to cosmic rays, or extremely high-energy particles, passing through their heads. A return to the moon or a mission to Mars that NASA and other space agencies are planning would place astronauts at continued risk from cosmic rays or dangerous bursts of solar radiation. Several reports in the past have outlined the?? potential risks. To further investigate the risks that space radiation currently pose, the National Research Council assembled experts in space and biology together.

At the present time, given current knowledge, the level of radiation astronauts would encounter “ would not allow a human crew to undertake a Mars mission and might also seriously limit long-term Moon activity,” this committee notes in their new report today. Uncertainties remain Still, much remains uncertain regarding the actual risks that space radiation poses for the body, explained committee member Walter Schimmerling, a scientist now retired from NASA’s space radiation program. All these uncertainties mean that safety margins have to remain high, limiting how long astronauts can stay in space.

This in turn could rule out a?? mission to Mars, as well as long-term or multiple missions to the moon. “ The way to deal with that problem is to reduce the margins of uncertainty,” Schimmerling toldSPACE. com. To enable at the very least lunar missions with astronauts, the committee stressed that radiation biology research deserved the highest priority. However, the experts noted that NASA’s space radiation biology research has been significantly compromised by recent cuts in funding, leading to major gaps in our knowledge of the health risks of radiation, such as cancer, neurological damage and degenerative tissue disease.

NASA’s entire space radiation biology research program is critically dependent on the NASA Space Radiation Laboratory, which in turn relies on the U. S. Department of Energy’s heavy ion physics program. The committee strongly recommended that NASA do as much research at this lab as it could, in case Department of Energy’s priorities shift and dramatically reduce the availability of the lab. “ No one knows how long the window of opportunity is for how long this laboratory is available ??? 10 or 15 years seems a reasonable guess,” Schimmerling said.

Possible solutions When it comes to shielding astronauts from radiation, spacecraft?? designers?? and mission planners have to consider trading off a safe amount of protective material ??? say, high density plastic ??? with cutting weight in order to enter space practically. Crafts that are too heavy simply can’t carry enough fuel to make flight practical. Further research could not only look into better shielding materials, but also spacecraft designs that put electronics and machinery in the periphery between astronauts and harm’s way. Lava tubes on the moon might also be useful as

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habitats from a shielding point of view," Schimmerling said. " I don't know how realistic the idea is, but they would have the advantage of reduced exposure to radiation. " The sun is a major source of dangerous radiation astronauts might encounter especially during solar storms that can erupt with little notice. The committee also recommended further research into forecasting these outbursts. .