

Hazards in the Heliosphere: Forecasting and Mitigation Techniques

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Spacecraft have to survive very hostile environments which can severely limit space missions as well as pose threats to humans. Shielding requirements, including space storm shelters, both on the spacecraft as well as radiation protection facilities on the target, need to be taken into consideration with respect to travel time, local target space weather conditions and the phase of the solar cycle. Be it on Mars or a different planet, once we reach our target the local space weather conditions will be a function of the planet's location in the solar system and whether it has a magnetosphere and/or atmosphere around it. This presentation will look at the various opportunities that heliospheric exploration offers while in parallel evaluating the obstacles that must be overcome to realize these scenarios considering the feasibility to use and integrate existing systems (e.g. forecasting), as well as presenting innovative mitigation techniques.