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Assuring the Long-Term Sustainability of Outer Space Activities (4)

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GLOBAL SOCIO-ECONOMIC RISKS, IMPACTS, AND RECOMMENDATIONS FOR SPACE
WEATHER POLICIES AND INITIATES

Abstract

Space weather impacts global technological systems and societies. Space weather, or the dynamic conditions on the Sun and in the space environment and its impacts on technological systems, can produce coronal mass ejections, solar energetic particles, and geomagnetic disturbances. These space weather events can cause extreme currents in wires, widespread blackouts, and phone and internet communication failures both in space and within the Earth's atmosphere. Severe space weather can damage satellites used for global positioning, communications, and weather forecasting. It also creates a risk of radiation sickness to astronauts and commercial airline crews and passengers. Accurate forecast knowledge of the space weather threat and timing of events is critical to planning and preparation to minimize socio-economic impacts. This paper reviews the scope of the space weather threat on the global community today. It describes current international and federal public policy initiatives to mitigate risk to infrastructure, public safety, and human life. It will examine recent international reports and federal disaster reduction plans to meet these challenges as society becomes increasingly reliant on vulnerable technologies. This paper will provide recommendations to increase public awareness and implement public policies to prepare, prevent, and recover from possible catastrophic failures of commercial and government infrastructures caused by a major space weather event.