

29th IAA SYMPOSIUM ON SPACE AND SOCIETY (E5)
Space Assets and Disaster Management (4)

Author: Mr. Samuel Naef

International Space University (ISU), France, samuel.naef@community.isunet.edu

Mr. Vincent Delayat

France, vincent.delayat@community.isunet.edu

Mr. Christos Ntinou

International Space University (ISU), France, christos.ntinou@community.isunet.edu

Mr. Rami Ibrahim

International Space University (ISU), France, rami.ibrahim@community.isunet.edu

Mr. Xi Chen

International Space University (ISU), France, xi.chen@community.isunet.edu

Mr. Omkar Nikam

International Space University (ISU), France, omkar.nikam@community.isunet.edu

Ms. Sabrina Alam

International Space University (ISU), France, sabrina.alam@community.isunet.edu

A FUTURE CARRINGTON EVENT: ADOPTING A DETERMINISTIC APPROACH TO
INTERNATIONAL TELECOMMUNICATIONS ISSUES**Abstract**

The purpose of this white paper was to conduct an evaluation of the potential effects of a future Carrington event on Earth's telecommunications, and offer suggestions to mitigate these detrimental effects. These were examined separately for terrestrial, aerial and space infrastructure, while economic and liability issues were also addressed. A key conclusion was that maintaining telecommunication links in the case of an intense geomagnetic storm, mainly relates to the availability of power, and so mitigation methods for this were also examined. In addition, recommendations have been presented to improve early warning systems via CubeSats around the sun; improved designs of satellites; and how high altitude platforms (HAPs) and portable radios can be used effectively in the advent of telecommunication outage in high-priority locations such as cities, hospitals, and military buildings.