

Status Report on SG 1.15

Responsible Commission

Commission 1.

Study Number and Title

1,15 International Cooperation on Space Weather

Short Study Description

The complex interaction of: the solar magnetic field; electromagnetic radiation; particles emitted by the Sun; and galactic radiation with the interplanetary magnetic field and planetary atmospheres causes events and effects that are commonly referred to as Space Weather.

Space weather can adversely affect spacecraft, satellites, electronic components and power-plant facilities, radio communications and other infrastructure (i.e. elements on which human society is increasingly dependent). Over the last few decades a wide range of scientific programs and international initiatives have been conducted to study space weather which have contributed toward increasing our understanding of space weather related events and effects.

The purpose of the present study is to review, from an international, scientific, economic and policy perspective: our present knowledge of space weather and its (socioeconomic) effects on: human society; past and ongoing programmes and initiatives to identify possible still existing gaps and untapped opportunities. Recommendations and proposals charting ways forward that could contribute to increasing the understanding and resilience of human society to space weather will be formulated.

Progress in last 6 months

At the Spring Meeting (2016) this Study Group (originally S.G. 3.20) was transferred to Commission 1 where several recommendations as to suitable study group members were put forward. The study was renamed SG 1.15.

Thereafter the study lead (Acad. Susan McKenna-Lawlor) approached various international specialists in Space Weather and secured their commitment to join the Study Group. The names/contact details of these persons will shortly be provided to the Academy so that formal invitations to join the group can be issued to them.

While these preparations were in train, S.McKL prepared and presented a talk at the 3rd. IAA Space Flight Safety Symposium in St. Petersburg (4-8 July 2016) on **The performance and reliability of spacecraft in the near Earth environment**. This material will be submitted to a special edition of Acta Astronautica and will constitute the first spin off paper of the study.

Issues requiring resolution

Experts on economic and policy perspectives required for the study remain to be identified and will be sought within the Academy.

Invitation

The study group aims at producing a report by end of 2018. Any person interested may apply to join the group (membership is open to those who are not Academy members - subject to their being appropriately qualified). Persons interested in participating may contact the [IAA office by email](#) or call on 33 1 47 23 82 15. The work of this international team is on a volunteer basis and conducted primarily using the internet. No travel support is required.

Name of person providing the Study Group status

The group chair (Acad.) Susan McKenna-Lawlor

Status Report Date

10 September 2016