

Abstracts (approximately 500 words) of presentations/papers to be given at the workshop shall be sent together with the registration form not later than **14 July 2017**. The authors will be notified of the selection outcome by 18 August 2017.

Instructions for presenters/authors and registrations forms can be downloaded at: <http://iaass.space-safety.org/workshops/>

The language of the workshop is English.

LOCATION

Météo-France, 42 Avenue Gaspard Coriolis
Toulouse (France)

REGISTRATION

Registration forms can be downloaded at:
<http://iaass.space-safety.org/workshops/>.

Duly filled-in registrations forms shall be sent to the workshop secretariat not later than 14 July, 2017. Registration acceptance by the organizers will be confirmed by an invitation to attend. The registration is free for participants to the 9th IAASS Conference (18-20 October, 2017). The registration fee for workshop participants not attending the IAASS conference is Euro 210, for non-IAASS members, Euro 150 for IAASS members, and Euro 90 for presenters/authors.

WORKSHOP ORGANIZATION AND CONTACTS

The workshop is organized by the IAASS Space Hazards Committee in co-operation with CNES

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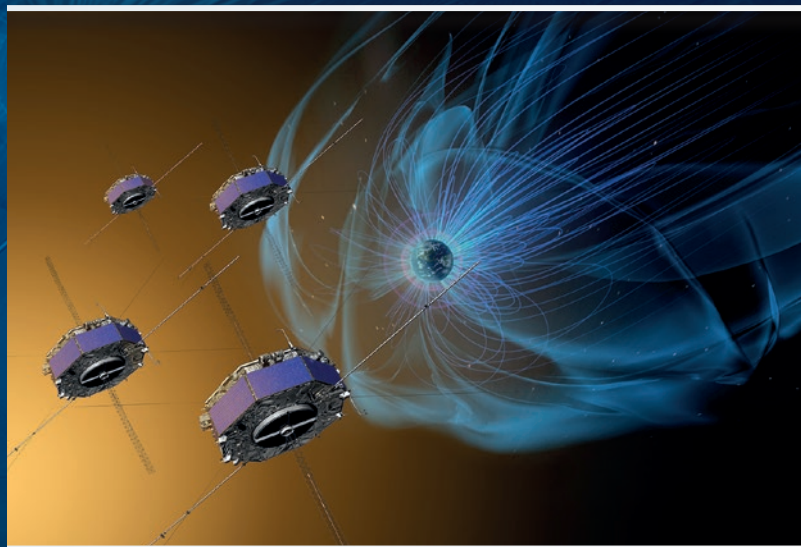
<http://iaass.space-safety.org/workshops/>



1ST INTERNATIONAL WORKSHOP ON SPACECRAFT ENVIRONMENTAL ANOMALIES AND FAILURES (SEAF)

**TOULOUSE (FRANCE)
16-17 OCTOBER 2017**

<http://iaass.space-safety.org/workshops/>



ANNOUNCEMENT

Invited Sponsors



INTRODUCTION

The U.S. National Space Policy of 2010 included the statement that the U.S. should *“improve, develop, and demonstrate, in cooperation with relevant departments and agencies and commercial and foreign entities, the ability to rapidly detect, warn, characterize, and attribute natural and man-made disturbances to space systems of U.S. interest.”* The concern for safe space operations was intertwined with security considerations, but it underlined the importance of better understanding the nature of on-orbit anomalies, of providing timely warning about threats from the environment, and of sharing lessons learned among space operators. Preventing on-orbit failures is not only about mission success but it helps mitigating the creation of new space debris.

Since 2012, an annual workshop on Spacecraft Anomalies and Failures (SCAF) has taken place in Chantilly, VA, U.S. with the objective to advance the understanding of how space environmental effects may be negatively affecting satellite operations. The workshops were attended by NASA, NOAA, other USG organizations, U.S. industry, and U.S. academic institutions.

The deliberations of past SCAF Workshops have highlighted that:

- (1) most space operators do not invest significant resources to investigate the root cause of operational failures. Sometimes anomalies are attributed to environment effects by default. The lack of anomaly diagnostics on-board makes difficult to confirm hypothesis.
- (2) space operators are concerned about sharing detailed data on-orbit anomaly and failure due to concerns of proprietary technology, user/stockholder confidence, national security, and space insurance implications. However there is interest to get timely environmental forecasts, standardize failure investigation techniques, improve diagnostics, and exchange lessons learned.

OBJECTIVES

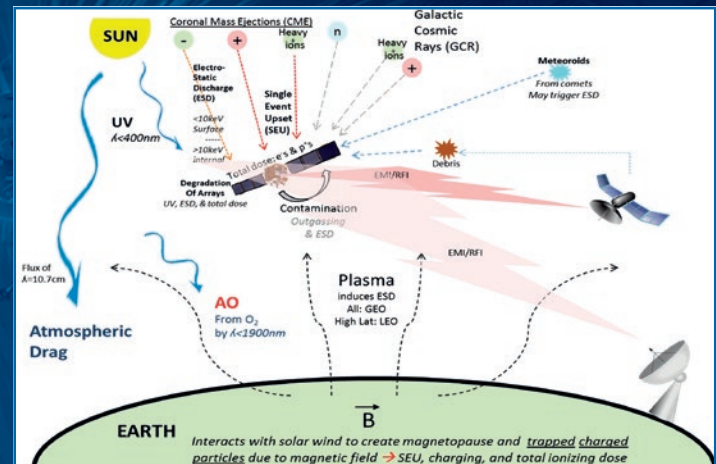
The organization of the 1st International Workshop on Spacecraft Environmental Anomalies and Failures is an initiative of the Space Hazards Committee of the IAASS, which has the objective to enlarge the previous SCAF participation internationally, and to further involve commercial space operators and newcomers. The growing globalization of space provides both opportunities and challenges. As space gets more competitive and congested with a wide variety of operators it is critical to promote a common awareness of the influence of space environmental effects on space systems and preventive actions.

The workshop will explore possible strategies to respond to the challenge to rapidly identify, characterize, attribute, and resolve environmental disturbances to space systems. For such purpose, the workshop will also examine approaches and lessons learned from other domains.

The workshop will also seek to reinforce relationships between communities that do not regularly interact (i.e., space environment experts, spacecraft designers and satellite operators).

WORKSHOP TOPICS

- Establish baseline of space environmental effects (outgassing, atomic oxygen, UV radiation, particulate or ionizing radiation, plasma, space debris) that could cause anomalies and failures (manmade vs natural, periodic vs random).
- Share lessons learned and failure investigation case studies for better understanding of how operational satellites were affected in the past.
- Develop best practices on how support future operational assessments of anomaly and failure attribution.
- Develop designs and operational imperatives for efficient and effective failure detection and self-diagnostics systems (installing accelerometers, flash detectors, instrumented witnesses plates, and/or cameras, etc.).
- Discuss the problem of mapping between a particular engineering model and mission effects.



WHO SHOULD ATTEND

Spacecraft designers, space environmental effects experts, space operators, academic researchers, plus insurers, procurement agencies, and commercial investors in space systems. Workshop attendance is by invitation only.

PRESENTATIONS & PAPERS SUBMISSION

Powerpoint can be used to support oral presentations at the workshop. Providing in addition a full paper is optional. Presentations and papers should be delivered the day of the workshop and will be distributed to all workshop participants as part of the workshop proceedings. Selected papers (on the basis of originality and quality), will be peer reviewed and included in a monographic issue of the Journal of Space Safety Engineering (JSSE) dedicated to the results of the workshop, that will be published in December 2017 and distributed via Elsevier ScienceDirect, the world's leading source for scientific, technical, and medical research.