

23rd SYMPOSIUM ON SPACE POLICY, REGULATIONS AND ECONOMICS (E3)
Protecting the Environment of celestial Bodies (4)

Author: Mr. Mark Williamson
Space Technology Consultant, United Kingdom, mark@williamsonspace.co.uk

PROTECTING THE SPACE ENVIRONMENT: A POLICY FRAMEWORK

Abstract

IAA Study Group 5.6 is due to publish its ‘Cosmic Study’ on Protecting the Environment of Celestial Bodies (PECB) in 2010. This marks an important step towards international recognition of the issues surrounding protection of the space environment, and the formation of an organisation tasked with formulating the necessary guidelines and policies. It is now time to consider the next step.

This paper seeks to inform the process by which this future organisation will operate by laying out a framework of issues that will need to be addressed. It does this by reference to earlier published works, including the author’s 2006 AIAA book “Space: The Fragile Frontier”, a comprehensive text on the subject of space environment protection.

The construction of the framework begins with the identification of aspects of the space environment considered at risk in any future unregulated scheme of solar system exploration and development. This includes the orbital environments as well as the surfaces, subsurfaces and, where relevant, atmospheres of the celestial bodies. Other considerations include the potential pollution of the radio spectrum by interference and unregulated use.

The framework incorporates the present ‘planetary protection’ regime, which covers chemical and biological issues, while extending consideration to the protection of morphological features and areas (the concept of the international planetary park), and the protection of cultural heritage sites (the historic landing sites of the early Space Age and the artefacts therein).

Many previous publications have considered the legal and ethical aspects of space environment protection, but this paper takes a pragmatic, scientific approach by considering the ramifications of a laissez-faire attitude towards the subject. The concept of the framework is intended to focus the formulation of guidelines and, later, policies on the key issues: not the ‘nice to have’ nuances of the ethical approach, but the crucial ‘must haves’ of a technical analysis.

If we don’t assure these aspects of environmental protection in the near term - and certainly before the solar system is opened up to commercial enterprise - it is clear that much of what we now take for granted in terms of orbital resources and pristine surface environments will be destroyed or significantly degraded. A carefully structured policy for space environment protection will protect not only the environments themselves, but also our future ability to study and develop those environments in a sustainable way.