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PLANETARY PROTECTION AND COMMERCIAL ACTIVITIES IN SPACE

Abstract

History has demonstrated that as commercial activities increase in pristine environments, those environments become progressively more contaminated and disturbed. Concerns that activities in space could contaminate other planetary bodies and interfere with the search for life were raised even before the beginning of the Space Age. Article IX of the 1967 Outer Space Treaty (OST) addresses this issue, and the Panel on Planetary Protection of the Committee on Space Research (COSPAR) maintains an international consensus policy on biological planetary protection, to which all OST signatories should adhere. Major space agencies, including both NASA and ESA, specify that they will participate in planetary missions only if the COSPAR planetary protection policy is followed.

For the first time, commercial entities are planning activities in space that have implications for planetary protection. The Planetary Society, a US-based organization, plans to provide living organisms in their LIFE experiment, to fly to Mars and back on the Russian mission Phobos-Grunt. The Google Lunar X-Prize will be awarded to a competitor that successfully performs activities on or around the Earth's Moon, including a bonus prize for imaging sites of previous human activity. To the extent that governmental space agencies are involved in these activities, COSPAR planetary protection policy can be invoked; however, beyond peer pressure and the Outer Space Treaty itself, there is little current capability for ensuring that the COSPAR policy on biological planetary protection is followed by exclusively commercial entities.

Beyond biological planetary protection, the bonus prize announced by the X-Prize Foundation raises additional questions regarding preservation of historic sites. More broadly, the increasing interest in commercial access to other objects in the solar system raises concerns about issues in environmental stewardship. A June 2010 workshop, sponsored by COSPAR, ESA, and NASA, recommended that a policy be developed on protection of planetary environments and historic sites that would be maintained by the new COSPAR Panel on Exploration, in parallel with the current policy on biological contamination that is maintained by the COSPAR Panel on Planetary Protection. The involvement of interested commercial entities in the development and acceptance of such an environmental/historical protection policy is very important, in no small part because self-regulation at a publicly accepted level is a useful means to avoid the imposition of more formal legal mechanisms for enforcement.