

COSPAR and the International Framework for Planetary Protection

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Rationale for planetary protection

Planetary protection is critical for enabling scientists to study the natural environments of celestial bodies without contaminating them and which could compromise future investigations. Most importantly, it also helps to preserve the terrestrial biosphere from possible contamination by alien material

The COSPAR's Planetary Protection Policy is constructed to ensure that the conduct of scientific investigations of possible extraterrestrial life forms, precursors, and remnants must not be jeopardized; and that the Earth must be protected from the potential hazard posed by extraterrestrial matter carried by a spacecraft returning from an interplanetary mission



International legal framework

The COSPAR Planetary Protection Policy, through a set of categories with guidelines and requirements, guides compliance with Article IX of the Outer Space Treaty of 1967. States are responsible for their national space activities, whether governmental or non-governmental, in accordance with Article VI of the Outer Space Treaty

Article IX Outer Space Treaty: *“...States Parties to the Treaty shall pursue studies of outer space, including the Moon and other celestial bodies, and conduct exploration of them so as to avoid their harmful contamination and also adverse changes in the environment of the Earth resulting from the introduction of extraterrestrial matter and, where necessary, shall adopt appropriate measures for this purpose....”*

Article VI Outer Space Treaty: *“States Parties to the Treaty shall bear international responsibility for national activities in outer space, including the Moon and other celestial bodies, whether such activities are carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty. The activities of non-governmental entities in outer space, including the Moon and other celestial bodies, shall require authorization and continuing supervision by the appropriate State Party to the Treaty...”*



Planetary Protection Policy categories

Category I: Flyby, Orbiter, Lander: Undifferentiated, metamorphosed asteroids; others TBD

Category II: Flyby, Orbiter, Lander: Venus; Moon (with organic inventory); Comets; Carbonaceous Chondrite Asteroids; Jupiter; Saturn; Uranus; Neptune; Ganymede[†]; Titan[†]; Triton[†]; Pluto/Charon[†]; Ceres; Kuiper-Belt Objects > 1/2 the size of Pluto[†]; Kuiper-Belt Objects < 1/2 the size of Pluto; others TBD

Category III: Flyby, Orbiters: Mars; Europa; Enceladus; others TBD

Category IV: Lander Missions: Mars; Europa; Enceladus; others TBD

Category V: Any Earth-return mission. “Restricted Earth return”: Mars; Europa; Enceladus; others TBD. “Unrestricted Earth return”: Venus, Moon; others TBD

[†]Additional analysis is required



COSPAR

Established in 1958 as a non-governmental organization. Permanent observer status with COPUOS since 1962

Eight Scientific Commissions covering all fields of space research (Earth, planets, ionosphere, magnetosphere and heliosphere, astrophysics, life and material sciences, fundamental physics). Ten technical Panels on a variety of topics from planetary exploration and planetary protection to space weather, scientific ballooning, satellite dynamics, radiation belts, and capacity building (with a Fellowship sub-Panel)

COSPAR Planetary Protection Panel (PPP): Chair and two Vice-Chairs. Eight members appointed by space agencies and eight scientists representing COSPAR Scientific Commissions. PPP meetings comprise open session and closed session. Recommendations submitted through resolution to COSPAR Bureau and Council



COSPAR-COPUOS

Contamination concerns raised, inter alia, in the report of the Ad Hoc Committee on the Peaceful Uses of Outer Space in 1959

In the 1964 COPUOS report, the COSPAR planetary quarantine requirements recommended by the Consultative Group on Potentially Harmful Effects of Space Experiments were given important consideration by the re-print in that report of the full COSPAR resolution of May 1964

COPUOS in its 2017 report noted the long-standing role of COSPAR in maintaining the Planetary Protection Policy as a reference standard for spacefaring nations and in guiding compliance with Article IX of the Outer Space Treaty



Conclusions

Acknowledge the international role of the COSPAR Panel on Planetary Protection (PPP) in developing and maintaining the planetary protection Policy guidelines and requirements by actively working to ensure that its policies are based upon the best and most recent science, in order to provide guidance and support to all nations that are pursuing planetary exploration

States pursuing planetary missions, through governmental and non-governmental entities, should work actively with the COSPAR Planetary Protection Panel in developing and maintaining the highest scientific standard in planetary protection, taking into account the specific needs of planetary missions

THANK YOU



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