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Safety Zones on Celestial Bodies and in Outer Space (5)

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THE APPLE OF DISCORD OR THE FRUIT OF SALVATION? A DIALOGUE ON THE PRACTICAL AND LEGAL ASPECTS OF SAFETY ZONES ON THE LUNAR SOUTH POLE

Abstract

Call it like you want but humanity will soon witness an incredible flurry of activities on the Moon. From governmental plans like the ARTEMIS Program or the International Lunar Research Station (ILRS) to several commercial missions laying the foundations for the development of a lunar economy, more and more actors are targeting our celestial neighbour for future human and robotic exploration. Buzz Aldrin once defined the Moon as a "magnificent desolation". While this was certainly the case until now, we can be relatively sure that the next individuals to walk on the lunar surface will witness a rather different scenario. Differently from the past, these new missions will not be finished with planting a flag as they seek to establish an unprecedented network of lunar assets and infrastructures.

Due to the physics of the lunar environment, the level of interdependence among actors operating on its surface will grow exponentially with the progressive increase of their number. Most likely, none of them will have the luxury of operating in the "magnificent desolation" witnessed by the Apollo 11 astronauts. In fact, it is becoming more and more apparent that lunar actors will face an unprecedented risk of potentially harmful interference. Even nominal operations such as landing and taking off hold a disruptive potential that might seriously damage or disable assets located in a wide range within the lunar surface. In recognition of this issue, the international community has recently started to debate the concrete usefulness and potential legality of area-based measures to prevent and manage the risk of potentially harmful interference among lunar operations, commonly referred to as "safety zones".

The proposed paper will discuss the practical and legal aspects of safety zones through a dynamic dialogue between a lunar habitat operator and a space lawyer. After a snapshot of the current situation for lunar activities, the paper will discuss the risks of potentially harmful interference that might be faced by a lunar habitat operator, and consequently assess the concrete usefulness of safety zones in neutralising them. Building upon these operational considerations, section 2 will discuss fundamental legal aspects of safety zones including their boundary conditions, procedural aspects and substantive legal effects. Merging practical and legal considerations, the paper will draw its preliminary conclusions and formulate some future perspectives on the potential of safety zones as a policy tool to meet the safety needs of lunar operators in accordance with international law.