

Managing A Space Of Waste

A crossroad between the freedom of exploration and use and the law of the sea

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PUBLIC NOTE

Article I of the Outer Space Treaty (OST) encompasses the freedom of exploration and use of outer space. However, if the cycle of the Kessler Syndrome continues, at a certain point travelling to outer space may not be possible anymore. To stop this from happening, management of space debris caused by non-functional satellites is necessary. Even so, treaty law does not offer an obligation for States to manage their space debris. This leaves the question: where does the freedom of exploration and use end, and where does the need to protect the environment begin? By looking at the good faith-principle in combination with the law of the sea, I aim to discover what obligations States may have under the OST with regards to space debris.

Lessons for Practice

- Management of space debris in the geostationary orbit is important to prevent the Kessler Syndrome. By making an analogy with the law of the sea and more specifically the good-faith principle, states may be obliged to manage their space debris.
- Both a political and societal debate are needed to reach a consensus as for how this obligation should be constructed.

Keywords: space debris, law of the sea, freedom of exploration and use, good-faith

Introduction

In a timespan of a little more than ten years, the number of States capable of making, operating, and using satellites has doubled (Venkata Rao, et al., 2017). What makes the geostationary orbit special is that satellites in this orbit appear to be stationary in the sky. Because of this, there is no need for moveable antennas on earth. It therefore forms a valuable spot for communication devices and monitoring the weather. Since the geostationary orbit is a narrowly defined region, a collision between non-functional satellites has potentially severe consequences (Pelton 2015).

So, can we oblige States to manage their space debris? Through making a comparison with the law of the sea, I aim to discover a threshold of where the freedom of exploration and use of outer space ends and the need to protect the environment begins.

The Outer space Treaty as the constitution

The Outer Space Treaty (OST) is regarded as the constitution of space law, as it forms the basis for all other space laws (Popova & Schaus, 2018). Article I of the OST enshrines the freedom of exploration and use of outer space. This freedom entails that space activities should be carried out in such a way that it benefits all States (Gorove, 1971). But if States abandon their satellites in outer space, this creates space debris. If space debris collides, this leads to the creation of more debris elements. In turn, these elements may damage more than one other satellite, hence leading to an exponential increase of space debris. If this cycle continues, at some point travelling to outer space may not be possible anymore. This is called the Kessler Syndrome (Pelton, 2013).

International treaty law offers few leads as for how to manage space debris. Policy options for national legislators are constrained to the available interpretations of the OST. However, the way the OST must be interpreted is not clear. It is thus important to determine how the OST must be interpreted in the context of space debris.

Interpreting the OST through good faith

One of the ways to interpret the OST is through the *good faith-principle*. States are bound to act out their freedoms granted by a treaty in “good faith” (Nordquist, 1982). This includes the OST. Though, whilst this concept is not incorporated within the OST, it has been explicitly incorporated in the United Nations Law of the Sea Convention (LOSC), under article 300.¹ The International Tribunal of Law of the Sea (ITLOS) States that to reach the threshold of article 300, the conduct of a State must be “*so egregious, and risk consequences of such gravity [...]*” (*Southern Bluefin Tuna Case*, 1999).

Apart from the obligation to refrain from certain activities, according to article 194 LOSC, States also have a proactive duty to “protect and preserve the marine environment”.

If we make an analogy between space law and law of the sea, we see that managing pollution is part of the obligation to protect the environment. This obligation is needed since more States and private entities are interested and involved in exploring and using outer space (Pekkanen, 2019). This makes reaching a consensus as for how to manage space debris even harder.

The law of the sea as a stepping stone

I believe that establishing an obligation to manage space debris through an analogy with the law of the sea is both logical and necessary. The debate surrounding maritime pollution has been going on for far longer than that of space debris. We now have the opportunity reapply the lessons we have learned from these debates without making the same mistakes. Kessler warned us more than 70 years ago that once enough damage has

¹ Article 300 UCLOS: “States Parties shall fulfil in good faith the obligations assumed under this Convention and shall exercise the rights, jurisdiction and freedoms recognized in this Convention in a manner which would not constitute an abuse of right.”

been done, it cannot be reversed. If satellites cannot exist within the geostationary orbit, this would mean no weather predictions, no access to navigation functions and most importantly of all: limited access to outer space. Therefore, I believe that we need both a political and societal debate as for how to manage space debris before we create a *space of waste*.

Conclusion

In conclusion, management of space debris in the geostationary orbit is important to prevent the Kessler Syndrome. However, there is no treaty law that obliges States to manage their space debris. By making an analogy with the law of the sea, we might create this obligation. Because of the good-faith principle, States must have regard for the freedom of exploration and use of other States. Establishing an obligation to manage space debris through an analogy with the law of the sea is not only logical, but also necessary. Once too much damage has been done, it cannot be reversed. Both a political and societal debate are needed to avoid a space of waste.

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Jurisdiction

Southern Bluefin Tuna Cases (New Zealand v. Japan; Australia v. Japan), ITLOS, award on jurisdiction and admissibility, paragraph 64, 4 August 2000.



A note from the author

My name is Anasuya Malgie. I am a master student studying International Laws at Maastricht University. This paper is written as part of the Space of Waste Project. This project is set up in collaboration with Utrecht University as part of my bachelors program. It consists of three parts: my bachelor thesis, the Space of Waste podcast and this paper. Through discussions with a friend, I became interested in space debris. My goal for this project is to spread awareness for space debris through different methods. I believe that this is needed since space debris is seen as a problem for the future, where it is in fact not. By comparing different fields of law, I aim to look at what went wrong in the past, and what we can do right in the future.