

Natural Contaminants in the International Space Treaties

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Abstract

Natural contaminant in the outspace is the situation where men can be exposed to the natural effect of the activities of terrestrial bodies either as a result of space exploration activities or the direct effect of these activities on the earth surface. Meteorites and cosmic dust, radiations, solar storms are some of the sources of natural contaminant in the outer space. Efforts must be made to curtail their effects by the stipulation and adherence of international laws..

Key Words: International Law, International Space Law, International Treaties

Introduction

Scientist started exploration of space in the 60s with Russia and the United states taking the lead. Space exploration has made a lot of impact to technological development world wide thereby improving men standard of living. Specifically, space exploration has helped to achieve the following: High-resolution imagery, advancement in telecommunications, recording of weather information, broadcast of information directly to telephones and computers among other things. (Sandalimas,2010). Natural contaminants are those contaminants that are components of the environment itself without human intervention. "contamination" has many definition, both in status and case law depending upon the context and circumstances being addressed. In this context, it means adverse or harmful changes (Robinson,2010). In 1966, the United Nations approved 5 treaties and 5 legal principle on the exploration of the outer space such that such use does not cause havoc for men, the treaties also prevent the monopolization of the outer space by some countries but to make it open for the exploration of all mankind¹. To this effect, the International Court of Justice, in its 1966 Advisory opinion on the legality of the threat or use of nuclear weapons, implicitly recognized the duty to control, take preventive action and use to use due diligence (Gabrynowicz, 2005). This article is aimed at addressing how natural contaminant can be managed.

The effects of natural contaminants are very serious, so attention is given to human beings and spacecraft while in orbit or after exceeding the atmosphere, this must be done as reckoned on the ground. It should mimic the conditions inside the space capsule as those on the surface of the earth. Such care should have legal procedures in international law, as is the case when you take the necessary actions on natural disasters on the ground. The provision of international aid to the affected countries, has to be Protection of the natural sources of danger in space, and to identify such risks and necessary legal action that can be taken in accordance with the principles and rules of law in international law inclusive of the Outer Space Treaty, this is an issue of a great deal of interest in satellite navigation. The sources in the following two requirements

Meteorites and cosmic dust

First, meteors and meteorites: We all know that when a meteor pass this universe and carry with them the potential lethal, and meteorites which are the debris of the solar system solids of all sizes, consisting of silicon, or iron, nickel, or both, at the loss of these blocks on the ground by gravity after going through the atmosphere, they burn because of the speed and friction, and they appear in the form of shiny glowing lines, called flare (Bevan,1969). These convoys of rocks and wrecks are meteoritic source of danger to equipment and spacecraft, so it must be contained (Bevan,1969). The top designers are taking into consideration the seriousness of the meteorites in the design of the spacecraft not only for being the only form of risk (Gifford)

Due to the risks posed by these objects, and other cosmic phenomena on satellite navigation, it was committed the fifth article in its second paragraph of the Outer Space Treaty of 1967, States Parties space objects when exposed to such risks, during the launch or when they take their orbit in outer space, to provide all possible assistance to the astronauts belonging to other countries, by providing "a must for Astronauts belonging to any State Party to provide all possible assistance, when engaging in any activity in outer space or other celestial bodies to astronauts belonging to other States Parties ".It also committed the parties to the media for the immediate state of absolute space object or the Secretary the year when the state discovered the phenomenon in outer space that would endanger the lives of astronauts or their health at risk (Ehindayo,1999) Thus, States are

¹ United Nations General Assembly Resolutions and Treaties Pertaining to the Peaceful Uses to Outer Space.

obliged discovered when a large asteroid or a barrage of meteorites or comets so that it will not hinder the course of the spacecraft and will be subjected to the vehicle or on the board of the risk, it's bound to report promptly to the States Parties or the Secretary-General .

The procedures for media messaging, has stipulated in Article I of the Treaty of Rescue 1968 also, has committed contracting party when they know the exposure astronaut distress, such as the collision of meteors and result in a catastrophe, to report immediately to the authority, and if not knowing their identity should conduct media search on everyone, and all the media available to him, as he is obliged to inform the Secretary-General. If evacuated, countries should take these obligations, and refrained from reporting on media for the immediate state of activity or her vehicle exhibition space for such dangers in order to promote international responsibility.

Second: cosmic dust is an atomic particles very close to dirt called (meteors minute) and are found everywhere from the solar system, including earth, some are in the form of larger particles of dirt known on earth. Cosmic dust does not constitute a danger to satellite navigation, because the cover of the spacecraft prevents penetration of cosmic before colliding with it. But it is different in case of a decision to remain long-term in space, as in the case of manned space station because the cosmic dust accumulates there for a couple of years, which requires the maintenance of the surfaces of the spacecraft and replace them because they are susceptible to oxidation and damage (Ehindayo,1999).

This has made the environment now to become the basis for the preparation of particle designed in space manned and unmanned (Ehindayo,1999). The second requirement:

Radiation Environment

Human exposure constantly in his environment are familiar every day with various types of radiation within acceptable limits to avoid it, we must act, and protect the atmosphere of the danger of direct exposure to it, either in the field of outer space or within the earth, there are types of radiation human are exposed when in the spacecraft without the shield. And we will talk on the environment of radioactive entered by human in outer space, which includes the following:

- Solar radiation: Include thermal radiation and optical radiation of the sun, which is one of the first problems that scientists have warned about, also include UV and X-rays and infrared rays. All of these radiations human are exposed to directly, and cause disease in the skin and eyes, and can cause death if man suffered from them for a long time. The scientists stressed the need to isolate the cabin space for this radiation, and can be prevented with mediated wall spacecraft and blackout windows and vents control (Gifford).
- Second. Cosmic rays: Is a huge torrent of subatomic particles traveling at high speed and are constantly coming from all directions of space, originating from the sun and the galaxy, it's made up of hydrogen and helium nuclei, and nuclei of iron and uranium.

The danger lies in the biological effects of space on men, they are working to destroy the hair cells which lead to increased white hairs, and tumors occur in the skin and damage the nerve cells and reproductive and cause death if it exceeds the exposure limit, which can be avoided. In terms of artistic influences on the spacecraft, it involves great danger but it must be prevented, because the constituent materials for space vehicles lead to the production of secondary particles when they absorb the initial cosmic rays (Langton,1969).

Van Allen Belts

It consists of two belts, one internal height (2100) km and the second external up to altitudes between (20,000 to 5000) km, and the reason for the existence of these belts are the earth's magnetic field which acts on the hunt for electrons and protons from space, and classified these radiations within the sources which makes them very serious on the astronauts (Patrick, 1994). It is necessary to protect the vehicle enough to ward off the danger her. This is because the protons radioactive fall mainly in the direction perpendicular to the vehicle, causing devastating damage, so it must penetrate these belts at high speed it does not exceed the minutes¹.

Solar storms

Sun is extremely dangerous to humans and it's in the outer space, they are throwing clouds of particles originating from eruptions. Solar violent known (Flares) traveling at 1,000 miles per second, and the solar flares source of unrest geomagnetic cut wireless communication which is one of the most dangerous are being exposed to aviation space. And can be prevented at the same time because the prediction of solar storms appear at regular

¹ See the text of Article V, the third paragraph, the outer space Treaty of 1962

intervals¹. There are also magnetic storms that occur due to the influence of the magnetic field of the earth, Van Allen belts, which broadcasts the huge flood of electrons affect the disabling wireless communication devices, they also affect the movement of satellites and space instrumentation impenetrable at this area (Mohammed, 1970).

Due to the seriousness of the environmental radiological satellite navigation, and the need to prevent them, for the safety of the spacecraft, there must be a science called the science of cases cosmic, which works to predict storms and magnetic eruptions of solar, especially larger ones, and timing. Just like meteorology, forecasting on the conditions of solar disturbances and then acknowledge trips or postponed or canceled, and the allocation of satellites to monitor the sun and emotions such as Moon (OSO). This can be achieved through the efforts of international theoretical and practical cooperation with States with major space capabilities, to lay the foundations correct and acceptable in the framework of international cooperation, in accordance with the provisions of Article 13 of the Charter of the United Nations, resulting in Special regulation of these issues and the formation of a new international (special mechanism, an international organization Specialist) to monitor the solar system.

Conclusion

Meteorites and monitoring of the environment, can be announced, Any natural phenomenon or cosmic could constitute a source of danger to the satellite navigation and warning in the period of solar eruptions, especially if we know that this "regular eruptions appear to be all months or every four years, and there are huge explosions appearing every one ten-year-old"². Application to the World Meteorological Organization (WMO), has ensured the General Assembly to express its resolution No. 1721 of 21 December 1961. It's recommendation to all States, specialized agencies, is to carry out studies and research to strengthen international cooperation that text in the first principle that the Assembly recommends that all member states and the World Meteorological Organization and other competent agency that takes place in the light of developments related to the field outside."A quick study of the comprehensive measures needed, as follows: a. sophistication technology and science of the atmosphere to increase the basic knowledge of the natural forces affecting climate"³.

Based on this, a new mechanism for the Space Situational to direct recent developments should be constituted. Increased knowledge about the natural forces affecting the basic outer space, to protect the space objects from dangerous cosmic phenomena can be natural and of the International Academy of Astronautics (IAA) to lead an influential role in it. And it is laying the foundations and the legal rules that govern the information contained. And their uses and how to handle them and make them reliable, resulting in taking responsibility as to whether the resulting damage to the spacecraft or astronauts or space activities of other countries. The Outer Space Treaty, has committed Article V of the Treaty, States Parties shall inform the Secretary-General immediately or other states parties to the Treaty, when the discovery of any phenomenon in outer space, in the course of the existence of the spacecraft in orbit, ie, when the direct space activity to other countries. States parties also committed to provide all possible assistance in the event of a disaster for spacecraft or if struck by the plight in while in outer space (Mohammed, 1961). This applies to natural phenomena, states parties are obliged to media Messaging, when they predict or detect hazards which may result from any type of radioactive environment, can be opposed to satellite navigation or threaten space activity for any of the State's Parties.

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¹ See the text of Article V, the third paragraph, the outer space Treaty of 1962

² The Position Paper of the International Academy of Astronauts (IAA), Index A/AC.105/593

³ The Position Paper of the International Academy of Astronauts. Document no A/AC 105/593 at 1994, pp23

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