



Viewpoint

The Space Resource Exploration and Utilization Act: A move forward or a step back? ☆



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ABSTRACT

On May 21, 2015, the US House of Representatives passed a revised version of the ASTEROIDS Act, now labeled the Space Resource Exploration and Utilization Act. If endorsed also by the US Senate the Act may be formally enacted into law by the President of the United States. In the light of this important development it seems appropriate to analyze the content and the legal and political implications of the Space Resource Exploration and Utilization Act.

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1. Introduction

In a previous viewpoint [1] this author analyzed the legal and political implications of a bill, shortly referred to as the ASTEROIDS Act, submitted to the US House of Representatives on June 10, 2014 [2]. The article questioned the consistency of certain sections of the Act with international space law, particularly of a provision recognizing US commercial asteroid resource utilization entities with property rights on the resources that they have obtained [3].

Since the publication of said viewpoint important events have occurred, notably the adoption of a revised version of the ASTEROIDS Act, now labeled the Space Resource Exploration and Utilization Act [4], by the House of Representatives [5]. This event has been the outcome of a controversial legislative process in which, after the first draft of the Act failed to obtain support in the House of Representatives' Subcommittee on Space of the Committee on Science, Space, and Technology [6] (mostly because legal and scientific testimonies questioned its legality and need) [7], a revised version of the Act was presented on March 15, 2015, in a rather sudden and unexpected fashion [8]. Interestingly, this time the Republican-led Committee did not organize dedicated hearings or call experts to evaluate the amended bill and, instead, proceeded to

approve the Space Resource Exploration and Utilization Act on May 13th despite strong opposition voiced by the Democrats [9]. A week later, precisely on May 21st, the Act was formally endorsed by the Full House. By the time of this writing the Act has been submitted to the US Senate [10] and, in case of approval, it may be formally signed into law by the President of the United States [11].

The Space Resource Exploration and Utilization Act makes notable changes to the text of its predecessor. However, not only it does not eliminate the most debatable aspects of its earlier version but it arguably adds more troublesome elements as far as its legality under international space law is concerned.

In the light of these developments it seems appropriate to analyze the content of the Act, discuss its legitimacy within the international legal framework regulating space activities and envision legal and political consequences related to its possible enactment into law.

2. Why the Space Resource Exploration and Utilization Act?

The Act is intended to promote the private exploration and utilization of space natural resources and to remove governmental barriers to the development of an economically profitable and stable space resources industry.

In recent years a growing interest by the US private sector in the possibility to mine and utilize extraterrestrial resources has emerged. Two companies, Deep Space Industries and Planetary Resources, have announced ambitious plans, including the mining of asteroids by 2020–25 [12]. Often the argument is made that in

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the absence of a dedicated legal framework regulating the exploitation of space natural resources and clarity over the possibility to acquire property rights over them, private entities would not invest in this risky ventures [13]. From this perspective the Act could be seen as an attempt to fill this gap. Furthermore, it could be argued that the adoption of the Act is in line with the space law-making process in the United States, where laws have been promulgated for specific space-related applications as their technologies matured and were available for commercialization [14].

The above arguments could be countered by raising the following points: first, the profitability of the commercial utilization of asteroid resources is debatable. While asteroids allegedly contain significant quantities of natural resources, additional studies and research on the amount, distribution and quality of these resources are needed in order to purposely assert that their use can generate substantive profit [15]. Second, the technology to mine and utilize natural resources in space is not ready yet. It might take 20–30 years before asteroid mining becomes a reality [16]; therefore, it seems difficult to justify the need to rush the passing of a controversial law regulating it. Finally, the adoption of the Act appears to be guided more by political reasons than by legal and diplomatic assessments. As pointed out during the Subcommittee session held on May 13, 2015 [17], one of the co-sponsor of the Act represents the state (i.e. the State of Washington) where one of the two companies interested in asteroids mining, namely Planetary Resources, is located. This can arguably be seen as one of the reasons behind the urgency to submit and adopt the Act.

3. The Space Resource Exploration and Utilization Act

The Space Resource Utilization and Exploration Act maintains the core elements of its predecessor, in particular it confirms that entities are conferred property rights over the asteroid resources that they have obtained. Accordingly, entities are entitled to transfer, sell, and use for commercial, i.e. profitable, purposes those resources as well as to undertake asteroids activities free from harmful interference. The Act is applicable to United States Commercial Space Resource Utilization Entities, an expression that refers not only to a person organized under US law, but also to any foreign entity that has voluntarily submitted to the subject matter and personal jurisdiction of the courts of the United States. These entities shall undertake their activities without causing harmful interference in outer space.

In terms of the differences between the original and current version of the Act, at first sight the latter seems to pay more attention to its place within international space law [18]. In this regard, there are numerous references to the need to ensure that activities under the Act are consistent with the international obligations of the United States; additionally, within 180 days from the enactment into law of the Act, the President of the United States shall submit to the Congress a Report containing recommendations for any authorities necessary to meet the international obligations of the United States with respect to the exploration and utilization of space resources.

A closer analysis, however, reveals that this initial impression is not reflected in the provisions of the Act. Indeed, references to 'consistency with international obligations' are vaguely phrased and such a consistency is to be evaluated from a national, US, perspective, which may not be shared, or agreed to, by other States Parties to the UN space treaties [19]. Furthermore, the Report may ultimately declare the Act to be consistent with international space law, with the consequence that no actions to ameliorate its text would be taken.

A novelty introduced by the Space Resource Exploration and Utilization Act is a list of definitions of key terminology that it uses.

Notable is the distinction between "space resources" and "asteroid resources", with the former defined as: "a natural resource of any kind found in situ in outer space", and the latter as: "a space resource found on or within an asteroid."

This language is somewhat confusing as one is left to wonder what "space natural resources in situ", other than "asteroid resources", are. A logical way to read this would be to assume that the drafters of the Act intended "space resources" to be natural resources located on or within planets or natural satellites, hence not on or in asteroids. However, this reading would have the important consequence that "*space natural resources*" (emphasis added) could not be appropriated, as the Act specifically, and only, provides that "*asteroid resources*" (emphasis added) can become the property of the entity that has obtained them. In addition, the use of the expression "in situ" raises significant legal questions which will be addressed in other sections of this viewpoint.

An important improvement made by the present version of the Act is the deletion of a clause according to which conflicting claims concerning the right to undertake asteroid resources utilization activities had to be settled on a first-come, first-served basis. The idea of a first-come, first-served approach is not unheard of in space law, as for example it regulates access to and utilization of the geostationary orbit. The problem with the ASTEROIDS Act's clause was that, on one side, it only took into consideration claims made by US entities, while disregarding potentially conflicting claims made by non-US actors and, on the other side, it did not consider that when the first-come, first-served approach had been chosen to manage the use of resources located in an international areas this was the result of a collective decision rather than a choice made by a State acting individually [20].

4. The legal status of celestial bodies and the resources contained therein

In order to assess the legality of the Space Resource Exploration and Utilization Act one shall first discuss how international space law regulates celestial bodies, including asteroids, and the resources that they contain.

International space law clearly defines the status of celestial bodies while it leaves that of their resources rather uncertain. Celestial bodies are not subject to appropriation; pursuant to Article II [21] of the 1967 Outer Space Treaty States are forbidden from extending their territorial sovereignty over outer space or any parts of it [22]. Despite arguments claiming otherwise this prohibition also extends to private entities [23].

Instead, the legal status of celestial bodies' resources remains doubtful, in particular it is uncertain whether they can be appropriated once removed from their initial location and used for purposes other than scientific [24]. By analyzing the drafting history and the terms of the space treaties there is room to argue that the commercial use of extraterrestrial resources is (at least) not prohibited [25]. Importantly, when negotiating the 1979 Moon Agreement, several delegations argued that, pending the establishment of an international regime, no moratorium on the exploitation of lunar resources existed [26]. Furthermore, Article I (2) of the Outer Space Treaty gives States the right to explore and use outer space: the word 'use' can be interpreted to encompass both non-economic and economic use [27].

Arguably, when dealing with the utilization of resources located in international areas, two approaches are foreseeable: an international one; and a national one. The former consists of States gathering together to define commonly agreed rules regulating the exploration and use (both for scientific and non-scientific reasons) of those resources. History shows that States have been rather successful in doing so, as the international community has

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