PRIVATE OWNERSHIP IN OUTER SPACE
– STILL WAITING?¹

Abstract: Having in mind that property rights, such as ownership right and right of use, are not regulated in detail by Space law legislation, one has to raise a question – can we regulate property rights outside Earth?

At the very beginning, I will express my personal stand on Space law in general, its development and place among other legal branches. I will try to state certain impressions, which I believe, should be addressed properly.

My paper shall revisit the basic principles of property law; what is an ownership, how does one acquire it or transfer it to another individual. One of the issues shall relate to a question can we simply copy-paste property laws applicable to Earth into the Space.

Other theoretical questions will be dealt in my paper, including but not limited to: if the humans cannot have properties in Space, can we claim the Earth? Why would different laws apply on Earth and in Space? Or maybe one should emphasize this difference between Earth law and Space law? In addition to this, I will present two theories regarding mentioned problem.

Further on, does one have to redefine the institutes of property law, including, inter alia, division into movables and immovables, having in mind the different conditions on Earth and in Space, such as gravity? With regard to breathable air being used in Space, can we charge the same, having in mind the respective costs?

Fast development in Space technology, e.g. space mining will ultimately bring this issue to the table. And it has already begun. Numerous articles and announcement by space capable countries and companies, are announcing plans to undergo these missions.

The race has begun; not an arms race, but the race to establish more defined legal framework outside the Earth. Also, the technology is here, but the question is raised: can we, in legal sense, keep up?

Key words: space, space law, Earth, private ownership, property rights, appropriation, legality.

¹ Parts of this article were presented at 66th International Astronautical Congress, Jerusalem, Israel.
I. Introduction

IMAGINATION LOST

“For once you have tasted flight you will walk the earth with your eyes turned skywards, for there you have been and there you will long to return.”

Mentioned quote, besides a personal favourite, represents one of the most famous air and space quotes. For me, it suggests an imagination and fascination of a man living over 500 years in a time much different than ours. Without elaborating Da Vinci’s planetary accomplishments in different scientific fields, one has to stop at the fact that he was a pioneer in an area which was unimaginable in his time – human flight.

One has to wonder: how was this man courageous enough to confront the dark ages of human sciences and what were his reasons for doing so: curiosity maybe? But the thing for which this man deserves our undivided attention is his imagination, imagination from which it all started and led to the incredible things which shaped the world in the centuries to come.

So, what happened to it?

It seems that we, as the 21st century humans, forgot the imagination as much as we could. We consider it is reserved only for sci-fi books and movies, wizards and fairies, all in all, for children.

In all our everyday technological hectic civilization, we have not only forgotten imagination, but also buried it as deep as we could.

The reason I am emphasizing this forgotten and unique human ability is because we need to realize, once again, that extraordinary things and progress arises from very same.

Although it may sound funny, but my personal stand is, that imagination, inter alia, represents one of the most vital parts of Space law development, i.e. legal imagination.

In addition to this, I believe that we still have not recognized the unique opportunity which we have, and that is creating a brand new world of legislation which will be applicable in outer space.

We, as the humans, have a possibility of reaching out in our full potential, both intellectually and imaginatively. And for me, it seems we are not using this enough.

And it seems that most of lawyers worldwide have become oblivious to this. It looks like they are afraid of it.

2 Quote by Leonardo da Vinci.
II. SPACE (AND ITS LAW) – AN UNWANTED FRONTIER?

Before we enter in any discussion relating to Space law, I would like to express my personal view of Space law in respect to other branches of law.

Although it is widely accepted that Space law is a branch of international law, and has a place among other legal branches, I unfortunately consider it a “black sheep” of law. Notwithstanding with lawyers who do not even recognize it, nor the space lawyers, it seems that space law has still not taken the solid place among other law branches. We all know it is there, but a lot of people do not know exactly what it does. I would conclude that it lacks more concrete provisions.

EARTH VS. SPACE

For the purposes of this article, I would like to differentiate Space law – law applicable outside the Earth, and the Earth law – which compasses all the legislation applicable on Earth.

One has to take into account that Earth law has been developing since the Roman times, i.e. over 2.000 years. Its numerous branches have been developed and improved for years and still are. Surely, it seems that Space law represents only one new branch of international law.

Well, could we really place Space law there?

Are we going back to the middle-ages and believing that the universe revolves around the Earth, or that there is nothing except Earth? We are talking here about creating a legal framework for outer space. Which, according to the scientists, is indefinite.

In which way can we compress Space law into Earth law? Even the term Space law is too wide to understand; can we use only one name to compass all the planets, asteroids, satellites? Even if we focus only on our Milky Way, it is still large enough.

Should we rather have Moon law, satellite law or at least Solar system law? Earth was easy, in comparison to outer space.

ALL HAIL TO THE MOON

This brings me to another interesting issue about Space law.

There is a well known phrase used worldwide when speaking about Space law, and could be found, inter alia, in Outer Space Treaty (hereinafter: “OST”). It states: “outer space, including the Moon and other celestial bodies”.

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In order to properly address this syntagme, we need to understand why is the Moon only addressed. Of course, it is the only Earth satellite, but it does not make other planets of our solar system not worthy of space law. Placing all these planets, asteroids, meteors etc. simply as celestial bodies looks more like the Moon law, than Space law.

The reason I am elaborating this sentence is because it seems to add more to the fact that space law is attributable to Earth. One more observation which adds up to the fact, that one should declare Space law a self standing branch of law.

Reasonably enough, the time period during which OST and other Space law conventions were issued was a time after the Second World War, a time soon followed by the Cold War. It was a time of mutual scare, a time when world was torn between two super powers: two super powers with nuclear weapons. It is without question that all these conventions were under enormous influence of the political concerns at that time, with only one main purpose: not to allow anyone to use outer space for its own purposes.

But, the fact that more than 50 years have passed since this time, urges us to revisit the basic foundations of Space law.

III. To Own or Not to Own?

The question relating to establishment of property rights system might seem as a complicated idea. It has been debated since the 1950s, but still we have not reached any concrete solution. So, let us try a little bit different approach, a theoretical and back to the basics one.

Allow me to introduce two theories regarding property rights outside the Earth:

1. Planetary theory, and
2. Universal theory.

**PLANETARY THEORY**

This theory is closer to current legal status than the other one. According to this theory, each celestial body, including Outer Space, would have its own legal system.

This approach would allow us to differentiate Earth law from Space law. Space law, further on, in this context, would envisage particular law systems, e.g. Moon law or Asteroid law.
In this way we could justify our current legal standpoint on establishing a non-appropriation principle outside the Earth.

UNIVERSAL THEORY

The other approach, which at first glance may look radically different from the traditional one, envisages a legal system as universal one, and not dependant on territory.

Such establishment would be, logically, based on Earth law. Of course, if we use the principles of Earth law, we are obliged to respect one of the most important and fundamental principles of law, i.e. ownership.

APPROPRIATION

If we are to accept the current property system applicable to Earth, which prescribes, *inter alia*, private property, I do not see any legal obstacles which would prevent appropriation outside the Earth, including Moon and all other celestial bodies.

From the legal point of view I do not see why the outer space is considered and emphasized as so much different than Earth.

First of all, one should raise a question regarding private property of humans on Earth. It is without question attributable to humans; i.e. we are entitled to Earth. We can obtain property, sell, lease etc.

Without any intention of entering into theological or political debate, I am raising a question: does the Earth belong to humans *per se*?

Is our understanding of Earth appropriation based on the fact that humans are the only intelligent species on Earth? From legal perspective, what is our *modus aquirendi* and *iustus titulus* of Earth? Why are we so confident that it is ours?

This question is of vital importance, because it represents and adds to the argument that the appropriation of outer space is possible, and would represent double standards if we would allow private property on Earth and forbid it outside it.

Of course, the current technology does not allow us to deepen the existing system of property rights. But this must not prevent us from thinking in advance. Thus, the universal approach must be accepted. We cannot and must not keep on dividing Earth and the rest of the universe.

Indeed, law will be different, but the principles beyond must be the same.
IV. PROPERTY LAW ON EARTH VS. PROPERTY LAW IN OUTER SPACE – A COPY–PASTE OPTION?

AN OVERVIEW OF PROPERTY LAW ON EARTH

There are two largest legal systems on Earth: Common law and Continental law\textsuperscript{3}. Further on, Common law developed into two sub branches: England and United States. On the other hand, there are several concepts of Continental law, i.e. German and French concepts. Having in mind that Serbian law system, including property law, is based on German system, I will be using its principles and norms relating to property rights, for the purposes of this essay.

Property right or right of property (lat. \textit{dominium, proprietas})\textsuperscript{4} has most commonly been defined as the highest legal and factual authority on certain matters, which allows unlimited use of the rights holder in accordance with the prescribed limits of the applicable legislation.

Depending on the nature of the property, an owner of property has the right to consume, alter, share, redefine, rent, mortgage, pawn, sell, exchange, transfer, give away or destroy it, or to exclude others from doing these things\textsuperscript{5}.

Of course, this wide definition of property law is not complete; rather it will provide a starting point in comparison to Space law.

V. CERTAIN PROBLEMS OF COPY–PASTING THE EARTH LAW

MOVABLE AND IMMOVABLE PROPERTY

These two terms represent the basic division of things subject to ownership.

One could define movable property as things which can be moved from one place to another, without being damaged.

On the other hand, immovable property is most commonly defined as things that cannot be moved from one place to another. Most legal systems consider land and buildings as immovable property.

\textsuperscript{3} Fleiner, T., 2005, \textit{Common law and Continental law}.
\textsuperscript{5} “property”, \textit{American Heritage Dictionary}. 

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But, one must have in mind that all property laws, including mentioned division, were designed for Earth. And, surely it was logical for the Romans not to think about space colonization.

This emphasis could be of great importance, having in mind that Earth possesses certain properties existing only on Earth.

One of the most important conditions is Earth gravity. It is a condition which has never been taken into account when speaking about Earth law. In the end, there is no reason to do so. Imagine drafting a Sales purchase agreement, with a gravity clause, e.g.: Gravity at the location amounts to 9.81 m/s².

But, Moon and outer Space have zero gravity or reduced gravity in comparison to Earth. Hence, will this fact exert influence on our understanding of legal properties of things outside the Earth?

Let us demonstrate this in a possible example: what if we are to place International Space Station (hereinafter: “ISS”) as a collateral? Will we pawn it or mortgage it?

This is an introduction to the question: are space objects, e.g. ISS a movable or immovable property?

First of all, a question that should be dealt with is who owns the ISS? The International Space Station Intergovernmental Agreement provides an answer, i.e. in Article 5 of the mentioned agreement which stipulates: “each partner shall retain jurisdiction and control over the elements it registers and over personnel in or on the Space Station who are its nationals”.

This means that the owners of the Space Station – the United States, Russia, the European Partner, Japan and Canada – are legally responsible for the respective elements they provide. The European States are being treated as one homogenous entity, called the European Partner on the Space Station. But any of the European States may extend its respective national laws and regulations to the European elements, equipment and personnel.

6 The International Space Station Intergovernmental Agreement, often referred to as ‘the IGA’, is an international treaty signed on 29 January 1998 by the fifteen governments involved in the Space Station project. This key government-level document establishes a long term international co-operative frame-work on the basis of genuine partnership, for the detailed design, development, operation, and utilisation of a permanently inhabited civil Space Station for peaceful purposes, in accordance with international law (Article 1).

7 http://www.esa.int/Our_Activities/Human_Spaceflight/International_Space_Station/International_Space_Station_legal_framework.
Now, let us focus on the legal property status of ISS, and determine is it a movable or immovable property.

As we mentioned before, movables are things that can be moved around without being destroyed, or mitigated in value, such as a car. They can move themselves or can be moved by another.

Immovables, at the other hand, are houses and land. They cannot be moved without being damaged, and they are in some way incorporated in ground.

So, how would we define ISS? Or can we define ISS?

Surely, ISS is not incorporated in ground, but at the other hand it is massive and, regarding its purpose, it could be considered as a building. But, having in mind surrounding conditions, it can move without being damaged. But this movement has its restrictions, whereas ISS cannot be moved back to Earth safely.

It seems that mentioned division could not apply to Outer space so easily. This issue raises other related questions, e.g. disposal of the ISS. Having in mind that different manners of property disposal apply to movables and immovables, one has to solve this question before proceeding with disposal.

But for now, we will not address the disposal of property in outer space.

THE AIR QUESTION

There are many things on Earth that we take for granted, and most of them for free.

One of these things is breathable air which we enjoy on Earth. Selling or purchasing the air is unimaginable, and the prohibition of sales is not even envisaged. It is so absurd to talk about the potential cost or disposal of air on Earth. There is even a phrase “to sell air” describing a fraudulent action.

But, fresh air is something reserved exclusively to Earth. Outside it, it represents a valuable resource. And as all valuable resources, it must have a cost.

Shall we one day be faced with increased Fresh air fees? In which way are we going to determine the price of air?

All these questions, and so many more, will be raised in near future. Things we take for granted on Earth will be, of course, different in space.
VI. Property Rights – A Sine Qua Non of Space Exploration

THE REBIRTH OF PRIVATE PROPERTY

The true beginning of private property emerged in the 17th and 18th century, in philosophy and political thought by Thomas Hobbes and John Locke. A legal institute was created – the ownership.

The modern concept of ownership has been developing since then, and today, it is widely accepted that most countries of the World recognize it as a ground stone for progress. On top of all, a right to own is one of the most important human rights.

It is simply one of the most fundamental requirements of a capitalist economic system. For decades social critics in the United States and throughout the Western world have complained that “property” rights too often take precedence over “human” rights, with the result that people are treated unequally and have unequal opportunities. Inequality exists in any society. But the purported conflict between property rights and human rights is a mirage. Property rights are human rights8.

So, are these human rights limited to Earth?

NON-APPROPRIATION PRINCIPLE
– A SAFE GUARD OR A STOP SIGN FOR EXPLORATION?

Article 2. of OST prescribes that “Outer space, including the Moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any means”.

This provision represents the basics of Space law today, that is a “non-appropriation” principle. This principle is regarded as a fundamental rule regarding the exploration and use of outer space. It confirms that outer space is not to be subject to ownership rights and prohibits sovereign or territorial claims to outer space9.

In addition to this, the provisions of the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (hereinafter: “MOON”) support this principle, and envisage that non-appropriation principle applies to actions of non-State entities and natural persons.

It is certain that there is no doubt to the prohibition of an appropriation by way of a claim of sovereignty by a State.

But, is this principle still required, or is it a relic of the past?

It is beyond every doubt that Space exploration is a costly and risky endeavor. A question is raised: how can we expect from, for an example, a private company, to invest enormous sums of funds into exploration, and not even have any or limited rights in space? Is situation on Earth different? Would you expect an investor to build anything, without providing him with ownership, joint-venture, lease or any other property right? I wouldn’t think so.

SPACE MINERS

Buying plots on Moon may be a far-fetched idea, but throughout recent years, an idea of asteroid and planetary mining is becoming more popular than ever.

Now, almost a reality, one of the most important questions is: is it legal? And, who is the owner of the valuable resources?

Although mentioned Article 2 of OST clearly forbids “appropriation”, other provisions of OST, especially, Article 1 stipulates that “Outer space, including the moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies”10.

The principle of free space exploration emphasized here represents the paramount of space activities. This principle is also confirmed by the MOON, i.e. the provisions of the MOON envisage exploration and exploitation in natural resources of the Moon and other celestial bodies.

One of the principal objects and purposes of the MOON is to promote “exploitation” of the natural resources of the Moon, through the current provisions of the Agreement and eventual establishment of an international regime11,12.

One could conclude that the prohibition of national appropriation in Article 11 (2) of the MOON does not in and of itself restrict the exploitation of natural resources, which will also involve removal of such resource

10 Article 1, OST.
11 Preamble, Articles 11 paragraph 5 and 11 paragraph 7 MOON.
from their “place” on the Moon. Thus, such exploitation remains the subject of international law, and shall undergo future legal regime\textsuperscript{13}.

Has this “future regime” began with the adoption of the US Space act of 2015 which finally addresses the question regarding property rights on resources?

It states:

“A United States citizen engaged in commercial recovery of an asteroid resource or a space resource under this chapter shall be entitled to any asteroid resource or space resource obtained, including to possess, own, transport, use, and sell the asteroid resource or space resource obtained in accordance with applicable law, including the international obligations of the United States.”

It is clear that mentioned document paves the path to another approach for space exploration and exploitation. But, its interpretation and significance will be left for another article.

\textbf{VII. Conclusion – A Legal (Space) Vacuum}

All until October 1957, the day representing the birth of space age, lawyers worldwide, save for some exceptions, did not show interest for legal regulation of outer space. But, the launching of first artificial satellite in space changed the world. Mikhail Smirnov noticed: “it is interesting to point at the fact that the lawyers became interested in legal framework of space, even before the first space flights became a reality”\textsuperscript{14}.

Decades which followed brought us the legal frame for outer space activities. And this legal framework was legitimate and useful for the period that marked second half of 20\textsuperscript{th} century.

But today, in 2015, this legal framework cannot keep up with present day technology and possibilities in space exploration.

As we determined, the non-appropriation principle does hold back space exploration activities, at least the legality of same.

For me, it seems that the entire World is looking at another way upon mention of appropriation in space. And, it seems that we unite in one question: Are we witnessing a new Wild West? This phrase has been used in almost every article regarding ownership rights in space, and is becoming a little bit old and inappropriate. Inappropriate because I believe that neither the world we live in today, nor the space we aspire to explore, are

\textsuperscript{13} Article 11(7) MOON.
\textsuperscript{14} Račić, O., 1972, The basic principles of Space law, Belgrade.
places where we should expect Wild West scenes or any similar illegal and uncontrollable process.

We are obliged to face the truth, that is, that the technology caught up with us; and that the law must follow the praxis. Are we going to treat space as *terra incognita*, that is *spatia incognita*?

It is our duty, as mankind, to utterly provide a realistic and up-to-date legal framework, which must and shall become a starting point for space exploration. Only then, guided by our earth experience, can we speak of proper, legal and civilized exploration of outer space.

Mr. H.G. Wells once said: “There is no way back into the past, the choice is the Universe... or nothing.” Well, let us see what choice we are planning to make.

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PRIVATNA SVOJINA U SVEMIRU – U POSTUPKU ČEKANJA

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REZIME

Iako je svemirsko pravo nastalo šezdesetihih godina 20. veka, još uvek predstavlja nepoznanicu za većinu pravnika širom sveta. Međutim, danas više nego ikad, svemirsko pravo dobija i svoj praktični aspekt.

Jedno od najvažnijih ljudskih prava, ali i preduslov za napredak, jeste pravo svojine. Svojina, uz ostala stvarna prava, predstavlja polaznu tačku imovinskopravnih odnosa na Zemlji.

Imajući u vidu da, u poslednjih nekoliko godina, svemirska istraživanja dostižu vrhunac prvi put od sletanja na Mesec, mišljenja sam da se ovaj civilizacijski aspekt ne sme ostaviti neispitan.

Međutim, tzv. svemirska legislatura nedvosmisleno zabranjuje načelo apropiracije u svemiru. To znači da niko, fizičko ili pravno lice, ne može uspostavljati svojinu nad nebeskim telima. Treba imati u vidu da su dokumenti iz ove oblasti doneti pre pola veka, i da su u vreme donošenja, odnosno u vreme Hladnog rata, bili sasvim opravdani. Napeti odnosi između dve supersile, kao i trka u naoružanju, nisu ostavljali mesta za detaljniju regulativu, pogotovo u oblasti prisvajanja prostora izvan Zemlje.

Ali danas, kada se američki astronauti prevoze ruskim sojuzom do Međunarodne svemirske stanice, nedvosmisleno se dolazi do zaključka da su se vremena značajno promenila, što se za svemirsko pravo ne može reći.

Eksploatacija minerala sa Meseca i drugih nebeskih tela, koja je do par godina delovala kao motiv naučnofantastičnog filma, danas je praktično realnost.

I naravno, postavlja se pitanje ko je vlasnik iskopanih materijala i može li raspolagati njima. Nije prošlo dugo vremena da se stvori jaz između tradicionalista, pravnika koji se drže već donetih dokumenata ističući
načelo zabrane sticanja svojine, i kompanija koje žele komercijalizaciju svemira, samim tim i izvesna prava nad stvarima van Zemlje.


Međutim, snažnog sam uverenja da spoj legislature stare pedeset godina i sporadičnog domaćeg zakonodavstva neće urediti ovu oblast u pravnom, civilizacijskom i opštem smislu.

Čini mi se da nas je svemirska tehnologija sustigla, odnosno da nas je zatekla nespremnim. Posle dve hiljade godina iskustva, možemo li dopustiti ovakav pravni vakuum?

Ključne reči: svemir, svemirsko pravo, Zemlja, privatna svojina, imovinska prava, prisvajanje, zakonitost.

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