NOTES

FIRST CONTACT: ESTABLISHING JURISDICTION OVER ACTIVITIES IN OUTER SPACE

Brian Abrams*

TABLE OF CONTENTS

I. INTRODUCTION ........................................................................................................ 799

II. BACKGROUND ....................................................................................................... 800
   A. The Outer Space Treaty .................................................................................. 801
      1. On Property Rights ................................................................................. 803
      2. What are Celestial Bodies? ...................................................................... 804
   B. The Liability Convention .............................................................................. 805
      1. The Standard of Liability .......................................................................... 805
      2. Resolution of Disputes ............................................................................ 806
      3. Some Open Questions ............................................................................... 807
   C. Domestic and Foreign Law ........................................................................... 808
      1. Property Rights—United States Case Law ............................................ 808
      2. Liability—Statutory Law .......................................................................... 809

III. CURRENT PROPOSALS ...................................................................................... 810
   A. Property Rights ............................................................................................ 810
      1. First Possession ....................................................................................... 810
      2. U.S. Common Law—The Estates .......................................................... 811
      3. Asteroids as Personal Property ............................................................... 812
   B. Liability .......................................................................................................... 813
      1. Market Share Liability ................................................................................ 814
      2. Alternative Dispute Resolution .................................................................. 814

IV. ANALYSIS ............................................................................................................ 817
   A. Barriers to Bringing Suit ............................................................................... 817
      1. Against a Foreign Defendant ..................................................................... 817
      2. Against the United States .......................................................................... 819
   B. Towards a Solution ........................................................................................ 820

* J.D., University of Georgia, Expected 2014; B.A., Vanderbilt University, 2011.
C. Jurisdiction—A Requirement for Success .............................................. 821
  1. Sufficient Jurisdiction .............................................................. 821
  2. Jurisdictional Problems .......................................................... 822
D. International Implications .............................................................. 823

V. CONCLUSION ..................................................................................... 824
I. INTRODUCTION

Law is not static; it changes over time as new facts and new situations force the law to adapt. Twentieth century laws will not be able to account for twenty-first century technology. As time progresses, the law will have to evolve in order to deal with previously unanticipated situations driven by technological advances.

In particular, international law will soon be inadequate to cope with new issues created by the exploration of outer space. Difficult problems are already cropping up and will only continue to multiply. New technology and the increasing involvement of private actors drive many of the areas where current international space law will prove insufficient.

These problems, which once seemed as far off as the stars, are now looming over the horizon. In October 2012 a private company, SpaceX, launched “the first official commercial flight to the International Space Station.” Since that time, SpaceX has conducted six missions to the International Space Station and is in the process of testing a reusable rocket. Another company, Planetary Resources Inc., has millions of dollars in backing and plans to mine asteroids for their mineral resources in the near future. Other companies are focusing on extracting valuable resources from the moon. It is unclear what economically viable rights on the moon those companies will be able to establish. Similar questions will arise for asteroids: Does anyone own an asteroid? How did the owner establish ownership? Ventures to mine resources and explore outer space could have a tremendous effect on humanity by providing scarce resources and an avenue for continued space exploration.

Other private businesses are expanding into space as well. Several companies are working on conducting space tourism flights, ferrying

5 Id.
passengers for a quick jaunt into outer space (and, of course, passengers can buy space traveler’s insurance first). Even before these flights occur, the Earth’s orbit is already littered with space debris that endangers flights, satellites, space stations, and people on the ground.

These examples and more will demonstrate the likely shortcomings of current space law. Numerous proposals have been suggested to deal with each of these issues but will not be enough. Legal disputes are inevitable no matter which specific rules are adopted. With an increasing number of actors moving into outer space, the number of disputes will surely rise. The international community should establish a forum to adjudicate those disputes. Such a court should be unbiased, multilateral, and have the power to enforce its decisions.

This Note will first look at the current governing international space law, predominately two treaties: the Outer Space Treaty and the Liability Convention. Next, it will discuss current proposals to fill gaps in that law, such as the application of private property rights in outer space. This Note will use those proposals to illustrate the need for a dispute resolution system over outer space cases. Finally, the Note will propose a specific system in the form of an international court. It will suggest goals for this court and rules to help the court fulfill those goals.

II. BACKGROUND

Space law includes both international and domestic law covering outer space activities. Five treaties control international space law: the Outer Space Treaty, the Rescue Agreement, the Liability Convention, the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies, Jan. 27, 1967, 18 U.S.T. 2410 [hereinafter Outer Space Treaty], the Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space, Apr. 22, 1968, 19 U.S.T. 7570 [hereinafter Rescue Agreement].
Registration Convention, and the Moon Agreement. This Note will primarily focus on the Outer Space Treaty and the Liability Convention.

The Rescue Agreement aims “to develop and give further concrete expression to” the duties outlined in the Outer Space Treaty that direct states to give “all possible assistance to astronauts . . . and [to] return objects launched into outer space.” The Registration Convention mandates that launching states register their space objects and that the Secretary-General of the United Nations maintain a central registry of all those objects.

Finally, the Moon Agreement establishes general principles governing activities on the moon. The Moon Agreement limits activities on the moon to “peaceful purposes,” “carried out for the benefit . . . of all countries.” The Moon Agreement declares that “[t]he moon and its natural resources are the common heritage of mankind.” Developing nations have argued that the common heritage of mankind theory protects their interests in international natural resources by providing common ownership. Only fifteen countries are parties to the Moon Agreement, and thus it is not binding international law upon most states.

A. The Outer Space Treaty

The Outer Space Treaty establishes general principles and guidelines for activities in space. It is known as the “‘constitution’ of outer space” because

---

14 The Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, Dec. 18, 1979, 1363 U.N.S.T. 3 [hereinafter Moon Agreement].
15 Rescue Agreement, supra note 11, at pmbl.
16 Registration Convention, supra note 13, arts. II, III.
17 Moon Agreement, supra note 14.
18 Id. arts. 3, 4.
19 Id. art. 11.
of “[i]ts broad and general nature and content.” Agreed to in 1967, the Outer Space Treaty was forged out of Cold War diplomacy, in a world where the United States and Soviet Union simultaneously engaged in an arms race and a space race. This treaty, like any other, resulted from the state of geopolitics and technology of the time—in this case the 1960s.

The Outer Space Treaty covers a broad range of topics, much of it reflecting those Cold War concerns. It attempts to demilitarize space, especially the stationing of weapons of mass destruction in space. Along the same lines, it espouses the importance of “co-operation and mutual assistance” and pushes for consultations and agreements between states as the mechanisms for working together in space. This multilateral cooperation is one of the core goals of the Outer Space Treaty as it was intended to prevent competition between the U.S. and U.S.S.R. that could have spiraled out of control.

The Outer Space Treaty includes restrictions on the use of outer space and its resources. Article I directs that the “exploration and use of outer space . . . be carried out for the benefit and in the interests of all countries . . . and shall be the province of all mankind,” but allows “free access to all areas of celestial bodies,” and encourages scientific studies. Article II, known as the non-appropriation clause, states: “Outer space, including the moon and other celestial bodies, is not subject to national appropriation.” These provisions may restrict private entities from obtaining property rights in outer space.

State liability is also addressed in the Outer Space Treaty. First, it deems states responsible for their own activities and the activities of their nationals. The treaty puts the onus on states to approve and regulate ventures into outer space. Second, the Outer Space Treaty establishes that a state responsible for a space object (either by launching it or procuring its launch) is liable to another state or a state’s nationals for any damage caused

---

23 Siegfried Wiessner, Human Activities in Outer Space: A Framework for Decision-Making, in SPACE LAW: VIEWS OF THE FUTURE, supra note 20, at 7, 8. The Outer Space Treaty has also been called the “Magna Carta” of outer space. See, e.g., Smith, supra note 20, at 46.
25 Outer Space Treaty, supra note 10, art. IV.
26 Id. arts. IX–XII.
27 See Beck, supra note 24, at 12.
28 Outer Space Treaty, supra note 10, art. I.
29 Id. art. II.
30 Id. art. VI.
31 Id.
by the space object. 32 These rules are further developed in the Liability Convention, which in many ways implements these standards.

1. On Property Rights

There is some debate about the impact of the province of mankind and non-appropriation clauses on the legality of extracting resources from space. The most commonly accepted interpretation of the province of mankind clause is that it reaffirms the free access rights established in Article I. 33 Other scholars argue that as long as an activity in space benefits all nations in some general sense, even if the benefit is indirect, then the activity is permitted under the Outer Space Treaty. 34

There is, however, some tension between the ability to freely “use” outer space and the principle of non-appropriation. Many scholars agree that establishing a “keep-out” zone or declaring territorial ownership over a portion of outer space or a celestial body would be an appropriation in violation of the Outer Space Treaty. 35 This is in tension with a “use” of outer space that prevents someone else from using the same outer space resource. 36 A possible explanation differentiates between an appropriation as a territorial claim to sovereignty and a use that does not impinge on other states’ equal usage rights. 37

The Outer Space Treaty’s “province of mankind” language can also be distinguished from the common heritage principles of the Moon Agreement, which goes even further in protecting the interests of non-spacefaring states. 38 For example, during the ratification process in the U.S. Senate for the Outer Space Treaty, the Committee on Foreign Relations attached an understanding that “nothing in Article I, paragraph 1 of the treaty diminishes

32 Id. art. VII.
33 Johnson, supra note 22, at 1500–01 (suggesting that the province of mankind provision affirms an equal right to access, instead of prohibiting certain actions).
34 Smith, supra note 20, at 46–47 (noting that satellites provide weather reports, telecommunications, and greater knowledge about outer space, benefitting most nations even though they do not directly own or benefit from the satellites).
36 Wiessner, supra note 23, at 13 (questioning why positioning a satellite in geostationary orbit would not amount to an appropriation or why consumption of an asteroid’s minerals would be a “use” but not “appropriation”).
37 Johnson, supra note 22, at 1501–02.
38 Id.
or alters the right of the United States to determine how it shares the benefits and results of its space activities.  

While scholars have erred on the side of allowing greater use of outer space resources, the text of the Outer Space Treaty itself is unclear. Even an analysis of the history of the drafting of the Treaty does not clarify the issue, most likely because the drafters themselves were divided. That ambiguity reflects the two goals of the Outer Space Treaty and the inherent tension between them: encouraging the dreams of space exploration and guarding against the nightmares of a combative space race between states or the domination of space by one state.

2. What are Celestial Bodies?

The Outer Space Treaty must also be interpreted in order to determine to which entities in space it applies. The text itself repeatedly indicates when the provisions apply to “outer space, including the moon and other celestial bodies.” A debate has arisen over the meaning of “celestial bodies,” though the meaning of outer space (the vacuum) and the moon (the one prominent in the night sky) are much more obvious. There are many objects in outer space that could fall under the meaning of “celestial bodies”: galaxies, stars, planets, natural satellites (moons), comets, meteors, and asteroids.

One possible interpretation of the term “celestial bodies” comes from the text of the treaty. The Moon Agreement indicates that it applies to celestial bodies except for the earth and that it “does not apply to extraterrestrial materials which reach the surface of the earth by natural means.” This provision implies that all other extraterrestrial materials are “celestial bodies.”

Another proposed solution is to limit “celestial bodies” to natural objects in outer space that cannot be moved by artificial means. This would

---

39 Wiessner, supra note 23, at 12 (internal quotation marks omitted) (quoting S. EXEC. REP., No. 90-8 (1967)).
40 Johnson, supra note 22, at 1504–07.
41 See generally Outer Space Treaty, supra note 10.
43 Moon Agreement, supra note 14, art. 1.
44 Fasan, supra note 42, at 35–36.
45 Id. at 40 (arguing further that if asteroids fell completely under the space treaties no state would have the legal right to destroy an asteroid about to collide with the earth).
potentially fulfill the drafters’ aim of dealing with larger space objects.\textsuperscript{46} Other scholars reject that distinction, arguing that it will change as technology advances and that the movability of an asteroid is immaterial to whether its minerals can be commercially extracted and moved elsewhere.\textsuperscript{47} These attempts at delineation may continue to be complicated by evolving scientific knowledge and technological innovation. As with many other statutes and treaties, some vagueness and the need for interpretation seems inevitable.

B. The Liability Convention

1. The Standard of Liability

The Liability Convention furthers the rules outlined in the Outer Space Treaty for state liability regarding space based activities. While the Outer Space Treaty imposed liability on states, the Liability Convention establishes standards for state liability. Article II of the Convention sets out the basic rule: “A launching State shall be absolutely liable to pay compensation for damage caused by its space object on the surface of the earth or to aircraft in flight.”\textsuperscript{48} There are two key points to draw from this rule. First, only states are liable, not individual people or corporations. Second, when the damage does not occur in outer space, there is strict liability for the damages.

Article III deals with damage that occurs in outer space itself and establishes a fault based standard:

In the event of damage being caused elsewhere than on the surface of the earth to a space object of one launching State or to persons or property on board such a space object by a space object of another launching State, the latter shall be liable only if the damage is due to its fault or the fault of persons for whom it is responsible.\textsuperscript{49}

\textsuperscript{46} Id.
\textsuperscript{48} Liability Convention, \textit{supra} note 12, art. 2 (emphasis added). A “launching State” is defined as “(i) A State which launches or procures the launching of a space object”; or “(ii) A State from whose territory or facility a space object is launched.” \textit{Id}. art. 1, para. c. Damage includes “loss of life, personal injury, . . . or damage to property.” \textit{Id}. art. 1, para. a.
\textsuperscript{49} \textit{Id}. art. 3.
Thus, as with the rule in Article II, only states have liability, and states are responsible for the people it sends into space. Additionally, the damage must be caused by a “space object.” This seems to leave open the issue of damage caused by an individual person.50

The Liability Convention institutes other important rules in addition to the standards for liability. Many of these rules are similar to American tort law. The Liability Convention establishes joint and several liability when “launching state” refers to more than one state.51 It also creates a standard for contributory negligence to excuse absolute liability, when the claimant acts with “gross negligence” or “intent to cause damage.”52 The Convention explicitly does not apply to the “nationals of that launching state” or foreign nationals involved in the “operation” or “launching” of the space object.53

2. Resolution of Disputes

When damage occurs, the Liability Convention outlines a two-tiered process for bringing a claim against another state. The first path to bringing a claim is through “diplomatic channels.”54 The most preferred result under the Liability Convention is for states to deal with problems themselves through diplomacy.

The Convention does, however, create a second option, should diplomacy fail. If the states have failed to reach an agreement after one year, the parties will set up a Claims Commission once either of the parties requests such a commission.55 This second option represents an ad hoc solution that has the potential to vary greatly. The Liability Convention prescribes the basic rules for a Claims Commission. It consists of three members, one appointed by each of the two parties and the third agreed upon by both parties.56 The Claims Commission will evaluate the merits and decide on an amount of compensation if necessary.57

The Liability Convention, however, limits the power of the Claims Commission. The Commission’s decision is binding if and only if the parties have agreed to that power beforehand. Otherwise, the Commission merely

50 For example, the Liability Convention does not appear to cover a tort between two people on the same space station. Id.
51 Id. art. 5.
52 Id. art. 6.
53 Id. art. 7.
54 Id. art. 9.
55 Id. art. 14.
56 Id. art. 15.
57 Id. art. 18.
delivers a reasoned recommendation.\textsuperscript{58} The Claims Commission does have much greater power over how it reaches a decision. The Commission decides on “its own procedure…where it shall sit and all other administrative matters.”\textsuperscript{59}

While the Liability Convention provides this two-avenue approach for resolving disputes, it also gives great leeway to states to employ other mechanisms. It leaves open the possibility of bringing suit in the launching state: “Nothing in this Convention shall prevent a State, or natural or juridical persons it might represent, from pursuing a claim in the courts or administrative tribunals or agencies of a launching State.”\textsuperscript{60} It also allows states to enter into their own agreements without interference from the Liability Convention.\textsuperscript{61} Thus, current international law on liability in space leaves open the possibility of having numerous different dispute resolution avenues.

3. Some Open Questions

The Liability Convention is not comprehensive. It leaves several areas unanswered or incomplete. One example is that the “Convention does not deal meaningfully with problems that may arise when injuries are sustained in the environment of space or on a celestial body.”\textsuperscript{62} Additionally, as discussed earlier, there is a fault based standard for damage between space objects in outer space, but it does not address other possible situations such as torts between individuals.

Scholars and practitioners also debate about the meaning of “space object.” The Convention itself defines a space object to include “component parts of a space object as well as its launch vehicle and parts thereof.”\textsuperscript{63} One author argues that this raises two questions: First, does a launch vehicle also have to enter outer space? Second, if an object is not launched but built in space, is it still a space object?\textsuperscript{64} Another major issue is, quite literally, the intersection between space law and air law. For a craft that travels into outer

\textsuperscript{58} Id. art. 19.
\textsuperscript{59} Id. art. 16.
\textsuperscript{60} Id. art. 11.
\textsuperscript{61} Id. art. 23.
\textsuperscript{62} Herbert Reis, \textit{Some Reflection on the Liability Convention}, 6 J. SPACE L. 125, 127 (1978) (suggesting that another treaty may be necessary once more people are in space). Herbert Reis served as the chief negotiator for the U.S. on the Liability Convention from 1967.
\textsuperscript{63} Liability Convention, supra note 12, art. 1.
space but travels long distances in airspace, which law governs? Is the
vehicle a spacecraft or an aircraft?65 This question will be particularly
relevant for space tourism where the flights only enter outer space for a few
minutes but fly in airspace for much longer.66 Much like the difficulties with
classifying the term “celestial bodies,” these questions will need to be
resolved in some fashion by the international community. It can be
expected, however, that even with greater clarification some ambiguity will
remain, especially as technology advances.

C. Domestic and Foreign Law

1. Property Rights—United States Case Law

United States courts have not reviewed many space issues. It may be too
erly in the commercialization of outer space activities to have too many
lawsuits develop. A U.S. District Court in Nevada has heard one case that
deals with an individual’s claim of private ownership of an asteroid.67 In
Nemitz v. United States a pro se litigant sought to prove his property rights
over a specific asteroid upon which NASA had landed a spacecraft.68 The
district court dismissed for failure to state a legal claim because neither
NASA provisions promoting the use of space, nor U.S. ratification of the
Outer Space Treaty created private property rights for Nemitz.69

While on the surface this case might preclude individual companies from
establishing property rights in outer space, it can easily be distinguished from
those hypothetical cases. Nemitz relied on a registration with the
Archimedes Institute website and filing a security interest under the Uniform
Commercial Code with the asteroid as collateral to establish his ownership.70
Neither of these creates private property rights.71 A company who lands a
spacecraft on an asteroid may have a better claim under a first in time, first in
right theory or because the company has actual possession. Congress has yet

65 United Nations Office for Outer Space Affairs, Compilation of Replies Received from
Member States to the Questionnaire on Possible Legal Issues with Regard to Aerospace

66 Chang, supra note 7.

v. Nat’l Aeronautics and Space Admin., 126 F. App’x 343 (9th Cir. 2005).

68 Id.

69 Id. at 1–2.

70 Id. at 1.

71 Id.
to allocate property rights in asteroids or other celestial bodies. It is possible, however, that U.S. courts would further the logic of this court that the Outer Space Treaty does not allow for private property rights.

2. Liability—Statutory Law

The Liability Convention only applies to states, leaving to each country the authority to make laws governing their nationals’ adventures beyond the Earth’s atmosphere. In the United States Congress has enacted laws specifically addressing outer space activities by private entities. The Commercial Space Launch Act regulates and encourages the commercial space flight industry. It lays out several requirements for a company to obtain a license. The company must be financially responsible, take out insurance (usually), and waive claims against the United States for any damages it incurs while operating under its license. Thus, acting under the Liability Convention, the United States attempts to shift some of the responsibility to the companies themselves.

Other countries have their own statutory rules for outer space activities, covering a range of space law issues. For the most part, however, these rules are less thorough than the regulation in the United States. Because only a limited number of states and corporations have the capability of launching objects into space, parties wishing to send an object into space often must make transnational business deals. This oftentimes creates legal uncertainty because of the “potential applicability of different national laws and legal regimes, which can conflict.”

---

72 See, e.g., id. (holding that a private individual had no cognizable property rights in an asteroid).
74 51 U.S.C. §§ 50901–50923 (2012). The Commercial Space Launch Act was previously Title 49, Section 70101, et seq.
75 Tennen, supra note 47, at 820.
78 Id. at 14.
79 Id. at 12.
interactions will only occur with increasing frequency because of the privatization of space exploration. Even with a handful of treaties in place, the national law that exists is more detailed and more directly applicable to businesses.

III. CURRENT PROPOSALS

Space law is a relatively new area of law. International space law is limited to five short treaties, only one of which has very broad language. The others have limited scope, dealing with early space law problems such as the safe return of astronauts and tracking objects sent into space. Numerous proposals have been made to improve space law. Most of the academic proposals involve suggestions for new substantive rules and will be discussed below. Few address how to administer these new rules or how to resolve disputes arising under the proposed international legal frameworks. This section will provide a brief overview of some of these substantive proposals for property rights and liability in outer space.

A. Property Rights

The Outer Space Treaty leaves the availability of private property rights in outer space unclear. Commentators worry that this uncertainty will discourage commercial ventures beyond the earth’s atmosphere. To address this concern, these commentators have proposed a variety of private property schemes for outer space resources such as asteroids.

There are several key distinctions between these proposals. One is whether or not to treat asteroids as real property or personal property. The other is whether to use free market principles or the non-appropriation principles of the Outer Space Treaty.

1. First Possession

Perhaps the most extreme proposal is to open up outer space following first possession rules. This proposal treats celestial bodies as real property and allocates property rights along a “first in time, first in right” rule similar

---

80 United Nations Office for Outer Space Affairs, supra note 9.
81 See, e.g., Johnson, supra note 22, at 1480.
to homesteading in the nineteenth century United States, where settlers rushed to claim unsettled land before others got there.\textsuperscript{83} Under this system a “discovering nation” would be able to claim territory in outer space and choose whether to open up settlement in its new territory to its own citizens or to the international community as a whole.\textsuperscript{84} The sovereignty of the “discovering nation” would extend to its outer space territory, where it could govern as it pleased.\textsuperscript{85}

A first possession scheme has several difficulties, even though it achieves its chief goal of encouraging economic development. First, without a centralized mechanism for demarcating the property, disputes are inevitable, as was the case with homesteading in the West.\textsuperscript{86} Second, how will states or settlers resolve these disputes? Territorial disputes do not often end well.\textsuperscript{87} If the international community, or members of the community, adopted a “first in time, first in right,” system for divvying up property rights, states may better avoid conflict by establishing clear expectations ahead of time, particularly by agreeing on a framework for resolving disputes.

2. U.S. Common Law—The Estates

Other commentators propose a closer balance between encouraging commercial exploration of space and maintaining the “province of mankind” language of the Outer Space Treaty.\textsuperscript{88} One such proposal advocates having an intergovernmental organization (IGO) such as the United Nations use U.S. common law property rights to distribute property to private persons or corporations.\textsuperscript{89} The twist is that the IGO would not transfer fee simple absolute but less complete property rights such as a defeasible estate,

\textsuperscript{83} Id. at 344–47.
\textsuperscript{84} Id. at 347–48.
\textsuperscript{85} Id. at 350–51. Although Gruner does suggest some role for the Outer Space Treaty and international law, it appears to be a secondary concern and subject to the whims of each individual state as it colonizes space.
\textsuperscript{87} See, e.g., John Vazquez & Marie T. Henehan, Territorial Disputes and the Probability of War, 1816–1992, 38 J. PEACE RES. 123 (2001) (supporting generally “the territorial explanation of war” and stating that territorial disputes “account for the majority of wars”).
\textsuperscript{89} Id.
leasehold, or license, allowing the IGO to limit use of the property, protecting the interests of all mankind.\textsuperscript{90} The author of this proposal, Davin Widgerow, admits the need for adjudication of disputes arising under this system.\textsuperscript{91} The proposal suggests three possible examples on which to base such a system of adjudication: the Claims Commission from the Liability Convention, international arbitration, and the Seabed Disputes Chamber of the International Tribunal.\textsuperscript{92} There seems to be an inherent tension, however, between the common law approach suggested earlier and these adjudication models, especially the Claims Commission and arbitration. Because states create a Claims Commission on an ad hoc basis and appoint arbitrators, these bodies would likely lack the institutional memory and continuity that a court needs to develop common law.

A standing body like the Seabed Disputes Chamber may have a better chance but would need to be able to hear cases between two private entities, not just between the IGO and its grantees.\textsuperscript{93} Basic property law suggests this is insufficient. Property law cases are not always between the original grantor and grantee. Additionally, the alienability of land contributes greatly to its value. Granting inalienable territory would likely decrease the incentive of private entities to purchase it from an IGO. The more sticks in the bundle of property rights one receives, the more likely one is to buy.

3. Asteroids as Personal Property

Treating all celestial bodies as equivalent to land territory on the earth may not reflect the nature of those celestial bodies. Some have argued that international law must distinguish between asteroids and other celestial bodies such as planets.\textsuperscript{94} Legally, asteroids could be treated as personal

\textsuperscript{90} Id. at 514–15. Note that this article assumes “province of mankind” means ownership of mankind. Thus the UN or other IGO acts as the owner of outer space on behalf of all mankind.
\textsuperscript{91} Id. at 515.
\textsuperscript{92} Id. at 515–16.
\textsuperscript{93} Widgerow’s article suggests that an adjudicatory body modeled off of the Seabed Disputes Chamber would only “adjudicate disputes between the international community and private . . . companies.” Id. at 516.
\textsuperscript{94} Andrew Tingkang, These Aren’t the Asteroids You Are Looking For: Classifying Asteroids in Space as Chattels, Not Land, 35 SEATTLE U. L. REV. 559, 561 (2012); see also Fasan, supra note 42 (arguing that the difference between asteroids and other celestial bodies requires each to have a separate definition under international law).
rather than real property. This makes an asteroid seem more like a chattel, which may be lost.

This problem with tracking seems to make asteroids uniquely vulnerable to disputes over ownership, particularly before a physical presence has been established on the asteroid. Often, tracking fails and one asteroid is identified as a different asteroid multiple times. This proposal does not outline how these personal property rights are acquired.

What would happen if two private actors have claims to the same asteroid? Even if asteroids are properly identified, disputes may still arise, as they do on earth, over trespass to chattels, the sale of goods, and other issues. The difference between asteroids and other chattels, however, is that the property rights are based on international law, and the asteroids will likely be owned only by corporations doing transnational business. People operating in space will need a way to resolve disagreements whether asteroids are treated as real property or personal property.

B. Liability

The Liability Convention and national legislation, such as the Commercial Space Launch Act in the United States, govern the issue of liability under space law. The body of law on liability, however, is often incomplete. Drafted at a time when a small number of states were the only actors venturing into outer space, the Liability Convention covers only a limited set of possible facts. Many states do not even have domestic space laws, and those that do typically lack the thoroughness of American law. People analyzing the Liability Convention widely agree that the law must move away from its focus on states. Unlike property law concerns, many

---

95 Tingkang, supra note 94, at 579–86 (outlining differences between asteroids and planets including their size, shapes, and the ability to move and split asteroids).
96 Id. at 581–82.
97 Id.
98 See, e.g., Reis, supra note 62.
99 Kayser, supra note 77. The use of domestic law may further be limited because space travel occurs outside a country’s territory in the sovereign-less expanses of space. See Beck, supra note 24, at 22.
100 See, e.g., Beck, supra note 24, at 37 (“The Liability Convention’s complete failure to hold private entities accountable poses problems for all commercial space developments.”); see also St. John, supra note 64, at 711–13 (outlining problems with a “state-centric regime” but concluding that the requirements of liability insurance and cross-waivers of liability will have to do for now).
proposals for changing space liability law address adjudicating these transnational disputes as well as establishing substantive rules.

1. Market Share Liability

Some commentators argue in favor of changing the standard of liability. The standard under the Liability Convention is typically strict liability. One proposal calls for the use of market-share liability to apportion damages. The suggested scheme would attribute the market share of unidentified space debris amongst states according to the percentage of space debris identified as belonging to that state. This idea has become increasingly popular with academics to solve the issue of liability for damage from space debris. Like the pharmaceuticals to which market-share liability was first applied, it can often be very difficult, if not impossible, to determine the origin of space debris that may cause great damage to a space object.

This particular proposal attempts to work within the Liability Convention by amending it to use market-share liability for damage caused by space debris. Market-share liability may well be a successful solution for dealing with the problem of space debris. Working within the framework of the Claims Commission, however, does not add value to this substantive law. In fact, in the United States, market-share liability was developed by courts, not arbitration committees. The arguments made in this Note demonstrate the need for a permanent court over an ad hoc commission, and they apply with equal force whether the substantive rules call for strict liability, market-share liability, or some other standard.

2. Alternative Dispute Resolution

The Claims Commission framework created in the Liability Convention resembles arbitration more than a court. Some have argued that alternative dispute resolution represents the best way to settle disagreements arising

---

101 Liability Convention, supra note 12, art. 2.
103 Id. at 144–45. This method would, at present, assign the United States a 52.9% market share and Russia a 40.8% market share. Id. at 146.
104 Id. at 138–39.
105 Id. at 143.
106 Id. at 152–53.
under international space law. Alternative dispute resolution has many benefits and overcomes several shortcomings of international space law. The difficulty, however, is that the usual problems associated with alternative dispute resolution are greatly exaggerated in the space law context.

As discussed above, the Liability Convention and domestic law leave several gaps in the legal framework, which private parties may be able to overcome by using alternative dispute resolution. First, because parties to arbitration agree to the governing law beforehand, there will not be the same choice of law problems. Second, because parties can choose the substantive and procedural law, these arbitrations would not have to follow the strict liability standard articulated in the Liability Convention. Alternative dispute resolution may facilitate a fairer or more efficient standard, whether it be fault based or market-share based.

Several other potential benefits of alternative dispute resolution have been articulated. First, it may be more cooperative rather than adversarial. Second, allowing private businesses to decide on the applicable substantive and procedural law could lead to better outcomes. Finally, alternative dispute resolution may be faster than recourse in the courts.

While this system may benefit private businesses, it does not further the other goals of international space law as outlined in the Outer Space Treaty, nor does it address other gaps in the law involving individuals or states. The Outer Space Treaty—the constitution of space law—makes it clear that the law has dual objectives: encouraging space exploration and establishing that all of mankind has an interest in outer space. Private businesses could use alternative dispute resolution to duck the implications of public policy by choosing other substantive and procedural rules. They can cherry pick the law most favorable to business and least supportive of the province of mankind principle.

Second, alternative dispute resolution does not further the goal of cooperation in outer space. Any cooperation that occurs is only between the

---

108 Id. at 466. Choice of law problems may arise particularly frequently in unanticipated factual situations, such as if there was no “launching state” under international law because the space object was built in outer space. Id. at 456.
109 Id. at 466.
110 Id. at 471.
111 Id. at 465.
112 Id. at 466.
113 Id.
114 Outer Space Treaty, supra note 10, art. 1.
two private companies. This argument confuses the desire for interstate cooperation with a desire for corporate cooperation. Instead, most people want to foster competition between private businesses in order to incentivize innovation and exploration of outer space. States are different animals because interstate competition can lead to military conflict instead of better business practices. The history of the space law treaties indicates the overriding goal was to avoid conflict between the United States and the Soviet Union and the militarization of space. Furthermore, extensive use of alternative dispute resolution may limit the possibilities for fostering interstate cooperation by taking states almost entirely out of the process of resolving disputes.

Another drawback of alternative dispute resolution is that it generally applies only in limited circumstances: disputes between private businesses. Generally, agreements to arbitrate disputes only occur between parties in privity with one another. How would this mechanism address a disagreement over competing ownership claims over an asteroid? Such a dispute does not necessarily arise out of a contract or any prior relationship between the parties. The arbitrator or mediator would then have the power to decide property rights between two parties when a third party may also have a claim.

Alternative dispute resolution would likely not provide a forum for individuals with a claim against a corporation, unless the parties had a contract. Furthermore, all of the usual complaints about alternative dispute resolution, especially mandatory arbitration for consumers, also apply when disagreements arise under space law. Thus, alternative dispute

---

115 See Wong, supra note 107, at 465.
116 See, e.g., Gruner, supra note 82 (advocating a competitive first in time, first in right system for allocating property rights in outer space).
117 Beck, supra note 24, at 36 (“The international space treaty regime served its original purpose well. The United States and the Soviet Union never undertook any significant militarization of space.”).
118 Wong, supra note 107, at 466. Consider, however, the claim that “ADR could and should be used to resolve most legal conflicts in space law.” Id. at 465.
120 Josha T. Mandelbaum, Stuck in a Bind: Can the Arbitration Fairness Act Solve the Problems of Mandatory Binding Arbitration in the Consumer Context?, 94 Iowa L. Rev. 1075, 1077 (2009) (“These problems include high fees, a lack of due-process safeguards, unequal bargaining power, arbitrator bias toward the business, the bar of class-action suits, potential private usurpation of the roles of the judicial and legislative branches, and society’s inability to make good policy decisions going forward because of a lack of information.”).
resolution should not be encouraged, and the international community should think carefully about closely monitoring its voluntary use by private entities.

IV. ANALYSIS

A. Barriers to Bringing Suit

Current international and domestic law provides limited avenues for obtaining judicial relief with respect to complaints arising from events in outer space. A number of barriers make it especially difficult for non-state actors to pursue these types of claims.

1. Against a Foreign Defendant

A private plaintiff will have particular problems suing a foreign defendant. Take, for example, an American space tourist who suffers harm during a flight run by a Russian company departing from Russia.121 Depending on the specific facts, she will likely have problems suing in an American court because of a lack of personal jurisdiction. A Russian company, operating in Russia, likely does not have continuous and systematic contacts with the United States sufficient to justify general jurisdiction.122 The Russian company might not have purposeful contacts with the United States sufficient to permit specific jurisdiction either, if the company’s only contact with the forum state was the sale of a ticket to the space tourist.123 Without jurisdiction in American courts, the tourist must look elsewhere.

The alternative legal avenues are international and foreign law. The Liability Convention would not provide an avenue for recourse if the American government does not act.124 To sue in Russian courts, the space

121 Example adapted from Beck, supra note 24, at 22 (providing the hypothetical of an American businessman on a space flight operated by Russia). Beck’s actual hypothetical is discussed next.
122 See Goodyear Dunlop Tires Operations v. Brown, 131 S. Ct. 2846 (2011) (holding that the sale of tires by a Goodyear subsidiary in North Carolina was insufficient to establish general jurisdiction such that North Carolina courts could hear claims unrelated to Goodyear’s contacts with the state).
123 J. McIntyre Mach., Ltd. v. Nicastro, 131 S. Ct. 2780 (2011) (holding that New Jersey could not exercise jurisdiction over a foreign company whose only contact with New Jersey was the presence of four machines that ended up in New Jersey).
124 Liability Convention, supra note 12, art. 7 (stating that claims are brought by one state against another).
The tourist must rely on Russia’s domestic law. The high costs of travel and litigating in a foreign court may prevent this suit from ever being filed in a Russian court. The American tourist will have even greater difficulties if the Russian government sold the space tourism flight instead of a private business. Even if the tourist can obtain personal jurisdiction over the Russian government in the United States, the suit may be barred by sovereign immunity. To determine whether sovereign immunity applies, a court would first look at the Foreign Sovereign Immunities Act, which grants immunity in American courts to foreign states. There are several exceptions allowing a plaintiff to bring suit, but it will be an uphill battle. The main exception applies when the foreign state is engaged in a commercial activity. Whether the outer space activity is a commercial activity will depend on the nature of the conduct and the connection between the conduct and the United States.

Extraterritoriality also presents a potential burden to suing in American courts. Because the plaintiff’s claim is based on conduct in outer space, outside of the sovereign territory of the United States, a court may decide not to hear the claim. Whether or not the extraterritorial nature of the claim bars the suit depends on the cause of action. If the plaintiff brings a statutory based claim, then the court will decide whether the legislature intended the statute to apply extraterritorially, but the courts presume statutes do not apply extraterritorially.

It is unlikely that causes of action that apply

---

125 See Beck, supra note 24, at 22.
127 Beck, supra note 24, at 22.
129 Id. § 1605.
131 Marla Stayduhar, Flying the Friendly Skies May Not Be So Friendly in Outer Space: International and Domestic Law Leaves United States’ Citizen Space Tourists Without a Remedy for Injury Caused by Government Space Debris, 7 U. PITT. J. TECH. L. & POL’Y 1, ¶¶ 27–28 (2006) (arguing that the commercial activity exception would be useful for a case based on commercial space debris but not for a space tourist).
132 See, e.g., Small v. United States, 544 U.S. 385, 390–91 (2005) (holding that the term “convicted in any court” in a federal gun possession statute only applied to domestic convictions because of a presumption that Congress intends statutes to have only domestic and not extraterritorial effect, unless there is evidence to the contrary in the text, purpose, or
extraterritorially would also apply to outer space because it is unlikely that Congress intended to extend the reach of causes of actions that far.

Problems with jurisdiction, sovereignty, and extraterritoriality, combined with the complications of filing suit in a foreign country, make it very difficult for individual citizens to pursue claims arising out of conduct in outer space.

2. Against the United States

It is unlikely that someone could successfully bring a tort claim against the United States federal government for its actions in outer space. The Federal Tort Claims Act (FTCA) governs the government’s waiver of its sovereign immunity to tort claims. The FTCA states “[t]he United States shall be liable . . . to the same extent as a private individual under like circumstances.” The FTCA provides for exceptions to this waiver to sovereign immunity, including for “[a]ny claim arising in a foreign country.”

Outer space is not a foreign country but the exception may still apply. The Supreme Court has held that the foreign country exception in the FTCA barred a wrongful death suit based on acts occurring in Antarctica because Antarctica, even without a government, fit within the ordinary meaning of “foreign country” and because such a reading prevented absurd results in the rest of the statute. Because of the Court’s reasoning in that case, the Court would very likely decide that outer space also constitutes a “foreign country.” Congress could always amend the statute in the future, but for now, individual plaintiffs likely cannot successfully bring outer space-based claims against the United States.

---

134 Id. § 2674.
135 Id. § 2680(k).
136 Smith v. United States, 507 U.S. 197 (1993) (holding that Antarctica is a foreign country for purposes of the FTCA).
137 Lauren S.-B. Bornemann, This is Ground Control to Major Tom . . . Your Wife Would Like to Sue but There’s Nothing We Can Do . . . The Unlikelihood That the FTCA Waives Sovereign Immunity for Torts Committed by United States Employees in Outer Space: A Call for Preemptive Legislation, 63 J. AIR L. & COM. 517, 532–36 (1998).
B. Towards a Solution

The shortcomings of the international law governing outer space are clear. It was designed for a bygone era of state exploration of outer space driven by the bipolar competition of the Cold War. It is conceivable that in the future human behavior beyond Earth’s boundaries will more closely resemble the extent and nature of human activity on Earth. Increased activity in heretofore sovereignless space requires a new legal regime.

This new legal system must account for the interests of private individuals and businesses in outer space. Under the Outer Space Treaty each state “shall retain jurisdiction and control over” any object and personnel it launches into outer space. This legal regime does not reflect the reality that private businesses are taking the lead in industries like space tourism.

When disputes arise in outer space, they will need to be settled in accordance with the governing substantive law. Currently, that law has two main objectives: protecting the province of mankind and fostering economic development of outer space resources. A successful legal regime will help fulfill both of these goals and provide legal recourse to non-state actors.

A court with jurisdiction over outer space controversies will allow for commerce to expand beyond the earth’s atmosphere. A system that can provide legal security will provide greater incentives for investment. Current law creates great legal risk for investors because of the uncertainty involved in interactions and potential conflicts of international and foreign law.

138 See Beck, supra note 24.
139 Outer Space Treaty, supra note 10, art 8.
141 Michael Wollersheim, Considerations Towards the Legal Framework of Space Tourism, SPACE FUTURE (Apr. 21, 1999), http://www.spacefuture.com/archive/considerations_towards _the_legal_framework_of_space_tourism.shtml (”Especially for private enterprises that perform commercial space activities such as space tourism, legal security—on a level of private and public international law—is a mandatory requirement.”).
142 Kayser, supra note 77, at 12, 14 (giving the example of satellite owners who have to buy launching services from foreign countries and the further complications when some businesses are state-owned and others are privately operated).
Having a centralized court to adjudicate suits could create greater predictability and legal certainty. First, businesses will know that they will only be sued in one court. This allows the business to plan ahead to reduce costs and risks. Second, the court will develop precedents that can help inform decision makers who can then rely on consistent results.

A centralized court could also protect the interests of all mankind in outer space. Judges would be picked by states instead of the litigants and would be tasked with enforcing international law. Currently, that law protects the interests of all of mankind. In contrast, other systems relying on national laws will allow corporations to cherry-pick the national law that is most favorable to them. If states maintain jurisdiction, then businesses will fly under the flag of the state with the most business friendly laws. If international arbitration is used, then businesses can select which nation’s laws govern the dispute. These systems might allow outer space businesses to avoid environmental or safety laws that increase costs but benefit others.

For these reasons, a central court could serve a significant role in protecting the international community’s twin goals for outer space: promoting economic development and preventing unilateral exploitation at the expense of others.

C. Jurisdiction—A Requirement for Success

An international outer space court will need several characteristics in order to achieve success. In addition to the support of the international community and legitimacy, it will need jurisdiction.

1. Sufficient Jurisdiction

An international outer space court may benefit from the jurisdiction lessons of American courts. In particular, the idea of diversity jurisdiction may be beneficial for an outer space court. Plaintiffs can bring suit in United States of America. After the case is filed, the court may examine whether the defendant has minimum contacts with the forum state. If the court determines that the defendant purposefully avails itself of the privilege of conducting activities within the forum state, it has clear notice that it is subject to suit there, and can act to alleviate the risk of burdensome litigation. See Asahi Metal Indus. Co. v. Super. Ct. of Cal., 480 U.S. 102, 110 (1987) (“When a corporation purposefully avails itself of the privilege of conducting activities within the forum State, it has clear notice that it is subject to suit there, and can act to alleviate the risk of burdensome litigation . . .” (citations omitted) (internal quotation marks omitted)).

144 Note that these arguments have even greater weight if the international community also agrees upon substantive law to govern outer space as well as the need for a court.

145 Outer Space Treaty, supra note 10, art. 1.

146 Wollersheim, supra note 141.

147 Wong, supra note 107, at 466.
States federal court when suing a defendant from another state for an amount of money greater than the statutorily defined amount in controversy. The purpose of diversity jurisdiction “is to provide a federal forum for important disputes where state courts might favor, or be perceived as favoring, home-state litigants.”

Just as federal courts are used to prevent problems arising from bias, an international court could serve as a neutral forum for controversies between parties of different countries. Bringing suit in the defendant’s country could just as easily, if not more easily, allow for potential bias as bringing suit in a different American state. Requiring diversity for the outer space court to have jurisdiction could also limit its reach and possible encroachment on countries’ sovereignty. The courts of each country could still hear suits between or against its nationals.

2. Jurisdictional Problems

Even with jurisdiction, two problems may arise. First, with regards to the issue of sovereign immunity, states would need to waive their immunity, presumably through a multilateral treaty, in order for an international tribunal to hear complaints against these sovereign governments. States could choose to waive immunity entirely or, alternatively, to waive immunity only in their own courts or to not waive immunity at all. No matter what the outcome is, the existence of an outer space court will not make the problem arising out of sovereign immunity any worse than it already is because states currently control this decision. It may, however, encourage states to waive sovereign immunity out of comity with other states.

The second problem related to jurisdiction is that potential litigants may not have access to the court. One argument against an international court is that it may be too costly to bring suit at all, especially for individuals, because of travel expenses and other costs resulting from the complexities of unique procedures in the court. Certainly, at some point, a plaintiff will be unable to pursue a valid claim because she is unable to travel to the seat of the relevant court.

This argument against an international court could also be made against the status quo. The unfortunate aspects of the present situation could only be improved, not worsened, by an international court. Under current law the

150 Ernest, supra note 126, at 540 (concluding that “[i]therefore, it may be best to proceed without the creation of the international tribunal”).
indigent victim will often be unable to bring suit in her local courts.\footnote{See supra Part IV.A.I.}

Indeed, in the United States, the Supreme Court has worried more about the burden on foreign \textit{defendants} being dragged into U.S. courts.\footnote{Asahi Metal Indus. Co. v. Super. Ct. of Cal., 480 U.S. 102, 114 (1987) (“The unique burdens placed upon one who must defend oneself in a foreign legal system should have significant weight in assessing the reasonableness of stretching the long arm of personal jurisdiction over national borders.”).} Having one court for outer space funnels disputes into one predictable location. Furthermore, a potential plaintiff can always sue in the home courts of a foreign defendant even though that may be costly and inconvenient.

\textbf{D. International Implications}

The idea of an international outer space court represents a significant change to the international legal regime. It has the potential to greatly affect international relations. In order to be beneficial, the court must obtain legitimacy. There are two basic threshold issues necessary to achieve international legitimacy. First, the court cannot be an ad hoc tribunal or it will not send a clear, consistent signal to the international community that justice will be served, hampering its legitimacy.\footnote{See generally \textit{International Justice}, N.Y. Times (Feb. 27, 2004), http://www.nytimes.com/2004/02/27/opinion/international-justice.html (explaining the problems with the trial of Slobodan Milosevic).} Instead, this should be a permanent, standing court.\footnote{This begs the question of how the international community should select judges. One framework would be to work through the United Nations with the Secretary General nominating and the Security Council approving potential judges. In the General Assembly, the relatively small number of spacefaring nations invested in the status quo could be easily outvoted. The judges should also be shielded from potential conflicts of interests by insulating them in their terms of service. \textit{See, e.g., Cohens v. Virginia}, 19 U.S. 264, 387 (1821) (describing the great importance of independent judges when comparing federal court to state court judges).} Second, the court must have American support.\footnote{See generally Robert C. Johansen, \textit{The Impact of US Policy Toward the International Criminal Court on the Prevention of Genocide, War Crimes, and Crimes Against Humanity}, 28 Hum. RTS. Q. 2, 301 (2006) (arguing that the United States’ failure to support the International Criminal Court has undermined the ICC).} Without those two elements, the court will likely fail to have a lasting impact.

If the court can achieve that basic level of success, it has the potential to improve international relations concerning outer space. A multilateral approach to outer space exploration could foster cooperation, preventing
competition and the militarization of space. An international court could be the basis of that approach going forward. A court-based system created out of a multilateral treaty encourages states and their nationals to resolve their disagreements peaceably. If disagreements can be resolved in court and enforced on Earth, then states will not have a strong incentive to use force to protect their interests beyond Earth’s atmosphere. A cooperative framework also has the potential to resolve disputes between developed and developing states over the use of natural resources found in outer space. Crafting a compromise for the substantive law will also play a major role in smoothing over those differences, but a standing court at least provides a forum for resolution of new quarrels among these repeat players.

V. CONCLUSION

The law governing outer space remains incomplete and unprepared to deal with the changing nature of human activity beyond Earth’s atmosphere. This represents an opportunity for the international community to fashion a new legal regime for this ungoverned expanse. States must adopt new substantive rules governing issues such as property rights and liability. Just like with domestic laws, outer space law will require a means to settle disagreements and unsettled areas of law. An international court whose jurisdiction covers outer space represents an ambitious but optimal choice. Done properly, it can ensure fairness, spur business, protect the interests of all mankind, and encourage cooperation. The international community has a blank slate on which to write, a chance to craft the best possible legal regime, and it should not pass on that opportunity. Instead, it should chart an ambitious path into outer space with the formation of a court for outer space.